



The Affected Environment

The purpose of this chapter is to describe the physical, biological, cultural, and social environments of Ebey's Landing National Historical Reserve, including human uses that could be affected from implementing any of the alternatives described in the following chapter. Though this chapter contains topics that were identified as important issues by the public and the agencies during scoping, it also contains environmental background data relevant to both readers and park managers.

The Cultural Environment

Physical Development and Historical Significance

The physical landscape of Whidbey Island has been shaped by natural and cultural forces for over 25,000 years. The landforms, soils, and shorelines that characterize the island landscape are the residue of the Vashon Glacier's moraine depositing sand, gravel and other materials over thousands of years. Receding ice left lakes and lagoons, which eventually formed into the rich and fertile prairies found in the Reserve. Human use and adaptation to the land has created a unique physical relationship between the built and natural environment that is reflected in the patterns of use present in the Reserve today.

The Reserve is unique in that the historical landscape provides the nation a vivid and continuous historical record of Pacific Northwest history. The land appears much as it did a century ago. Patterns of settlement, historic homes, pastoral farmsteads, and commercial buildings are still within their original farm, forest, and marine settings. A visitor can experience a variety of diverse physical and visual landscapes within a small, geographic area. The community comprising the Reserve is a healthy, vital one that allows for growth while respecting and preserving its heritage. (See Figure 4, Cultural Landscape Features for a more detailed map of the cultural landscape features or characteristics, refer to *Ebey's Landing National Historical Reserve*

General Management Plan/Environmental Impact Analysis, Volume II, Technical Reports, An Analysis of Land Use Change and Cultural Landscape Integrity for Ebey's Landing National Historical Reserve by Nancy Rottle.)

The Reserve has a long, rich history. Many scenic views that Captain George Vancouver of the Royal British Navy saw and noted in his 1792 journal are still evident today. American Indians inhabited the island at the time of Vancouver's expedition, and the captain described their activities. When the first white settlers set foot on central Whidbey Is-

land, they encountered not a harsh wilderness but a tempered landscape already shaped by centuries of human use and occupation. The Skagit Indians had permanent settlements along the shores of Penn Cove at what are now

Monroe's Landing,

Snakelum Point, and Long Point.

The native people had abundant natural resources at their disposal to sustain their community. They routinely cultivated camas, bracken fern,

and (later) potatoes on nearby prairies, and by selectively burning, they kept these naturally open areas clear of brush.

European exploration of the Puget Sound region increased beginning in the late 18th century. As the Indians had more contact with Euro-Americans, diseases such as smallpox spread through native villages decimating these indigenous communities. Within approximately one century's time, the native population on central Whidbey Island went from 1500 residents to three documented in 1904.



Coupeville waterfront, Whidbey Island, Washington, ca. 1900.

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The explorations of the area by early sea travelers documented the natural riches and astounding beauty of the island. Reports of open meadows, natural prairies, abundant timber, and dark, rich, prairie soils did much to advertise the amenities offered by Whidbey Island, and within half a century white settlers were arriving. Spurred on by the Oregon Territory's Donation Land Claim laws of 1850 and 1853, settlers came to homestead lands not yet determined to be in the United States. By encouraging the land "give-away", the government was better assured of staking its claim to these fertile northern Puget Sound lands.

Isaac Ebey was one of the first to take advantage of the new law and claimed his allowable 640 acres—one square mile—of prairie, accessible from one of only a few low spots on the steeply bluffed western edge of the island (hence the name "Ebey's Landing"). Ebey paced off his own claim since the government had not yet sent surveyors out to map the area. His family and friends followed, and within three years, the remaining prairie lands on central Whidbey were claimed. While the prairies drew the farmers, the deep, protected waters of nearby Penn Cove drew the interest of sea captains who could travel down the coast to San Francisco and other ports with lumber for shipbuilding and return north with supplies for the growing community.

Slowly a community evolved as the population increased. Farmers were successful with their crops, and sea captains and other entrepreneurs em-

braced a commerce of selling local goods off island and returning with items not available on Whidbey. At the turn of the 19th century, central Whidbey had the basis of a stable and prosperous community. Recreation and tourism, and the arrival of the military, brought further benefits to the area, which continue to the present. The visible patterns on the land and extant historical buildings and structures define this cultural landscape today as a microcosm of Pacific Northwest history. It is the last place in the Northwest where these broad patterns of history are evidenced in the land.

Archaeological Resources

A total of 35 archaeological sites have been recorded in the Reserve, all of which are in the locale of Penn Cove with the exception of one in the vicinity of Ebey's Landing. Many appear to be recent—the remains of Indian groups encountered by the early explorers. The location and nature of some of the sites, however, suggests a respectable antiquity, perhaps as old as 10,000 years. The sites have been recorded on statewide survey forms that are filed with the Office of Public Archaeology at the University of Washington.

Previous archaeological work in the Reserve and on the island as a whole has been limited. Archaeologists have surveyed little of the land within the Reserve because so much of it is in private ownership. The NPS's role in gathering field information has been limited for the same reason. The possibility of finding additional sites remains high, and recently, during some excavation work for real estate development on the north side of Penn Cove, cultural material was located, and project work stopped, to enable an archaeologist to visit the site and observe in order for construction work to continue. This resulted in the preparation of a draft National Register nomination form for the Penn Cove Park archaeological site at Monroe's Landing. This site is significant as a large, early historic Indian village associated with several locally prominent American Indians.

It is known that local property owners in the area of Ebey's Prairie and Crockett Prairie have uncovered and retrieved hundreds of items of cultural



Front Street looking east, Coupeville, 1901. Oliver S. Van Olinda, Photographer, Permission of University of Washington Libraries. Special Collections Division.

interest over the past century. Information about and access to many of these artifacts was granted to a historian under contract with the NPS in 1998, who prepared a narrative describing the materials, the approximate location where it was found, and other background information offered by the owners. The information gathered in the artifact documentation project reports on various collections and illustrates how these collections reflect stories other than Native American history—that of the descendents of the first white pioneers. Efforts were made to key each artifact collection to specific pieces of land, most often the old family farm, in order to provide a context for where the artifacts were found. These collections are in private ownership and not on display. However, the artifacts provide glimpses into the worlds of the prehistoric and historic native populations, white pioneers from the 1850s-60s and after, and the Chinese tenant farmers who lived and worked in the prairies of central Whidbey Island during the turn of the 20th century.

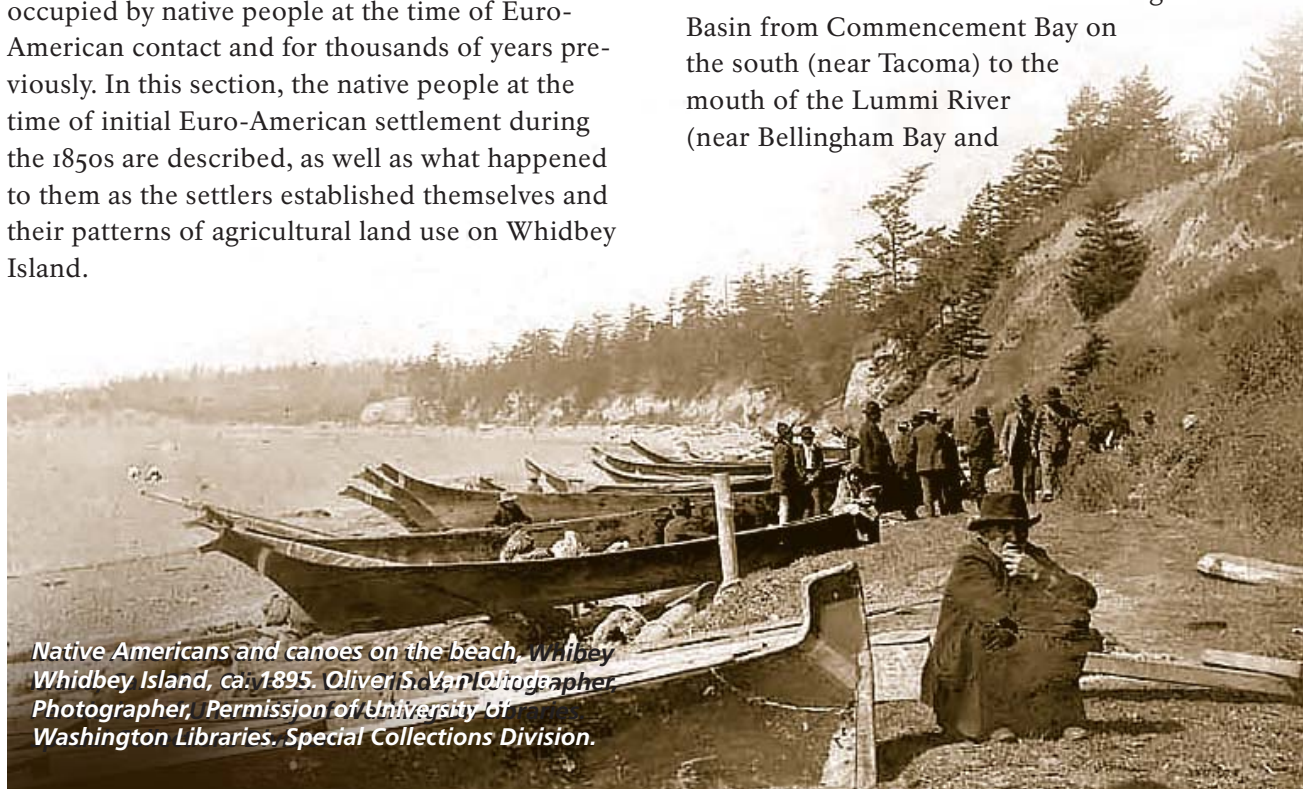
Contact Period Tribal Presence and Displacement

The previous sections indicate that the Reserve, Whidbey Island, and the surrounding region were occupied by native people at the time of Euro-American contact and for thousands of years previously. In this section, the native people at the time of initial Euro-American settlement during the 1850s are described, as well as what happened to them as the settlers established themselves and their patterns of agricultural land use on Whidbey Island.

The Donation Land Claim laws stimulated initial homesteading, but it was the creation of Washington Territory in 1853 and the subsequent use of treaties with representatives of native people by Governor Isaac Stevens that formally acquired land for future homesteading and other purposes. Representatives of named tribes and bands of Indians sometimes referred to as chiefs and sub-chiefs signed the treaties and thereby simultaneously “cede[d], relinquish[ed] and convey[ed]” vast tracts of land and “reserved” certain other lands for the occupancy and use of their respective tribes and bands. One such “Stevens Treaty” was made at Mukilteo or Point Elliott, approximately 30 miles south of Ebey’s Landing National Historical Reserve, on January 22, 1855. Another dating to January 26, 1855 was made at Point No Point, on the Kitsap Peninsula just south of Whidbey Island and the Admiralty Inlet. Both of these treaties directly affected native people who once lived on different parts of Whidbey Island and elsewhere.

The Treaty of Point Elliott

The Treaty of Point Elliott involved twenty-two named tribal groups and an unspecified number of “other allied and subordinate tribes and band of Indians.” It covered much of the Puget Sound Basin from Commencement Bay on the south (near Tacoma) to the mouth of the Lummi River (near Bellingham Bay and



Native Americans and canoes on the beach, Whidbey Island, ca. 1895. Oliver S. Van Loon, photographer. Permission of University of Washington Libraries, Special Collections Division.

the Gulf of Georgia) on the north. On the west, the area went from the Gulf of Georgia, south to Hood Canal. On the east, the area was bounded by the summit of the Cascade mountain range. The treaty identified four areas that became known as the Lummi, Swinomish, Tulalip and Port Madison/Suquamish Indian Reservations, and it specified that the tribes and bands agreed to move to and settle on the reservations “within one year after the ratification of the treaty, or sooner.” The US Senate ratified the Treaty of Point Elliott on March 8, 1859 but people moved to reservations over an extended period of time. In the interim, it was lawful for them “to reside upon any land not in the actual claim and occupation of citizens of the United States, and upon any land claimed or occupied, if with the permission of the owner” (Sanger 1863: p. 927-932).

Based on linguistic analysis, anthropologists regard most of the indigenous people of Whidbey Island to be within a language grouping known as Southern Coast Salish (Suttles and Lane, 1990: 485-502). The two Coast Salish languages for the Southern Coast Salish are Lushootseed and Twana. Lushootseed was spoken by the vast majority of native people who lived in the area covered by the Treaty of Point Elliott and to the immediate south in an area that was addressed through the Treaty of Medicine Creek. The Southern Coast Salish people had 49 separate local communities with uniquely descriptive native language “tribal” names that were located throughout the Puget Sound Basin in the pre-reservation and early reservation period nineteenth-century (Suttles and Lane, 1990: 486).

On Whidbey Island, there were several named Southern Coast Salish tribes or bands who both had villages in various places on the island, as well as to the north on Fidalgo Island and on the mainland in the vicinity of the Skagit River and elsewhere. Despite their unique, locationally derived names, the native residents were neither isolated nor completely sedentary. They visited and were visited by members of many other tribes to trade, raid, and exchange members and for other purposes. Their extensive travels by canoe and by foot were made to have contact with other Coast Salish people as well as members of tribes who lived out-

side of the Coast Salish region.

The Skagit River Valley on the mainland runs from the western slopes of the Cascade Mountains to Skagit Bay on the northeast side of Whidbey Island. It was an area with nine separately named tribes or bands in 1855 (Sampson 1972). Among them was one of several Skagit tribes, the Mesekwegwils (the tribal name is variously spelled as Me-ske-wi-guilse and Mee-seequaguilch) who both lived near the Skagit River between Lyman and Birdview, and on Whidbey Island from Snakelum Point, south to Holmes Harbor (Sampson 1972: 21, Suttles and Lane 1990: p. 487). Other Skagit tribes, sometimes called Lower Skagit or Whidbey Island Skagits lived to the north of the Mesekwegwils and Snohomish people lived to the south (Sampson 1972: p. 21, Ruby and Brown 1986: p. 107-109). As noted in the previous section, there are two Skagit village archaeological sites located near Penn Cove. One is on the north side and the other is near Snakelum Point (Suttles and Lane 1990: p. 486). There are many other sites in addition to the larger villages in the immediate vicinity of Penn Cove (Bryan 1963).

The Point No Point Treaty

The Point No Point Treaty involved four named groups and covered the area of Washington Territory from Whidbey Island on the east to within fifteen miles or so of the northwestern tip of the Olympic Peninsula on the south side of the Strait of Juan de Fuca. From the northwestern shores of Whidbey Island, the area covered in this treaty extended southward to include Hood Canal. As with the other Stevens Treaties, the signatories who represented the four tribes as named in this treaty (S’Klallam, Sko-ko-mish, Too-an-hooch and Chem-a-kum) ceded most of their traditional territory and were allowed to reserve only a much smaller area. In this case, only one reservation consisting of 3,840 acres located on Hood Canal was designated (Sanger 1863: p. 933-937).

The S’Klallam or Clallam is the one tribe among those involved in the Point No Point Treaty that is known to have lived on certain parts of Whidbey Island before and during the non-Indian settlement represented by Isaac Ebey and others in the early 1850s (Farrar 1917). Anthropologists regard

Clallam to be one of five languages spoken among a language group known as Central Coast Salish (Suttles 1990: p. 453-475). As a result of the Point No Point Treaty, the Clallam were supposed to take up residence in what became the Skokomish reservation on the Hood Canal. Instead, the Clallam continued to reside in various non-reservation areas throughout most of the late nineteenth-century and until various points in time in the twentieth-century. One group of Clallams purchased land in 1874 on the Olympic Peninsula and two other groups acquired land in the mid 1930s.

In summary, certain Southern and Central Coast Salish tribes were associated with what is now Ebey's Landing National Historical Reserve during the pre-reservation and early reservation period. However, the history of how the reservations developed during the mid to late nineteenth-century in terms of tribal composition and the status of Indians who did not necessarily move to reservations is complex. It will be addressed in a later section on the traditional associations of several contemporary tribal reservation communities. Suffice it to note here that a large number of Whidbey Island associated Skagits were among the 74 signatories of the Point Elliott Treaty. Among them were George Snatelum, Senior, George Snatelum, Skagit sub-chief and Chief Goliah.

Culturally Significant Places

Although comprehensive studies have not been conducted in the Reserve to identify specific places of cultural significance to contemporary



Skagit man called Snaklum Charlie with family, Coupeville, Washington, ca. 1910. Permission of University of Washington Libraries. Special Collections Division.

American Indians, it is widely known that archaeological sites, burials and a variety of cultural resources have special cultural significance to native people of the Pacific Northwest. In addition to archaeological sites, two specific places are culturally important to tribes and tribal members with traditional associations to the Reserve. One is the Snaklin Monument, a five-foot tall stone obelisk, located within a small chain link fenced enclosure on private land near Parker Road in the northeast section of the Reserve. The other is an area shown on a plat map as a "USA Indian Cemetery." The site of the cemetery is on a wooded hillside approximately one-quarter mile northwest of the Snaklin Monument. Both the monument and the cemetery are less than one-half mile away from Snakelum Point on the south side of Penn Cove.

In early 1995, the Snaklin Monument was the subject of a brief study undertaken by archaeologist Dr. Gary C. Wessen. In addition to describing the monument, nearby features and the setting, Wessen found and reviewed historic documents, and conducted interviews with 11 individuals. The information isn't definitive about exactly when or where the monument was originally erected. An item from the *Island County Times* dating to June 21, 1918 referred to the monument as a "tombstone" and described two inscriptions: "Old Chief Snaklin, died 1849", and below this the words "George Snaklin, died 1880, aged 60 years" (Wessen 1995: p. 7). Wessen notes that the 1918 de-



Snaklin Monument, located near Snakelum Point, Penn Cove, Whidbey Island, Washington, ca. 2000, NPS Photo.

scription of the monument's location does not match the present location. Some of his interviews and references to the "memorial at Snakelin Pt. for Skagit Tribe" (Sept. 24, 1937 Minutes of Whidbey Island Chapter No. 6 of the Daughters of the Pioneers of Washington, as quoted in Wessen 1995: p. 8) support the idea that the obelisk and any associated human remains may have been relocated in the late 1930s or 1940s. By that time, there were two additional inscriptions on the opposite side of the obelisk: "Chief Charlie Snetlum, Died - June 5, 1857" and "Chief Charlie Snetlum, 1843-1934" (Wessen 1995: p. 5).

Whether or not burials are at the site of the obelisk, it is associated with the names of four members of at least three generations of a prominent Skagit Indian family who lived in what is now the Reserve before 1855 and until the 1930s. Regardless of spelling, the family name became a widely known place name that lives on for Whidbey Island. Old Chief Snaklin was an important man who died on December 16, 1852 according to the diary of Isaac Ebey's wife Rebecca, who referred to him as "Sneetlem" (Farrar 1917: p. 56). Both the Chief's son, George Snetelum, Senior, and grandson, George Snetelum, were among the signatories of the Point Elliott Treaty (Sanger 1863: p. 930). Another grandson of Old Chief Snaklin is represented on the monument in the inscription for Chief Charlie Snetlum, 1843-1934 (Wessen 1995: p. 7).

The second place of likely cultural significance for contemporary American Indians is an area set aside by the U.S. Government for tribal use as a cemetery. The extent of the area was determined through a land survey in 2001 and the information was shared with the tribal officials of the Swinomish Indian Tribal Community at that time. In addition to the interests the Swinomish have expressed in the significance of the monument and the cemetery, the Snoqualmoo Tribe of Whidbey Island has held periodic memorial events at the monument and it is apparent that offerings are left by visitors to the monument. The future uses of these two places will involve the tribes, the landowners and the Reserve to the extent that is determined to be appropriate in each case. A comprehensive study of these and other places of po-

tential cultural significance throughout the Reserve will be conducted in collaboration with traditionally associated tribes when funding becomes available.

Cultural Landscape Resources

Historic settlement and development patterns, natural features, and cultural features are important elements of the cultural landscape of the Reserve. Collectively, landscape patterns and their relationship over time, imprint and reflect human history in the land and gives it its character. Ten cultural landscape characteristics contribute to the character of the Reserve.

1- Overall Spatial Organization

The Reserve is organized by four major natural landforms comprised of prairies, uplands, wooded ridges, and shorelines. These landforms historically provided a strong physiographic framework in which the early settlement of central Whidbey occurred, and structured development of the landscape into ten distinct character areas as defined by the NPS in 1983. The two shorelines are strong linear boundaries on the east and west sides of the island and historically influenced the development of transportation systems, access for trade, and the movement of goods. The two major ridges influenced early land use and development by physically channeling settlement onto the more accessible, open prairie lands. Historically, farmsteads were clustered along early roads that tended to follow property lines and natural landforms such as ridges. All services and market-related functions were concentrated in the town of Coupeville, platted in 1883 and the county seat of government. To a large degree, these historic trends and large-scale landscape patterns and organization are evident in the Reserve today.

2-Response to the Natural Environment

There is a strong correlation between historic land use and current agricultural capability of the soils in the Reserve. Two large areas of fertile soils are found in Ebey's and Crockett prairies. In addition to this prime resource, the majority of other areas in the Reserve are dominated by a variety of soils,

which as a group, are suitable for agriculture with proper management. In some areas of the uplands near San de Fuca and Fort Casey, farmers cleared woodlots for pasture and less intensive feed crops. These patterns of use, based on the physical properties of the soil, are still evident today throughout the upland areas, where farms are smaller and woodlots frame developments into pockets of land.

Natural vegetation influenced the ability of settlers to work their claims. Forests restricted development on the ridges until the later 1800s, as did three salt marshes at Crockett Lake, Perego's Lagoon and Grasser's Lagoon. Natural features strongly influenced transportation patterns. Roads generally followed the edge of the ridges, along shorelines and property lines, connecting settlers to each other and the west coastline of the island to Penn Cove.

In a similar response to natural features, the historic town of Coupeville was built on the inland waters of Penn Cove in part because that location was critical for providing access to ships carrying natural resources (timber) and, later, farmers' goods, to outside markets. The cove was deep and well protected, two important features for the sailing ships of the later 19th century.

3-Land Use Categories and Activities

The Salish Indians beginning about 1300 were among the dominant people influencing the ecology of central Whidbey. Their occupation was characterized by the establishment of a winter village, which included a variety of activities, and the development of smaller, temporal, seasonal sites designed to maximize mobility in the gathering of seasonal resources. The Salish burned the prairies as a means of increasing plant production and to invigorate plant production for game animals along the edges of the prairies.

The white settlers claimed lands beginning in the 1850s, taking the prairies first and the uplands later. Farms were built and fences enclosed the large open prairies to define more discrete land uses. The cultivation of fields occurred within the fenced areas and grazing occurred outside. Lands were rented to those unable to own land or too

late to claim any under the laws encouraging settlement.

Primary land uses in the Reserve today include the following: agricultural use of the prairies; concentration of residential, commercial, government, and service development in the town limits of Coupeville; the conservation of natural areas and systems (such as forests, woodlands, wetlands, lakes, and parklands); and the recreational use of shorelines and beaches along the coast and Penn Cove. While new development is occurring and land uses are changing in specific areas, these broad land use systems mirror historic patterns and reflect a continuity of use based on the needs of a growing community and the qualities of the natural resources found in the Reserve.

4-Vegetation Related to Land Use

Vegetation in the Reserve can be divided into two categories: cultural vegetation (primarily associated with the agricultural landscape) and native communities (associated with the forests and beach/salt marsh vegetation along the low lakes and shorelines). Plant communities introduced or impacted by humans are a common occurrence throughout the Reserve but are most evident in the prairies and uplands. The introduction of crops, fencing of property, clearing of land to build homes, and a variety of land use practices related to the development of a viable market crop between 1855 and 1900, left the landscape of the Reserve permanently altered. Fencing properties led to the development of hedgerows.

The primary forest cover naturally occurs along the ridges and upland areas of the Reserve and along the shores of Penn Cove. The cover is dense in places and historically forced settlers onto open lands because the clearing of such large trees required a significant amount of labor. During the 1900s, the forests were heavily logged. Madrone trees along the shores of Penn Cove were planted in the early part of the 20th century to complement the existing numbers in an effort to beautify the shoreline and attract tourists.

Significant salt marshes are located at Crockett Lake, Perego's Lagoon, and Grasser's Lagoon. Some of these areas were used historically for

grazing animals. Vegetation in the Reserve has been significantly impacted by human use and occupation over several generations, but in these three areas, there remain remnant plant communities that reflect native species associations.

5-Circulation

The contemporary road system through the Reserve is largely based on historic routes and patterns. Early roads were aligned based on functional need, proximity to natural landforms, and property lines. At a smaller scale, local roads were required to link families and farms on the prairies. Routes following the base of both sides of the ridge between Crockett and Ebey prairies were created. Roads were also built to connect central Whidbey to other settlers and communities to the north and east-west from the Strait of Juan de Fuca to Penn Cove. The circulation network that was in place by 1899 is basically the primary circulation network found today in the landscape.

6-Structures

Like land use, structures found in the Reserve are a reflection of both individual needs and the inherent qualities and specific resources of the landscape. Historic buildings in the Reserve represent all of the important historical eras and reflect a variety of architectural styles. Some are significant as examples of certain types of architecture or construction technology; others are significant because they contribute to our understanding of Reserve history. Some of the more notable historic buildings in the Reserve include residences and outbuildings from the settlement era (1850s-1870s), from the Victorian era (1880s-1910s), and from the period of community development (1910s-40s). Whether vernacular or high style, these homes and commercial buildings are tangible reminders of the community's past.

Roads are structures and many of the primary and secondary roads in the Reserve are historic (see discussion about roads under "Circulation"). Other structures in the Reserve include historical monuments, memorials, log blockhouses, a wharf, and a cemetery; all these contribute to the significance of the Central Whidbey Island Historic District.

7-Cluster Arrangement

Clusters of buildings and structures found in the Reserve represent several historic eras and trends in the settlement and development of the landscape. There are fourteen primary farm clusters in the Reserve at Ebey's, Crockett, and Smith prairies. Building clusters in the Reserve are designated as such because of their historical association with each other, and because of a functioning relationship among several individual buildings.

Fort Casey is considered a cluster because of the historical associations and relationships among a variety of structures still present today. The cluster is spread out over a large area. The overall organization of the landscape and the formal hierarchical layout of the officer's quarters, barracks, parade ground, service areas, workshops, and defense structures still exist within its original setting and location on Admiralty Head. Much of this infrastructure has been in place since 1906. Other features include gun emplacements, sidewalks, service-related buildings, among other built structures, and all retain a distinct relationship to one another.

8-Archaeological Resources

See previous section "Archaeological Resources" under the "Cultural Environment" heading.

9-Views and other Perceptual Qualities

As a cultural landscape, the Reserve is viewed holistically as a collection of resources, many of which are significant. Historic views and perceptual qualities also contribute to the significance of the landscape. These views can be treated as tangible resources and are identified using the historical record and are based on character-defining features of the cultural landscape. Fifteen contributing views have been identified in the National Register nomination that documents the contributing resources of the historic district.

10-Small-Scale Features

A variety of small-scale features found in the Reserve adds character and texture to the cultural landscape. Many of these features are associated with historic structures such as old lampposts in

Fort Casey or individual specimen trees like the black walnut tree outside the Captain Thomas Coupe saltbox. There are historic gates and fences, wooden post and wire fencing along roads and property lines, remnant orchards, hedgerows, building ruins and the individual grave markers in the cemetery that collectively give richness to the cultural landscape of the Reserve.

Museum Objects and Artifacts

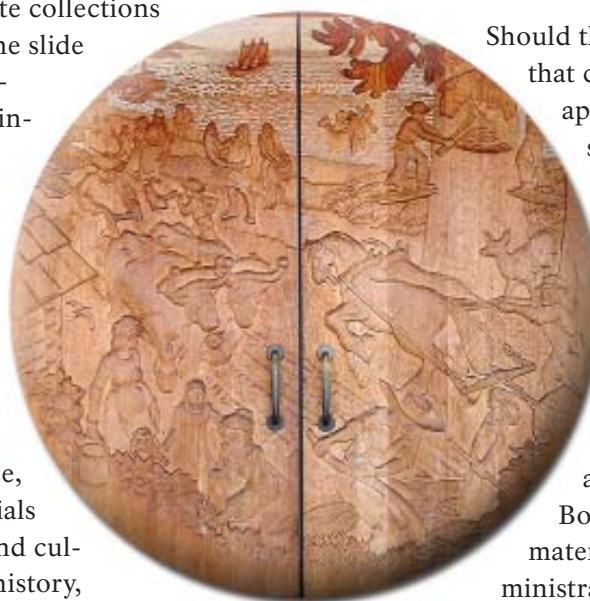
The Trust Board currently does not hold any object collections in its possession, nor does it intend to be a repository for such items at this time. The Trust Board does have a slide and photograph library that includes both present-day and historical images. Many of the historical images are duplicates of material the museum holds; some are images duplicated from private collections (oral history participants). The slide and photograph library is frequently used by researchers, including members of the local community, children and young adults working on research projects for school such as History Day, and contractors working for the NPS or other organizations.

There is a small reference library in the Trust Board office, containing a variety of materials on topics including natural and cultural resource management, history, rural land preservation, architecture, preservation planning, natural history guides, among others. Augmenting the reference library are natural and cultural resource vertical files containing articles and manuscripts, both published and unpublished, and general ephemera on topics relevant to the Reserve.

The Reserve works with North Cascades National Park Service Complex to conserve and store the artifacts that resulted from work on the Ferry House foundation and the Jacob Ebey Blockhouse. Approximately 15,000 archaeological items were uncovered. The Ferry House artifacts con-

tained a mix of historic and prehistoric materials totaling approximately 12,000 items including the associated records. The Block House artifacts are all historic archaeology items that are in the process of being analyzed and are expected to number less than 3,000.

The Trust Board works in partnership with the Island County Historical Society, which is the official, though non-profit, repository for items associated with Island County history. Its museum has a large collection of items that have been donated to it over the years. Its capacity to take additional items is limited by the lack of adequate collections and storage space and staff to oversee its management. The museum and collections are managed by a group of volunteers and at various times participation can be sporadic.



*Island County Historical Museum
Front Doors, ca. 2004. Courtesy of
the Island County Historical Society.*

Should the Trust Board determine that collections are a positive and appropriate arena for the Reserve to expand into on-site, it will be necessary to devise creative solutions for collections management. This may include, though not necessarily limited to, entering into a formal partnership with the museum. This is also true for archival materials. The Trust Board is generating archival materials that represent its administrative history. These materials have been organized and placed in boxes that remain in the office (taking up valuable space). To date, no long-term solution has been consid-

ered for these important resources. A Scope of Collections Statement is underway to help determine solutions to some of these concerns. A Museum Management Plan for the Reserve's NPS collection is currently underway by staff at North Cascades National Park Service Complex.

The Natural Environment

The Reserve is located in the western hemlock forest zone of Western Washington. It encom-

passes approximately 13,617 acres of land and 3,955 surface acres of salt water for a total of 17,572 acres. Central Whidbey Island contains the island's best farmland, broad prairies, a deep protected cove, high seaside bluffs, low rolling hills, shallow brackish lakes, and a narrow, rugged beach along Admiralty Inlet.

A great diversity of wildlife inhabits the wooded areas, wetlands, and shorelines of the Reserve. Deer, raccoons, coyotes, and a number of small mammal species are common in the wooded areas. Many species of waterfowl use the wetlands and shoreline for breeding, nesting, and resting during migration. Crockett Lake and the bordering agricultural land adjacent to Fort Casey State Park support a large population of permanent and migratory waterfowl as well as other birds and small wildlife. Kennedy's Lagoon and Penn Cove are also significant waterfowl habitats. The Reserve is located on the Pacific Flyway.

There is also a considerable variety of flora species, due in part to the different habitat zones encompassed by the Reserve. Representative species from woodland areas, prairies, coastal bluffs, beaches, fresh water kettle ponds, lagoons, wetlands, and marine ecosystems can be found. There are also several locations where sensitive species are located.

While there exists a variety of habitats and significant species, there has been little emphasis on the understanding or inventorying of natural species or processes within the Reserve. The majority of the land is privately owned and humans have manipulated virtually all of the land for many decades, mostly for agricultural purposes, including logging. The threats to the traditional land uses that affect its rural char-

acter are urgent and continuous.

Climate

Several factors influence the maritime climate surrounding Whidbey Island. One major influence is the Pacific Ocean, which acts as a regional thermostat that generates moisture-laden air. Major bodies of water help to regulate temperatures on landmasses. They form a great atmospheric heat reservoir with a tremendous capacity for storing heat and releasing it slowly. Thus, for the most part, the maritime environment does not experience great influxes of extreme weather.

The other geographic climate influencing factors are the surrounding mountains. To the east, the Cascade Mountains deflect continental winds. The prevailing wind direction is from the south and southwest in the fall and winter and from the west and northwest in the spring and summer. Roughly, one hundred miles to the west is Washington's Pacific Coast, where the continental United States receives its highest annual rainfall. The Olympic Mountains stand between the Pacific Coast and Whidbey Island, which places the Reserve within the rain shadow of the Olympic Mountains.

Data collected at the weather monitoring station in Coupeville documents that the area encompassing the Reserve averages only 20.77 inches of precipitation annually, compared to over 40 inches on the south end of Whidbey Island. An overall average rainfall for Whidbey Island would be close to 30 inches. About 80 percent of the annual precipitation occurs



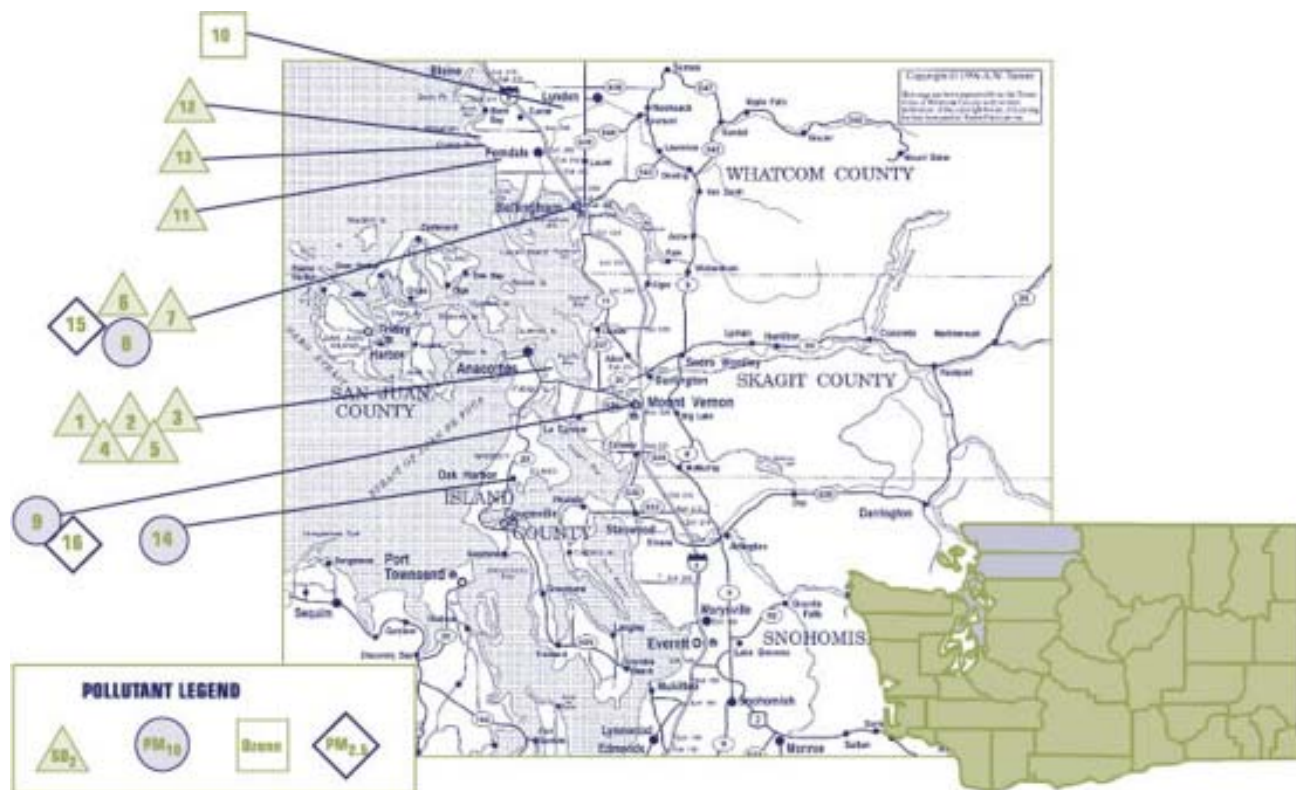
Ebey's Landing and bluff, Island, Whidbey Island, ca. 2000. NPS

from October through May. The average maximum temperature is 57.9 degrees Fahrenheit; the average minimum is 41.7 degrees Fahrenheit. The extreme temperatures range from 90 to 0 degrees Fahrenheit. The growing season within the Reserve is 202 days. Total cloud cover averages 255 days per year with only 43 days of clear skies.

A May 1990 report by the Intergovernmental Panel on Climate Change (representing 39 countries and reporting on the greenhouse effect), stated that unless emissions of green house gases are immediately cut by more than 60 percent, global mean temperatures could increase up to 5.4 degrees Fahrenheit by the end of the twenty-first century. A two to six foot sea level rise is predicted using computer simulated models. This amount of sea level rise could result in significant adverse environmental impacts on groundwater such as salt-water intrusion, inundation of shoreline environments and possible displacement of wetlands (Island County 1990: III-14).

Air Quality

The Environmental Protection Agency (EPA), the Washington Department of Ecology (DOE), and the Northwest Air Pollution Authority (NWAPA) regulate air quality on Whidbey Island. The EPA has established National Ambient Air Quality Standards (NAAQS) to protect the health and welfare of the public for the six so-called “criteria” or conventional pollutants - carbon monoxide, ozone, nitrogen oxides, sulfur dioxide, lead and fine particulate matter. The DOE has established ambient standards for Washington State, which are identical to the federal NAAQS except for more stringent sulfur dioxide standards. The DOE is also responsible for developing and implementing state implementation plans that will assure compliance with state and federal ambient air quality standards. The NWAPA is the local air pollution control agency serving Island, Skagit, and Whatcom counties and shares responsibility with DOE to develop and implement the state implementation plans. In addition, all three agencies share responsibility for conducting air quality monitoring, evaluation, and regulation of hazard-



Location of sulfur dioxide (SO₂), particulate (PM₁₀ and PM_{2.5}) and ozone monitors in Island, Whatcom, and Skagit Counties from NWAPA's website as of December 2004 – [<http://www.nwair.org/measurement/monitoring.html>]

Table 1: Reported 2002 annual emissions for selected industrial sources

Source	2002 Emissions of Criteria Pollutants in Tons				
	CO	NOx	PM10	SO2	VOC
Naval Air Station – Whidbey Island	30	31	34	1	38
Tesoro Northwest Company	1,012	2,293	682	5,345	1,626
Puget Sound Refining–Shell Oil Company	621	1,152	146	3,494	496
Alcoa Primary Metals – Intalco	15,969	65	354	1,924	11
BP West Coast Products (ARCO)	845	2,367	145	1,883	505
ConocoPhillips Company	237	1,017	97	2,286	402
Port Townsend Paper Corporation	1,681	550	267	545	64

Table 1: Reported 2002 annual emissions for selected industrial sources within the airshed as published by NWAPA in their “2002 Air Operating Permit and Other Large Source Emission Inventory for Island, Skagit, and Whatcom Counties of Washington State” and by Olympic Region Clean Air Agency in their 2002 emission inventory for Jefferson County available on their website at <http://www.orcaa.org/EIJefferson02.pdf>

ous air pollutants and the regulation of industrial sources, motor vehicles, and area sources (e.g., woodstoves, open burning, and small companies like dry cleaners and gasoline stations).

Air Quality Monitoring

NWAPA operates a particulate monitoring station in Oak Harbor. No other air quality monitoring is currently conducted on Whidbey Island. The map on the previous page shows the locations of other monitoring stations within the three counties of NWAPA’s jurisdiction.

Three other counties border on Whidbey Island: the Puget Sound Clean Air Agency (PSCAA) conducts particulate and carbon monoxide monitoring in Snohomish County; no air quality monitoring is conducted in Jefferson or San Juan County. Additional monitoring is conducted in the large urban areas to the south (Seattle/Everett/Tacoma) and to the north (Vancouver, British Columbia) of Whidbey Island.

Although there has been little air quality monitoring on Whidbey Island itself, monitoring elsewhere in the airshed along with modeling indicate that all areas of the island are currently in attainment of the NAAQS (personal communication with Axel Franzmann, Air Quality Scientist, NWAPA, 2001).

Industrial Sources of Air Pollution

The only large industrial source on Whidbey Island is the Naval Air Station near Oak Harbor. Although it is the only large industrial source on the island, the Naval Air Station is relatively small

compared to other industrial sources in the airshed including Tesoro and Shell oil refineries at Anacortes in Skagit County; Intalco, ARCO, and ConocoPhillips in Whatcom County; and Port Townsend Paper in Jefferson County. Reported 2002 emissions from these selected large industrial sources are shown in Table 1 for comparison.

The Port Townsend Paper mill near Port Townsend in Jefferson County, approximately five miles west of the Reserve, is of particular concern to the National Park Service due to its proximity to the Reserve and because the prevailing winds are from the west, especially during the summer months. In addition, the plume from the mill is often clearly visible from Ebey’s Landing and the odor of sulfur compounds can sometimes be detected at the Reserve.

Other Air Pollution Sources

Statewide data indicates that industrial sources are only responsible for about 13 percent of the air pollution in the state; motor vehicles contribute 55 percent of the air pollution; woodstoves and fireplaces 9 percent; outdoor burning 4 percent; and all other sources (such as small businesses like dry cleaners and gasoline stations) 19 percent. NWAPA indicates that a similar distribution would be found in Island, Skagit, and Whatcom counties with motor vehicles contributing the largest amount of air pollution. (See NWAPA’s “2002 Air Operating Permit and Other Large Source Emission Inventory for Island, Skagit, and Whatcom Counties of Washington State”.)

Night Sky and Natural Quiet

As our cities and towns grow, the places where the public can enjoy the sounds of nature or find clear views of our nighttime celestial skies are increasingly becoming compromised. Natural quiet and night sky are resources that are often an overlooked part of the environment.

Light pollution is the visible intrusion of light into our nighttime environment. The source of much of this pollution can be attributed to poorly designed outdoor light fixtures that allow light to stray beyond the intended purpose. The impacts of poor nighttime lighting include urban sky glow (the brightening of nighttime skies), glare, the trespass of light and wasted energy (International Dark Sky Association 2001). Light pollution can adversely affect night-flying migratory birds. The areas within the Reserve experiencing higher concentrations of light pollution are the town of Coupeville and the State Route 20 corridor. Some light pollution within the Reserve is possibly stray light from the town of Oak Harbor. The primary sources of the light pollution are poorly designed building and roadway light fixtures and vehicle lights.

According to the Coupeville town planner (Cort 2001), the lighting regulations for the Coupeville area are fairly standard, but are effective in containing light onsite and directing it downward. In 2003, Island County passed a lighting ordinance to preserve the qualities of the island's night sky resources. All fixtures must be retrofitted if not in compliance with the new regulations. The county has printed a brochure outlining the new ordinance, which is available at the county offices in Coupeville.

Noise pollution is the audible pollution of the natural environment from foreign sources. The U.S. Navy maintains an Outlying Landing Field (OLF) that cuts through Smith Prairie within the Reserve. The field is used by pilots to practice simulated aircraft carrier landings. When in use, there is an extreme noise impact. The Public Affairs Office at Naval Air Station, Whidbey Island (Martin 2001), states that the flight schedules normally vary from several times per week to once a month. The time of day and length of practice ses-

sions also vary. This erratic schedule implies that significant noise impacts can occur on a regular, but inconsistent basis.

Another source of noise pollution is State Route 20. Part of the State Route 20 corridor runs through the Reserve and there is a sizable amount of noise pollution attributed to highway traffic. There are about 3 million vehicles per year (Washington State Department of Transportation 2004). Personal watercraft (commonly referred to as jet skis) usage in Penn Cove, though infrequent, is another source of noise pollution.

Geology

The Puget Lobe of the Cordilleran ice sheet predominantly shaped the major surface features of Whidbey Island. This ice sheet formed during the Pleistocene Epoch between 2.2 million and 10,000 years ago. Continental glaciers advanced and retreated from Canada into Puget Sound during this time. The last period of glacial advance, known as the Vashon Stage of the Fraser Glaciation, reached its maximum between 18,000 and 14,000 years ago (Burns 1985). About 1,250 meters of ice covered the area near Whidbey Island during this time. This last period of glaciation left deposits of unsorted, boulder-clay layers referred to as Vashon till. This glacial till covers most of the upland areas of Whidbey and Camano islands, and varies in thickness from several feet to approximately 175 feet. This advance also left proglacial outwash sands at the lowest Vashon levels of Whidbey Island. These sands are overlain by till, which was later overlain by glacial-marine drift gravels (Easterbrook 1962, 1968, 1969). Other remnants of glacial impacts are kettle ponds, which were formed by large, soil-covered blocks of ice, left by the glaciers, which melted slowly leaving behind steep-walled depressions in excess of 200 feet deep and filled with water.

Soils

Glacial upland soils cover approximately 75 percent of Island County. In these areas, the glacial parent material has resulted in surface soils of coarse to fine-textured material ranging from moderately good to somewhat excessive drainage.

The soil series occurring on glacial uplands on Whidbey Island include Hoypus, Keystone, Whidbey, Swantown, Casey, Townsend, and Bozarth.

Sediment washed from upper slopes during the glacial retreat collected in glacial lake bottoms, mixed with organic matter and formed the fertile soils of the prairies. These prairies have attracted populations of humans for hundreds of years. The prairies have been in continuous agricultural use for over 150 years by European-descended immigrants, and probably hundreds of years longer by American Indians.

The west coast beaches along Admiralty Inlet consist of materials deposited by glaciers and washed by wave action. At Ebey's Landing, the beach is gravel-sand subject to erosion from currents and to accretion from the upland erosion. (Gallucci, 1980).

All the coastal formations are mainly composed of Pleistocene sediments. At Point Partridge, these are Everson gravels (Everson interstade, Fraser glaciation, upper Pleistocene). Undifferentiated Pleistocene sediments comprise Ebey's Landing. Toward the south and Fort Casey, it is Vashon drift (Vashon stade, Fraser glaciation, middle Pleistocene), Everson glacio-marine drift, and Vashon till. Along the shorelines, these alternate with pre-Fraser non-glacial undifferentiated Pleistocene sediments (Gallucci, 1980).

The most common wetland mineral soils in the County include Norma, Bellingham, and Coveland series. The most common organic wetland soils are Semiahmoo muck, Tacoma peat, Mukilteo peat, and Tanwax peat series. These are all poorly drained soils with shallow water tables.

The best farmland in Island County is U.S. Department of Agriculture (USDA) Class II (productive agricultural) which comprises 5 percent of the total landmass. Over 45 percent of the existing Class II lands within Island County are found within the Reserve (Luxenberg and Smith 1995: p.17). (See Figure 5, Prime, Unique, and Important Agricultural Soils.)

Topography

Elevations range from sea level to 200 feet. Generally, the narrow shoreline strip ends at steep slopes and cliffs. These fall away gradually inland to the low-lying prairies. No place in the Reserve is more than two and a half miles from the shoreline. The beaches and shoreline slopes and bluffs are in a constant state of erosion and accretion. Soils on slopes in excess of 15 percent grade, which includes some of the prairie edges, are subject to severe erosion when the vegetation cover is removed. Twenty-five miles of shoreline are included within the Reserve. This shoreline varies from the windswept cliffs on the west to the protected shores of Penn Cove.

Water Resources

For its size, the Reserve contains a broad diversity of marine and freshwater resources. (See Figure 6, Hydrology.) The land within the Reserve is bounded on the east by the Saratoga Passage (Puget Sound) and on the west by Admiralty Inlet (between the Strait of Juan de Fuca and Puget Sound). The Reserve contains extensive marine resource areas including Penn Cove, Kennedy's Lagoon, and Grasser's Lagoon in the northeast, Admiralty Inlet and Perego's Lagoon to the west, and Admiralty Bay and Crockett Lake (lagoon) in the south.

These areas provide habitat and nursery grounds for marine invertebrates and fish at Grasser's Lagoon, Kennedy's Lagoon, and Crockett Lake, support important commercial fisheries at Penn Cove, and provide wildlife habitat for waterfowl and terrestrial animals at Penn Cove, Crockett Lake, and Perego's Lagoon.

The Reserve lies within two watersheds, the central/south Whidbey and north Whidbey watersheds. The central/south Whidbey watershed boundary is located directly south of Coupeville, continues west across the prairie to Ebey's Landing and continues south throughout Whidbey Island.

Surface Hydrology

The only surface water that is used for domestic consumption in the general vicinity of the Reserve

is water piped from the Skagit River to Oak Harbor, the Naval Air Station Whidbey, and the North Whidbey Water District (Island County 1991). All other sources are obtained from groundwater (see “Subsurface Hydrology” section).

Surface freshwater resources within the Reserve are limited. These resources include Lake Pondilla, a kettle pond located in a heavily glaciated area of the West Woodlands, a forested area northwest of Ebey’s Prairie. There are also several small wetland areas, which include kettle holes, a freshwater wetland near the middle and high schools in Coupeville at Prairie Center, and human impacted salt marsh areas on the northern side of Crockett Lake. The near-shore habitat of Grasser’s Lagoon, Kennedy’s Lagoon, and Crockett Lake are vital to the juvenile life stages for many salmonid species originating from river basins in north Puget Sound and potentially other areas as well.

Penn Cove and Kennedy’s Lagoon

Penn Cove is the predominant surface water feature located within the Reserve. It is an appendage of eastern Puget Sound, which runs in an east-west direction for a length of approximately five miles from the Saratoga Passage. Penn Cove consists of roughly 3,955 acres of water bordered by a ten-mile shoreline, ranging from high sandy cliffs to muddy tidelands. Kennedy’s and Grasser’s Lagoons are located at the western end of Penn Cove. While small, these lagoons are highly productive biological systems.



Sunrise at Blower’s Bluff, across Penn Cove from the Coupeville Wharf, Whidbey Island, ca. 1999. NPS Photo.

Penn Cove supports extensive commercial and recreational fisheries. The high quality waters are used by the commercial aquaculture industry, Penn Cove Shellfish, LLC, for the production of locally and internationally renowned Penn Cove mussels.

There are two permitted effluent discharges into Penn Cove. The town of Coupeville and Penn Cove Park discharge sewage effluent after treatment into central Penn Cove. According to the Coupeville Town Planner, the effluent discharges meet all applicable water quality standards.

Occasionally personal watercrafts will enter the cove. The noise and water pollution attributed to their use is a concern to many living in the Reserve. The Coupeville town planner considers jet skis a minor problem, due to their very infrequent presence in Coupeville waters. The Coupeville Town Council has recently passed a new comprehensive plan, which supports regulating personal watercrafts. The means of regulating this use will not be decided until April 2001. The compromise could possibly be a speed limit within the Cove.

Penn Cove is one of several Puget Sound marine areas monitored as part of the Washington DOE Marine Waters Monitoring Program. The habitat quality of marine waters are characterized by analyzing the stratification of the water column (layering of the water according to temperature and salinity changes) and by measuring dissolved oxygen, turbidity, and the availability of sunlight below the water surface. Penn Cove was found to exhibit persistent stratification. Stratification will affect the distribution of toxins and other biological stressors, such as low dissolved oxygen concentrations (Kearsley and Parvin 1998).

During the 1993-94 monitoring season, there were months when dissolved oxygen concentrations fell below 5 mg/l, and one month (October 1993) of nearly anoxic conditions. Some fish species are stressed by environmental conditions when dissolved oxygen concentrations fall below 5 mg/l (Kramer 1987; Whitmore et al. 1960), while others may not exhibit stress at 2mg/l (Pihl et al. 1992). Between October 1995 and September 1996, low dissolved oxygen concentrations were observed

more frequently, and fell below 3 mg/l in November 1995 and September 1996. When oxygen concentrations drop below 3 mg/l, near hypoxic conditions occur. Continuous or intermittent hypoxic conditions may result in a shift in species composition, a decrease in population numbers and species diversity, a disruption of predator-prey relationships, and a shift in trophic pathways (Newton et al. 1998). There is no site-specific information concerning the impact of stratification or low dissolved oxygen concentrations on salmonids in Penn Cove (Kearsley and Parvin 1998).

The Washington DOE Marine Waters Monitoring program recommends that human activities, which could stimulate plankton production, decrease circulation, or increase oxygen demand be carefully evaluated in the vicinity of Penn Cove (Newton et al. 1998). The low dissolved oxygen concentrations are believed to result from natural conditions (Kearsley and Parvin 1998).

Grasser's Lagoon

Grasser's Lagoon is a 19-acre salt marsh that is located at the head of Penn Cove. It is tidally inundated twice a day. The lagoon serves important functions as a shoreline buffer zone and wetland habitat. A viable salt marsh exists in the upper intertidal area of the lagoon that provides ideal habitat for waterfowl. Numerous bird species including great blue heron, western grebe, pied-billed grebe, and kingfisher have been observed. The rocky sandspit forming the outer boundary of the lagoon supports significant numbers of shorebirds, including high concentrations of turnstones, surfbirds, and rock sandpipers, normally found in comparable numbers only on jetties and offshore rocks of the open coast. The shallow waters of the lagoon are used by a number of fish species including juvenile chum, pink and coho salmon, herring, smelt, and flounder. The abundance of shellfish and finfish in the area of the lagoon and adjoining waters of Penn Cove support high numbers of diving ducks, mergansers, and herons feeding in the area (U.S. Fish and Wildlife Service, 1985). Although there is no riparian buffer separating the lagoon from the surrounding roads, it appears to be functioning relatively well (Kearsley and Parvin 1998).

Lake Pondilla

The area surrounding Lake Pondilla is topographically diverse, densely forested and remote, and contains the highest ridges and deepest depressions within the Reserve (Gilbert 1985). This is the only area of kettles found on Whidbey Island. While many kettles remain within the area, Lake Pondilla is the only extant kettle pond. Little is known regarding water quality or biota associated with this interesting freshwater feature.

Perego's Lagoon

Located on the eastern shore of Admiralty Inlet, Perego's Lagoon is a coastal lagoon south of Point Partridge and north of Ebey's Landing. The lagoon is approximately 0.6 mile in length and generally about 0.1 mile wide. A narrow (100-150 foot wide) beach consisting of sand, gravel, and cobble separates it from the inlet. The coastal strip appears to be subjected to moderate wave action (0.5-2 feet) and is strongly influenced by long shore currents that deposit eroded upland sediments in this vicinity (Gallucci 1980). Slope changes abruptly inland of the lake with a cliff-face of approximately 240 feet rising almost immediately behind the lake.

Crockett Lake

Crockett Lake is the largest inland water feature and historically was a salt marsh opening to Admiralty Bay. It is a productive wildlife resource. The lake receives regular limited tidal inundation through tidal gates at its southwest corner.

When early settlers arrived in the area, Crockett Lake was a large tidal lagoon, separated from Admiralty Bay by an 800-foot wide sandy bar called Keystone Spit. At the time of settlement, the lake probably covered about 600 acres when full. Mudflats around its margins were regularly exposed and inundated as the water level changed in regular tidal and seasonal cycles. The lake was surrounded by tidal salt marsh and some brackish and freshwater marsh in areas where groundwater discharged into the lake. Though the amount of water exchange between the lake and Admiralty Bay varied with seasonal tides and the changing morphology of the channel, it probably had a regular flushing of seawater at all higher tides. Minor changes in salinity may have occurred due to

winter floods or low tides and evaporation in the summer, but these were probably minor compared to what occurs today.

Tidal gates were installed in 1948 by Island County Drainage District No. 6 in an effort to drain Crockett Lake and some of the marshlands surrounding it. This reduced the lake to about ten acres in size in 1953. Draining the lake combined with the establishment of drainage ditches into the marshes was apparently successful and allowed agriculture to expand into the former marshlands.

In 1974, the flapper valves rusted off the gate and again allowed water to flow into the lake. The drainage district was no longer active so the valves remained open and the lake grew to about 750 acres by the spring of 1982. Flooding occurred and while the inundation of agricultural lands was no longer an issue (lands around the lake were no longer cultivated), it became an issue for surrounding residents. Residents of Telaker Shores, a nearby housing development whose residences had been flooded, reactivated the drainage district and installed new flapper valves on the gates in April 1982.

In the 1980 *Ebey's Landing National Historical Reserve Comprehensive Plan*, the National Park Service identified the natural resource values of Crockett Lake. The lake serves as an important staging area for spring and fall shorebird migration and an over-wintering area for waterfowl during the fall and winter. The NPS Manager to the Reserve said in an affidavit that reducing the lake to its former size would reduce and impair the scenic, historical, and natural values and therefore would adversely affect the preservation and protection of the lake environment.

In 1986, the drainage district contracted with Entranco Engineers to evaluate some of the man-

agement alternatives. Entranco suggested regulating water levels at 4 to 5 feet above MLLW (mean lower low water) to protect septic systems at Telaker Shores. Lower levels were predicted to be better for wildlife because more of the mudflats would be exposed for feeding. The report neglected to mention that without regular inundation, the benthic organisms in the mudflat would quickly die.

In 1987, the Skagit County Superior Court issued a decision (in response to a lawsuit filed in 1985 by Seattle Pacific University) requiring the Drainage District No. 6 Commissioners to maintain lake levels at specific guidelines (Doody 1990). The drainage district agreed to allow staff from Fort Casey State Park to operate the gates and manage water levels. In 1989 or 1990, mosquitoes became a problem and lake water management operations were blamed. In 1992, the infestation was so severe that several local citizens began operating the gates to lower lake levels. They also initiated a program of biological and chemical control for the mosquitoes, with state approval. The university, state agencies, and Audubon Society have recognized the mosquito problem and have not objected to lowering the lake.

Observations indicate that the partially drained lake is unsightly and not very productive for wildlife except in the marshes. It appears that the productivity and scenic value of Crockett Lake have been greatly reduced by manipulation of lake levels.

Currently, according to the hydrogeologist for Island County, the tidal gates are still in place but in disrepair. While water may flow through the pipes that form the gates, it is unclear to what extent the gates still inhibit natural water flow and fish passage.



Crockett Lake, looking north, Whidbey Island, ca. 2000. NPS PhotoNPS

Subsurface Hydrology

Residents of Whidbey Island are dependent upon a sole source aquifer with a finite water supply for domestic water and irrigation. As such, the aquifer receives a high level of regulatory protection. The county, under the State Environmental Policy Act (SEPA) and the Planning Enabling Act (Chapter 36.70 RCW) is required to control development to protect groundwater sources (Island County 1989). The U.S. Environmental Protection Agency, upon the request of Island County government, designated the county a Sole Source Aquifer in 1982, which provides for an additional review of any federally funded projects to insure that there will be no degradation to the county's aquifer system. The designation has no effect on non-federally funded projects (Island County Hydrogeologist 2004).

According to the administrator for the Sole Source Aquifer Program, the EPA is not interested in reviewing policy plans such as this general management plan, but is interested in federally funded construction projects having a potential to impact the aquifer. There is a varying threshold for which projects are reviewed, based on the potential for threat to the aquifer. Whether or not projects are reviewed depends upon factors such as local geology, proximity to drinking water sources, and size (Bender 2004).

In 1986, the Department of Ecology designated Island County a Ground Water Management Area under the authority of WAC 173-100 and in 1987 provided a grant to develop a Ground Water Management Plan which was produced in 1991 (Island County 1991).

The groundwater system consists of five aquifer zones. Each consists of a series of water bearing zones, called aquifers surrounded by low permeability sediments called aquitards. Recharge for the aquifers comes from precipitation. Most of this precipitation is lost by runoff, transpiration by plants, or evaporation. Groundwater flows from recharge areas to discharge areas toward the sea (Island County 1991).

Precipitation contribution to the groundwater recharge is less than might be expected. This is be-

cause the rain shadow effects allow only an average of 20 inches of rain per year in the vicinity of Coupeville. Another factor that influences groundwater recharge is soil surface permeability. Some of the glacial soils have low-surface permeability or they "hardpan" during times of precipitation. This retards percolation into the groundwater aquifer. It is estimated that an average of 6 percent of the precipitation percolates through the soils to recharge the aquifer.

Groundwater pumping exceeds recharge in the vicinity of the Reserve causing saltwater intrusion in some areas. Saltwater intrusion is a serious problem. As pumping exceeds the rate of recharge, saltwater displaces the freshwater. Once contaminated, the aquifer can remain salty for long periods. Preventative management of groundwater is more effective and efficient than remedial measures once contaminated (Island County 1991). Saltwater intrusion has been documented within the Reserve in the areas of West Beach, Coupeville, Ebey's Prairie, and outside the Reserve at Admiral's Cove.

According to the Island County's Ground Water Management Plan, the demand and withdrawals of groundwater in Island County show a 62 percent increase in consumption in 20 years (between 1980 projected to 2000). If population growth and accompanying development continues, there is the potential of decrease in groundwater recharge and an increase in groundwater contamination. Problems associated with this would include saltwater intrusion, nitrates, pesticides, and other contaminants without proper groundwater management.

Water rights are presently over appropriated in certain areas of the county, particularly in northwest and southwest of Penn Cove. If these water rights are fully exercised, water will be removed from the groundwater system at a rate greater than the rate of replenishment (Island County 1991).

According to the hydrogeologist for Island County, the groundwater within the vicinity of Coupeville is "hard", with elevated iron and manganese levels. These are both secondary contaminants, meaning that they are not health risks but can cause aesthetic concerns involving taste, col-

oration or staining of fixtures. Dissolved solids, saline, iron, and manganese are virtually always present in some quantity in groundwater. Salinity, from salt water intrusion, is a problem in some areas of the county. Chloride levels that exceed the maximum contaminant level are often found in areas experiencing intrusion. This is also a secondary health standard, considered to be at levels that do not pose health risks.

The town of Coupeville has issued a moratorium on new water hookups within the town limits. Coupeville obtains its water from an infiltration gallery on the former Fort Casey Military Reservation northeast of Crockett Lake. The town also maintains a reservoir with a capacity of roughly 500,000 gallons but only 160,000 gallons can be utilized as an effective water supply. Whidbey Island groundwater yields range between 50 to 350 gallons per minute, with most wells yielding less than 100 gallons.

Wetlands

The most extensive wetlands in the Reserve occur within the kettles area at Fort Ebey State Park, around Crockett Lake, and near Prairie Center. Though not as extensive, important wetland resources are associated with Kennedy's and Grasser's lagoons and at Perego's Lagoon. According to the county, several other small wetlands have been identified in the Reserve. The county has two generations of wetland maps: the National Wetlands Inventory maps from the mid-1970s, and some improved maps from the 1980s. The county



Perego's Lagoon, Whidbey Island, ca. 2000. NPS Photo.

has found that the maps are not comprehensive; they must also rely on finding hydric soils in the soil surveys, and site visits to identify wetlands.

The majority of wetlands in Island County are formed in depressions that occur in the glacial upland soils. Some wetlands have formed on glacial uplands where glacial lakes once occurred, and there are a number of wetlands in the deltas and tidal flats in the coastal areas of the islands. Some of these have been manipulated in the past to serve as water reservoirs for stock or irrigation use.

Marine wetlands run from Admiralty Head to just south of Perego's Lagoon, and start again at Point Partridge and continue north along the shore out of the Reserve's boundaries. Estuarine wetlands line the shore from Admiralty Head south around Admiralty Bay and south beyond Reserve boundaries. Also in Penn Cove, estuarine wetlands extend from beyond the boundaries at Snakelum Point and around Penn Cove through Blowers Bluff beyond Reserve boundaries into Oak Harbor.

Vegetation

Woodlands

Whidbey Island is within the western hemlock zone of western Washington and is characterized by the vegetation commonly associated with that zone. Most of the wooded areas were logged or burned by 1900. The remaining woodlands are second and third growth Douglas fir, western red



Woodlands near the Jacob Ebey House, Whidbey Island, ca. 2000. NPS Photo.

cedar, and red alder, with thick underbrush of salal, Oregon grape, and ferns. Rhododendron and Pacific Madrone are also native species common to central Whidbey. There remain two large, densely wooded areas on the Reserve that comprise just over 4,500 acres.

Old growth or original forests on the Reserve are limited to a few remnant individuals along the bluffs above Ebey's Landing and the Seattle Pacific University's Natural Heritage Forest Area. There are areas where no cutting or burning has occurred since 1900 and where mature Douglas fir, grand fir and western hemlock can be found. The primary forest cover naturally occurs along the ridges and upland areas. Early settlement occurred in naturally open areas, primarily because clearing large trees involved not only great physical effort, but also required valuable time away from crop production, an activity essential to survival.

The following are common species of woodland vegetation: bald hipped rose, bedstraw, rhododendron, bracken fern, Douglas fir, foam flower, grand fir, ocean spray, Oregon grape, red alder, red elderberry, red huckleberry, salal, snowberry, star flower, western hemlock, western red cedar, western white pine, honeysuckle, and willow.

Wetlands, Salt marshes, and Beaches

Significant salt marsh areas are located at Crockett Lake, Perego's Lagoon, and Grasser's Lagoon. These areas comprise over 600 acres. These natural lowland areas provide food and habitat for numerous bird, small mammal, and invertebrate species. Salt marsh plant communities also create ecotones between different habitats, which enhance opportunities for the diversity of species.

Beach and associated bluff vegetation occurs primarily along the eight-mile coastal strip and along Penn Cove. In addition to routine disturbance by winds and tides, human use over many years has affected native plant species. This is especially evident in the public access areas around Penn Cove, and along the west shore of the Reserve at Ebey's Landing. Some native plants have survived in less accessible areas, such as around Perego's Lagoon and along the bluffs where unique flat-leaved cacti (*Opuntia fragilis*) occur.

The common species of salt marsh and beach vegetation include: cattail, orchard grass, pickleweed, seaside arrowgrass, slough sedge, silver cinquefoil, hardstem bullrush, salt grass, salt brush, blue grass, bracken fern, wild rose, seaside plantain, everlasting pea vine, yarrow, velvet grass, blue wild rye, California oat grass, caralline alga, creeping bent grass, dune wild rye, English plantain, green urchin, gumweed, Kentucky bluegrass, Nootka rose, northern saitas, orchard grass, purple snake root, rock weed, Rocmer's, fescue, sea lettuce, sea shore lupine, sea shore red fescue, snowberry, tomcat clover, wiry kelp, woolly sun flower, sea rocket, chick lupine, salt brush, sand verbena, and coastal mugwort.

Crockett Lake

The lake is vegetated in the low marsh areas primarily by emergent, salt-tolerant species such as pickleweed (*Salicornia virginica* L.), saltmarsh arrowgrass (*Triglochin* sp.), threesquare bulrush, saltgrass, and spearscale. In higher areas, the wetland supports silverweed, yarrow, redtop, dock, and Puget Sound gumweed. There are unvegetated mudflats in the central portion of the west half of the wetland.

Smith and Ebey's Prairie

Native Puget Lowland grasslands are one of the most endangered types of ecosystems in Washington State. There are only two remaining glacial outwash prairies in the northern Puget region and one of these is Smith Prairie. The undisturbed site at Au Sable Institute's property is the best example of the two remaining prairies and a good candidate for large-scale restoration for native prairie plant community. A small four-acre restoration project for Ebey's Prairie is scheduled for the summer of 2004.

The prairie remnant at Smith Prairie is estimated to occupy about five and one-half acres. It is the only known glacial outwash prairie site in this region where the prairie grass, *Festuca idahoensis* variety *roemerii*, achieves dominance. Foothill sedge (*Carex tumulicola*), and the exotic Kentucky blue grass (*Poa pratensis*) are abundant. There is a good diversity and abundance of native prairie forbs, including spring gold (*Lomatium utriculatum*),

barestem desert-parsley (*Lomatium nudicaule*), western buttercup (*Ranunculus occidentalis*), common camas (*Camassia quamash*), fire chickweed (*Cerastium arvense*), showy fleabane (*Erigeron speciosus*), spikelike goldenrod (*Solidago spathulata* var. *neo mexicana*), and numerous others. Shrubs such as Nootka rose (*Rosa nutkana*), and common snowberry (*Symphoricarpos albus*), have invaded and now dominate other portions of the prairie.

This area qualifies as an “element occurrence” of the Idaho fescue-field chickweed community listed in the Washington Natural Heritage Plan as a “priority 3” for protection. It has also been proposed for addition to the Natural Vegetation Classification as an Idaho fescue–common camas–field chickweed association by Frosty Hollow Ecological Restoration, a Whidbey Island consulting firm. A total of four plant associations representing Puget lowland dry grasslands have been identified, and are included or proposed for addition to the National Vegetation Classification. All four of these associations are considered globally, critically impaired.



Prairie Remnant on Au Sable Institute's property, Whidbey Island, ca. 1999. NPS Photo.

Grasser's Hill

Grasser's Hill is a privately owned 190-acre grass covered hillside located at the head of Penn Cove. The NPS holds a conservation easement on part of the hill. Grasser's Hill has scenic and archaeological values, and portions retain native vegetation associations—outwash prairies and oak savannas. Restricted to the west side of the Cascades in Oregon, Washington, and southern Vancouver Island, these vegetation types have been reduced 90 percent in extent since European settlement of the Pacific Northwest (Chappell 2003). Areas of Grasser's Hill are mapped as having soils supporting these vegetation types (U. S. Department of Agriculture 1958). The vegetation on all of the remaining areas of these mapped prairie and savanna soils has been converted to agriculture, residential development, roads, or grown into shrubfields. From 1997-2002 portions of the remaining prairie vegetation on Grasser's Hill were disturbed by new horticultural activity and subjected to regular mowing.

While there are no federally or state listed species on Grasser's Hill, extensive field surveys by Steve Erickson, a local botanist and conservationist, over a number of years have yielded the following information regarding several species of regional and local conservation concern, based on the number of occurrences and area occupied.

Recent genetic work on the blue flag iris (*Iris missouriensis*) found on Grasser's Hill indicates it is an unusual endemic native distinct from more common populations found east of the Cascades (Rocheft 2004). The specie *Carex tumulicola* is known to occur only in Washington in the Columbia Gorge near Bingen (Hitchcock 1974), in the San Juan Islands (Atkinson, S. et al. 1993), and on central Whidbey and Fidalgo islands (Erickson 2004). There are eight reported occurrences on central Whidbey, including Grasser's Hill and Schoolhouse Prairie. (Erickson 2004).

Two species that formerly occurred on Grasser's Hill have possibly been extirpated since 1992. Construction of Sky Meadow Road in the 1980s was observed to have destroyed populations of *Brodiaea congesta*. These plants were not located in searches in 1993, 1994, 1995, 1996, and 1997

(Erickson 2004). These species are not known to occur at any other locations on Whidbey Island. Several plants of *Delphinium menziesii* also occurred on Grasser's Hill, but were apparently destroyed by activities associated with residential landscaping between 1994 and 1995. This species is not known to occur elsewhere on central Whidbey (Erickson 2004).

One occurrence of Grass Widow (*Sisyrinchium bellum*) is known on central Whidbey. It occupies an area of several hundred square feet on the upper portion of Grasser's Hill. *Triteleia hyacinthin* is found at two locations on Whidbey Island, including Grasser's Hill, where there were less than 325 plants reported in the mid-1990s. Indian Paintbrush (*Castilleja miniata v. dixonii*) is found at eight locations on Whidbey Island, including Grasser's Hill. Showy fleabane (*Erigeron speciosus*) occurs at six locations on Whidbey Island, including less than 20 plants on Grasser's Hill. Also located here are over 1,000 plants of the Chocolate Lily (*Fritillaria lanceolata* = *F. affinis*). Death Camas (*Zygadenus venenosus*) has been reported at five locations on Whidbey Island, including Grasser's Hill. Roemer's Fescue (*Festuca idahoensis v. roemeri*) occurs on central Whidbey only in prairie and savanna remnants and on some coastal bluffs, including Grasser's Hill (Erickson 2004).

Hedgerows

The Reserve recognizes the cultural and natural importance of hedgerows. In the Reserve, hedgerows define historic cultural land use patterns dating back to the early Euro-American settlement in the 1800s. Some of the first Donation Land Claim boundaries can be identified today by hedgerows.

Most hedgerow origins can be traced to abandoned or unmaintained fence lines. Birds landing on the fences excrete shrub, herb, and grass seeds. Seeds may also be deposited by wind, water movement, farm machinery, small mammals, and automobiles. As the vegetation establishes itself, the fence becomes obscured. Occasionally, trees can be found within hedgerows.

A hedgerow can provide many diverse benefits to the land immediately adjacent to it. Hedgerows slow down water run-off, allowing more time for it to filter into the soil and the aquifer. They reduce soil loss by wind and water action. Hedges break up wind motion near the ground and help maintain soil moisture. Local soil fertility is enhanced due to the activities of associated hedgerow animal communities. Hedgerow plant species draw minerals from deep within the soil and deposit them near the surface. The insect eating mammals, amphibians, birds, and other invertebrates, which make hedgerows their home, assist in pest control. Many mammals and migratory birds are attracted to hedgerows for shelter, feeding, and nesting. In the Reserve, at least 22 species of birds depend upon the hedgerows for breeding, nesting, feeding, or shelter from predators (NPS "Hedgerows" brochure—no date).

Common hedgerow plant species include Nootka rose (*Rosa nutkana*), snowberry (*Symphoricarpos racemosus*), bracken fern (*Pteridium aquilinum*), and the invasive exotic, Himalayan black berry (*Rubus discolor*).

The Coupeville town planner states that there is no specific language in the 1999 Coupeville Comprehensive Plan or development regulations that addresses hedgerow maintenance. The Trust Board of Ebey's Landing National Historical Reserve freely distributes an NPS-produced hedgerow brochure entitled, "Hedgerows: Dirty Fences or Farmers' Best Friends?"

Exotic Plants and Noxious Weeds

An exotic species, as defined by the National Park Service (Director's Orders-77), is a species occurring in a given place as a result of direct or indirect, deliberate or accidental actions by humans. These species can be highly destructive, competitive, and difficult to control because of their aggressive growth and lack of natural predators. Exotic species can reduce crop yields, destroy native plant and animal habitat, damage recreational opportunities, clog waterways, reduce land values, and poison humans and livestock. The NPS manages the control of noxious weeds only on NPS-owned lands within the Reserve and relies on Is-

land County Noxious Weed Control Board (ICNWCB) for managing exotics on private property.

Class A weeds are non-native species with a limited distribution in Washington State and Island County. Preventing new infestations and eradicating existing infestations is the highest priority. Law requires eradication. Class B weeds are non-native species presently limited to portions of the state. Preventing infestations and containment of these weed species are the primary goals in Island County. Class C weeds are non-native weeds found in Washington. Many of these species are widespread in the county. Long-term programs of suppression and control are encouraged and in some cases required in Island County.

The following noxious weeds are found within the Reserve and are designated for control by the ICNWCB:

Poison Hemlock

Poison hemlock (*Conium maculatum*) is a class C weed. There is a sizable population along the bluffs at Ebey's Landing. Poison hemlock is toxic by touch, making its manual removal undesirable. Chemical controls have proven effective in eradicating this dangerous plant. In 1999, the ICNWCB released Hemlock moth (*Agonopterix alstroemeriana*), a biological control agent, in an attempt to control this species.

Canada Thistle

Canada thistle (*Cirsium arvense*) is a class C weed. It is abundant throughout the Reserve, with a sizable population on the Au Sable Institute property. Control methods that have been used by ICNWCB include mowing and biological control agents. In 1993, a population of thistle stem gall fly (*Urophora cardui*) was released on Grasser's Hill in an attempt at control. In 1997, populations of Canada thistle stem weevil (*Ceutorhynchus litura*) were released at four sites in Island County. A year later, a population of Canada thistle bud weevil (*Larinus planus*) was released. There is concern that these biological control agents may feed on native thistle and other plant species and may inadvertently affect these populations. Impacts associated with biocontrols are poorly documented.

Broadleaf herbicides are effective in controlling this species.

Scotch broom

There are known populations of Scotch broom (*Cytisus scoparius*) on the bluffs at Ebey's Landing and at the Prairie Overlook. Manually removing the broom has been effective. The Scotch broom seed weevil (*Apion fuscirostre*), a biological control agent, has been used by ICNWCB.

Gorse

Gorse (*Ulex europaeus*) is a class B noxious weed that is found in the Reserve. Hand pulling has been a marginally effective means of control. The ICNWCB has released a population of Gorse spider mites (*Tetranychus lintearius*) a biological control agent, in an attempt to control this weed. Broadleaf herbicides are effective in controlling this species.

Tansy Ragwort

Tansy Ragwort (*Senecio jacobaea*) is a class B weed that is found throughout the Reserve, with some populations on Potmac Road and Crockett Prairie. Manual removal has been effective. Populations of Ragwort flea beetle (*Longitarsus jacobaeae*), Ragwort seed fly (*Pegohylemyia seneciella*), and Cinna-bar moth (*Tyria jacobaeae*), all biological control agents, have been released by the ICNWCB in an attempt to control this weed.

Spartina

Spartina (*Spartina anglica*) a salt marsh grass, was introduced to Port Susan in the early 1960s in order to convert tidelands into pastureland for cattle. Since its introduction, it has spread throughout Puget Sound. The species is harmful in that it collects sediment, turning areas of mudflat into salt marsh. This changes the entire nature of the ecosystem, crowding out native vegetation such as eelgrass beds and impacting bird, fish, and marine invertebrate populations. *Spartina anglica* has been identified in Penn Cove. Both governmental agencies and citizen groups have worked to eradicate this Class B noxious weed. According to Gloria Wahlin, Island County Noxious Weed Board Coordinator a resident of Stanwood planted spartina in the early 1960s. The resident planted it on a beach so that his cattle could graze

on the shore. Washington State University supplied the seeds and it was erroneously believed that they were sterile and would not reproduce. It has since moved into Penn Cove, Kennedy's Lagoon, and it is at locations near Coupeville. The ICNWCB has been mowing the spartina and then spraying it with the herbicide, Rodeo. Another effective control method is to cover it with 100 percent shade cloth and manually remove it.

Other noxious weeds within the Reserve designated for control by ICNWCB are hairy willow herb (*Epilobium hirsutum*) found on the Keystone and Wanamaker Road side of Crockett Lake, and giant hogweed (*Heracleum mantegazzianum*) a class A noxious weed. All known occurrences of giant hogweed within the Reserve have been controlled.

Other invasive, exotic species of concern are field bindweed (*Convolvulus arvensis*), bull thistle (*Cirsium vulgare*), horseweed (*Conyza canadensis*), and Himalayan blackberry (*Rubus discolor*).

Noxious weeds that are found in Island County and that may or may not in the future enter the Reserve are: Spanish broom (*Spartium junceum*), bighead knapweed (*Centaurea macrocephala*), clary sage (*Salvia sclarea*), purple star thistle (*Centaurea calcitrapa*), milk thistle (*Silybum marianum*), velvet leaf (*Abutilon theophrasti*), common cordgrass (*Spartina anglica*), Brazilian elodea (*Egeria densa*), orange hawkweed (*Hieracium aurantiacum*), yellow hawkweed (*Hieracium caespitosum*), meadow knapweed (*Centaurea pratensis*), diffuse knapweed (*Centaurea diffusa*), purple loosestrife (*Lythrum salicaria*), parrotfeather (*Myriophyllum aquaticum*), Eurasian watermilfoil (*Myriophyllum spicatum*), babysbreath (*Gypsophila paniculata*), reed canarygrass (*Phalaris arundinacea*), smoothseed dodder (*Cuscuta approximata alfalfa*), scentless mayweed (*Matricaria perforata*), common St. John's wort (*Hypericum perforatum*), common tansy (*Tanacetum vulgare*), yellow toadflax (*Linaria vulgaris*), and absinthe wormwood (*Artemisia absinthium*).

Sensitive Species

The Reserve is the home of many unique and rare plants. Although only one plant, the golden paintbrush (*Castilleja levisecta*), is listed as threatened at the federal and state level, there are other species not protected that are of local importance and their preservation helps protect genetic diversity.

According to Frosty Hollow Ecological Restoration, a conservation group, the areas of unique local flora are Grasser's Hill, Smith Prairie and the former DNR game farm (now owned by the Au Sable Institute and managed as a summer environmental camp), Ebey's Bluff, Fort Ebey State Park, Bocker Environmental Preserve at Camp Casey, West Beach Road, Zylstra Road, Ebey's Landing, and Point Partridge. The major threats include development, mowing, road maintenance, visitor impacts, noxious weeds, and increased competition from tree and shrub cover.

Golden Paintbrush

Golden paintbrush (*Castilleja levisecta*) is a federally listed "threatened" species under the Endangered Species Act. There are only 13 occurrences remaining on earth, five on Whidbey Island. Of these, three are found within the Reserve, at Fort Casey State Park, the Bocker Environmental Preserve (at the Seattle Pacific University's Whidbey Island campus), and on TNC property south of Ebey's Landing. A population study was conducted in 2003 at all three sites. At two of the three sites, where similar studies were conducted previously, the populations have dropped significantly.

At Fort Casey, a previous survey in 1989 found more than 400 individuals, and in 1993, only 120 individuals were counted. At the Bocker Environmental Preserve, 1984 and 1985 surveys of a five by five-meter area found over 1200 and 2700 plants respectively. In 1993, 273 plants were counted in the same area; in 2004, only 68 plants were counted (Sheehan 2005). At the site south of Ebey's Landing, no previous study is known to have occurred. In 1993, a random transect sampling estimated the population at over 4000 individuals, with a small sub-population of an esti-

mated 120 individuals occurring directly below the main population.

Explanations for the declining population size at Fort Casey have included the pattern and timing of mowing, visitor use, increased cover by shrub and other competitive species, predation by rabbits, and natural succession of plant communities. At the Bocker Environmental Preserve, increased tree and shrub cover offer one explanation for decline in species numbers.

Wildlife

The classification “Priority Habitats and Species” by the Washington Department of Fish and Wildlife (WDFW) are defined as key species use areas and key fish and wildlife habitats based on expert empirical knowledge. The compiled data does not represent exhaustive inventories. All the priority species areas mapped represent known use areas—they are not potential habitats. Priority habitats are areas that support diverse, unique and/or abundant communities of fish and wildlife. The Priority Habitat and Species Areas identified by WDFW within the Reserve include the following: Penn Cove; Crockett Lake; the bluffs north and south of Ebey’s Landing; Perego’s Lagoon; Kennedy’s and Grasser’s lagoons; the bluffs north and south of Blower’s Bluff; the coastal tidelines that line the shores of the Reserve; bald eagle nest and foraging sites; and numerous smaller areas which include fresh and saltwater wetlands, estuaries, bluffs, and urban natural open spaces. Approximately 78 Priority Habitat and Species Areas occur within the boundaries of the Reserve.

It is important to note that habitat and species information can only show that a species or habitat type is present. They cannot show that a species or habitat type is not present. Site-specific surveys are frequently necessary to rule out the presence of priority habitat and species. Detailed surveys have not been conducted by NPS.

Terrestrial Mammals

Habitat fragmentation, development, and the introduction of exotic species have all contributed to the present composition of mammalian species in the Reserve. Mammals can be highly secretive

creatures. Many of them are nocturnal; some are small, and therefore, difficult to study. There has not been a conclusive inventory of mammal species on Whidbey Island. Many of the wild mammals of the Reserve, such as coyotes, deer, and raccoons, breed in forested habitats, but suitable habitat for smaller species (such as shrews, voles, mice and rats) is also available along fence rows and at farm sites. Aquatic habitats are used as feeding areas by scavengers and carnivores such as raccoons, skunks and coyotes, otters, as well as for bats, which capture insects over the water.

According to staff at Fort Casey State Park, there were an undetermined number of feral guinea pigs released within the vicinity of Fort Casey State Park sometime around 1990. It is believed by park officials that they existed within the Reserve for roughly one month afterwards. Ten were captured. The rest, if any of the population remained, were assumed dead due to predation. No recent sightings have been reported. A small mammal survey is scheduled for the summer of 2005.

Marine Mammals

Little is known of significant feeding, rearing, or breeding habitat for marine mammal populations within the Reserve. To date, there has not been a comprehensive marine species inventory within the Puget Sound area. Whales, dolphins, and seals may be temporary visitors in the surrounding waters. A harbor seal (*Phoca vitulina*) haul-out site, located east of Oak Harbor, is operated by WDFW. The area has year-round occupancy by harbor seals. Due to the proximity to Penn Cove and the Reserve boundaries, seal visitation and use should be expected. Orca whales have been observed in Penn Cove periodically.

Birds

There are many bird species that inhabit the area within and around the Reserve. The majority of species are using the natural habitat areas within the Reserve as feeding grounds, migratory resting places and wintering grounds.

Nesting communities are most likely found within the forested areas and to a much smaller extent along the shoreline border communities of Ebey’s



Heron at Crockett Lake, Whidbey Island, ca. 2000.

Landing, Penn Cove and Crockett Lake. Crockett Lake serves as an important staging area for spring and fall shorebird migration and, along with Penn Cove, an over-wintering area for waterfowl during the fall and winter. Crockett Lake has been an International Shorebird Survey site since 1997. In 2001, Crockett Lake and Penn Cove were both designated Important Bird Areas by Washington State Audubon. A year-long baseline bird survey of selected habitat types within the Reserve was completed in 2003.

There are nine known Bald Eagle (*Haliaeetus leucocephalus*) nesting sites in the Reserve in the areas of Point Partridge, Kennedy's Lagoon, West Beach, Kettles Park, Coupeville, Long Point, Ebey's Prairie, Smith Prairie and Admiralty Bay. All nests are active and productive. The majority of nest activity occurs during late winter, spring and summer. In addition, there is a foraging area near Coupeville with regular large year round concentrations averaging up to 25 eagles. These nine nests and the foraging area are considered Priority Habitat and Species Areas by the WDFW.

During the 2002, Christmas Bird Count 11,291 birds of 82 species were counted in the Reserve. Included in the total were 20 Bald Eagles and 2 Peregrine Falcons (*Falcon peregrinus*). The Reserve supports a high density of both breeding and wintering birds of prey, including Red-tailed Hawk (*Buteo jamaicensis*), Bald Eagle, Northern Harrier (*Circus cyaneus*) and American Kestrel (*Falco sparverius*). The numerous Red-tailed Hawk nests probably indicate an equivalent breeding popula-

tion of Great Horned Owls (*Bubo virginianus*). (Clifford D. Anderson, Falcon Research Group). Small flocks of Harlequin Ducks (*Histrionicus histrionicus*) winter off west side beaches from Point Partridge to Admiralty Bay. Pigeon Guillemot (*Cepphus columba*) nest in the bluffs in Penn Cove and along West Beach and Admiralty Inlet.

Marine birds are most easily distinguished by habitat type. Some locally common species that can be seen in the different habitat types within the Reserve are the following:

- Rocky coasts—oystercatchers, Black Turnstones (*Arenaria melanocephala*), Surfbirds (*Alphriza virgata*), sandpipers, Harlequin Ducks
- Intertidal and tidal shallows—Harlequin Ducks
- Stone, pebble and cobble beaches—Killdeer (*Charadrius vociferus*), Pigeon Guillemots, kingfishers, gulls
- Mudflats and salt marshes—gulls, terns, cormorants, dabbling ducks. (This area is considered the richest bird habitat because of the quantity of plant biomass.)

Reptiles and Amphibians

There has been no known conclusive inventory of reptiles and amphibians for the Reserve; however, excellent habitat for reptiles and amphibians may be found throughout the Reserve. The northwestern garter (*Thamnophis ordinoides*), red-legged frog (*Rana aurora*), and Pacific chorus frog (*Pseudacris regilla*) are found within the Reserve. Also present is the western toad (*Bufo boreas*) (Washington Department of Game and Soil Conservation Service 1979).

Invertebrates

No information is available concerning terrestrial invertebrates within Ebey's Landing National Historical Reserve. Limited marine species information is available.

Fish

There has been no systematic biological survey of the waters of Puget Sound (Kruckeberg 1991). However, according to a collection of surveys, it is estimated that there are about 211 species of fish

that populate the Puget Sound area (Kruckeberg 1991).

The common fish that inhabit shoreline, tidepool, mudflat, estuary, kelp, and eel grass beds are the following: salmon, trout, sharks, little blennies, and sculpins. Beyond the reach of tides, the common pelagic, or free swimming, species are: salmon, dogfish sharks, rat fish, herring, hake, and some rockfish. Below the reach of tides within the benthic or bottom dwelling habitat, flounder, cod, sole, and rockfish are the most common species found.

The WDFW has identified Penn Cove as a spawning area for surf smelt and sundlance. For surf smelt, the spawning area exists in the subtidal zone and extends from Snakelum Point around Penn Cove to Monroe's Landing, with the western shore of Penn Cove used only sporadically for spawning. For sundlance, individual spawning areas exist on Snakelum Point, Long Point, Lovejoy Point, Monroe's Landing and just east of San de Fuca. No known rock sole spawning and herring spawning areas or herring holding areas exist within the Reserve.

The local salmon fishery is heavily used, as has been the case for many years. The marine and fresh water systems adjacent to and within the Reserve are very important for juvenile salmon rearing and migration, particularly pink and chum fry. Some of the more common salmon species and nearby relatives that utilize the Puget Sound area are: pink salmon (*Oncorhynchus gorbuscha*), king salmon (*Oncorhynchus keta*), coho/silver salmon (*Oncorhynchus kisutch*), sockeye salmon (*Oncorhynchus nerka*), chinook salmon (*Oncorhynchus tshawytsena*), coastal cutthroat trout (*Salmo clarkii*), rainbow/steelhead trout (*Salmo gairdneri*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), dolly varden (*Salvelinus malma*).

Shellfish

Commercial resources include a substantial subtidal clam bed offshore from Ebey's Landing. Penn Cove clam beaches are among the most productive in the state and constitute a very valuable recreational resource. There is a Washington De-

partment of Fisheries (public) beach on the south shore of Penn Cove, which is one of the most productive hard-shell clam beaches in the state. There is also a groundfish sport fishery of unknown magnitude in Penn Cove.

Penn Cove Mussels, Inc., a mussel culture operation, was established in Penn Cove in 1975. It was the second mussel culturing operation in the United States. In March of 1996, it entered into a joint venture with Coasts Seafoods Company, whereby becoming Penn Cove Shellfish, LLC. The site is located on the south side of the Cove, sheltered from prevailing winds by a high bluff. The geography of Penn Cove makes it a nutrient trap for the outflows of the Skagit and Stillaguamish river systems. The fresh water and nutrients, combined with the sunlight provided by the rain shadow effect of the Olympic Mountains, is advantageous for plankton growth. The mussels are cultured on floating rafts moored in the cove. Each of the 38 rafts (40 feet by 80 feet, 40 feet by 120 feet, and 30 feet by 90 feet each), hold approximately 1500-2400 of these mussel seed collector lines, on which the mussels grow (Penn Cove Shellfish 2001). The company plans to add three new rafts in the near future. Mussels grow consistently to two inches in eight to ten months, at which point they are harvested. Between three-quarters to one million pounds of mussels are produced a year (Jefferds 2000).

Intertidal, Benthic, and Pelagic Communities

Below the influence of the tides, there is a submarine landscape of great variety. Habitable bottoms formed from sand, clay, and gravel substrates provide the predominant settling ground for life. These sediments are derived mainly from the rivers feeding into the sound but also, the erosion of submarine slopes contributes to sediment deposits. Life on submarine terrain is largely sedentary, or sluggish. The benthos, or bottom dwelling zone, ranges from the bottom of the submarine troughs up to the intertidal zone. In the intertidal and splash zones, when beyond the reach of tides, marine life waits for the water and revitalizing nutrients to come to it.

Some representative species within the coastal intertidal zones are the following:

- Rocky habitats—limpets, barnacles, periwinkles, mussels, rockweed, purple sea star, anemone, kelp, rockfish, sea urchins, sea cucumbers.
- Sandy or cobble habitats—sea gull, dune grass, sand piper, six-rayed star, Dungeness crabs, sun star, sand dollars, jellyfish, sand sole, razor clam, butter clam.
- Muddy habitats—marsh grass, black brant, eel grass, micro-crustaceans, English sole, juvenile salmon, marine worms, bentnose clam, ghost shrimp.
- Surface layer of the water—copepods, fish eggs, and fish larvae.

The major groups of marine invertebrates within Puget Sound are sponges, hydroids, sea anemones, ribbon worms, round worms, segmented worms, chitons, clams, snails, limpets, crabs, barnacles, other carapaced creatures, starfish, sea urchins, and sand dollars. Communities of sea urchins, Pandalid shrimp, hardshell subtidal and intertidal clams, northern abalone, and subtidal geoducks exist within the Reserve and can be found at the following locations:

- Sea urchin—a community is located offshore from Point Partridge on Partridge Bank in the Strait of Juan de Fuca.
- Pandalid shrimp—a community located from Admiralty Head north through Ebey's Landing to Point Partridge. Another, much larger, community is located offshore from Ebey's Landing north over Partridge Bank in the Strait of Juan de Fuca and beyond the boundaries of the Reserve.
- Hardshell subtidal clam—a community located from Fort Casey State Park to Perego's Lagoon. Another small community is found in Penn Cove, near Kennedy's Lagoon.
- Hardshell intertidal clam—a community is located from Long Point around Penn Cove and beyond Blower's Bluff.
- Northern abalone—a community hugs the coast at Ebey's Landing.
- Subtidal geoduck—three small communities are located offshore from Point Partridge in the Strait of Juan de Fuca. A larger community

exists off the western shore of central Whidbey, just north of the Reserve's boundaries.

The most extensive of the oceanic habitats is the pelagic zone where plants and animals are found floating or swimming. Common species that can be seen within this habitat zone are phytoplankton, floating plants, and microscopic algae, which form the basis for most marine food chains. This microscopic algae is able to absorb carbon dioxide from its environment, combine it with dissolved salts, and photosynthesize food using radiant energy from the sun.

Giant kelp (*Nereocystis luetkeana*) beds support lots of algal life in addition to larger life forms. This annual plant prefers to grow in places where the sea is in motion. It can reach lengths of up to 20 feet. The best beds occupy a zone that is just below the lowest low tide zone at a depth of 40-60 feet (mean low water).

Eel grass (*Zostera marina*) meadows with their subtidal waters and muddy bottoms are ideal habitat zones. Eel grass, also called the pasture plant, is distant kin to the cereal grains, the grasses. Its growth patterns provide ample biomass for itself and other organisms such as algae, sea anemones, marine worms, snails, limpets, crabs, ducks, and fish. Both kelp and eel grass beds serve as nurseries to many fish species. Eel grass is sensitive to changes in water quality.

Marine Invasive Species

There are a number of marine species in the immediate vicinity of the Ebey's Landing National Historic Preserve that are not native but have been in the area for so long that they have become generally perceived by the public as being local flora and fauna. These include the Manila or Japanese littleneck clam (*Venerupis philippinarum*), Pacific or Japanese oyster (*Crassostrea gigas*), Eastern softshell clam (*Mya arenaria*), and the beach grass *Ammophila arenaria*. Three other species have either arrived more recently or have been found in nearby waters. Two of these are the European green crab and the purple varnish clam and are mentioned below. The third is a salt marsh grass (*Spartina anglica*), which is discussed in the "Vegetation" section of this chapter.

The European green crab (*Carcinus maenas*) is native to the Atlantic coast of Europe, ranging to Northern Africa. It was first documented on the West Coast of the United States in 1989 when it was found in San Francisco Bay. Spreading northward since then, numerous adult European green crabs have been collected in Grays Harbor and Willapa Bay on the Washington Coast and at least two live adults found at the head of Barkley Sound on the west side of Vancouver Island, Canada. To date, the European green crab has not been documented on Whidbey Island. This crab is described as a voracious predator consuming bivalve mollusks, small crustaceans, and other organisms and having the potential to impact populations of Dungeness crabs, bivalves, and other native species. In other areas where it has become established, the crab has fed not only on the larva of native crab species, but has also out competed them in capturing prey with its superior speed and dexterity. The Washington Department of Fish and Wildlife presently maintains a long-term monitoring and control program for this species.

The purple varnish clam (*Nuttallia obscurata*) is an Asian species believed to have been introduced to the Strait of Georgia in the late 1980s via ballast water from a ship. It has spread rapidly throughout the area and has been documented on Whidbey Island beaches at least as far back as 2002. Shells from this species have been found in Penn Cove. The clam is found 8-10 inches deep in the substrate and somewhat higher in the intertidal than the area occupied by Manila and native littleneck clams. Impact of this species is not yet determined. Research indicates that it is preyed upon by birds and raccoons.

Agricultural Resources

Traditional agricultural land use within the Reserve dates back to the first European settlers. American Indians practiced types of agricultural use, but their methods were much different from those practiced by the Europeans. American Indians often and regularly would perform prescribed burns on sections of the prairie in order to encourage the growth of edible plants, like camas, bracken fern, and chocolate lily. On the prairie, edible bulbs were dug with wooden hand tools.

European settlers' agricultural practices were much more similar to those employed today. Historically, within central Whidbey Island, agricultural use of the land has played a large part in the livelihood of the inhabitants. This is still true to some extent but the mainstay of the community economic base has shifted.

According to an official at the Washington State University Cooperative Extension Office (Meehan 2000), land use, over time, has changed to more, smaller-scale farms. Presently, the general trend is toward loss of farmed lands. This is true within the Reserve and is due in large part to strong residential development pressure. Due to the increased difficulty in making a profit on agricultural land, the number of people maintaining a working farm is dwindling.

There is still an active farming community within central Whidbey Island. Typical commercial crops include grass, alfalfa, cabbage, and beet seed for export, lavender, conifer seed, strawberries, barley and peas. In 2000, within the Reserve there were 3,355.6 acres in cropland within the Reserve, 1,138.6 acres in pasture, 1,437.1 acres in grassland, and 5,290.7 acres in woodland. (Refer to *Ebey's Landing National Historical Reserve General Management Plan/Environmental Impact Analysis, Volume II, Technical Reports, An Analysis of Land Use Change and Cultural Landscape Integrity for Ebey's Landing National Historical Reserve* by Nancy Rottle.)

The Whidbey Island Conservation District provides conservation plans to landowners at no cost.



Dairy farm operation within Reserve, Whidbey Island, ca. 2000. NPS Photo.

As of 2000, they were assisting 73 farms (both commercial and small farms) within the Reserve, for a total acreage of 7,446.3. In addition, they are serving 25 woodland owners, with a total acreage of 1,120.5. (For a discussion of NPS-owned farms within the Reserve, see “Agriculture” in the “Alternatives” chapter.)

Fire

Most forest and shrub ecosystems are dependent on fire to maintain their long-term stability. Ecological benefits of fire in these ecosystems can include reduction of woody fuel accumulations, maintenance of successional stages, increase of plant species diversity, and control of insect and disease populations at normal local levels. Disrupting and suppressing these ecosystem-regulating effects of naturally occurring fires and those that traditionally were set by American Indians creates abnormal fuel conditions. These conditions favor unnaturally large and intense wildfires, with erratic and unpredictable behavior, that further degrade the integrity of natural ecosystems and threaten life and property.

Fire has played an important role in shaping the landscape at Ebey’s Landing National Historical Reserve. Historical accounts have established that American Indians burned grasslands and woodland forests to create habitat for game animals and to promote the growth of weaving materials and food products, such as camas (Agee, 1987). This helped shape the vegetative patterns on Whidbey Island.

Natural ignitions were also a part of the Reserve’s fire history. Forested hillsides and prairie grasses have all evolved with wildland fire. The frequency with which an area burned from natural ignitions depended upon a variety of factors including plant community type, site slope or aspect, wind direction and velocity, and variations in seasonal precipitation. Periodic fire has an important role in both the health of the natural systems and the integrity of the cultural landscape at the park. Without fire, forest plant communities no longer function as they would in the post-glacial ecosystem that included regular burning.

American Indian Use of Fire

American Indians used fire as a tool to manipulate vegetation in the Pacific Northwest (Williams 1997). Humans used fire to hunt and harvest natural products, to ward off predators, and to maintain the habitat against natural succession that would convert the land into forest (Pyne 1982). There were three common patterns of American Indian fire use in the Northwest; frequent burning in westside prairies and dry Douglas-fir forests, maintenance of small patches of open prairie for agriculture or hunting by coastal or mountainous tribes, and widespread burning by inland or “plateau” tribes east of the Cascade Mountains (Knudson 1980). It is believed that American Indians burned where they lived to promote a diversity of habitats (Williams 1997).

Fire after Euro-American Settlement

Evidence shows that the frequency of large fires increased with the appearance of American settlers in the 1840s (Pyne, 1982). Reasons for burning were mainly to clear land of trees and underbrush for farming. Embers from open hearths and American Indian burning were also ignition sources for fires.

The fire season of 1910 and the severity of fires that year had a profound influence in how society would deal with future wildland fire. Society launched into an effort to remove wildland fire from the landscape and active wildland fire suppression became the goal for land management agencies.

Presently, the Washington Department of Natural Resources and local fire departments carry out wildland fire protection for the Reserve. Island County wildland fire starts for the previous ten years show that only four were caused by lightning and 233 were human caused (DNR 2001). The wildland fire workload can be influenced through continued or expanded use of wildland fire prevention programs.

Wildland Fire or Natural Fires

Natural fires are those wildland fires caused by natural sources. The most common natural wildland fire ignition source for the Reserve is lightning. Other

types of ignition sources, though rare, are spontaneous combustion or volcanic in origin. Lightning fires for the Pacific states represent approximately 37 percent of all wildland fires (Taylor, 1974). Lightning occurrence, with associated wildland fire starts, has an occasional rating on Whidbey Island. (Agee, 1993)

Fire Regime and Interval

In studying the fire history on Whidbey Island, the fire regime for timber stands on Whidbey Island is a High Severity Fire Regime (Fire Regime 5) (Agee 1993). Common fire types in this type of fire regime would generally be low intensity surface fires with some torching early in the fire season. This would change to crown fires and severe surface burning after prolonged drought or during periods of high temperature and low humidity. When fires occurred, they would be severe surface fires that would replace entire tree stands.). The fire return interval for timber stands in the Reserve is between 100-300 years. The fire return interval is defined as the amount of time between two successive fire events in a given area (Agee 1993).

Fire Ecology

Wildland fire has had direct effects on the vegetation within the Reserve. Fire will eliminate individual plants thus setting the site back to an earlier successional stage. Negative effects from a human standpoint would occur if fire removed desirable plants or wildlife habitat from the site. If a plant has adapted to fire effects the impact may actually be positive. (Agee, 1993)

Fire and Air Quality

A significant by-product of the combustion process is smoke. Comprised of small particulates of fuels that did not completely burn; smoke is carried into the atmosphere by transport winds, which have a major bearing on where the smoke accumulates prior to atmospheric dispersal. Smoke impacts air quality in two ways: the first is in the form of airborne pollutants, which can adversely affect human health, and the second is the clarity of air, which affects the ability to see for long distances or creates regional haze impacts. From a health standpoint, air quality within the Reserve is good most of the year. This is due to

the prevailing Puget Sound winds keeping the air mixed overhead.

Under the State of Washington Clean Air Act, the counties are required to minimize outdoor burning. Within the Reserve, in unincorporated Island County, some burning of organic waste by landowners is allowed, although it is very limited by the terms of the Outdoor Burning Ordinance (ordinance no. C-117-01). This includes yard waste, agricultural waste, and slash burning. For waste piles over four feet in diameter, a permit must be obtained by the Island County Fire Warden. For slash burning, landowners must receive permits from Washington State Department of Natural Resources.

Interpretation

Interpretation of the stories of Ebey's Landing has relied primarily on a few wayside exhibits, the Island County Historical Society's self-guided walking tour, and on volunteers at the historical museum. The Reserve does not have an interpretive plan and currently has no interpretive staff to implement a plan. The process for developing a Long Range Interpretive Plan is expected to begin in 2005 and will incorporate the themes generated in this GMP, as well as specific recommendations for the best ways to interpret those themes, including recommended staffing. The plan will address non-personal interpretive services such as wayside exhibits and web sites, and personal interpretive services including the use of volunteers, partnerships and staff.

Interpretive Themes

The following primary interpretive themes are based on purpose and significance statements, which were developed from the enabling legislation of the Reserve. Primary interpretive themes are the big concepts that are the foundation for an interpreter to develop specific programs or products, which will provide opportunities for a visitor to form their own emotional or intellectual connections to the meanings and significance of a park. In order to provide a range of these opportunities for connections to each of the themes, every visitor should be given varied and multiple op-

portunities to understand the primary interpretive themes, ideally resulting in greater appreciation for stories of the Reserve and a sense of stewardship toward park resources.

Change—People have long been attracted to the Ebey's Landing area, making it their home for similar reasons yet bringing new motivations and uses. Principle topics include the following:

- Native American prehistoric and historic use
- Early exploration
- American settlement and commerce
- Water to land transportation
- Military history
- *Living Landscape*—Ebey's Landing National Historical Reserve is a living landscape, illustrating continuity among change from early use of the land by Native Americans and later explorers and settlers to present day uses. Topics include:
 - Historical landscape
 - Agricultural connection of prairies to coast
 - Recreational and educational activities
- *Ecology*—unique combinations of climate, maritime influences, and geologic features have shaped the landscape, resulting in an unusual diversity of habitats and species. Topics include:
 - Shellfish operation
 - Natural resources in Penn Cove
 - Biodiversity
- Natural environment directed settlement patterns
- *Geology*—Glaciers played a key role in shaping the Ebey's Landing area, leaving behind many clues for today's explorers to discover.
- *Historical Reserve*—Protecting and preserving this new type of national park takes partners across the community. The Reserve is a model for learning new ways to manage our treasured places.

Visitor Experience Goals

Ebey's Landing National Historical Reserve is a new kind of national park, created to preserve and protect a rural community, its historic sites and natural beauty. It provides a place to learn about Pacific Northwest history from Native American

settlement up to the present time, and to learn about this new type of park that depends on cooperative management. It also provides visitors opportunities for outdoor recreation and reflection. Visitors will:

- Have advance access to information through a variety of media, in a variety of locations, including the park website, exhibits at the ferry terminals, and published guides that will assist them in planning a trip to Whidbey Island and the Reserve, thereby maximizing their time, enjoyment and understanding of the history and resources.
- Receive interpretive information through exhibits, self-guided walks, the Reserve's brochure, and a variety of personal and non-personal services that orient them to the Reserve's features.
- Understand the ways that privately owned land is being protected as part of the Reserve for future generations.
- Safely enjoy a variety of accessible, sustainable recreational experiences.
- Understand the importance of resource protection and leave the park with a sense of stewardship toward natural and cultural resources protected by the park.
- Learn about the unique and sensitive species of the area and the communities they inhabit.
- Understand that there has been a continuum of human /nature interaction at this place, probably since the end of the Ice Age.
- Have opportunities to continue to enjoy solitude, dark night skies, prairie landscapes, and ocean vistas.

Interpretive Programs and Opportunities

In some years, the park has hired seasonal interpreters to conduct interpretive tours, but most interpretation is through the wayside exhibits and two self-guided publications: the NPS's walking tour brochure of Coupeville and the driving and bicycling tour brochure. These are distributed at the Island County Historical Museum, Coupeville Library, Coupeville Chamber of Commerce and at other locations. The interpretive programs and media communicate messages derived from the primary interpretive themes. Current interpretive

opportunities include the following:

Website

The park website provides informational and interpretive materials with historical and current photographs and illustrations, including the following topics:

- History and Vision for the Reserve
- Cultural Landscapes and Hedgerows
- Settlement Patterns
- Landforms of the Reserve
- Research Materials and Information
- Archaeological Heritage and Resources
- Historic Buildings
- Management Documents

Port Townsend Ferry Terminal

This is the arrival point for visitors taking the ferry to Whidbey Island from the Olympic Peninsula. Visitors have easy access to a three-sided kiosk with orientation information on the reserve concept, a map of the Reserve and an interpretive panel on the Washington State Ferries System. This can also be a busy area during ferry arrivals so many visitors may not get oriented to the Reserve here.

Coupeville

Visitors have another orientation opportunity at the Coupeville Wharf, with a kiosk containing a map of the Reserve and two other interpretive

panels.

The Island County Historical Museum, located near the wharf, provides the Reserve's primary personal orientation services using volunteer staff in the museum and on some walking tours of Coupeville. The Island County Historical Society operates the museum and is a partner with the NPS and Trust Board through a cooperative agreement. They have permitted temporary exhibits on Ebey's Landing to be displayed in the museum, space permitting. The volunteers do not receive any interpretive training from the National Park Service and usually do not get any NPS orientation training about the Reserve. The Trust Board staff periodically provides some Reserve orientation information to museum docents.

The Island County Historical Society distributes the NPS produced self-guided walking tour (brochure) of Coupeville, which incorporates some information on Ebey's Landing. The NPS has interpretive exhibits on the porch of the museum and brochure holders so after-hour visitors can access Reserve information. Other orientation and interpretive kiosks are located at Ebey's Landing, Fort Ebey, and the Prairie parking lot.

Interpretive wayside exhibits and kiosks are located at key locations throughout the Reserve. These are Crockett Blockhouse, Ebey's Landing and Bluff Trail, Fort Casey, Fort Ebey, Keystone Spit, Monroe's Landing, Prairie Overlook and Prairie Wayside.



Prairie Overlook interpretive wayside, Ebey's Prairie, Whidbey Island, ca. 2000. NPS Photo.



Interpretive wayside at Coupeville Wharf, Whidbey Island, ca. 2000. NPS Photo.

In 2001, the NPS assessed the existing interpretive media in the Reserve, which included an inventory of themes interpreted, the effectiveness of each exhibit, and recommendations for improved interpretation addressing the cultural landscape. The report will be a key piece in the development of the Long Range Interpretive Plan.

Recreational Resources

The Reserve has a diverse range of recreational activities for visitors and residents. These vary from exploring the cobbled beach of Keystone Spit to attending performances of nationally known musicians and actors. Because of the temperate climate of the Pacific Northwest, virtually all of these activities can be enjoyed the year-round. While there is a choice of activities to participate in locally, the Reserve is also in close proximity to the recreational opportunities on the Olympic Peninsula, the San Juan Islands, and the North Cascade Mountains.

The primary recreational resources and opportunities within the Reserve are owned and managed by partner agencies including the town of Coupeville, Island County, and Washington State Parks. Their management would continue under current laws, policies, and regulations for those government agencies under all alternatives. The NPS and Trust Board would have authority and management responsibility over NPS-owned lands in the Reserve.

The town of Coupeville's current *Comprehensive Plan for Parks, Recreation and Open Space* assert goals and policies that include a recreation mission, a land acquisition mission, open space preservation, and a desire to improve coordination of park and recreational facilities between the town of Coupeville, Island County, the NPS, and the Coupeville School district. The plan states that it should be a continuing priority for the town to provide for a wide range of indoor and outdoor facilities for both passive and active recreation. Another goal includes planning for pedestrian and bicycle travel within the town, to coordinate with Island County's non-motorized trails plan, and connect with public paths and scenic areas within the Reserve (Town Comp Plan, p. 107). The Town

conducted a community opinion survey with residents in 1992 and again in 2001. Results from the 2001 survey showed that 43 percent of respondents thought having nearby outdoor recreation was "Very Important" (45 percent in 1992) and 44 percent thought it to be "Important"; 57 percent thought the pace of life was "Very Important" (53 percent in 1992); and 65 percent thought Coupeville's rural, village nature was "Very Important" (58 percent in 1992). When asked how they rated outdoor recreation opportunities, 61 percent (62 percent in 1992) responded they were "Satisfied". When asked about tourism (and the associated activities that come with that) being an advantage or disadvantage to Coupeville, 55 percent (43 percent in 1992) noted that the benefits outweighed the disadvantages; 82 percent (71 percent in 1992) thought tourism should be encouraged as a business that would provide jobs in central Whidbey Island.

In Island County's Comprehensive Plan, an appendix notes the results of a March-April 1991 Island County Survey (Phase B, Public Review Draft, July 14, 1998). There was a 3.64 percent response rate, considered a high response for surveys of this type. Respondents were asked to prioritize nine potential actions the county could take to improve the parks and recreation situation and the results for high priority actions were as follows: shoreline access (57.4 percent), scenic vistas (36.6 percent), natural area (35.8 percent), trail system (34.5 percent), improve existing parks (32.9 percent), small parks (22.2 percent), destination parks (19.8 percent), playgrounds (18.2 percent), and regional visitor parks (5.3 percent). The five highest priorities on central Whidbey Island are shoreline access, trail system, scenic vistas, natural areas, and improvements of existing parks. The highest priority in Island County as a whole was for increased access to and use of the shoreline. Increased shoreline access was significantly higher than any other category in the survey. This is a remarkable finding in a county containing over 200 miles of saltwater shoreline and the County's plan suggests that this is a serious problem. The second highest priority in the County as a whole was to maintain scenic vistas from County and State roads.

Washington State Parks has numerous areas under its management on central Whidbey Island. These are very important recreational resources in the Reserve and provide services and opportunities to thousands of visitors a year (Ebey's Landing State Park visitation in 2003 was 84,143; Fort Casey State Park visitation in 2003 was 727,054; Fort Ebey State Park visitation in 2003 was 331,771). Numerous public comments received during the Comprehensive Area Management Plan (CAMP) process for Fort Ebey, Fort Casey and Ebey's Landing state parks included statements about linking the state parks together with bike and walking trails, and the need to coordinate all park planning efforts with the Reserve and other agency planning efforts. The Draft Recreational Resource Values stated for Fort Casey include:

- Develop and operate the park to offer a high quality recreational experience to all who visit;
- Partner with Beach Watcher staff to promote environmentally sensitive beach and trail use throughout the park;
- Work cooperatively with Washington State Ferries, Washington State Department of Fish and Wildlife and the Army Corps of Engineers, to provide boating and fishing access to the waters of Puget Sound and the Strait of Juan de Fuca;
- Offer an increasing number of interactive and educational tours of the park's cultural resources;
- Develop and encourage a variety of other day use activities as diverse as picnicking, bird watching, fauna identification and kite flying;
- Continue to provide a unique on-the-water camping experience, which also offers visitors a base from which to explore other park and area features; and
- Offer a high quality underwater park for the non-consumptive use of scuba divers.

(Note: there are no Recreational Resource Values developed yet for the other state parks in the Reserve).

Washington State Parks

Most of the recreational activities in the Reserve occur on public state park lands. Fort Casey State Park is located at the Reserve's southern boundary at Admiralty Head. This park has breathtaking views of the Strait of Juan de Fuca and contains a historic military infrastructure designed and built beginning in the 1890s to protect the entrance to Puget Sound. Visitors to the park can enjoy overnight camping with showers and restrooms, hiking the bluffs and beachcombing, exploring historic gun emplacements, batteries and bunkers, visiting a 1901 lighthouse, reading interpretive exhibits, kite flying, picnicking, and scuba diving at the underwater preserve located off Keystone Spit near the ferry landing.

Fort Casey State Park manages Ebey's Landing State Park, located at the bottom of Hill Road intersecting Ebey Road. This ten-acre parcel of public land offers beautiful vistas of the steep western shoreline of Whidbey Island and across the strait to Port Townsend, the Olympic Peninsula, and Vancouver Island. It consists of a small parking lot, a picnic table, an interpretive kiosk, three low-mount interpretive panels, a vault restroom, interpretive facilities (NPS) a hiking trail up the bluff, and beach access. At times, visitors use remote controlled airplanes and hang glide off the steep bluff. It is one of the most popular public areas in the Reserve and parking is often not available on summer weekends. Visitors and residents can enjoy hiking, walking, and beachcombing along Keystone Spit, nearly all of which is managed by Fort



One of the historic guns of the Coastal Artillery Post at Fort Casey State Park, Whidbey Island, ca. 2000. NPS Photo.

Casey State Park. Wildlife is common in this area, and the annual bird count conducted by the Whidbey Audubon Society takes place here and across the highway along Crockett Lake.

Fort Ebey State Park is located in the Reserve's central west area along bluffs overlooking the Strait of Juan de Fuca with commanding views of the water. This state park has a "wilder" character than Fort Casey, though it, too, was originally a military installation dating from the World War II era. Opportunities for visitors in the 645-acre park include hiking in the dense woodlands, walking to a glacial kettle (Lake Pondilla), camping (not available in the winter), reading interpretive exhibits, mountain biking in the kettles area, and hiking the beach or portions of the bluff.

Hikers and bikers can now walk from Fort Ebey State Park through the kettles and woods to access the Kettles Trail, which runs along State Route 20 and leads to Coupeville. An extensive trail system is intended for the entire Reserve with plans to link public use areas together through the purchase of conservation easements over private lands. (See Figure 7, Parks and Trails map.)

Island County Parks

Rhododendron Park is an undeveloped park with dual ownership. Thirty-two acres are maintained by Island County and ten acres are managed by the Washington State Department of Natural Resources. Fort Casey State Park provides maintenance assistance. This park is located in dense



Admiralty Head Lighthouse, Whidbey Island, ca. 2000. NPS Photo.

woods between SR 20 and Patmore Road, and offers primitive camping (five sites) available year round. It consists of a ball field, a pump house, restrooms, and a picnic area. In the spring, this park displays native rhododendrons in bloom.

Island County manages a quarter-acre site at the foot of Monroe's Landing Road under a 25-year use agreement with Washington State Game Department. This public land has been upgraded in cooperation with the National Park Service. Monroe's Landing contains a public boat launch for access to Penn Cove (one of only two in the Reserve), and limited beach access for swimming. Visitors and residents use the beach for clamming. Farther along the Penn Cove shoreline to the east is a three-quarter acre picnic area called Scenic Heights maintained by Island County. At the end of Libbey Road, on the northwestern edge of the Reserve, is Libbey Beach Park. This three-acre site has beach access to the Strait of Juan de Fuca, and includes a shelter, a picnic area with a barbeque, and a vault restroom.

Town of Coupeville Parks

Coupeville offers a diverse range of recreational activities, including a new trail system. A newly installed 2000-foot trail along the east end of Front Street ends at Captain Coupe Park on Penn Cove. This trail will eventually reach the eastern edge of town on Parker Road to create an interconnected community trail system. The town has numerous historic buildings to visit housing galleries, shops, and restaurants. Coupeville has the greatest concentration of 19th century buildings in the state of Washington. Many of the buildings in Coupeville contribute to the historic integrity and significance of the National Register historic district.

The town owns and maintains two community parks, three neighborhood parks, and two mini-parks. Community parks include Town Park and Captain Coupe Park.

Town Park is 3.8 acres and consists of a grassy area with large, old trees. The park contains 500 feet of waterfront with a 440-foot trail leading to the beach on Penn Cove. The site includes a cookhouse, picnic tables, barbecue pits,

restrooms, tennis court, shuffleboard and playground equipment, and a live performance stage called the Pavilion where concerts and other special events are held. Captain Coupe Park is one acre in size with extensive views across the cove. It has the only low bank waterfront with public access in town, a boat launch and floating dock, boat trailer parking, restrooms, picnic tables, and barbecues.

The three neighborhood parks include Sixth Street Park, Peaceful Valley Park, and Summit Loop Park (formerly Sunset Terrace Park). Sixth Street Park is 1.2 acres and includes playground equipment, picnic tables, a ball field, and tennis court. Peaceful Valley Park is a one-acre park and consists of open, undeveloped land behind the library. Summit Loop Park is a half-acre park situated in a picturesque location on Pennington Hill with views to the Cascade and Olympic mountains.

The town's two mini-parks includes 0.11-acre Cook's Corner Park (now called Triangle Park) at the corner of Ninth and Main streets where special events are held and a sculpture is displayed. Front Street Stairs, on the north end of Front Street, is a beach park accessing Penn Cove by a flight of stairs. The town also owns community open space areas, which include a 3.93-acre parcel in the Peaceful Valley development and a number of undeveloped street rights-of-way.

Washington Department of Fish and Wildlife Public Lands

The Washington Department of Fish and Wildlife owns a small parcel of land along Madrona Way (.62 acres in Lot A-1 and 1.73 acres total within the Reserve) at the south shoreline of Penn Cove about .7 miles from the intersection of SR 20 and Madrona Way. Referred to as Salt Water Access Reserve A, the site has panoramic views across Penn Cove, Camano Island, and the Cascade Mountains. The beach area is separated from the upper land area by a damaged concrete sea wall. This day-use public site is not known to the public. Tribal members use it to access tidelands for shellfish harvesting and for informal recreational activities such as picnicking.

Types of Recreational Activities

Penn Cove is an important recreational resource within the Reserve. Its deep, protected waters provide opportunities for kayaking, canoeing, sailing, and motor boating. A few jet skis are in use primarily during the summer months. Each year nearby Oak Harbor hosts "Race Week," and scores of sailboats can be seen on Penn Cove waters for the competition. Sailing and other boating activities occur year-round in the cove. Fishing and crabbing are other activities that the cove provides for visitors and residents.

The Reserve contains several hundred National Register listed historic buildings and structures representing a diverse array of architectural styles



Annual Coupeville Arts and Crafts Festival, Coupeville, Whidbey Island, ca. 2000. NPS Photo.

and historic eras. The Trust Board distributes a driving and bicycling tour brochure of the Reserve and offers information about the area's natural and cultural history. The tour leads visitors to various public access areas and scenic waysides and overlooks. Visitors can also learn about the area from the Island County Historical Museum, located in Coupeville. Operated by volunteers, the museum has displays and exhibits that speak to Island County history, and distributes Reserve interpretive materials to the public.

Coupeville is an attraction for heritage tourism enthusiasts because of its history and architecture. Throughout the year, the town or other organizations host special events such as historic car rallies, the Penn Cove Water Festival, Arts and Crafts Festival, Greening of Coupeville, Mussel Festival, among others, and parades for most major holi-



Paragliding in the Reserve at Fort Ebey State Park, Whidbey Island, ca. 1999. NPS Photo.



Hiking the Bluff Trail, Whidbey Island, ca. 1999. NPS Photo.

days. Residents from elsewhere on the island will participate in these parades and other activities.

Activities such as tennis, baseball, football, basketball, and track occur in the town limits. The schools provide these facilities. There are also baseball diamonds located in Rhododendron Park and in Coupeville off Haller and Sixth streets.

Hunting occurs within the Reserve on private lands with permission of landowners. Most are bird hunters who use the woodlands surrounding Fort Ebey State Park and agricultural fields in the prairies.

Scenic Resources

The setting within the Reserve is spectacular—the combination of sky and water, and the variation of landforms and vegetation such as prairies, woodlands, kettles, agricultural fields, and uplands. The wealth of natural resources has influenced and shaped human settlement and the use of land over hundreds of years. Many of these settlement and use patterns are still present in the cultural landscape.

According to the 1995 visitor survey, visitors come to the Reserve predominately because of the beautiful scenery. Scenic resources are among the most important resources within the Reserve that need protection. Part of this protection involves the maintenance of the rural landscape that creates the scenic elements.

As part of the GMP planning workshops, the planning team identified the significance of the Reserve through the enabling legislation. In terms of scenic resources, the significance of the Reserve is that the historical landscape appears much as it did a century ago. Historic homes, pastoral farmsteads, and commercial buildings are still within their original farm, forest, and marine settings. In addition, one of the Desired Future Conditions or goals for the Reserve is that historic and scenic views would be maintained and enhanced. While changes in historic views are evident, especially in the addition of structures, the majority of views up to this point have retained their cultural integrity.

The threat of changing land use, particularly conversion from agriculture and woodlands to residential development, can significantly change the rural character of the Reserve. (Refer to *Ebey's Landing National Historical Reserve General Management Plan/Environmental Impact Analysis, Volume II, Technical Reports, Views and Vistas, Historic Changes from Pre-1950 to 2000 map, 2003 An Analysis of Land Use Change and Cultural Landscape Integrity for Ebey's Landing National Historical Reserve* by Nancy Rottle.)



Partial view of historic Gould Farm, Ebey's Prairie, Whidbey Island, 1901. Oliver S. Van Olinda, Photographer, Permission of University of Washington Libraries. Special Collections Division.



Same view, historic Gould Farm, Ebey's Prairie, Whidbey Island, ca. 2000. NPS Photo.

Landscape Character Areas

Based on original work by NPS Landscape Architect, Cathy Gilbert, on significant landforms and critical landscape components, the Reserve can be divided into ten character areas (Gilbert 1984). These character areas are useful in describing the Reserve's scenic qualities. These original character areas have been further refined by the planning team. (See Figure 8, Landscape Character Areas.)

San de Fuca Uplands

The San de Fuca Uplands are characterized by undulating and gently rolling hills that begin at the shoreline of Penn Cove and rise in elevation. The slope levels onto agricultural land, divided by woodlots and residential subdivisions. The visual continuity of open fields and Penn Cove is relatively unimpaired. Significant natural features include saltwater wetland areas, Garry oak communities, and remnant prairie communities.

Significant areas include Grasser's Hill and Lagoon, San de Fuca's commercial and residential building clusters, Arnold Farm, Monroe's Landing, Muzzall Farm, Vande Werfhorst Farm, and Blower's Bluff.

The north entry into the Reserve is through the San de Fuca Uplands with entrance points via State Route 20 through San de Fuca, Monroe's Landing Road past the Oak Harbor Air Park, or Penn Cove Road. Other significant corridors include Arnold Road and Zylstra Road.



Grasser's Lagoon, Whidbey Island, ca. 1999. NPS Photo.

Penn Cove

The Penn Cove character area is characterized by low beaches and uplifted banks. It consists of 3,955 acres of open water with nearshore and shoreline habitats of mudflat tidelands, high sandy bluffs, beaches, and eelgrass beds. The Penn Cove shoreline has more than thirty archaeological sites along the shoreline, including three permanent Salish villages. Significant areas include Blower's Bluff, Monroe's Landing, Grasser's Lagoon, Kennedy's Lagoon, Long Point, and Snakelum Point.

Penn Cove served as the historic water entry for the Reserve incorporating the historic Coupeville Wharf and San de Fuca Wharf and docks, and others no longer standing. Significant corridors are Scenic Heights Road, Penn Cove Road, and Madrona Way.



Penn Cove looking north, Whidbey Island, ca. 1999. NPS Photo.

West Coastal Strip

The west shore of the Reserve along Admiralty Inlet is an eight-mile strip of narrow sand and stone beaches that give way to dramatic bluffs and ravines. Elevations range from sea level to just over 200 feet. Bluff instability, combined with steep slopes and well-drained sandy soil, prevents development of forest and shrub vegetation and helps maintain conditions allowing development of low-growing herbaceous plants. Nearshore areas include eelgrass and bull kelp beds. Remnant prairie populations and populations of a federally threatened plant, golden paintbrush (*Castilleja levisecta*), are found at several locations along the bluffs.

Significant areas include Point Partridge, Fort Ebey State Park, Ebey's Landing Bluff Trail, Perego's Lagoon, Ebey's Landing State Park, Camp Casey, and Fort Casey State Park. Significant corridors are Hill Road, trails through Fort Ebey and Fort Casey state parks, Ebey's Landing Bluff Trail, and the coastal bluff and beach trail.

The West Coastal Strip character area, adjacent to Admiralty Inlet and the Strait of Juan de Fuca, is the western boundary of the Reserve, extending from Point Partridge south to Admiralty Head. There are several beach access points along public roads and trails.



Ebey's Landing and bluff, Whidbey Island, ca. 2001. NPS Photo.

West Woodlands

The Kettle and Pratt Woodlands area is characterized by dense forests including Douglas fir, western red cedar, and alder, with salal, Oregon grape, and rhododendron understory. The interior portions of these woodlands are remote and isolated. The area contains kettles and trails that connect to Fort Ebey State Park. After owner Robert Pratt died, TNC purchased 400 acres of woodlands, eventually selling an easement to NPS.

The kettles are large depressions up to 200 feet deep, which are significant geological features, formed by retreating glaciers. Kettle holes are formed when huge blocks of ice melt. These melted ice blocks formed deep ponds and wetland areas. Most of the kettles found in the Reserve occur in forested areas. Lake Pondilla is the only kettle large enough to be classified as a pond. The remaining kettle holes are scattered and relatively small in size.

Other significant sites are historic Coveland and the Captain Whidbey Inn. Significant corridors are Libbey Road, State Highway 20, Madrona Way, and the Kettles Trail.

Access through this area is primarily along trails leading from State Highway 20, Fort Ebey State Park, and Ebey's Landing Bluff Trail.



Lake Pondilla, Fort Ebey State Park, Whidbey Island, ca. 2001. NPS Photo.

Coupeville

This nineteenth century seaport town, set on the southern edge of Penn Cove, has the greatest concentration of historic buildings in the state and is the second oldest town in Washington State. It is also the commercial center of the Reserve. Within the town limits, one can experience dramatic views of Penn Cove, Mt. Hood, the Cascades Mountains, and prairies.

Significant areas within Coupeville are the Coupeville Wharf, Town Park, Captain Coupe Park, Summit Loop Park, historic Front and Main streets and Prairie Center. Coupeville's historic resources include historic buildings, structures, platented neighborhoods, and remnant orchards. Significant corridors are Main Street, Front Street, Broadway, Madrona Way, Coveland Street, Ninth Street, and Parker Road.

Entry to Coupeville is primarily via State Route 20, with secondary access via Parker Road from the east, Madrona Way from the west, Fort Casey Road and Engle Road from the south, and water entry via Penn Cove



View of Coupeville looking east, Whidbey Island, ca. 2000. NPS Photo.

Ebey's Prairie

Ebey's Prairie is located in the central portion of the Reserve and is the largest natural prairie on Whidbey Island. It contains its most productive agricultural land, which reflects its agricultural character. It is characterized by its historic farm clusters, fields, fences and hedgerows, upland ridges, and forest edges. It has a long history of agricultural use by Skagit Indians, dating back 8,000 years, and by European settlers since the 1850s.

Significant areas and locations within this Character Area are Ebey's Landing, the Ferry House and ravine, Sunnyside Cemetery and the (Davis) Blockhouse, Jacob Ebey House and Blockhouse, Sherman-Bishop Farm, Smith Farm, Engle Farm, Jenne Farm, and the inter-prairie ridge between Ebey and Crockett prairies.

Primary access to Ebey's Prairie is along State Route 20 and Engle Road. Significant corridors include Ebey Road, Hill Road, Sherman Road, Cook Road, and the Ebey's Landing Bluff Trail (leads away from prairie).



Segment of Ridge Trail near Prairie Overlook, Whidbey Island, ca. 2001. NPS Photo.

Fort Casey Uplands

The Fort Casey Uplands is characterized by undulating and gently rolling hills of forest, fields, and residential areas. Natural areas include remnant prairie communities, a Washington State Natural Heritage Forest, and golden paintbrush populations. Cultural areas include the historic buildings of Fort Casey State Park and Camp Casey.

Access is along Engle Road, Fort Casey Road, and Hill Road. Another significant corridor is the southern portion of the coastal bluff and beach trail.



Seattle Pacific University property, Whidbey Island, ca. 1999. NPS Photo.

Crockett Prairie

Crockett Prairie is a natural, open prairie adjacent to Crockett Lake, Keystone Spit, and Admiralty Bay. Crockett Lake is a salt marsh, and is an important migratory bird habitat and nesting area. From Keystone Spit, the view of Crockett Prairie is complemented by the open water of Crockett Lake and the tree covered ridges beyond. Other significant areas include the inter-prairie Ridge between Ebey's and Crockett prairies, and the Washington State Ferry Terminal. Historic remnants in this area reflect the building of Fort Casey, including ponds, wharf, and dock remains.

Primary access routes are Engle Road from Coupeville and State Route 20 along Keystone Spit. Significant corridors are Wanamaker Road, Patmore Road, and Fort Casey Road.



Crockett Prairie and Crockett Lake, Whidbey Island, ca. 1999. NPS Photo.

Parker and Patmore Woodlands

The Parker and Patmore Woodlands are a natural resource area characterized by densely wooded second and third-growth Douglas fir forest with western red cedar, alder, salal, and rhododendron undergrowth. It is located along a ridge on the eastern portion of the Reserve.

Significant areas are the Reeder Farm, Long Point, Snakelum Monument, and Rhododendron Park. Significant corridors are State Route 20, Parker Road, Patmore Road, and Keystone Road.



Long Point, south shore of Penn Cove, Whidbey Island, ca. 1993. Copyright Washington Department of Ecology.

Smith Prairie

Smith Prairie is a 600-acre natural prairie surrounded by Douglas fir forest. The prairie is open, characterized by agricultural features reflecting its cultural history. Significant areas are Au Sable Institute (the former site of the Washington State Game Farm), Naval Air Station-Whidbey's Outlying Landing Field, and two commercial tree farms growing seed stock. The Au Sable Institute property is the site of the largest remaining remnant of a native prairie community on Whidbey Island.

State Route 20 provides the main south entry into the Reserve. Other significant corridors are Parker Road, Morris Road, and Keystone Road.



Au Sable Institute property within Smith Prairie, Whidbey Island, ca. 1999. NPS Photo.

Visitor Use

Visitor Use Patterns

The University of Washington conducted a visitor survey in the summer of 1995, between July 7 and August 28. The survey used a questionnaire format and 968 visitors were surveyed. The results and analysis of that survey are published in the *Ebey's Landing National Historical Reserve, 1995 Visitor Survey*. The following narrative on visitor use patterns summarizes the information generated on who uses the park and how visits are planned, trip information and satisfaction, and numbers of visitors, expenditures, and economic impact on the Reserve.

Visitor Profile

According to the report, the average age of the sampled visitors, which included no one younger than 16, was approximately 47 years. Ages ranged from 16 to 85 years. Visitors 40-49 years of age were the largest group (26 percent), followed by 50-59 (22 percent), 30-39 (21 percent), 60 and older (20 percent), and 16-29 years of age (11 percent).

Fifty-six percent of the respondents were females and 44 percent were males. The majority of visitors (78 percent) were married. Caucasian/non-Hispanics comprised 97 percent of the sample. Those of Asian heritage made up approximately two percent of the sample; Native Americans/Alaska Natives accounted for approximately one percent of those surveyed. There was only one respondent of African American heritage. Approximately one percent of those sampled identified themselves as Hispanic.

Of the respondents to the survey, approximately 61 percent of the visitors were currently employed, 2 percent were unemployed, 17 percent were retired, 13 percent were homemakers, 5 percent were students and 2 percent were military. Of those employed, the majority of visitors were in occupations classified as managerial or professional. The average visitor had completed 16 years of education.

The largest group of visitors was comprised of two people (36 percent) with the second largest group comprised of four people (21 percent). Almost half of the visitor groups came with children 15 years or younger.

The majority of visitors (88 percent) did not live on Whidbey Island. Residents made up 11 percent and approximately 1 percent lived within the Reserve. For those visitors not living on Whidbey, approximately one-half (59 percent) were from Washington State, 10 percent were from Canada and 8 percent were from California. Of those from Washington State, over one-third (37 percent) were from King County.

About 48 percent of visitors were visiting the Reserve for the first time and the mean number of visits was one, though 19 percent had been to the Reserve three to nine times and ten percent were returning a tenth time or more. These statistics reveal that although the majority of those sampled had little previous experience with the Reserve, a small portion had visited there a great number of times.

Planning the Trip

One-third of visitors made the decision to visit the Reserve on the same day as their trip and another third decided no more than three days before their trip. The majority (70 percent) responded that they had planned a visit to the Reserve when they were planning their trip. Most visitors (79 percent) did not seek information before the trip, but those who did used information from friends and relatives. Other sources were previous visits, maps, brochures and travel guides.

The Trip

Reasons for visiting the Reserve varied, but included the scenery, state parks, family, Coupeville Arts Festival, nature, history, and to look at real estate. The vast majority of visitors were not aware that the area was a national historical reserve. Of those places visited within the Reserve, the places having the highest number of visitors was the town of Coupeville, followed by Fort Casey State Park, Coupeville Wharf, Fort Ebey State Park, the lighthouse, and Camp Casey. The least visited

places were Crockett Lake, Sunnyside Cemetery, Prairie Wayside, Driftwood Park, and the Bluff Trail.

Most visitors arrived by private vehicle (88 percent) with most (44 percent) coming via the Deception Pass bridge. About one-third arrived by ferry from Mukilteo. Only one-quarter sought information about the Reserve after they arrived in the Reserve. Most visitors spent two hours in the Reserve, while 30 percent spent three to four hours. Twenty-two percent were overnight visitors. The most common method of moving through the Reserve was by car (59 percent), but also walking, hiking, bicycling, and boating were mentioned.

Visitor Satisfaction

The survey also asked visitors if anything detracted from their visit and 18 percent responded. The reasons visitors provided were in eight categories: unhappy with the lack of information and signage in the Reserve, upset that attractions were closed, had “some problems” in Coupeville, had problems at the campgrounds, were angry at the weather, encountered “some health hazards”, unhappy with services and facilities, and felt like they did not have enough time to experience the Reserve.

Visitors were also asked if there were educational and information services that they wished were available to them. Almost half (48 percent) of the respondents wrote an answer in the space provided. The comments were varied and included such items as the desire for more guides, maps, nature walks, history, and information on plant and animals.

For overall satisfaction with their visits, 36 percent of visitors stated that their visit was “very good” and 42 percent described it as “excellent” or “perfect”. Almost three-quarters of visitors (74 percent) said that they would visit the Reserve again.

Numbers of Visitors, Expenditures, and Economic Impact

Since there are no entry gates at the Reserve, visitation numbers were difficult to estimate. Visitors arrive on the island by three routes: the Mukilteo/

Clinton ferry, the Port Townsend/Keystone Ferry, and over the Deception Pass bridge. A few visitors arrive by personal boat or by air. Other visitors live on the island. Though various options were explored, the method chosen was to ask people who were waiting in line for the ferries to depart whether they had stopped at the Reserve while on the island and then use those figures to make estimates of the total number of visitors. The final estimate of the total number of visitor groups (average size of 3.9) traveling through the Reserve during the summer months was 113,106 visitors.

In estimating the direct economic impact of the Reserve, the study looked at the amount of money spent per group multiplied by the number of total estimated groups. The overall average amount of money that each visitor group spent was determined to be \$70 in expenditures. The greatest portion of money (34 percent) was spent on food.

When the \$70 in expenditures is multiplied by the 113,106 total numbers of visitors, a total sum of \$7,917,420 is realized. That means that visitors spent almost 8 million dollars in the Reserve during their stay over the peak visitation period (in 1995 dollars when the study was completed). Economists explain that money spent directly at such places as hotel, restaurants, and shops are then further invested by the owners of these places. These industries or trades buy from and sell to each other and to industries in other regions. Therefore, the impact of the money is actually larger than 8 million. The general trade and services multiplier is 2.055 and when calculated, the total economic impact of dollars spent at the Reserve is 16.4 million.

To project that figure to 2005 dollars, assuming an average annual inflation rate of 3 percent over ten years, the total estimated amount that visitors now spend in the Reserve is \$21.3 million. This figure does not take into account the population growth in the metropolitan region since 1995 when the study was completed and the increase in visitation that is likely to have occurred.

This analysis shows that the Reserve not only provides large numbers of visitors with enjoyable opportunities for recreation and education but also

that the Reserve make a valuable contribution to the health of the local economy.

Federal Lands Recreation Enhancement Act

Due to the limited amount of land owned in fee by the federal government and the nature of the park unit, Ebey's Landing National Historical Reserve does not currently collect fees. However, the Reserve is eligible to receive, or have access to, monies that are collected by "fee parks."

Socioeconomic Factors

Location and Access

Situated in northern Puget Sound, Whidbey Island is 27 miles north of Seattle and 50 miles south of the Canadian border. To the east of the Sound is the Cascade Mountain Range and roughly one hundred miles to the west is Washington's Pacific Coast. The majority of Washington's population lives in the 75-mile corridor between Tacoma and Everett to the east of Whidbey Island. Ebey's Landing National Historical Reserve is less than a three-hour drive from Washington's most populous cities, from Tacoma (193,556 population), north through Seattle (563,374) and Everett (91,488) to Bellingham (67,171). The populations on the Olympic Peninsula are only a ferry ride away. Bordering the Reserve is the city of Oak Harbor (20,830), home of the Whidbey Island Naval Air Station.

The site is in the 2nd Congressional District in Washington State and the 10th State Legislative District. Ebey's Landing National Historical Reserve is situated in Island County, Washington, which is comprised of both Whidbey and Camano Islands.

Regional Context

Land connections to Whidbey Island and the Reserve from the mainland are provided by State Route 20 from Skagit County using the Deception Pass bridge. This bridge and the road across Fidalgo Island are serious transportation bottlenecks at times, given the population on North Whidbey, the presence of NAS Whidbey, Decep-

tion Pass State Park and the fact that the continuation of State Route 20 is the Cascade Loop Highway. Ferry service is provided by the Washington State Ferries (WSF) arriving on south Whidbey Island at Clinton, from the mainland city of Mukilteo; a ferry from Port Townsend arrives in the Reserve at Keystone Harbor adjacent to Fort Casey State Park. In addition, several public and private airfields presently exist on Whidbey Island.

Island County has a variety of parks and recreation facilities. (Refer to "Recreational Resources" section for additional information.). These recreation opportunities are owned and maintained by different governmental and nonprofit organizations including federal, state and local government, and private volunteer groups. Located on the very northern tip of Whidbey Island is Deception Pass State Park. The park is the most heavily visited state park in Washington, with almost 2.84 million visits recorded in 2000. The boundary of the Reserve encompasses several parks, including Fort Casey, Fort Ebey, Ebey's Landing and Keystone Spit, and Rhododendron Park managed by Island County (Island County Comprehensive Park and Recreation Plan 1999).

Over the past ten years, travel to and from Island County has been increasing. This is evident from the 140 percent increase in daily traffic at the Deception Pass bridge; and by the 52 percent annual vehicle traffic increase on the Washington State Ferry system to Island County. (Island County, *Island County Comprehensive Plan* 1999: p.8-51)

Transportation

Island Transit

The transit needs of Coupeville and its residents are served by Island County Public Transportation Benefit Area Transit (PTBA), operating as Island Transit. The agency's services include fixed route, paratransit service, vanpool program and ride matching programs. All of Island Transit's services are provided free to its users. The system is fully funded by a 0.3 percent sales tax, matched by funds from the Motor Vehicle Excise Tax revenues generated within the PTBA.

Since Island Transit began in 1987, ridership increased by 1803 percent (from 13,024 to 247,794 users) after the first year. Ridership overall for Whidbey Island has increased dramatically over the years, peaking in 1998 at 792,947 with users traveling 1,048,854 miles. The year 2000 fixed ridership totals for Whidbey Island were 506,243 with users traveling 721,549 miles.

Island County has identified the following areas of interest to the Reserve that should be considered as candidates for local feeder service expansion (based on current and predicted use and discussions between the public and Island Transit):

- Service connections between Oak Harbor and the Mount Vernon/Burlington area
- Point Partridge area
- Recreational areas, such as Deception Pass, Oak Harbor waterfronts, the Kennedy's Lagoon to Coupeville, Fort Casey, Crockett Lake, South Whidbey State Park, Pass Lake area and Scenic Heights/Penn Cove area

Ferry Service

Washington State Ferries provides passenger and auto ferry services to two routes that serve Whidbey Island. Just south of Coupeville, the landing at Keystone connects via ferry to Port Townsend in Jefferson County. The second route serves the terminal at Clinton at the south end of Whidbey Island. This route connects to Mukilteo in Snohomish County and links Whidbey Island with the Seattle-Everett metropolitan area (Town



Keystone Ferry Terminal, Whidbey Island, ca. 1999. NPS Photo.

of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 36-37).

Between 1977 and 1996, vehicle usage increased by over 106 percent on the Mukilteo-Clinton Ferry and nearly 185 percent on the Keystone-Port Townsend Ferry. During the same time, the total ridership increased by over 85 percent on the Mukilteo-Clinton Ferry and over 169 percent on the Keystone-Port Townsend Ferry. Since 1986, ferry usage has been increasing at a relatively steady rate.

The WSF's Long-Range System Plan anticipates that new vessel safety regulations for crossing Puget Sound's major shipping channel will require a new class of ferry vessel to be used for the Port Townsend to Keystone Ferry run. It is expected that these new ferries would have a 110-vehicle capacity. With these new vessels, WSF expects to meet the level of service standards for the next twenty years.

The *Island County Comprehensive Plan* states that the ferry terminals are valuable elements of the transportation system and should be maintained as such. In accordance, Island County plans to work with the WSF, WSDOT, and Island Transit to provide the following improvements:

- Highway improvements along SR 20 and Engle Road to improve access to the terminal, allowing for convenient vehicle waiting and loading.
- Permanent facilities for additional vehicle holding areas to accommodate future increases.
- Construction of a new multi-modal terminal facility to encourage high occupancy vehicle travel and accommodate walk-on traffic from transit, "kiss-and-ride", and park-and-ride passengers.

Air Service

There are seven airfields currently operational on Whidbey Island. Two of these airfields, the Coupeville Naval Outlying Landing Field (OLF) and the Whidbey Island Naval Air Station, are restricted to military use only. Of the remaining five airfields, three are private and two operate commercially. The two commercial airfields are the Oak Harbor Airpark and the Langley-Whidbey Airpark.

Roads and Highways

Travel on local roads and highways accounts for the largest single element of Island County's transportation system. Two state highways transect Whidbey Island and the Reserve and serve as the primary north-south travel corridors. These state highways, SR 20 and SR 525, connect Whidbey Island to the mainland in Skagit County via the Deception Pass bridge, to Mukilteo in Snohomish County via the Clinton ferry, and to Port Townsend in Jefferson County via the Keystone ferry.

State Route 20 and SR 525 receive a large amount of commuting traffic. According to the 1990 Census, about 6,000 county residents work outside the county. During the summer months, traffic congestion increases considerably when seasonal population and visitor use is most noticeable in Island County.

The average daily traffic in Island County is forecasted to increase on county roads and state highways by approximately 18 percent between 1996 to 2003 and by approximately 64 percent by year 2020. These values represent average annual growth rates of approximately 2.6 percent and 2.7 percent per year. The growth rates are determined from future permanent population and employment estimates.

The average annual daily traffic taken from milepost 20.02, approximately one-quarter mile east of Rhododendron Park, depicts increased traffic along State Route 20 from 2001-2004 .

Table 2: Average annual daily traffic along Hwy 20 at Milepost 20.02

1996	6,900 cars per day
1997	7,300 cars per day
1998	7,600 cars per day
1999	7,600 cars per day
2001	7,600 cars per day
2002	7,700 cars per day
2003	8,000 cars per day
2004	8,200 cars per day (3 million per year)

(wsdot.wa.gov/mapsdata/tdo/annualtrafficreport.htm)

Island County is responsible for approximately 594 miles of roads, including 79 miles of major ru-

ral arterials, 131 miles of minor rural arterials, 370 miles of other local rural roads and 14 miles of urban roads. In addition, there are approximately 54 miles of state highways within Island County, of which approximately 51 miles pass through the unincorporated areas of the county. Most county and state roads are two-lanes.

Visitors use many of the state and county roads as the primary way to view the Reserve. A brochure provided by the Reserve highlights a 43.6-mile driving and bicycling tour. A system of interpretive roadside panels and kiosks provide additional information at several of the stops. There are ten waysides within the Reserve at the following locations: Monroe's Landing, Fort Ebey State Park, the Coupeville Wharf, Prairie Overlook at Sunnyside Cemetery, Ebey's Landing, Prairie Wayside at Engle Road, Crockett Blockhouse (at Fort Casey Road), Ft. Casey State Park and Keystone Spit, and the Keystone Ferry Landing.

Deception Pass Bridge

Many residents and government officials believe that the traffic congestion leading up to and over the Deception Pass bridge in North Whidbey Island is a problem. Washington Department of Transportation (WSDOT) has conducted surveys and public outreach in an effort to determine the problem and possible solutions. This could involve constructing a new bridge, adding a new ferry route, or improving the road infrastructure approaching the bridge. Some citizens are concerned that increased access will negatively impact the rural island character that has attracted them to the area, while others feel that increased access will be beneficial for the economy.

If a new ferry or bridge were to be built, there is much disagreement as to the location. There is also a distinct difference in opinion depending on the region of Island County in which one resides. South and central Whidbey Island residents, who may not travel across the bridge regularly, are more likely to be opposed to a new bridge, while north Whidbey residents tend to be the opposite. This is a concern for the Reserve, because increased access increases the pressure of development, hence threatening the rural character of the Reserve.

Highway Level of Service Standards

There are six Levels of Service (LOS) categories used to describe the quality of a transportation system. For roadway sections, these levels of service categories range from LOS “A” through LOS “F” with LOS “E” being the point where the traffic demand on the roadway is equal to the capacity of the roadway. LOS “C” is a generally accepted level-of-service by transportation professionals for rural and low-density urban areas. Currently, WSDOT has set planning goals and have set LOS “C” as their level of service goal for state highway through rural areas. In urban areas, WSDOT has set their level of service goal at LOS “D”.

According to WSDOT, improvements are needed on two areas within the Reserve to maintain LOS on SR 20. The first is from Oak Harbor city limits south to Libbey Road and the second is from Libbey to Main Street in Coupeville. In both areas, the WSDOT plans to provide four lanes with left turn pockets. This action is of concern to the Reserve. Existing roads follow historic road patterns, which are part of the cultural landscape. Widening roads include smoothing and straightening curves and elevating roadways, which impact adjacent land by fragmenting farmland, increasing speeds, changing drainage and historic road patterns, and affecting views. Safety issues need to be addressed, but in a manner that realizes that this is a unit of the National Park System and visitors may be traveling at slower speeds to experience and enjoy the scenery of the Reserve.

Six-Year Transportation Improvement Programs

Island County and WSDOT plan improvements to the state highway and county roadway system on an annual basis through the development of six-year Transportation Improvement Programs. Projects are selected in part on their LOS grade. State and county funding for these road projects are determined by their priority rating; road projects with a higher rating are more likely to be funded. In these six-year programs, emphasis is given to safety improvements and operational improvements.

The following chart shows Island County’s six-year transportation improvement program projects that would occur within the Reserve. The county priority rating determines which projects will be funded first. Projects with low priority ratings that do not receive funding can be resubmitted in later rounds, which they often are.

According to the *Island County Comprehensive Plan*, “new roadways will be given the lowest priority rating. New roads should link and integrate roadway segments into a rational circulation system.” The following planned rural roads are located within the Reserve boundaries and according to the *Island County Comprehensive Plan*, they should be considered with new developments:

- Arnold Road to Balda Road
- Wanamaker Road to Houston Road
- Ft. Casey Road to SR 20

Table 3: TIP Projects within Reserve Boundaries

Priority	Project Title	Work Description
10	Madrona Way Phases 1, 3	R/W for road realignment away from embankment; retaining wall at beach; asphalt concrete paving (ACP) overlay; guardrail.
13	Madrona Way Section 2	Flood damage repair
27	West Beach Rd.Phase 2	Widen to 6 feet ACP shoulders; drainage; regrade vertical curves; ACP overlay; bicycle route.
28	West Beach Road Phase 3	Widen to 6 feet ACP shoulders; drainage; regrade vertical curves; ACP overlay; bicycle route.
38	Patmore/SR 20 Intersection	Intersection realignment
40	Monroe’s Landing Rd. Section 1	6 feet paved shoulders; drainage; bus pullout.
44	Monroe’s Landing Rd. Section 2	6 feet paved shoulders; intersection channelization; drainage; bus pullout.
47	Scenic Heights	Right of Way; grading; drainage
54	Parker/ SR 20 Intersection	Intersection realignment (Joint WSDOT/ County)
55	Parker/ SR 20 Intersection	Right of Way; realign; reconstruct; ACP overlay.

Source: *Island County Comprehensive Plan 1999*

Scenic Highways and Corridors

For many roadways in the state, scenic resources have already been identified through WSDOT's Scenic Highways Program. A total of 1,918 miles have been designated as scenic highways and another 1,360 miles have been determined to be eligible. The Scenic Highway Program was developed to assist corridor communities, agencies, and interest groups involved with the scenic highway by forming partnerships and strategies to address tourism and resource management issues. The only legislative requirement for highways with Scenic and Recreational designations is on outdoor advertising control outside corporate city limits. Any other requirements to protect scenic views originate at the local level and are incorporated into local comprehensive plans as ordinances. In Island County, SR 20 and SR 525 have been designated as scenic highways by WSDOT and are included in WSDOT's Heritage Corridor Program.

In addition to the state program, Island County has defined its Scenic Corridors Program. A scenic corridor pertains to the land on the sides of roadways that is generally visible to the public traveling on the roads and is characterized by views and vistas of unusual natural significance in the county. A scenic corridor would continue to allow for the full use of its right-of-way for road and utility purposes, without restraints to design and safety standards. Capacity, safety, and maintenance needs would not be compromised in viewing surrounding land and seascapes. Nearly all roadways within the unincorporated areas of Island County could fall within the scenic corridor designation except for residential streets and commercially zoned areas (*Island County Comprehensive Plan*, Island County 1999).

Land Use and Ownership Patterns

Industry and Economy

The economy of central Whidbey is composed of public administration, agriculture, and tourism. The public administration sector makes up the largest portion of employment within the area, which includes Island County offices, Island

County General Hospital, and central Whidbey schools based in Coupeville.

The historic town of Coupeville (1,640 population) is located within the Reserve and is a little more than one square mile in area. Due to its central location, Coupeville's role for providing public and county services continues to grow. Although now primarily a residential community, Coupeville has served as the commercial center for the surrounding residential area since its founding in 1853. It was later incorporated in 1910. (Town of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 7)

Coupeville has always had an economy based upon service activities—the government services in the Island County Courthouse being a prime example. Second to this is retail businesses serving the residential, agricultural, and building activities of central Whidbey Island. In recent years, there has been significant growth in medical services. Whidbey General Hospital has expanded its facilities and services. In addition, a 92-bed convalescent home and many specialist physicians have established practices in Coupeville.

A 1995 visitor survey for the Reserve conducted through the University of Washington estimated visitation at 113,106 visitor groups a year. These groups spent an average of \$70 each, for a total of nearly \$8 million a year. The money tourists spend at places including hotels, restaurants and shops is then further invested by the business owners into the local economy. These industries or trades buy from and sell to each other and to industries in other regions. Therefore, the indirect impact of dollars spent by Reserve visitors is much higher. The visitor survey estimated this number to be \$16.4 million (Ebey's Landing National Historical Reserve, 1995 *Visitor Survey*).

The Whidbey Island Naval Air Station also influences the economy. Although Oak Harbor absorbs much of the population associated with this facility, a small percentage of Navy personnel and civilian employees elect to live in Coupeville. In 1990, 64 workers, or almost 12 percent of the total Coupeville labor force (555 people) were in the Armed Forces (U.S. Bureau of the Census 1990).

In total, Island County is anticipated to increase its total employment from 21,589 in 1996 to 33,345 by the year 2020, representing an increase of 11,756 jobs (a 54 percent increase). Sixtyfour percent of the projected new jobs are anticipated to be located in the county's three Urban Growth Areas (UGA), and the remaining 36 percent in the unincorporated areas of the county. Central Whidbey is projected to gain 1,264 jobs, with 841 occurring within the town of Coupeville. A growth of 5,884 is anticipated to occur within the Oak Harbor Urban Growth Area (U.S. Bureau of the Census 1990).

Coupeville has a potential labor force of 1,120 persons over the age 16. Of these, 555, or almost 50 percent are actually in the labor force, including both civilian and military workers. The remaining 565 people are not in the labor force. Given the large number of Coupeville residents over age 65, many of those not in the labor force may be retired. Within the civilian labor force, 466 persons were employed and 25 were unemployed, for an unemployment rate of 5.1 percent (U.S. Bureau of the Census 1990).

Port of Coupeville

The 1991 *Comprehensive Parks and Recreation Plan* for the Port of Coupeville states that "the Port was founded to promote the welfare of the residents of the Port District. To that end, the Port seeks to promote economic development of the area while recognizing and preserving the unique environmental, historical, and cultural aspects of the area."

The Port of Coupeville owns several tax parcels at the foot of NW Alexander Street on Front Street, plus some 462 linear feet of tidelands. The Coupeville wharf and associated floats are on aquatic lands leased from the Department of Natural Resources. The National Park Service leases a section of the property owned by the Port at the start of the pier for an interpretive kiosk highlighting the Reserve.

Capital facilities owned by the Port District include the wharf, floating docks, pier and the building at 24 NW Front Street. Over the past five years, the wharf has been extensively rehabili-

tated. This includes the pilings and structural supports, utilities, and interior and exterior rehabilitation of the wharf building. The wharf is zoned for commercial use. Moorage floats are available on a first-come, first-served basis on the east side of the wharf, and a second float provides marine fueling service off the north side. In 1999, the Port received approval to extend the eastern float and add a west side float. The Front Street building houses retail space in the southern half and the Port administrative offices in the north half. (Town of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 55)

Resource Industries

Agriculture

Some of the first crops raised in the prairie by Euro-American settlers were hay, grains, and potatoes. Today, typical crops grown in the Reserve include grass, corn, barley, and alfalfa for silage, cabbage, beets, timber, lavender, conifer seed, strawberries, squash and peas. Over 45 percent of the existing Class II lands (productive agricultural) within Island County are found within the Reserve. The dominant crop grown is hay, comprising 7,608 acres of Island County farmland; this is due in part to the prevalence of dairy farms in the area. In 1997, only 106 acres of land was dedicated to growing vegetables in the county (U.S. Department of Agriculture, Federal Census of Agriculture 1997).

The exact number of farms and farmland within the Reserve is not clear. The Whidbey Island Conservation District, which provides conservation plans for landowners, serves 73 farms (both commercial and small farms) within the Reserve, for a total acreage of 7,446.3. In addition, the Conservation District is serving 25 woodland owners, with a total acreage of 1,120.5 (Weber 2000).

The largest and most significant farm operations in Island County are dairy farms. Currently, there are four dairies in Island County, three dairies on Whidbey Island and one on Camano Island. Live-stock products accounted for 85 percent of the total market value sales (\$10,538,000) in 1997, while crop sales accounted for only fifteen percent. In 1997, dairy products accounted for \$6,503,000 in

sales, compared to \$1,561,000 in crop sales (U.S. Department of Agriculture, Federal Census of Agriculture 1997).

Lower milk prices have made it difficult for farmers with smaller farms. In 1995, there were five dairies in the Reserve; in 2001 there were only two. One of these farms, the Engle Farm, recently went bankrupt and was purchased from the bank by the Trust for Public Land (TPL). The National Park Service bought the property from TPL. The former owners, under a lease with the NPS, are currently operating a Holstein heifer feeding operation, with approximately 350 cattle.

Indeed, agriculture has been seriously impacted and is endangered within the Reserve, due to the result of low prices, loss of local crop processing plants, closure of support businesses, and impacts from urban sprawl (such as nuisance lawsuits, and vandalism). There are few alternatives for farmers to offset the increased liability issues. Newer installations or higher leveraged operations have a much higher cost of production and have been losing money heavily the last ten to fifteen years. According to the Island County dairy agent, the “last straw” has been the mandated waste management facilities upgrades that are very expensive and have not been financially possible for many farmers, even with matching grant funds. The milk support program only becomes effective if the price gets below \$10.60 per hundred-pound weight (cwt) which is about \$1/cwt under the average cost of production.

A disturbing trend is the increasing number of farms with net losses. Both in 1992 and 1997, there were more farms with net losses than farms with net gains, and the gap is widening. In 1997, only 63 farms posted net gains while 198 had net losses. While the average market value of agriculture products sold per farm increased by 21 percent from \$33,278 in 1992 to \$40,376 in 1997, 195 of the county's 261 farms still made less than \$10,000.

The Federal Census of Agriculture shows that the amount of land dedicated to farming in Island County decreased by 19 percent between 1992 and 1997. Since 1978, the total number of farms has increased slightly from 244 to 262. However, the

number of full-time farms has decreased by eight percent from 122 farms in 1992 to 112 farms in 1997. Since 1978, the average farm size has also continued to decrease from an average of 89 acres per farm to 61 acres. These changes appear to have come from the sale and redistribution of land that had been large and intermediate sized farms (U.S. Department of Agriculture, 1997).

Table 4: Number of Farms by Size Class in Island County

Farms by Size	1969	1974	1978	1982	1992	1997
1-9	19	15	31	48	40	51
10-49	119	112	110	151	138	126
50-179	76	72	70	80	76	66
180-499	22	31	28	24	18	16
Greater than 500	4	2	6	5	6	2
Total:	240	232	244	308	278	261

Source: Census of Agriculture

Table 5: Market Value of Agriculture Products Sold in Island County

Market Value (\$)	1978	1982	1992	1997
Less than 5,000	155	216	175	164
5,000-9,999	32	33	44	31
10,000-19,999	18	17	27	28
20,000-39,999	12	10	15	14
40,000-99,999	13	11	6	10
100,000-249,999	8	8	3	8
250,000 or more	6	13	8	6

Source: Census of Agriculture

According to Don Meehan, a member of the Washington State University Cooperative Extension faculty located in Coupeville, the changes in land use over time have typically seen more farms, but on smaller scales. The general trend is towards loss of farmed lands. This is true of the Reserve and is a growing trend because of strong development pressure. Due to the increased difficulty in making a profit on agricultural land, the number of people willing to make the sacrifice of maintaining a working farm is dwindling.

Aquaculture

There are three existing aquaculture districts found within the surrounding waters of the Reserve. District 1E is located in Penn Cove on the south shore west of Coupeville and is permitted to Penn Cove Shellfish, LLC. District 2C has no current regulated activities, however geoduck harvesting has been allowed under previously issued shoreline permits. According to the DNR, District 3E, which is located offshore from Fort Ebey State Park, was harvested two to three years ago for geoducks by state and tribal officials. Although District 3E is a significant bed, the geoducks are too small and not of high commercial value. It is possible the tribes will harvest this bed again.

Penn Cove Shellfish, LLC. was established in 1975 and is the oldest and largest mussel farming in the country. It was the second mussel culturing operation in the United States. They now produce two varieties of mussels and clams and numerous types of oysters; but only the mussels are grown in Penn Cove. The mussels are cultured in 38 floating rafts. Three new rafts will be added in the near future. Between three-quarters to one million pounds of mussels are produced a year (Jefferds 2000). The shellfish are sold to restaurants and wholesalers locally and around the world.

Island County is responsible for regulating aquaculture districts and permits. For any new aquacultural district or expansion of existing aquaculture districts, an environmental review, public input, and aesthetic impacts must be considered. Conditional approvals of substantial development permits are made upon clear finding that the physical, aesthetic, environmental, and recreational qualities of the shoreline are preserved for public enjoyment. Any new aquaculture projects are required to locate in existing districts that have remaining capacity. The countywide density of net-pen and raft culture operations is regulated to minimize cumulative environmental and visual impacts. (Island County, *Island County Comprehensive Plan* 1999: p. 3-29).

Timber

The first major lumber company on the island, Grennan and Cranney, opened in 1856 and was

followed a few years later by a small shipyard in Oak Harbor. By the 1860s, logging was a major part of the local economy. Originally slow operations that utilized axes and bull teams, loggers could only cut about an acre a month (White 1980), but they increased their output when they adopted the crosscut saw and used horses and larger crews. By 1900, a cheaper and more efficient system was introduced with the donkey engine, a steam engine outfitted with skids and a winch.

The biggest trees in the county grew on southern Whidbey and on Camano Island, but virtually all the mature trees were immense. For example, the hemlock's average diameter at maturity on good sites was 3 to 4 feet, and its height 125 to 200 feet. The diameter of the cedar was 4 to 6 feet and its height was approximately 200 feet. Spruces had a diameter of 6 to 7 feet and stood 230 to 245 feet. The fir was the largest of all, with a diameter of 5 to 7 feet and stood 245 to 330 feet (White 1980). By the end of the nineteenth century, most of the old growth Douglas fir had been cut, so loggers turned to cedar, hemlock, and second growth fir; however, by then the larger sawmill operations had transferred to Camano Island (National Park Service 1993). When Puget Mill logged off their last large tract of land—1,480 acres on north Camano Island in the early 1920's—large-scale logging in the county ended (Richard White). Afterward, only small logging contractors remained.

While commercial forestry activities were of primary significance to the area in historic times, their economic importance is currently minimal relative to other sectors of the economy. Projecting present trends into the future, the relative commercial significance of central Whidbey forests as sources of logs and pulpwood will diminish. The majority of current forestry is conversion of forest to real estate development.

There is less land owned by DNR now than there was 20 years ago. According to DNR officials, this trend will continue, due to the urban interface and high visibility. Logging on Whidbey Island is difficult. The state agency recognizes the unpopularity of logging adjacent to residential areas. The trend for DNR is to transfer state owned lands to local governments and to lease lands to the county,

state parks, and school districts. Rhododendron Park was recently transferred to the county. The last logging practice performed on state owned lands was a thinning project in 1997 in south Whidbey Island.

Contemporary Tribal Communities

At present, there are no tribal reservations in Ebey's Landing National Historical Reserve or elsewhere on Whidbey Island. Nevertheless, present-day descendants of Whidbey Island's native residents at the time of the treaties of Point Elliott and Point No Point in 1855 are now members of several contemporary tribes with reservations elsewhere in the Puget Sound Basin. In addition, some descendants may belong to tribes that became federally recognized in the twentieth-century; and, at least one group that began to seek formal federal recognition in 1988. Finally, it is possible that descendants of Canadian First Nations who were referred to in the 1850s as "Tribes from the north" may have some combination of direct and indirect associations with the history and resources of Whidbey Island. The Reserve will initiate a study that will more fully document the contemporary tribes and tribal communities with traditional associations to it during the fall of 2004. The summary here is based on a combination of preliminary research done to identify all native communities who are likely to be traditionally associated with Ebey's Landing and interaction with certain tribal representatives and tribes who have expressed interests in the Reserve during the time since its establishment.



Local sculpture by Roger Purdue of Coupeville, Whidbey Island, ca. 2000. NPS Photo.

Point Elliott Treaty Reservations

Beginning with one of the four reservations established through the Point Elliott Treaty, the reservation that is closest to the Reserve is the Swinomish Indian Tribal Community. Located only twenty air miles or so northeast of Penn Cove, the Swinomish reservation consists of 7,169 acres on Fidalgo Island. The reservation is bordered on the east by the Swinomish Channel. It extends north to State Route 20 and Padilla Bay. When the reservation developed in the second half of the nineteenth-century, members of other Southern Coast Salish tribes (Kikiallus, Suquamish and Skagits) and at least one Central Coast Salish tribe (the Northern Straits speaking Samish) joined the Swinomish as reservation residents (Sampson 1972: p. 31-50; Suttles 1990; Suttles and Lane 1990; Ruby and Brown 1986: p. 230-233). Members of the Swinomish community are actively involved with the Reserve and have recently expressed interest in San Juan Island National Historical Park.

The Tulalip Reservation, located a few miles north of Mukilteo on the mainland and north of Everett, was originally identified in the Treaty of Point Elliott as a "township of land" for both the site of "an agricultural and industrial school" and a place to settle "all the Indians living west of the Cascades Mountains." Initially known as the Snohomish Reservation, the early residents began to use Tulalip (a Luhshootseed language name for the bay around which the reservation was located) as a preferred name (Suttles 1990: p. 488). Although the goal of settling all the Indians west of the Cascades was not realized at Tulalip, members of an impressive number of tribes in addition to the Snohomish became residents of the

reservation over time. Among them were several Central Coast Salish tribes such as Stillaguamish, Snoqualmie, Skykomish, Skagit and Samish. An unknown number of Samishes lived on the Swinomish, Tulalip and Lummi reservations at different times. A separate Samish Tribe that has an office in Anacortes became federally recognized in 1996. Intermarriages took place and relationships persist among families despite which reservation they may live on or which tribal community they may belong.

The Lummi Indian Reservation is the third of four reservations established by the Point Elliott Treaty. It is located north of Bellingham and is primarily occupied by Lummis, Samishes and Nooksacks whose ancestors used the San Juan Islands and southern Gulf Islands in pre-reservation times. Representatives of the Lummi Tribe maintain interests in San Juan Island National Historical Park and regard San Juan Island to be part of their traditional territory in the vicinity of the international border. There may be members of the Lummi Tribe with relationships to individuals and families at both the Swinomish and Tulalip reservations. It is possible that they may maintain traditional associations through those relationships to areas traditionally occupied by Samishes on northern Whidbey Island.

The Port Madison/Suquamish Indian Reservation on the Kitsap Peninsula, to the northwest of Seattle, is approximately the same distance away from Ebey's Landing National Historical Reserve as is the Lummi Reservation. It is the last of the four reservations designated by the Point Elliott Treaty. One reference indicates that in pre-reservation times their traditional use area extended as far north as Whidbey Island (Ruby and Brown 1986: p. 226). It is not known if the nature of their use included village or other residential sites anywhere on Whidbey Island, or if it was limited to activities such as fishing.

Point No Point Treaty Reservation and the Clallam

The only reservation designated by the Point No Point Treaty is adjacent to Hood Canal on the Olympic Peninsula. Known as the Skokomish Res-

ervation, it was originally intended as a residence for the Twana speaking Skokomish, the Clallam (known also as Klallam and S'Klallam) and two other groups in an area where Southern and Central Coast Salish speaking groups occupied adjacent areas. The Skokomish are not known to have associations with Whidbey Island or Ebey's Landing National Historical Reserve, but the Clallam have clear associations. Instead of taking up residence at Snohomish, the Clallam continued to live on the Olympic Peninsula, along the Strait of Juan de Fuca and elsewhere in Puget Sound where they lived and fished prior to 1855. They ultimately established three reservations within their traditional territory and the area covered by the Point No Point Treaty.

One group of Clallam families who maintained residence near Dungeness on the Olympic Peninsula purchased acreage east of Port Angeles, Washington in 1874 and established Jamestown. This group received federal recognition in 1980 as the Jamestown S'Klallam Tribe. A second group maintained residence near Port Angeles and the Elwha River. Acreage was acquired on their behalf in the mid-1930s by the federal government and it formally became the federally recognized Lower Elwha Reservation in 1968. A third group of families established residence near a sawmill at Port Gamble in the late 1800s and, like their relatives at Lower Elwha, they acquired land in the 1930s under the auspices of the Indian Reorganization Act of 1934. This became the Port Gamble Reservation (Ruby and Brown 1986, Suttles 1990, Tiller 1996).

While the diaries of the Ebey family clearly document that the ancestors of the present-day populations of Lower Elwha, Jamestown and Port Gamble were visitors and residents of Whidbey Island in the 1850s, the nature of contemporary Clallam interests in the Reserve is unknown (Farrar 1917). It is possible that future consultation with the three Clallam tribes and additional research may illuminate traditional associations for both these US tribes and their linguistic and cultural relatives who now live as members of First Nations in Canada.

Tribes That Have Recently Received Federal Recognition

In addition to the Samish who received federal recognition in 1996, there are two other federally recognized tribes who may have direct or indirect traditional associations with various parts of Whidbey Island. These tribes are the Sauk-Suiattle and the Upper Skagit. Their histories have been closely intertwined before and since the time of the Point Elliott Treaty. The Sauk-Suiattle lived along tributaries of the Skagit River in the foothills of the Cascade Mountains. They are said to have traveled along the Skagit River to Skagit Bay in Puget Sound. They received recognition in 1975 and acquired reservation land in 1982. The Upper Skagit acquired reservation land and federal recognition in the mid 1970s (Ruby and Brown 1986, Tiller 1996). Both the Sauk-Suiattle and Upper Skagit are actively engaged with the National Park Service at North Cascades National Park and the extent of their interests in the Reserve have not been determined.

Tribe seeking federal recognition

There is one local group of individuals who refer to themselves as the Snoqualmoo Tribe of Whidbey Island. They petitioned the Branch of Acknowledgment of the Bureau of Indian Affairs for federal recognition in June 1988 (Marino 1990: p. 179). The Snoqualmoo have a mailing address in Coupeville and sometimes hold memorial services at the site of the Snakelin Monument that is located on private land within the Reserve.

The Snoqualmoo have adopted the spelling of their name as it appeared in the Point Elliott

Treaty of 1855. They are a separate and distinct petitioner from the Snoqualmie Tribe that received federal recognition on August 29, 1997. The Snoqualmie have offices in Carnation and claim the Snoqualmie River and the Snoqualmie Falls areas as the heart of their traditional area.

Population Trends

In 1942, the development and subsequent growth of the Whidbey Island Naval Air Station at Oak Harbor effected the population of the area. Between 1940 and 1960, the county's population increased by 222 percent compared to the state's 64.3 percent.

Island County's growth has continued to surpass the state average. Much of the population increase has been due to in-migration of residents. Since 1990 there has been a growth of 11,363 persons in Island County; of that number 5,249 were the result of natural population increase (9,896 births and 4,647 deaths) while 6,114 resulted from net in-migration (Washington State Office of Financial Management website 2001). During the 1980s, two-thirds of Whidbey Island's growth came from in-migration. This in-migration slowed to just over 50 percent during the 1990s (Island County, Island County Comprehensive Plan 1999: p. 4-12).

In 1995, the high series forecasts from the Washington Office of Financial Management (OFM) projected the population of Island County to increase to 78,651 by the year 2000 (the actual: 71,558). The same forecast has projected that growth will continue to 98,667 in 2010 and 118,779 in 2020 (refer to table 6). (Washington State Office of Financial Management 2001website).

Table 6: Population Trends 1970-2020

	1970	1980	1990	2000	2010*	2020*
State	3,413,300	4,132,400 (21.1%)	4,866,663 (17.8%)	5,894,121 (21.1%)	7,082,719	8,365,569
Island	27,011	44,048 (63%)	60,195 (37.0%)	71,558 (18.9%)	98,667	118,779
Central	2,993	6,144(106%)	8,205 (34%)	8,404 (2.4%)		
Oak Harbor	9,167	12,271	17,176	19,795		
Coupeville	703	1,006	1,337	1,723		
Island County	131.1	213.8	292.2	343.0		
Density Per Square Mile						

Source: Office of Financial Management 2000 and Port of Coupeville Park and Recreation Plan (page 4)

* Forecasted

The central Whidbey share of Island County's population has held relatively steady over the years, at 13 to 14 percent, and is expected to decrease only slightly through the year 2020. Although a significant number of unimproved lands and planned residential developments exist, continued water problems in this region are expected to stabilize growth rates. Central Whidbey is projected to show a population increase of about 3,800 people, or 9 percent of the county's growth by 2020.

Demographics

Age Distribution

The trend toward dramatic increases in retirement age populations was experienced in nearly all areas of the county. Since 1980, the older segments have continued to grow at a faster rate than the remainder of the population.

During the 1980s, population groups age 65 and over increased at twice the overall growth rate. Similarly, in Coupeville, the 65 and over age group increased by 91.5 percent, more than twice the overall growth rate. In Coupeville, the population of those over the age of 85 grew by 293.8 percent during the 1980s. In contrast, the 18-24 year old age group increased by only five percent countywide and, in Coupeville, declined by almost ten percent.

Groups older than 85 experienced the highest

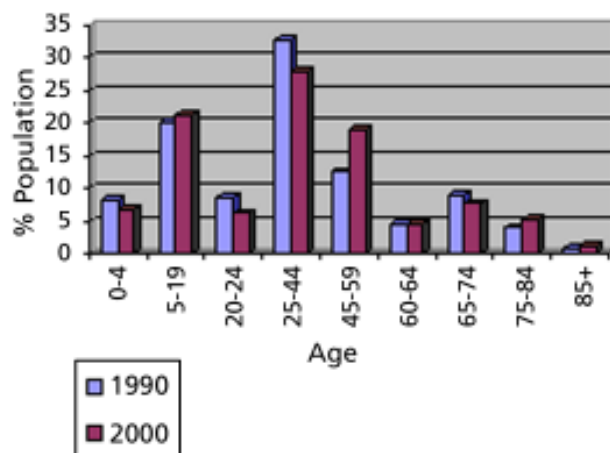
growth rates in the county between 1990 and 2000 with an increase of 47.5 percent. With 14.2 percent of the population in 2000 over 65, the percentage of elderly surpassed the state average of 11.2 percent. (Town of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 9)

While the largest changes have generally occurred in older populations. The largest demographic remains the middle-aged population, with the median age in 2000 for the county being 37 years old. In 1990, the median age in Coupeville was 41.5.

Racial and Ethnic Distribution

In Island County, the large majority of the population remains Caucasian, non-Hispanic. Minority populations are small, but continue to grow. In the 1980s, African Americans and Asian/Pacific Islanders grew by more than 100 percent, African Americans composed 2.4 percent, and Asian/Pacific Islanders composed 4.3 percent of the population. People of Hispanic origin increased by nearly 60 percent and comprised the second largest ethnic group, with four percent of the population in 1990. In 2000, the racial and ethnic distribution has remained relatively the same (Office of Financial Management 1999; Island County *Island County Comprehensive Plan* 1999: p. 4-12 to 4-13; Town of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 9).

Table/ Chart 7: Island County Age Distribution for 1990 and 2000



Table/ Chart 8: The Percent Change by Age of Island County between 1990 and 2000

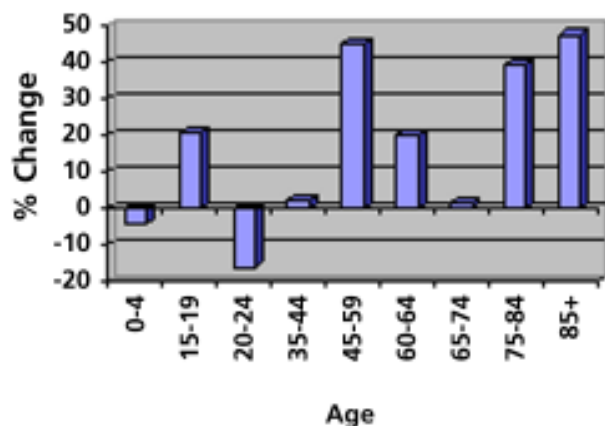


Table 9: Population by Race

	Population (Number of People)			Percentage of Total Population		
	Island	Central	Coupeville	Island	Central	Coupeville
Total Population	71,538	8,404	1,723			
Total	69,098	8,148	1,699	100%	100%	100%
Caucasian	62,374	7,772	1,547	87.20%	92.50%	89.80%
African American	1,691	85	27	2.40%	1.00%	1.60%
Native American	693	57	9	1.00%	0.80%	0.50%
Asian	3,001	127	37	4.20%	1.50%	2.10%
Pacific Islander	374	7	0	0.50%	0.08%	0%
Hispanic	2,843	247	92	4.00%	3.00%	5.30%
Other	1,025	100	49	1.40%	1.20%	2.80%
Two or more	2,460	256	54	3.40%	3.00%	3.10%

Source: Office of Financial Management 2000

Economically Disadvantaged Demographics

Household Income

Island County typically has a lower median household income than the state average. In 1989, Island County had an estimated 6.6 percent of its population below the poverty level, an estimated 4,719 persons, of that 1,995 were under the age of 18.

In 1990, the median household income in Coupeville was \$20,758, significantly less than the county median of \$29,161. Household income estimates are an average of both family and non-family households. In 1990, median family income in Coupeville was \$32,995, while median non-family income was \$9,626. Income sources reported in the census reflect the town's large retired population; 358 households had wage and salary income, 232 had social security income and 153 had retirement income (Town of Coupeville, *Town of Coupeville Comprehensive Plan* 1999: p. 10-11). In 1990, there were 144 Coupeville residents below poverty level; included in these numbers were 25 families, 44 were children under the age of 18, eleven were under the age of 5, and 29 were over the age of 65.

In 1990, of the 996 Coupeville residents who were 25 years of age and older, 18.2 percent of them did not have a high school diploma, 4.4 percent had less than a ninth grade education, and 21.9 percent had a bachelors degree or higher.

Civilian Unemployment

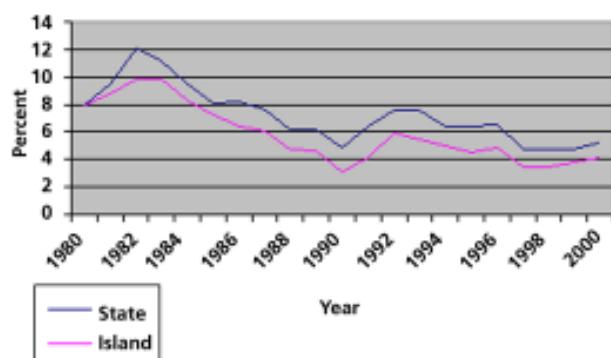
The civilian labor force consists of those who are working and those without a job and are looking for work, but does not include military personnel. The unemployed does not include retirees or persons in institutions (including students). The Armed Forces employs 24.1 percent of Island County residents. Due to NAS Whidbey, it is important to look at civilian unemployment, to more accurately represent the county.

The unemployment climate of the state and Island County has improved dramatically since the early 1980s. A string of national recessions (1970, 1973-75, 1980, and 1981-82) played havoc with unemployment. Over ten percent of the county's work force were idle in 1975 and 1977 and close to ten percent were jobless in 1982 and 1983. The recovery following the 1981-82 recession was very strong, even unprecedented in its duration, and

Table 10: Median Household Income: 1989 to 1999 and Forecast for 2000

	Census Estimate										Prelim. Estimate	Forecast
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Washington	31,183	33,461	34,374	35,880	36,519	37,674	38,707	40,808	43,460	46,080	48,289	50,152
Island	29,161	30,342	30,948	31,220	32,067	32,734	33,119	34,810	36,329	37,474	37,691	39,010

Table/ Chart 11: Unemployment Rates, Island County and Washington State, 1980-2000



unemployment declined every year until 1991. The 1990-91 recession was mild compared to the previous ones and while unemployment did increase in 1991 and 1992, it did not reach excessive heights. Each of the last two years brought declines. The 2000 rate in Island County was 4.1 percent while the statewide rate was 5.2 percent (Refer to table/chart 11).

Ethnically, the labor force composition of Island County is slightly less diverse than its general population. According to the 1990 Census, 92.1 percent of the county's labor force was white. The next largest racial group, Asian/Pacific Islanders, had a 4.3 percent share. The three remaining racial divisions, African American, Native American, and "Other Race", each accounted for less than 2.0 percent of the total. People of Hispanic origin, who can be of any race, made up 2.2 percent of the labor force.

While the general population of Island County is evenly split between males and females, the labor force is not. Sixty percent of the work force is male while 40 percent is female. Statewide, males also have a slightly larger portion of the work force at 55 percent.

Comparisons of the 1980 and 1990 censuses, however, show that the county is part of a nationwide trend of increased female participation in the work force. Even though males still outnumber females, there was significant change during the past decade. In Island County, the number of males that worked increased by 40 percent while the number of females increased by 61 percent. The type of employment was also changing. Women took full-time jobs at a higher rate than did men. The number of women working full-time in Island County increased by 93 percent from 1980 to 1990 while the number of men working full-time increased by 46 percent.

In Coupeville, the size of the labor force in 1990 was 555 people, including 64 in armed forces. Females were more than twice as likely to be unemployed as males. The civilian unemployment rates show a greater division in racial backgrounds with whites making up 90 percent of the workforce (26,940 of 29,794).

Table 12: Island County Unemployment by Race and Gender for 1990

Race/Sex	Total Workers	Unemployed	Total/Sex	Employed	Unemployed	Civilian Unemployment
Caucasian/Male	26,940	1092 (4.0%)	16,637	16,149	488 (2.9%)	4.7%
Caucasian/Female			10,303	9,699	604 (5.9%)	6.5%
African American/Male	926	29 (3.1%)	695	670	25 (3.6%)	14.2%
African American/Female			231	207	24 (10.4%)	13.9%
American Indian/Male	392	27 (9.4%)	182	160	22 (12.1%)	23.1%
American Indian/Female			210	195	15 (7.1%)	13.8%
Asian-Pacific Islander/Male	1,182	125 (10.6%)	522	496	26 (5.0%)	8.5%
Asian-Pacific Islander/Female			660	561	99 (15.0%)	18.4%
Other/Male	354	33 (9.3%)	312	304	8 (2.6%)	9.4%
Other/Female			75	50	25 (50.0%)	50.0%

Table 13: Estimated Additional Households by Income Distribution for Central Whidbey

Planning Area		1996	2000	2010	2020	24-year	Additional Households
Central Whidbey, Unincorporated	Census Est. of Income Dist.	8,600	9,300	10,200	12,000	3,400	
Less than 50%	21%	1,848	1,999	2,192	2,579	731	292
50-80%	19%	1,625	1,758	1,928	2,268	643	257
80-100%	10%	862	932	1,022	1,202	341	136
100-120%	10%	834	902	989	1,164	330	132
More than 120%	40%	3,431	3,710	4,069	4,787	1,356	543
							1,360

Source: Island County Comprehensive Plan

Housing

The numbers of low and moderate-income households in unincorporated Island County are projected to grow between the present and the year 2020. The unincorporated area of the county is projected to grow by 12,200 households through the year 2020. Of this, approximately 4,800 additional households for those below the 80 percent median income level are needed and 7,400 additional households are projected to be for those greater than 80 percent income sector of the population.

Island County recognizes that it is unlikely that those under 50 percent of the median income level will find housing they can afford unless incentives are offered for their development. People in the lower middle-income group might be able to afford housing at or below median price. (Island County *Island County Comprehensive Plan* 1999: p.4-16)

The numbers of low and moderate income (80 percent or less of the median) households in unincorporated central Whidbey are also projected to grow between the present and the year 2020. The unincorporated area of central Whidbey is pro-

jected to grow by 2,700 households through the year 2020. The unincorporated portion of central Whidbey is projected to need 1090 additional households for the sector of the population below the 80 percent median income level through 2020 (Island County *Island County Comprehensive Plan* 1999: p.4-13 to 4-20).

In 1990, forty percent of Coupeville residents rented and 60 percent owned homes. The median apartment rent was \$450 and the median house value was \$138,000.

Public Assistance

Historically, the per capita income in Island County has been lower than the average for the nation and the state. For this reason, one might expect the proportion of public assistance recipients in the county to be relatively high; however, this has not been the case. In 1998, the Washington State Department of Social and Health Services (DSHS) identified 14.3 percent (10,355) of Island County residents receiving a public assistance service compared to 22 percent of Washington State residents utilizing a DSHS service. Island County was ranked 37th out of the 39 Washington

Table 14: Summary of the densities currently allowed under Island County's development regulations

Zone	Minimum Lot Size	% of County	% of Reserve
CA (Commercial Agriculture)	20 acres	4%	12%
R (Rural)	5 acres	30%	47%
RA (Rural Agriculture)	10 acres	18%	13%
RF (Rural Forest)	10 acres		
PK (Park)	N/A		7%
RR (Rural Residential)	14,500 SF to 2.5 acres	8%	5%

(For a complete analysis of each zone and to the extent that it supports the goals of the Reserve, please see Volume II, *Analysis of Island County Zoning and Development Regulations in Ebey's Landing National Historical Reserve* by David Nemens)

State counties for use rate of DSHS services. Island County residents accounted for 0.79 percent (10,355) of total DSHS clients and 0.63 percent (\$28,893,928) of the DSHS direct service dollars.

DSHS provide services to assist in problems caused by some combination of poverty, disabilities, family abuse or neglect, domestic violence, recent refugee status, substance abuse, and/or juvenile criminal behavior. Forty percent of children (birth – 17), 15 percent of “working age” adults (18–64), and 12 percent of seniors (65 or older) used at least one DSHS service during fiscal year 1999. More than half of DSHS’s 1.26 million clients used more than one type of service during a year.

Ebey’s Landing National Historical Reserve Agreements and Mandates

The following agreements are existing legal agreements and legislative mandates that influence both planning and operations at the Reserve:

- Trust Board of Ebey’s Landing National Historical Reserve Rules of Procedure, October 25, 1988. (Specific rules relating to appointment, removal, and composition of members, terms, roles of officers, meeting and other procedures.)
- Interlocal Agreement for the Administration of Ebey’s Landing National Historical Reserve, recorded July 23, 1988. (An agreement to establish a joint interagency administrative board for management of the Reserve. Operation procedures established for Trust Board.)
- Cooperative Agreement between National Park Service and Ebey’s Landing National Historical Reserve Trust Board, July 25, 1988. (Agreement for NPS to partially fund, not to exceed 50 percent, the annual operational costs of the Reserve, subject to availability of appropriations.)
- Cooperative Agreement between Island County Parks and Recreation Department, National Park Service, and Trust Board of Ebey’s Landing National Historical Reserve, July 29, 1990. (Agreement among parties for a project to undertake a project to plan and produce interpretive exhibits installed at the county sites of Monroe’s Landing and Crockett Blockhouse, Coupeville, Washington.)
- Cooperative Agreement between State of Washington, Department of Transportation, Marine Division, National Park Service, and Trust Board of Ebey’s Landing National Historical Reserve, June 24, 1990. (Agreement among parties to undertake a project to plan and produce exhibits which will be duplicated and installed at two DOT ferry terminals located at Port Townsend and Keystone, Washington.)
- Cooperative Agreement between Washington State Parks and Recreation Commission, National Park Service, and Trust Board of Ebey’s Landing National Historical Reserve, October 30, 1992. (Agreement among parties to undertake a project to plan and produce exhibits which will be installed at three state park sites known as Ebey’s Landing, Fort Ebey and Fort Casey, Whidbey Island, Washington.)
- Cooperative Agreement between National Park Service and Island County Historical Society, August 11, 1989. (Agreement to provide for the incorporation of interpretive facilities as part of the museum construction project by the cooperator, landscaping for enhancement of primary viewsheds, and the historic area and compatible with the restrictions for the site, and the payment of funds to accomplish these purposes.)

Land Use Documents, Related Plans, and Programs

Analysis of Island County Zoning and Development Regulations in the Ebey’s Landing National Historical Reserve

This report was prepared by David Nemens Associates, Inc., Seattle, Washington in May 2001 for the National Park Service. Its purpose was to identify the relevant Island County zoning designations and development regulations applicable to properties within the Reserve. In addition, this report was to assess to which extent these designations and regulations are consistent with the goals of the Reserve. Documents analyzed included the following:

- 1998 Island County Comprehensive Plan
- Applicable parts of the Island County Code
- Ordinance adopted by the Island County Board of County Commissioners

- Decisions of the Western Washington Growth Management Hearings Board

Information was also used from the 1980 *Ebey's Landing National Historical Reserve Comprehensive Plan*, the 2000 Washington State Yearbook (Public Sector Information, Inc. Eugene, Oregon), and interviews with Island County Planning and Public Works Directors, and the Ebey's Landing National Historical Reserve Trust Board. The entire report is included as a supplemental document in Volume II of this draft GMP/EIS.

This report provides background on Island County's Comprehensive Plan and Zoning Code (see following subsection) and the Land Use and Zoning Designations. Six zones are analyzed that apply to the Reserve: Commercial Agriculture, Rural, Rural Agriculture, Rural Forest, Park, and Rural Residential. Each zone is summarized as to minimum parcel size, base density, and permitted and conditional uses. The definition, goals and policies of the zone from the Comprehensive Plan are cited in addition to the purpose, designation criteria, permitted and conditional uses under the Zoning Code. Most importantly, an analysis is provided as to the extent the zoning does or does not provide support to the overall goals for the Reserve. (See Figure 7, Island County Zoning.)

The report found that Island County's zoning and development regulations vary in the degree to which they are consistent with, and supportive of, the purpose and objectives of the Reserve. The Rural zoning district, the largest zoning district in the Reserve, allows the subdivision of land into lots as small as five acres. Such a development pattern, were it to occur in an uncontrolled manner, would be inconsistent with the existing visual character of the Reserve. The county has adopted development standards (such as lot coverage limits and building setbacks) for the Rural zoning district; yet the report states that it is doubtful that such standards would mitigate the impact that development at a five-acre density would have on the Reserve's visual resources. Though the county regulations encourage clustering of lots and houses through the use of the Planned Residential Development (PRD) process in the Rural zoning district, the regulations do not require use of the PRD process.

Another significant potential inconsistency between Island County's zoning regulations and the Reserve's objectives is in the area of allowed uses. Many of the permitted and conditional uses allowed in the zoning districts within the Reserve could be incompatible with the Reserve's objectives. Even the County's Commercial Agriculture (CA) district, arguably the most supportive of the Reserve's goal of preserving the farming legacy of the area, allows minor utilities as a permitted use and communications towers as a conditional use.

The report suggests that one way to address the issues of development density, development pattern, and allowed uses would be through the adoption by the county of an overlay zone that encompassed some or all of the Reserve. Island County could adopt special zoning restrictions and requirements applicable only in this overlay zone; for example, all land subdivision within this overlay district could be required to go through a PRD process with special, more restrictive PRD standards. Similarly, allowed uses could be restricted within this overlay zone. The advantage of this approach is that it would not affect the development standards, densities, or uses allowed in other parts of the county.

Island County Comprehensive Plan and Zoning Code

The following background on the county's comprehensive plan and zoning code were provided by David Nemens and Associates, Inc., Seattle, Washington.

Island County's first comprehensive plan, the *General Plan*, was adopted in 1964, followed by the adoption of an Interim Zoning Ordinance in 1966. The county completed updating the *General Plan's* cultural and natural systems inventories in 1974 (*Phase I: Existing Conditions*), and soon thereafter adopted amended planning policies (*Phase II: Planning Policies*). However, the county never amended its zoning ordinance or development regulations to be consistent with the more recently adopted policies. In 1984, the county adopted a new Planning and Zoning Strategy along with implementing performance-based zoning and development regulations.

Table 15: Land use inventory in Coupeville

LAND USE	Vacant	Developed	Sensitive	TOTAL
Single Family	191.4	141.1	16.5	349.0
Multi-Family	8.3	36.7	0.3	45.3
Commercial	13.7	31.9	0.0	45.6
Public, Quasi-Public	8.0	45.6	0.0	53.6
Residential Reserve	193.1	22.9	11.9	227.9
Totals	414.5	278.2	28.7	721.4

Work on the current *Island County Comprehensive Plan* began shortly after passage of the Washington State Growth Management Act in 1990. The county prepared several drafts of the plan for public review between 1994 and 1998. In September 1998, the County Planning Commission presented its recommended comprehensive plan to the Board of County Commissioners (BOCC). The BOCC held several additional public hearings, adopting the plan on September 28, 1998.

Plan opponents, including the Whidbey Environmental Action Network (WEAN) and the Island County Citizens Growth Management Coalition, filed several appeals with the Western Washington Growth Management Hearings Board (“the Hearings Board”), challenging the timeliness and adequacy of the plan and its implementing development regulations. One of the issues included in the challenges was the consistency with Growth Management Act requirements of the county’s proposed five-acre density (one dwelling unit per five acres) in the Rural Zone. After hearing these challenges, on October 12, 2000 the Hearings Board issued a Compliance Hearing Order validating the county’s position on most of the remaining issues, including the five-acre density in the Rural Zone.

Land Use and Zoning Designations

This report refers to two separate but closely related sets of Island County land use designations: “Future Land Use” designations, as shown on the “Future Land Use Map” of the *Island County Comprehensive Plan*; and “Zoning” as shown on the Island County zoning map. In Island County, the names of zones are identical to the names of corresponding land use designations. The county’s own maps sometimes use these terms interchangeably. However, the comprehensive plan and the

zoning code are separate, distinct documents. The comprehensive plan establishes the more general policy basis for the county’s land use regulations; the zoning code contains these detailed regulations themselves. Because of the one-to-one correspondence between land use designations and zoning districts in Island County, these two sets of designations are discussed together in this report.

The “Future Land Use Plan Central Whidbey” (*Island County Comprehensive Plan Element 1: Policy Plan and Land Use Element*, Map L) illustrates the future land use/zoning designations for central Whidbey Island. According to the plan, these designations “describe the future land use plan for Island County ... based on the major issues as identified in Chapter I, the existing land use analysis in Chapter II, and the goals and policies that will be used to guide and accommodate future growth as presented in Chapter IV.” (Section III page I-III.) The “Future Land Use Plan Central Whidbey” labels its designations as “proposed zoning.”

Ebey’s Landing National Historical Reserve contains a mix of land use/zoning designations. At Ebey’s Prairie, the predominant designation/zone is Commercial Agriculture. To the west of the Prairie (in and around Sunnyside Cemetery), there is a small area designated/zoned Rural. West of this are substantial areas designated/zoned Rural Agriculture and Rural Forest. There is another area designated/zoned Commercial Agriculture in the Crockett Prairie area, and several scattered areas designated/zoned Rural Forest north and east of Crockett Prairie. Aside from these areas, and the areas designated Park (Ebey’s Landing, Fort Ebey, and Fort Casey State Parks) or Municipality (all areas within Coupeville municipal limits), and small areas of Rural Residential along the shores of Penn Cove, most of the land within the Reserve

is designated/zoned Rural or Rural Agriculture. The following is a summary of the densities currently allowed under Island County's development regulations for those zones present in the Reserve.

Town of Coupeville Documents

Town of Coupeville Comprehensive Plan

The plan was prepared in compliance with the requirements of the 1990 Washington Growth Management Act and the 1992 Island County Countywide Planning Policies. The plan is intended to guide the future growth, character and development of Coupeville for the next ten to twenty years and was last updated in 1999. The comprehensive plan is currently going through a ten-year update, which began in 2003. Changes to the comprehensive plan include updated demographic profiles, economic information, and land use information. The town's designated Urban Growth Area coincides with the current town limits. As of 2000, it had a population of 1,723 people and an area a little more than one square mile.

Other than the required planning elements required by the GMA, the town has a strong sense of preserving its historic rural and "small" town character. It recognizes its beautiful natural setting on Penn Cove and small town atmosphere and develops planning goals that emphasize these points. The plan also recognizes the *1980 Comprehensive Plan of Ebey's Landing National Historical Reserve* in its Land Use element. One of the goals of the comprehensive plan recognizes the larger community of which the town of Coupeville is a member. Coordination with Island County and Ebey's Landing National Historical Reserve is encouraged.

Town of Coupeville Zoning

Chapter 16.08 of the Coupeville Development Regulations and its corresponding Official Zoning Map establish the zoning districts for the town of Coupeville. The zoning code is intended to protect the public's health, safety, and welfare and to encourage the most appropriate use of the land. In 1973, when the Central Whidbey Island National Register Historic District was designated, there were 51 historic structures located within the town limits and an additional 40 properties in the

county. After the historic district was created, the town established a historic overlay zone for design review.

The town of Coupeville has a total area of 721 acres and as the seat of Island County is significantly impacted by public uses including government offices. The town is primarily zoned single family residential, with 93 percent of the remaining vacant lots designated as a reserve for residential development and the preservation of the rural character of the town. The new land use added in the 2003 update to the comprehensive plan is the "Cottage Housing District," which is designated to have a primarily residential character, allowing higher densities with up to eight dwelling units per acre. Table 15 summarizes the land use inventory in Coupeville. (See Figure 10, Town of Coupeville Zoning.)

Related Washington State Park Plans

Fort Ebey State Park and Fort Casey State Park

Washington State Parks is currently in the process of developing a Comprehensive Area Management Plan (CAMP) for the state parks located within Ebey's Landing National Historical Reserve. This planning process determines what type of land classification would best serve the vision of each park. These range between three management options favoring natural resource protection, cultural resource protection, and recreation related development. Additionally, resource values are developed to support the parks' intent. These may include statements, which support the cooperative nature of the Reserve.

After development and review of the plans by both Washington State Parks planners and the public, the final land classification process would be reviewed by the Washington State Parks and Recreation Commission. After approval, the Northwest Regional Office will develop the management plan for the region. This "umbrella document" will direct the development of park specific plans.

It is the hope of the National Park Service and Ebey's Landing National Historical Reserve Trust Board that the management plans of Fort Casey

and Fort Ebey state parks are consistent and supportive of the mission statement of the Trust Board, the vision statement for the Reserve, and the current general management planning process the NPS is undertaking for the reserve.

Related U.S. Navy Plans

The U.S. Navy plans to continue to use the Outlying Landing Field in Coupeville to practice simulated aircraft carrier landings as long as the EA-6B is stationed at the Naval Air Station (NAS) Whidbey Island, and may continue its use beyond that if the Navy decides to base the EA-18G at NAS Whidbey Island (Meelas 2004).

Related National Park Service Plans and Studies

An Analysis of Land Use Change and Cultural Landscape Integrity for Ebey's Landing National Historical Reserve

This document was prepared by Nancy Rottle, Assistant Professor, University of Washington Department of Landscape Architecture, and Jones and Jones Architects and Landscape Architects in April 2003 for the National Park Service. The document includes and explains the methodology, provides an analysis of land use changes from 1983-2000, and suggests recommendations. The entire report and accompanying graphics are included as a supplemental document in Volume II of this draft GMP/EIS.

The goals of the project are the following:

- To determine the patterns of landscape change that have taken place since the initial cultural landscape inventory in 1983, what contemporary pressures these patterns suggest, and what forces might compromise the future integrity of the Reserve's landscape.
- To determine what characteristics of the historic landscape (from 50 years previous and earlier) still remain and contribute to the historic integrity of the Reserve, as defined in the Department of Interior's guidelines for evaluating historic and cultural landscapes.
- To explore innovative preservation strategies used in other parts of the U.S., especially as applied to agricultural and forested working

landscapes, and how might lessons from these examples be applied to the Reserve.

Goal three of the project was investigated in a separate report (see following report summary) on agricultural land preservation case studies and strategies.

Some of the findings documented within the Reserve between 1983 and 2000 include the following changes:

- Over 1,100 new structures were built, an increase of 49 percent (26 percent of the structures were in Coupeville, 24 percent in subdivisions, and 50 percent in other areas of the Reserve).
- Structures placed in the open and the addition of new subdivisions have had the most significant effect upon the cultural landscape of the Reserve, interrupting vistas of farmland, defining edges of hillsides with buildings instead of trees or open space against the skyline, dividing the landscape into smaller pieces, and changing the character of the ground plane from large continuous areas of vegetation to areas dotted with large new homes.
- Fourteen historic structures were lost despite NPS and Trust Board efforts to convey the value of these buildings to the historic integrity of the Reserve.
- There was a 41 percent increase in residential subdivisions, involving 233 acres and two new subdivisions.
- The visual impact of new subdivisions is substantial as they are located in primarily open areas rather than in forested areas.
- The land area for Coupeville expanded 30 percent, gaining 63 acres from the Urban Growth Area.
- Commercial land use grew by a total of 22 acres or 24 percent.
- Agriculture was reduced by 4 percent losing 158 acres primarily to subdivisions or rural residential uses.
- Woodland diminished by 2 percent, losing 111 acres primarily at the forest edge to residential and agricultural uses.
- The status of parklands appears to have increased. Due to lack of information in 1983, the status is unclear.

- There was an 11 percent increase in grassland (143 acres), a 14 percent loss of pasture (190 acres), and a 1 percent gain in cropland (32 acres). This change is probably due to a decline in active farming especially dairy grazing with fields becoming fallow or converting to residential lawns.
- Roads increased by 24 miles or 20 percent. Nearly all of these were “minor roads” (a 35 percent increase in that category). The proliferation of roads has created impacts to functioning agriculture and ecological integrity.
- There were slight gains in hedgerows (.2 miles) and windbreaks (1.8 miles) overall.
- All cluster arrangements remained between 1983 and 2000 with the addition or loss of individual structures within six farm clusters between 1995 and 2000. This suggests that an agricultural relationship to the land is still intact. However, the majority of new structures built on the Reserve did not follow the historic pattern of clustering indicating a direction change from the primarily agricultural relationship mode to a residential one.

The analysis suggests that urbanization, suburbanization, and residential pressures on the landscape are substantial, is a classic pattern in urbanizing areas, and without intervention will continue. Recent zoning changes in Island County are less restrictive than when the Reserve was created, which may accelerate the loss of the Reserve’s rural landscape. The loss of agricultural would be significant in altering the character and human relationship to the cultural landscape, and may undermine the Reserve’s purpose, “to preserve and protect a rural community which provides an unbroken historic record from...19th century exploration and settlement...to the present time.” As residential use of the land expands, the open agricultural fields will be replaced with houses. Unless successful measures are taken, farming will become increasingly challenged by conflicting interests, accelerating land values, and lack of support facilities.

The report recommends a combination of strategies for farmland protection such as overlay zoning, designation of special districts, zoning, purchase of easements and other incentive mechanisms. In purchasing easements, it is recom-

mended that a study be done to determine those lands possessing the highest visual and historic integrity, but are least protected and vulnerable to development.

Farmland Preservation Case Studies for Ebey’s Landing National Historical Reserve

This report was prepared by Nathaniel Cormier of Jones and Jones Architects and Landscape Architects in October 2001 for the National Park Service. The purpose of the report is to inform the Reserve about ways to protect the working cultural landscape, primarily agriculture and forestry. It identifies, discusses, and documents an array of strategies that government at all levels, land protection organizations, cooperatives, and farmers have used to promote sustainable working farms and woodlots across the United States. Existing programs available at the Reserve and innovative case studies are documented at each level. This report led to an accompanying *Farmland Preservation Recommendations* report (summarized below), which makes specific recommendations about the Reserve. These two reports are included as a supplemental document in Volume II of this draft GMP/EIS.

Farmland Preservation Recommendations for Ebey’s Landing National Historical Reserve

This report was prepared by Nathaniel Cormier of Jones and Jones Architects and Landscape Architects in October 2001 for the National Park Service. The farmland preservation recommendations were based on case studies of farmland preservation strategies around the country and the character of the Reserve’s cultural landscape. The Reserve’s landscapes cannot be viewed as static because they will change as agricultural practices and land use goals change. Plans to protect the landscape must also protect the farmers responsible for sustaining the land. They are interdependent. Recommendations are grouped into three broad strategy categories and are based on a balance of restrictions and incentives:

- Protect the farmland—the Reserve should identify and protect the land in the Reserve best suited to farming and woodlots.

- Support the farmers—the Reserve should implement measures that make it easier for existing farmers to remain in farming and new farmers to begin farming
- Cultivate markets—the Reserve should help farmers to cultivate markets for the farm and forest products of the Reserve.

The report defines three important partners to carry out these recommendations. One of these is existing—Island County—and two others would be created, an Ebey’s Farmland Trust and an Ebey’s Farmers Cooperative. The county would be encouraged to create stronger agricultural protection through a special zoning or overlay district covering only the Reserve. The Farmland Trust would be a non-governmental organization to oversee acquisition of farmland and conservation easements and operate a development credit bank. The Trust could also pursue funding from foundations, citizens, and government agencies for its ongoing activities. The cooperative would allow farmers to share the costs of infrastructure needed to produce value-added products, which could be marketed under a Reserve label. In addition, the cooperative could run a community supported agriculture (CSA) business that sells produce to participating local and urban residents. The cooperative would give farmers a direct role in the management of the Reserve.

The report provides a matrix of the recommendations and denotes which partner would be the best to achieve them.

The remainder of the report explains in detail each strategy and provides examples.

San Juan Island National Historical Park General Management Plan

The last general management plan for San Juan Island National Historical Park (NHP) was completed in 1979. A new GMP is in progress led by the NPS Pacific West Region, Seattle Planning Office. The purpose of the park is to interpret and preserve the sites of American and English camps and to commemorate the historic events that occurred from 1853 to 1871 in connection with the final settlement of the Oregon Territory boundary dispute.

Ebey’s Landing National Historical Reserve and San Juan Island National Historical Park interpret the same period of history. Isaac Neff Ebey was a U.S. customs collector at the time, based in Port Townsend. One of his visits to San Juan Island in April 1854, created the first stand off between American settlers and the British when he threatened seizure of British property on the island to collect duties because he felt that the San Juan Islands were the possession of the Americans and not a duty free zone. Isaac Ebey’s visits are recorded as part of the events in history leading up to the establishment of the permanent water boundary between the U.S. and Great Britain. (Vouri 1999: pp. 29-33).

Existing Park Development and Programs

The total acreage of Ebey’s Landing National Historical Reserve is approximately 17,572 acres. The NPS-owned lands total approximately 684 acres with another approximately 2,023 acres held in conservation easements and development rights. The remaining acreage includes primarily privately owned lands, with other public lands managed by Washington State Parks and Recreation Commission, Island County, town of Coupeville, Washington State Department of Transportation, Washington State Department of Natural Resources, U.S. Army Corps of Engineers, U.S. Department of Defense, and Washington State Department of Fish and Wildlife. Unless otherwise noted, this section only addresses property owned by the National Park Service.

Roads and Parking

NPS-owned and managed roads (both paved and unpaved) total less than one mile and are located at interpretive and scenic waysides. Parking lots at the two NPS-owned waysides (one paved, one gravel) hold a total of 11 cars and 3 RV spaces.

Partner agencies including the town, county, and Washington State Parks have roads and parking areas under their respective jurisdictions and maintain them accordingly.



Parking at the Prairie Overlook, Whidbey Island, ca. 1999. NPS Photo.

Boundaries

The boundaries of the Reserve follow the historical patterns of development created by the 1850s Donation Land Claims. The northern boundary is irregular but can be generally marked by secondary roads in the Reserve, including West Beach Road, Van Dam Road, Zylstra Road, Arnold Road, Monroe's Landing Road, Scenic Heights Road, Penn Cove Road and Libby Road. State Route 20/525 bisects the Reserve in a generally north-south direction providing the primary means of transportation through the park unit; State Route 20 has a spur to the west leading to and along Keystone Spit and the Keystone Ferry terminal. Madrona Way follows the edge of Penn Cove and links the Grasser's Hill area with Coupeville. Parker Road travels east of Coupeville and is the main road along Penn Cove to the east and south, where it heads away from the cove and into Smith Prairie. Other primary roads along Ebey's, Crockett,



Parking at Ebey's Landing State Park, Whidbey Island, ca. 2001. NPS Photo.

and Smith prairies include Engle Road, Hill Road, Ebey's Landing Road, Terry Road, Fort Casey Road, Patmore Road and Wanamaker Road. The eastern edge of the Reserve is formed by the north-south running Keystone Road which ends at Admiralty Bay in the southeast corner of the Reserve. All of these roads are public, access various areas in the Reserve, and are maintained by the state, county, or town.

Water forms boundaries in the Reserve. The west boundary of the Reserve is the Strait of Juan de Fuca; to the south is Admiralty Bay and Keystone Spit; the eastern boundary is in Smith Prairie heading north to Snakelum Point, crossing over and including Penn Cove to a point north of Blowers Bluff. There are approximately 22 miles of coastline.



Monroe's Landing along the north shore of Penn Cove, Whidbey Island, ca. 2001. NPS Photo: hoto



Private residential development near Crockett Lake in the Reserve, Whidbey Island, ca. 2001. NPS Photo.

Private residential areas are located throughout the Reserve. There are over 6,600 tax parcels within the Reserve. The city of Oak Harbor lies to the north approximately four miles from the Reserve's northern boundary; Saratoga Passage and Camano Island are to the east of the Reserve; the Olympic Peninsula lies to the west across Admiralty Inlet; and to the south are the Whidbey Island towns of Greenbank, Freeland, Langley and Clinton.

Trails

The trails owned and maintained by NPS are a small component of the overall trail system that exists in the Reserve. National Park Service trails include a portion of the bluff trail (approximately $\frac{3}{4}$ mile, including the spur to Buttercup Hill); a trail linking the County's Kettles Trail to the Prairie Overlook (approximately $\frac{1}{4}$ mile); and a short trail from the Prairie Wayside to an overlook of Ebey's Prairie (less than $\frac{1}{4}$ mile); and the Ridge Trail connecting the Prairie Wayside with the Bluff Trail (approximately $\frac{3}{4}$ mile). These are unpaved trails and range in width from approximately 18 to 48 inches.

Buildings, Facilities, and NPS-owned Properties

The Reserve has ten primary buildings and many smaller outbuildings and agriculture structures owned by the National Park Service. In the vicinity of Ebey's Prairie is the Reserve's administration building, also known as the Cottage, a former



Trail access to Fort Ebey State Park from State Route 20, Whidbey Island, ca. 1999. NPS Photo.

Sheep Barn and Machine Shed, the historic Jacob Ebey House and Blockhouse, the historic Ferry House and outbuildings (shed and outhouse), the historic Rockwell House and the agricultural complex known as Farm I (no historic buildings). The historic agricultural complex known as Farm II is located in Crockett Prairie, and includes six historic structures, including the Reuble Barn, Gillespie House, granary, garage, shop and another building.

West Ridge Property

The property consists of farmland and the National Register listed Jacob Ebey House and Blockhouse, the Cottage, a sheep barn and a deteriorated machine shed. It includes a two-party well and pump house, which is shared with an adjacent private property owner. This property was purchased from The Nature Conservancy in 2002. The parcel is an irregular shape and consists of 60.5 acres of farmland currently under agricultural lease, and approximately 8 acres of mature conifer timber along the west property line.

Jacob Ebey House and Blockhouse

These two buildings were originally built in the 1850s but likely altered during "restoration" efforts in the 1880s and 1930s respectively. The Jacob Ebey House is approximately 640 square feet and the Blockhouse is approximately 64 square feet and located approximately one-quarter mile southwest of the Cottage. Neither building is accessible to the public due to their deteriorated condition. These buildings are not ADA accessible and have no informational signing.

The Cottage

Built in the 1940s as a single family dwelling, it was later altered with the addition of an attached garage, which doubled its size. This one story building is approximately 1,086 square feet and is presently used as the Reserve administration building by the Trust Board of Ebey's Landing National Historical Reserve. It consists of two offices, a reception/office area, kitchen/lunch room, four small storage/supply closets (two of which double as a furnace room and telephone/computer line room), unisex ADA accessible bathroom, and conference/meeting space. Water is obtained from a two-party well (to the south), and well house, and the sewage disposal is served by a double concrete septic tank system with drainfield. The parcel totals eight-tenths of an acre and is located off Cem-

etary Road and to the south of State Route 20, less than one mile from Coupeville. It was purchased from TNC in 2002. While it is adjacent to the West Ridge property, it has its own tax parcel.

Sheep Barn and Machine Shed

These buildings are located to the northwest of the Cottage in the woods, but are part of the Cottage tax parcel. They are approximately 4,900 and 768 square feet respectively. The barn is used for storage and the machine shed is unused due to deterioration. The NPS needs to evaluate these structures for their National Register eligibility. These structures are not open or accessible to the public. There are no informational signs at the site.



Historic Jacob Ebey House and Blockhouse, Whidbey Island, ca. 1999. NPS Photo.

Farm I

The farm is located at the intersection of Terry and Fort Casey roads, southeast of Coupeville. The property was owned for decades by the Engle family until a 1998 bankruptcy resulted in a sale to the Trust for Public Land, which later sold to the NPS in 2000. The farm consists of 115 acres of farm land, and the built infrastructure for a former 940-head dairy farm. The structures on the complex include an assortment of non-historic metal, concrete and wood frame buildings, manure lagoons (ten million gallons) and associated pump lines, silage pits, loafing sheds, storage sheds and barns, well and pump houses, equipment sheds, silos, and fencing. The dairy herd housing area totals 138,716 square feet in three buildings. There are electrical and telephone services provided to the property. The town of Coupeville provides water to the property. There are three water meters on the property and two wells provided water for the former dairy operation and field irrigation. None of the farm buildings are eligible for the National Register. The former owners of the farm retained a lease to continue farm operations until a final resolution is determined for the property.



NPS office at Farm I, Whidbey Island, ca. 2004. NPS Photo.

Farm Office

This building is now used by the NPS as a resource management office. It is a one-story, wood-frame building, about 400 square feet in size. It contains two rooms and a storage closet and is supplied with electricity and telephone. This building is not eligible for the National Register. Should the farm property be exchanged, leased or sold, this building would be vacated by NPS.

Rockwell House

The circa 1891 Rockwell House was built as a residence for the former property owners farming the land. It is now on a separate tax parcel owned by the NPS. It is a wood-frame, one and a half story Victorian style house with three bedrooms and a bath upstairs. The first floor consists of two bedrooms, one bath, a living/dining room, kitchen, entry hall, and mud/laundry room. The house is approximately 2,228 square feet in size. It is currently vacant (the public does not access this building) and in need of repair. This residence is listed in the National Register of Historic Places. It was purchased from the Trust for Public Land in 2001.



Rear view of historic Rockwell House at Farm I, Whidbey Island, ca. 2004. NPS Photo.

Farm II

This farm is located at the intersection of Fort Casey and Patmore roads, southeast of Coupeville. It was formerly owned by the Engle Family prior to the Trust for Public Land purchasing the property after bankruptcy, which later sold to the NPS. The property contains approximately 113 acres of tilled farm land, and a building complex consisting of a residence and farm buildings, many of which are unused. The historic residence was built in 1912 and is a one-story wood frame building. It is 1,492 square feet in size and contains three bedrooms, a living and dining room, kitchen, bathroom, and laundry room. The historic outbuildings in the complex, which contribute to the integrity of the Reserve, include a large gambrel-roofed barn (Reuble Barn, 5,250 square feet), a gable-roofed barn, a garage, shed, and granary. Non-historic structures include an assortment of sheds, shops, a manure lagoon and two underground manure storage tanks (78,000 gallons), bunker silo, well and pump houses, feeder and loafing sheds, and fencing, dating from the circa 1940s to the 1990s; none of these contribute to the property or district due to age or alterations. When the NPS purchased the property, the buildings were essentially unused except for the residence and were generally in a state of disrepair.



Historic Farm II, Whidbey Island, ca. 2004. NPS Photo.

Ferry House and Associated buildings

The circa 1858 Ferry House is approximately 1638 square feet and serves as a de facto exterior exhibit. The building is undergoing extensive preservation work and is not accessible to the public. The outbuildings (shed and outhouse) behind the Ferry House are approximately 690 square feet and are not currently used due to their condition. (Approximately 188 square feet of one outbuilding fell into ruin and has been documented and removed.) These are all contributing resources to the Reserve and are listed in the National Register of Historic Places. Due to vandalism activity that occurs periodically, “no trespassing” and “U.S. Government property” signs are located on these buildings. These historic buildings are not ADA accessible. This property was donated to the NPS by The Nature Conservancy in 2002.

Ferry Forest

This irregular shaped parcel of 20 acres was purchased from The Nature Conservancy in 2002. The property has no improvements and consists of a conifer timber forest with approximately 250 feet of frontage along Hill Road, southeasterly of the historic Ferry House.



Historic Ferry House, Whidbey Island, ca. 2000. NPS Photo.



Keystone Spit State Park, Whidbey Island, ca. 2000. NPS

Keystone Spit

The NPS purchased a small lot along Keystone Spit, near the Keystone-Port Townsend Ferry Landing, along SR 20, from a private property owner in 2002. This undeveloped lot is 0.17 acres in size and will be retained by the NPS as an access point for wildlife viewing at Crockett Lake.

Other Site Structures

NPS has interpretive facilities located in ten areas throughout the Reserve. These facilities are located on non-federal lands with two exceptions: the Prairie Overlook and the Prairie Wayside are NPS fee-owned lands. The remaining sites are located on county, state park, Island County Historical Museum, Port of Coupeville, and WSDOT properties.

These facilities are minimally developed with the primary focus being the interpretive panels and scenic views. The panels range from low-profile interpretive mounts (24 inches x 36 inches, metal-framed mounts with fiberglass embedded panels) to 3-sided, wood-frame kiosks (48 inches x 32 inches) with wood-shake roofs holding three fiberglass embedded interpretive panels. Some waysides include a bench, fencing, landscaping, parking areas, a trailhead and/or trail, and a bike rack. The NPS has a total of 5 kiosks and 18 low profile mounts at these waysides throughout the Reserve.



Prairie Overlook, Whidbey Island, ca. 2000. NPS Photo.

Site Vegetation

Generally, Reserve facilities are not landscaped. However, around the Cottage and some of the historic buildings such as the Ferry House, Jacob Ebey House, and Gillespie House, non-native plants (some of the original plantings) can be found, including lilacs, daffodils, ground cover, poplars, and fruit trees, which are all likely historic materials and add significance to the properties. All of the above-noted buildings have lawn that requires periodic mowing.

The Reserve promotes the use of hedgerows. The NPS has planted hedgerows consisting of snowberry, Nootka and rugosa rose, wild currant, and other native plants at its waysides. Trees in the area of the Cottage include willows and Douglas firs. Behind the Cottage to the north, two small planting beds were constructed to grow native plants for restoration work elsewhere in the Reserve.

Efforts have been made by NPS and the Trust Board to remove invasive species such as blackberries, hawthorne, poison hemlock, gorse, and scotch broom from government and partner-owned properties.

Washington State Parks

There are four units of the Washington State Park System within the boundaries of the Reserve. They include Fort Casey State Park, which also administers Keystone Spit State Park and Ebey's Landing State Park at the south end of the Reserve (totaling 457 acres), and Fort Ebey State Park (226 acres), which anchors the northwest area of the Reserve. These areas of public open space are important properties for recreational and educational pursuits by residents and visitors. (See "Recreational Resources" in this chapter.) Forts Casey and Ebey each have their own park managers and staff who operate the four units with funds allocated through the state park system. In 2003, Fort Ebey and Fort Casey state parks began collecting day-use parking fees; no such collection is yet operating at Keystone Spit or Ebey's Landing state parks but it is anticipated. Fort Casey has 35 campsites available and many areas for hiking and walking. Fort Ebey has 54 camping sites and 28 miles of hiking trails, including 3 miles of coastline hiking (Washington State Parks, Fort Ebey State Park 2004). In the area, there are other camping opportunities at adjacent Deception Pass State Park, Rhododendron Park, and in Oak Harbor.

Island County Historical Museum

Island County Historical Society is a nonprofit, 501(c)(3) organization that owns and operates the museum in Coupeville. The NPS purchased a conservation easement on the property, which enabled the museum to purchase the land and construct the museum building. For many years the Reserve's Trust Board had office space in the building. Rent covered both administrative and exhibit space. After the Trust Board's move to the Cottage in 2002, the museum relocated the exhibit space and no longer charges the Trust Board rent. The museum is important in that it serves as a "defacto" visitor center for the Reserve and provides interpretive materials, including two short videos, for visitors. There are brochure holders on the outside of the museum so visitors can still get information even if the museum is closed, and there are exhibits on the museum porch accessible

all the time. The National Park Service has a cooperative agreement with the museum for interpretive and other programs.

Oak Harbor Air Park

There is one privately owned and operated air park in the north of the Reserve called Oak Harbor Air Park three miles south of Oak Harbor. The airfield is approximately 73 acres and has one paved runway but no airline now provides service to it. Currently, it is only used by private plane owners. There have been recent discussions in the local newspapers on the benefits of converting the property to public use.

Utility Systems

Electricity to the Reserve is provided by Puget Sound Energy. The GTE/Qwest and General Service Administration provide telephone service. The town of Coupeville provides domestic water supply and sewer service within town limits; the remainder of the Reserve is served by private wells and septic/drainfield systems. Fire hydrants are located in town and in areas that are platted subdivisions. Currently, fire protection for the NPS-owned facilities in the Reserve is provided by the county volunteer fire departments, at the same level of service as provided to other property owners. None of the NPS-owned facilities have sprinkler systems.



Island County Historical Museum. ca. 2004. Courtesy of the Island County Historical Society.



Alternatives

The planning team, comprised of National Park Service, Reserve staff, and the Trust Board, developed management alternatives for Ebey's Landing National Historical Reserve, using public responses to newsletters and public meetings. National Environmental Policy Act regulations and NPS planning regulations require the formulation of a reasonable range of alternatives that address identified planning issues and management concerns. Each alternative was evaluated to ensure consistency with the Reserve's purpose and significance, the desired future conditions, and current laws, regulations, and policies.

In addition, the development of the alternatives for the future of the National Historical Reserve recognizes that the Reserve is about the protection of heritage resources within the context of a contemporary rural community. Therefore, strategies about the preservation and use of the Reserve's resources are advanced within this context of a living landscape; one that continues to evolve and change, and is not "frozen in time." This plan is developed in that spirit.

Three alternatives are described in this plan and are characterized as follows: Alternative A is the "No Action Alternative" which means continuation of the present course of action or maintenance of the status quo of existing policies and programs. Alternative B is the "Preferred Alternative." It emphasizes both the preservation of resources and the enhancement of visitor opportunities for the Reserve while providing for administrative and maintenance facilities. Alternative C is an additional alternative that builds upon elements included in Alternative B, but also provides additional actions that address the Reserve's management structure.

It is intended that all the alternatives presented in this GMP meet both the spirit and the intent of the law establishing Ebey's Landing National Historical Reserve. In doing so, this interdisciplinary planning team has developed a range of alternatives that provide for the long-term protection of reserve resources and the public enjoyment of those resources in a way which is cognizant and respectful of private property rights. (For a comparison of the three alternatives, see "Summary of Actions for Each Alternative" chart at the end of this chapter.)

Please note that "Reserve staff" is defined as staff working for the Trust Board and NPS staff currently assigned to the Reserve.

Actions Common to All Alternatives

Regardless of the alternative ultimately selected by the Trust Board and the National Park Service as the Preferred Alternative, the following actions would be common to each of the alternatives:

Reserve Management and Operations

- It would be recommended that the appointing level of government, either Island County and/or the town of Coupeville, designate a representative of the agricultural community for at least one of the trust board positions. This Trust Board member would be encouraged to be either an active or a retired farmer from central Whidbey Island.
- To help coordinate and guide future land use decisions within the Reserve, it is recommended that all Reserve Partners adopt this GMP as part of their own comprehensive planning as was done for the 1980 Ebey's Landing National Historical Reserve Comprehensive Plan. This includes adoption of the GMP by the town of Coupeville and Island County as companion measures to their respective comprehensive land use plans.

Natural Resources

- The NPS and Reserve staff would advocate for an integrated pest management program in cooperation with Reserve landowners and other partners.

Agricultural Resources

- The Trust Board and Reserve staff, recognizing that the continued presence of successful agriculture is essential to the mission of the Reserve, would actively work with Island County, the Natural Resources Conservation Service and other partners to promote a viable farming economy in the Reserve.

Visitor Experience

- The Reserve staff would expand interpretation and include those cultures that lived on the land and helped to shape the cultural landscape seen today. This includes Native Americans, early Euro-American settlers, Chinese immigrants, and other peoples.



Alternative A—No Action Alternative

General Description

The No Action Alternative, Alternative A, is required by the National Environmental Policy Act and provides the baseline from which to compare the other alternatives. Under this alternative, current management practices would continue as funding allows. Emphasis would be upon protecting the values of the Reserve largely through partnerships with others without substantially increasing staff, programs, funding support or facilities.

It would be assumed under this alternative that the principal support for the Reserve would continue to come from the leadership of the predominantly volunteer Trust Board. A small staff consisting of the Reserve Manager and part-time administrative assistant would continue to serve the Reserve, along with a NPS part-time natural resource position and the combined NPS Cultural Resource Specialist/Trust Board appointee. From time to time, staff would be augmented by assistance from the Pacific West Region Seattle Office, North Cascades National Park Service Complex and other NPS park units in the Region as time and funding permit.

Land protection efforts would continue to rely upon availability of federal funds secured through the Land and Water Conservation Fund (LWCF) by NPS staff, largely to acquire conservation easements from willing sellers on the high priority lands within the Reserve. However, the principal reliance of the Trust Board for protecting Reserve values would continue to be upon local land use controls from the town of Coupeville and Island County. No expansion of facilities, staff, programs, or services would be anticipated under this alternative. There would be no adjustment to the Reserve boundary under this alternative.

Management Zones

There is presently no NPS management zoning that meets current NPS management zoning standards. According to the 1980 *Ebey's Landing National Historical Reserve Comprehensive Plan*, in

keeping with the concept for the Reserve which revolved around citizens' desire to maintain a viable working community, urban growth needed to be guided to avoid encroachment on the scenic, historic, and natural areas. In order to achieve this goal, three special areas of consideration were identified and defined to help set objectives for the plan. These areas were defined as Public Use and Development, Natural and Historic Preservation, and Private Uses (subject to local zoning controls to protect the historic rural setting). These areas were applied over the entire Reserve boundary regardless of ownership. A definition of these areas from the Reserve's 1980 Comprehensive Plan follows. (Objectives for these areas are stated on pages 59-62 of the *Ebey's Landing National Historical Reserve Comprehensive Plan*.)

Public Use and Development

Public use areas are those areas within the Reserve that the general public may have access to, whether privately or publicly owned. Sites designated "public use" have historic and natural values. They have potential as primary recreational areas because of this combination of assets.

Historic and Natural Preservation

Historic areas are defined as specific sites or locations with significant events or people associated with the history of the area. Natural areas are defined as having unique physical features, which remain relatively untouched by human activity.

Private Use Areas

Private use areas are privately owned properties subject to local land use and design controls to which there is no physical public access. (See Figure 11, Management Zoning: Alternative A.)

Reserve Management

Policy and Oversight

Setting the policies and general actions for the Reserve would continue to be the responsibility of the Trust Board within the framework of the Reserve's legislation, the GMP, and relevant NPS policies and guidelines. Each year, the NPS would conduct an appraisal of the management and op-

eration of the Reserve under the requirements of Paragraph (e), Section 508 of Public Law 95-625 and the Cooperative Agreement between the NPS and the Trust Board.

The Trust Board would continue to have general policy and oversight of the Reserve partnership and oversee general management and protection of lands with conservation interests acquired using federal money. For all of the Reserve, the Trust Board would continue to pursue the protection of land and resources, provide administration of programs and technical support, participate in the local land use-review process, and be an advocate for and support the concept of the Reserve. (Refer to “Background of the Park” chapter, “Ebey’s Landing National Historical Reserve Trust Board” section for specific information on Trust Board composition and responsibilities.) The Trust Board would continue to be evaluated by the Deputy Regional Director in Seattle for the Pacific West Region.

Management

The Reserve Manager and support staff would continue to provide day-to-day administration and operational support and develop and implement public use, interpretative, and educational programs for the Reserve. Under Alternative A, the Reserve Manager would continue to report directly to, and be supervised by, the Trust Board.

The Cooperative Agreement between the NPS and the Trust Board would be revised to clarify the evolving roles and responsibilities of each party.

Under this Alternative, the NPS would continue to support the part-time NPS Cultural Resource Specialist/Trust Board member. The NPS Cultural Resource Specialist, acting in a liaison capacity with the Trust Board, would continue to seek funding from NPS sources for resource management, interpretation, and maintenance, and undertake long-range strategic planning in concert with the Government Performance Results Act (GPRA) on behalf of the Reserve. (Staff composition for Alternative A is detailed in the “Staffing” section of this alternative.)

The NPS staff in the Reserve would respond to all

NPS reporting requirements with the exception of the annual Volunteers in the Park (VIP) report and the service-wide interpretation report, which the Trust Board staff would prepare.

The Trust Board would be responsible for reviewing comments by Reserve staff on land use actions by the town and county and submitting recommendations to these government entities concerning whether actions will have an effect on the protection of the Reserve resources.

Cultural Resource Management

The following ongoing actions in the area of cultural resource management would be expected to continue under Alternative A.

Cultural Landscape

The Trust Board would continue to participate in the town and county design review boards to further protection of the cultural landscape.

The prehistoric and historic resources within the Reserve would continue to be documented and evaluated, and research on special topics would be pursued, such as ethnographic consultation with modern day-traditionally associated people to gain knowledge of important structures and landscapes within the Reserve. The Reserve staff would continue to promote awareness of the significance of the cultural landscape and its associated features.

Historic Buildings and Structures

As buildings and structures reach 50 years of age within the Reserve, they would be documented and evaluated to ascertain their contribution to Reserve history and added to the National Register of Historic Places as appropriate.

National Park Service staff would conduct research necessary to preserve and protect NPS-owned historic properties, which include some of the more significant structures of the Reserve. Funding permitting, the NPS would stabilize and potentially utilize NPS-owned historic structures in accordance with the Secretary of the Interior’s Standards. These include the Ferry House and associated buildings (shed and outhouse); the Jacob

Ebey House (the Block house has already been stabilized) at the West Ridge property; the Rockwell House at Farm I; and the historic structures at the Reuble Farmstead at Farm II.

The NPS and Trust Board would work cooperatively with property owners in the Reserve to provide assistance upon request that would include the following:

- Information on historic structure preservation.
- Continue to enhance the Trust Board reference library.
- Conduct seminars and training in historic preservation, including buildings, landscapes, design review among other relevant topics.
- Offer special events and outreach programs to residents and visitors related to the cultural landscape and preservation.

Additionally, the NPS Cultural Resource Specialist would work with the town and county to revise historic preservation guidelines that have been formulated to protect the Reserve's historic properties and natural features.

Collections Management

The Reserve would continue to work with North Cascades National Park Service Complex to conserve and store the artifacts that resulted from work on the Ferry House foundation, the Jacob Ebey Blockhouse, and other buildings and areas of NPS activities.

Archaeology

Archaeology work within the Reserve has been limited since the majority of land is in private ownership. Thirty-five sites have been documented and the possibility of finding additional sites remains high. Additional reconnaissance and subsurface testing would likely increase the number of recorded sites. The NPS staff would continue established resource protection measures for the identification and treatment of archaeological resources as required by NPS management policies, working on NPS-owned lands unless otherwise authorized.

Compliance Activities

The NPS in collaboration with the Reserve staff

would continue required federal compliance with the National Historic Preservation Act for activities within the Reserve to ensure compliance with Section 106 and 110 to support historic preservation goals. The Reserve staff would strive for enhanced consultation and relationships with affiliated tribes.

Natural Resource Management

The following ongoing actions in the area of natural resource management would continue under Alternative A.

Natural Processes

The Reserve staff would continue to promote and encourage natural processes and disturbance regimes for all natural management zones. This includes recognizing and understanding the significance that the protection of biological diversity on central Whidbey Island and the coastal environment plays in the overall ecological health of the Reserve. The Reserve staff would be advocates for natural processes throughout the Reserve (not just on NPS-owned lands or those that are NPS zoned as Natural).

Geology, Soils, and Air Resources

The Reserve staff would continue to encourage Island County to recognize and support the preservation of prime and unique farmland soils in the Reserve. (The NPS is required to analyze "prime and unique farmlands" in the preparation and review of EISs. This includes the identification of farmlands or soils that are of statewide and local importance. This document also includes the analysis of important state soils.) These soils are most valued for farming and are a declining resource. Once developed for other uses, such as residential, these soils are lost for future agricultural uses.

The NPS would continue to incorporate night sky preservation provisions in easement language.

Water Resources

The Reserve management and staff would continue to advocate for the protection of wetlands, impoundments, riparian areas, and aquifer re-

charge areas through application of local, state, and federal laws and regulations. The NPS would provide the protection where the federal land interests allow direct land management and resource protection. The Trust Board would continue to support and encourage existing water quality programs for the littoral and aquifer recharge areas of the Reserve.

Vegetation

Vegetation management would be coordinated with the Reserve's fire management plan, available in the fall of 2005. The Trust Board would continue to monitor the Reserve's woodlands where already protected by NPS fee ownership or by conservation partners.

The Trust Board and the NPS staff would continue to be advocates for native plant community preservation. The Reserve staff would identify areas where the reestablishment of prairie species has a high probability of success. Native prairie plant communities would be reestablished at selected sites. NPS staff would continue to pursue project funding for protection and recovery of the threatened golden paintbrush and work with partners to ensure its viability within the Reserve.

To help encourage the establishment and role of native plants, Reserve staff would continue to be an advocate for the retention and establishment of hedgerows. Hedgerows help define cultural land use patterns dating to mid-1800s settlement and depict some of the first Donation Land Claim boundaries. The "Ebey's Landing Hedgerows" brochure would be updated, reprinted, and distributed, informing the public about the history of hedgerows and their value to wildlife.

Through wide use of partnerships, the Trust Board and NPS staff would work together to continue the removal and eradication of exotic species on a site-by-site basis. A compatible roadside vegetation program would be encouraged through coordination with Island County, landowners, and other partners. Reserve staff would continue to inventory vascular plants throughout the Reserve and seek funding for implementing the *Recovery Plan for the Golden Paintbrush* (USFWS, 2000).

The NPS and Reserve staff would continue to strive to gain additional baseline knowledge of various species through surveys, volunteer projects, plant restoration projects, and others, such as the proposed 2005 multi-taxa, "Bio-Blitz", inventory (an intensive, 24-hour natural resource inventory involving dozens of specialists from many disciplines).

Depending upon funding, research and monitoring needs as identified and prioritized in the 2001 NPS Vital Signs Workshop would be implemented by the NPS with assistance from the North Coast and Cascades Network or NCCN (the cluster of eight NPS parks in Washington and northern Oregon having similar natural characteristics that are grouped together for many logistical reasons). (See Appendix D, Vital Signs Workshop List.)

Wildlife

The direct management of NPS-owned lands and support for other lands within the Reserve would help provide for the protection of threatened and endangered species under applicable federal and state laws. Cooperating parks within the NCCN would continue to assist in species inventories and finding funding to implement research and monitoring efforts as prioritized in the 2001 NPS Vital Signs Workshop.

Compliance Activities

The NPS in collaboration with the Reserve staff would continue required federal compliance with the National Environmental Policy Act for all federal actions affecting the environment. This requirement also would include compliance with Section 7 under the Endangered Species Act, and all other relevant environmental laws.

Agricultural Resources

Protection of Reserve Agricultural Lands

The protection of agricultural lands within the Reserve and the retention of historical patterns of agricultural land uses in the Reserve would continue to be achieved through the purchase of easements and development rights on specific key parcels. These would be obtained from willing sellers

using congressionally appropriated funds from the Land and Water Conservation Fund. Where a fee interest in land is obtained, NPS Lands Division staff in conjunction with the Trust Board would continue to explore a wide variety of protection options that could involve the saleback, leaseback, exchange or retention of these agricultural parcels. The identification of key agricultural parcels for additional protection would be linked to the Reserve's Land Protection Plan.

The extent of change allowed on key agricultural parcels would be defined in conservation easements prepared jointly by the NPS and Trust Board. Easement language would include defining various types of crops and agricultural uses that help maintain the historic landscape and preserve the landscape character. The NPS recognizes that some flexibility would be needed to allow for changing agricultural practices. The NPS would work with the Reserve staff to develop a conservation easement administration plan.

The NPS would track integrated pest management practices (IPM) on NPS-owned farmlands as required by Executive Order 13112 (Invasive Species) and directors Order 77-7.

Prime and Unique Soils

The Reserve staff would continue to encourage and support the preservation of prime and unique farmland, and farmlands of state and local importance, coordinating with Island County, the Natural Resource Conservation Service (NRCS) and other partners. These soils are most valued for farming and are a diminishing resource. Once developed for other uses, such as residential, these soils are lost for future agricultural use.

Technical Assistance and Public Awareness

Reserve staff and partners would continue, upon request, to provide information on where to find technical assistance for private landowners regarding organic, sustainable farming, as well as the preservation of historic structures and landscape features such as hedgerows, orchard remnants, archaeological sites, and small-scale features important to the integrity of the cultural landscape.

The Reserve staff would continue to promote public awareness of the Reserve's rich agricultural and archaeological heritage and the importance of the agricultural community to the economy, way of life, and overall character of central Whidbey Island.

NPS-Owned Farms

Farm I and Farm II

In 2000, the National Park Service became fee title owners of two dairy farm properties within the Reserve. These are known as the former Engle Farm properties, referred to as Farm I, which includes the historic Rockwell House, and Farm II which includes the Reuble Farmstead.

Though the NPS originally sought a partial interest (conservation easement) in the former Engle farm properties, circumstances required that the NPS acquire a full fee title interest. These properties have historically been used principally for dairy farming. The NPS has neither the expertise nor the desire to be long-term fee title owners of these two farm properties. In keeping with the mission of the Reserve, the best use of the land would be to continue agricultural use while protecting the historic and scenic resources. As such, the NPS would promote the continued agricultural use of these lands in a manner in which the farm properties would retain their open space, scenic, and cultural landscape values while contributing positively to the agricultural economy of central Whidbey Island.

To achieve these goals in Alternative A, the NPS proposes to dispose of both Farm I and Farm II, preferably through a land exchange for other priority property interests in accordance with 36 CFR, Part 18. Until a suitable land exchange can be identified, the NPS could consider other strategies, such as a historic property lease (36 CFR, Part 17), a cooperative agreement, or a special use permit, to promote appropriate use of the farm. The NPS would continue to rehabilitate historic structures at the Reuble Farmstead and the Rockwell House to the extent possible until the properties are exchanged. If no exchange opportunity exists, then rehabilitation work would continue while special use permits, cooperative agree-

ments, and/or historic leasing would be sought. A NPS Special Use management zone would need to be created to allow for disposition of federal property.

West Ridge Property

The property consists of leased farmland and several structures: the Jacob Ebey House and Blockhouse, the Cottage, a sheep barn and a machine shed. Two of the structures are listed on the National Register of Historic Places: the Jacob Ebey House and Blockhouse. The West Ridge property was purchased from The Nature Conservancy in 2002.

The Jacob Ebey House and Blockhouse were originally constructed in the 1850s as part of the Jacob Ebey donation land claim on the upper bench above Ebey's Prairie adjacent to dense woodlands. The Blockhouse is one of four remaining in the Reserve and originally was built to provide safety for early settlers from the threat of Indian attack. Both structures would continue to function as (unsigned) outdoor exhibits for public viewing.

The Cottage was built in the 1940s as a house and later altered with the addition of an attached garage. It would continue to be used as the administrative headquarters by the Trust Board of Ebey's Landing National Historical Reserve.

The 60-acre tract of agricultural fields would continue to be leased and actively farmed. It would be retained in federal ownership and zoned a Special Use Zone in NPS management zoning. When considered for future disposition, as an exchange, or outright auction and sale, the disposition would be in accordance with 36 CFR, parts 17 and 18.

Recreational Resource Management

The following actions would continue under the No Action alternative in regards to recreation and public use activities within the Reserve.

Trails and Walks

The Reserve staff would continue to work with partners to maintain and expand the existing hik-

ing, biking, and horse trails into an integrated network within the Reserve. The Reserve would continue to publish the existing driving and bicycling tour brochure and Coupeville walking tour brochure, and work with partners to promote the tours. As part of a comprehensive sign system, in the long-term, the Reserve would implement a trail sign plan in conjunction with partners for unobtrusive trail signage within the Reserve.

Appropriate Uses

The Trust Board would strongly encourage appropriate recreational watercraft use within Penn Cove to maintain quiet for both people and fauna. The Reserve staff would provide information to visitors about water-based recreational opportunities, such as fishing, boating, and diving. In conjunction with Washington State Parks, The Nature Conservancy, and other partners, the Reserve would develop standards and appropriate locations for paragliding, model airplane flying, and other recreational uses within the Reserve. The Trust Board would continue to support opportunities for passive and leisure activities in the Reserve including photography, bird watching, antique shopping, painting, history tours, and other pursuits.

Scenic Resource Management

As part of ongoing efforts, the Trust Board would endeavor to protect scenery and historic views. Scenic views from existing waysides and pullouts would be maintained. In addition, the Trust Board would continue to help influence the placement of new structures on the landscape to minimize visual impact.

Through use of Land and Water Conservation Funds appropriated by Congress and managed by the National Park Service, and assisted by private conservation efforts, the Reserve would endeavor to protect valued open space and the scenic beauty of the Reserve. Property interests would be conveyed to the NPS through opportunity purchases from willing sellers. These purchases would emphasize the acquisition of scenic or conservation easements, coupled with some modest amount of fee title purchases, and donations and bargain sales of an easement or other interest in

property. Acquisition priorities would be based upon the amended land protection plan subsequent to this GMP.

Interpretation and Education

Exhibits and Interpretive Media

Current wayside exhibits in the Reserve would be maintained to NPS standards. New additions would slowly be made to the existing network of wayside exhibits and pullouts through new and expanded partnerships.

In addition, a new Long Range Interpretive Plan would be produced for the Reserve in conjunction with the NPS Pacific West Region and the Harpers Ferry Center staff.

The Reserve staff would continue to support the traveler information station (TIS) at 1610 AM that provides radio information to travelers and motorists driving to and through the Reserve. National Park Service staff would continue to upgrade the webpage as requested by the Trust Board. This website could link the Reserve's electronic site to other related websites within the National Park System. Reserve staff would continue to distribute "Reserve orientation" videos and brochures to museums, the Central Whidbey Chamber of Commerce, and other contact points as appropriate.

Public information literature would continue to provide information about camping within the Reserve, along with information about wildlife viewing opportunities through the Internet, brochures, and partners such as Au Sable Institute and Whidbey Audubon. Finally, the Trust Board would endeavor to find suitable locations within the Reserve for the NPS Passport Stamp in addition to the Island County Historical Museum.

The Ferry House, and Jacob Ebey House and Blockhouse, would continue to be available to the public for outdoor viewing as exterior exhibits.

Visitor Center/Contact Station

The Island County Historical Museum would continue to serve as the defacto Reserve visitor center under this alternative. Central Whidbey and Reserve history is included along with other island

history at the museum. Reserve maps and interpretive materials would be available to visitors at the museum. A Reserve exhibit within the museum would be maintained and revised as necessary. The Trust Board staff would continue to provide training to museum docents as requested.

Partnership Programs

The Trust Board would continue to collaborate with non-governmental organizations (NGO) and nonprofit entities engaged in public education, conservation, historic preservation, and resource stewardship to a limited degree. Limited interpretive programs for residents, school groups, and others would continue.

Interpretive Guided Tours

Private operators would continue to provide limited guided tours of the area under this alternative.

Reserve Facilities

Visitor Facilities

The Island County Historical Museum would continue to serve as the defacto Reserve visitor center under this alternative.

Administrative Facilities

Under this alternative, the Reserve staff would continue to occupy offices in the Cottage (former residence) near the Sunnyside Cemetery near the edge of Ebey's Prairie. An addition, the resources office in a small building at Farm I would continue to be used as a natural resources management office until the farm is exchanged or sold.

Maintenance Facilities

In the short-term, until the Farm II is sold or exchanged, the NPS would continue to use the Reuble Farmstead cluster at Farm II for maintenance facilities for the Reserve. Maintenance support would continue to be provided by staff at North Cascades National Park Service Complex subject largely to the availability of special project funds. Hand and power tools, and machines for mowing and brushing would continue to be stored at the Farm II. Historic preservation craftsmen from North Cascades National Park Service Com-

plex would continue to use the woodworking shop in the Reuble Farm for restoration projects such as the Ferry House windows and doors, subject to available funds.

The Trust Board would continue to hire a seasonal summer employee to perform minor maintenance, including mowing, litter removal, weeding, and sign/interpretive panel maintenance. Special project assistance, such as trail development and brush clearing from waysides, would be provided by North Cascades National Park Service Complex maintenance staff or other NPS park staff as funding and staffing allowed. A small volunteer maintenance program would augment Reserve maintenance. There would continue to be limited support from North Cascades National Park Service Complex for a long-term maintenance planning program or to maintain NPS-owned structures and property. There would continue to be a need for on-site management of the NPS maintenance management system (MAXIMO). The NPS staff would continue to work with North Cascades National Park Service Complex to seek maintenance funding through a variety of internal NPS sources.

Once the Reuble Farmstead is exchanged, the maintenance facilities would need to be relocated to a site elsewhere within the Reserve once Farm II is exchanged or sold. The NPS and Trust Board would explore various partnering opportunities for long-term maintenance needs with units of local and state government (potentially as part of the in-kind service requirement for the Reserve), non-profits, and individuals.

Reserve Operations

Staffing

This alternative assumes current staffing levels in support of the Reserve, including both NPS and Trust Board positions. The Reserve currently has four staff positions, three of which are part-time. Administrative support (such as purchasing and payroll) for the NPS staff is provided by North Cascades National Park Service Complex and the Pacific West Region. The NPS Cultural Resource Specialist/Trust Board member would remain a combined position served by one NPS employee.

Staffing includes the following positions:

- Reserve Manager (Trust Board employee).
- Part-time Administrative Assistant (Trust Board contractor employee).
- Resource Management Specialist (NPS employee supervised by North Cascades National Park Service Complex).
- NPS Cultural Resource Specialist/Trust Board member (NPS employee supervised by Pacific West Region—Seattle Office).

Base Allocation

Total federal allocations for the Reserve in 2005 are \$282,000.

Fees

There are no fees for entering the Reserve. However, there is a daily parking fee at both Fort Ebey and Fort Casey state parks. The Island County Historical Museum located in Coupeville charges an entrance fee. This museum currently serves as the Reserve's visitor center, and visitors may receive information without paying a museum admittance fee. None of the fees collected by partners goes toward the Reserve's operating costs.

Table 16: Staffing under Alternative A

	Administrative	Maintenance	Interpretation/ Education	Resource Management	Total Staff	Total FTE
Trust Board Staff	1 full-time 1 part-time	0	0		2	1.5
NPS Staff	0	0	0	2 part-time	2	1.25
Total Staff	2	0	0	2	4	2.75

Hours of Operation

Since the Reserve is primarily private land, there are no standard “park” hours. However, the Reserve’s administrative offices are generally open on weekdays from 9:00 am to 5:00 pm. The Island County Historical Museum is open year-round on the weekends and has varying seasonal weekday hours. Most of the town shops and restaurants are open from 10:00 am until 5:00 pm daily.

Transportation, Access, and Circulation

The most significant change in the Reserve’s circulation in the last two decades has been the addition of roads. Many of these roads serve as connections between residential properties and major roads. Two significant changes include the addition of a road through the western woodland and along Keystone Spit. Almost all pre-1950 roads still exist. Madrona Way served as the highway before a new highway was built inland in the 1970s to handle increasing traffic. Since all the major historic roads still exist today, the pre-1950 circulation has retained its integrity (Rottle 2003).

State Route 20 serves as the main access through the Reserve. It follows the historic roadbed in the majority of the corridor. The Reserve staff would continue to work with Washington State Department of Transportation (WSDOT) regarding any road improvements within the Reserve. The role of the Reserve staff would be to assist WSDOT in better understanding NPS road design standards and visitor use of roads through national park system units. In addition, Reserve staff would review proposals affecting road realignments or road closures within the Reserve.

Additional access within the Reserve is provided by town streets, primary and secondary county roads, and non-motorized trails. The public is discouraged from entering private roads and the Trust Board asks visitors to respect private property.

Island County Transit bus service would continue to provide free service in central Whidbey along the State Route 20 corridor through Coupeville. Reserve staff would work with Island Transit to in-

crease the advertising of this service to all visitors to the Reserve.

The Reserve would continue to encourage pedestrian/bicycling use of town and county trails as commuter routes into the Town of Coupeville.

Carrying Capacity

Carrying Capacity is defined as the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the Reserve and its desired future conditions. There are three major components of carrying capacity: physical capacity (such as parking spaces, facility space, road capacity); visitor experience (such as congestion in the visitor center/contact station or solitude on trails); and resources (including natural and cultural resources). The carrying capacity in a given area could be exceeded for any of these components, which would elicit management action.

Since the Reserve is not a traditional park that is NPS-owned and managed, carrying capacity is difficult to define, and therefore manage, by traditional NPS methods. Within the Reserve, Washington State Parks manage their facilities and visitor use including wayside areas on state-owned land. Washington State Ferries manages its facilities and visitor use. The same is true for Island County and the Town of Coupeville for managing their parks and visitors. Furthermore, there are additional private organizations and attractions within the Reserve offering many visitor opportunities that must deal with visitation on a daily basis.

Parking is currently provided at the state, county, and town parks, Keystone Ferry landing, in town and at private organizations. In addition, limited parking is provided at the county and state owned waysides within the Reserve. The NPS owns and maintains two waysides. The Prairie Overlook has parking for eight vehicles and the Prairie Wayside has parking for five vehicles and RVs. These waysides are rarely full, though at certain times in the summer, the Prairie Overlook by the Sunnyside Cemetery can reach capacity.

The bluffs, trails, and beach at Ebey's Landing are well visited throughout the year. On summer weekends, the parking lot is usually full by late morning. When this occurs, visitors park along a wide berm on the county road. After this area is full (summer afternoons), visitors park illegally along Hill Road (where no berm exists).

According to the 1995 visitor survey, most visitors arrive by private vehicle (88 percent) which means that the public will continue to need parking areas. The places within the Reserve with the highest number of visitors were the Town of Coupeville, followed by Fort Casey State Park, Fort Ebey State Park, the lighthouse, and Camp Casey. These places have ample parking and are not owned or managed by the NPS. The least visited places (also having limited parking) were Crockett Lake, Sunnyside Cemetery, Prairie Wayside, and the Ridge Trail (University of Washington 1995). Island County bus service—Island Transit—is free on the island, but does not access all the areas within the Reserve.

At Ebey's Landing, the Bluff Trail is occasionally congested and heavily used, with numerous social trails and violations such as having dogs off-leash, and non-permitted uses (mountain bikers and horses on trails not designated for these uses, and hang gliders in areas not permitted). These activities lead to increased vegetative trampling, trail widening, erosion, real or potential damage to sensitive native species such as the unusual prickly pear (*Opuntia fragilis*), and conflicts with law-abiding hikers. The NPS owns approximately one-third of the Bluff Trail and The Nature Conservancy (TNC) owns the remainder. The NPS is currently addressing these issues with TNC. In addition, in 2002, the North Cascades National Park Service Complex Trail Crew Staff conducted a trail assessment and provided recommendations on how to mitigate the damage to the trail. It is the intent of the NPS, in collaboration with the Trust Board, State Parks, and TNC to fully implement these recommendations.

Reserve Boundary

The boundary of the Reserve would be retained in its present configuration as referenced in legislation. The current Reserve boundary is the same boundary as the Central Whidbey Island Historic District established in 1973, which was based on the historic donation land claims of the 1850s.

Land Protection

Land Protection Methods

In the enabling legislation for the Reserve, the Secretary of the Interior was instructed by Congress to transfer management and administration to the state or appropriate units of local government when it was certain that adequate land use regulations were in place to protect the rural landscape. Under the No Action Alternative, the protection of land and associated open space, cultural landscapes, and scenic values would continue to be largely influenced by county and municipal government regulations. These regulations would include land use controls such as subdivision regulations, zoning, minimum lot sizes, and design review.

The Island County zoning district affecting most of the land within the Reserve, the Rural Zoning District, allows the development of one house per five acres. This zoning district constitutes 30 percent of Island County, but 47 percent of the land within the Reserve. Depending upon future build-out of this density, this type of development pattern would significantly alter the existing visual character of the Reserve, which the enabling legislation for the park seeks to protect.

Figure 12, Build-out Scenario, shows an existing site within the Reserve (top photo) along State Route 20, which is zoned Rural and allows for five-acre single-family development. Using the existing zoning allowances for maximum lot coverage, maximum building height, and accessory buildings, the lower photograph visually depicts the potential scale of development. The total parcel size is 45 acres, which allows for the development of nine lots. (This parcel is currently owned and protected by NPS and is used for demonstrative purposes in this photo.)

The trend of securing a variety of less-than-fee interests, such as conservation easements on key parcels from willing sellers would continue. The NPS would acquire specialized easements utilizing appropriations secured by Congress from the Land and Water Conservation Fund. As funds are made available, the acquisition of conservation easements would continue. The acquisition of these interests would result in the protection of important cultural landscapes, scenic vistas, and significant natural features, and help to augment any land use protection measures of local government. In the past, there has been some limited, fee title purchase of land from willing sellers who did not desire to convey an easement interest. This alternative would anticipate that some additional, limited, fee title purchases would occur in the future in similar circumstances. Fee title purchase may also be needed in order to secure public use and access, where the seller desires to transfer full ownership of a property, or for use in a land exchange.

Under this alternative, The Trust Board would continue to oversee management of NPS conservation easements. Nonprofit land trusts and other programs would continue to assist NPS efforts in land protection. This could include support from the Whidbey Camano Land Trust, Island County's Conservation Futures program (supported by the county portion of the real estate excise tax), The Nature Conservancy, Trust for Public Land, and other entities.

Continued private stewardship of Reserve lands would be expected to continue with some potential donation of lands or interest in lands to the NPS or other land preservation entity.

Land Protection Priorities

Under this alternative, the priority for the protection of land within the Reserve would be based on the subsequent land protection plan as funding and opportunities arise.

Land Use Measures

Under the No Action Alternative, the following factors help determine land use management and land protection.

Local Land Use Regulations and Guidelines

The Trust Board would continue to rely on existing Island County and Town of Coupeville zoning and land use regulations. The Trust Board would continue to rely on the town's historic overlay zone within portions of the Town of Coupeville to assist in the protection of the Reserve's historic and natural values.

Trust Board and Reserve staff would continue to inform county and town elected officials when a proposed land use change or action within their respective jurisdictions is contrary with the values, resources, and public use and enjoyment of the Reserve. The Trust Board would provide specific recommendations to decision-makers to either suggest modifying a proposal or recommend disapproval of a land use change or action.

Design Review and Design Guidelines

The Trust Board would continue to comment on various land use and development proposals so that county government could evaluate the potential affect of the project on the significant historical, agricultural, scenic, and natural resources of the Reserve and to better inform the county land use decision-making process.

In addition, the Trust Board would continue to support the Coupeville Design Review Board and the Island County Historical Advisory Committee, whose role is to inform officials concerning the siting of new structures within the unincorporated portion of the Reserve, and review proposals for alternatives and additions on existing structures. Guidelines for both entities would be modified as needed with the Trust Board being an advocate for those proposed changes.

Funding for Land Protection

Under Alternative A, the LWCF would remain the primary source of land acquisition funds for the Reserve. This could be augmented by the efforts of nonprofit land trusts and individual citizens.

Action Items

Implementation of Alternative A would call for the following actions to occur:

- Initiate prairie restoration.
- Revise historic preservation guidelines for Coupeville.
- Develop comprehensive sign plan (including trails).
- Develop recreational plan with partners (standards and appropriate locations for activities).
- Participate in Washington State Parks comprehensive planning process.
- Continue to purchase conservation easements, as funding allows.
- Monitor conservation easements.
- Complete conservation easement administrative plan.
- Track IPM practices on federally-owned farmlands.
- Develop long range interpretive plan.
- Update land protection plan.
- Revise cooperative agreements between Trust Board, NPS and partners.
- Assure NEPA/NHPA compliance on all federal actions (as required by law).



Alternative B—Preferred Alternative

General Description

This alternative constitutes the Preferred Alternative for Ebey's Landing National Historical Reserve. The Trust Board and the National Park Service would respond to new operational and land management realities by enhancing programs, resources, and administrative and visitor facilities. This alternative would focus on promoting agriculture, protecting resources, and providing for greater opportunities for public education and enjoyment.

The NPS would seek increased budget appropriations from the National Park Service operating base to enlarge staff presence at the Reserve. The profile of the Reserve staff would expand from four to ten staff positions comprised of both Trust Board and NPS employees. Staff composition would expand the limited maintenance and resource capabilities and allow for education and interpretive positions.

The Trust Board would adopt a new land protection plan subsequent to publication of this GMP that would better articulate the long-range land protection needs by prioritizing highly valued landscapes. Emphasis would continue to be upon the purchase of conservation easements from willing sellers, augmented by land use protection measures by local government and nonprofits. The establishment of an overlay district in the unincorporated portion of the Reserve (not to be confused with the existing town's historic overlay zone) would be one of several key recommendations for strengthening design, zoning, and permitting authorities by Island County and the Town of Coupeville.

The Reserve staff would expand its role in natural resource protection within the Reserve by partnering with other organizations and agencies, when appropriate, on such issues as prairie restoration, roadside vegetation, protection of prime and unique agricultural soils, air and water quality, elimination of exotics and protection of night sky/natural quiet.

Facility improvements would include new information kiosks at three gateway areas into the Reserve and a visitor center/contact station in an historic building in either the town of Coupeville or in the historic district to inform the public about the Reserve. This building could also serve as the Reserve's administrative headquarters. This alternative would promote partnerships with others to achieve education and visitor goals.

To promote agriculture within the Reserve, the NPS would seek to exchange NPS-owned farms to private owners for additional protection on other properties within the Reserve. The NPS-owned historic buildings would be stabilized and the Jacob Ebey House and Ferry House rehabilitated in accordance with the Secretary of the Interior's Standards. The NPS would retain protective easements on the Rockwell House and Reuble Farmstead, as well as on the adjoining farmlands, before they are exchanged.

As in Alternative A, once the Reuble Farm is exchanged, the Reserve's maintenance facility would need to move. The Reserve would explore partnering opportunities with units of local government, nonprofits, or others within the Reserve.

Congressional legislation would also be sought to provide for a modest boundary expansion of the Reserve to incorporate additional prairie, agricultural lands, and wetlands. These would include the remainder of Crockett Lake and the Naval Air Station-Whidbey Outlying Landing Field not currently within the Reserve, additional portions of Smith Prairie, and Bell Farm in the northwest are of the Reserve. Any boundary changes proposed would be fully coordinated with willing property owners and managers.

The Trust Board would work with the public, the Island County Marine Resources Committee, and other agencies to protect the coastal waters adjacent to the Reserve.

Three development concept plans have been included at the end of this alternative showing detailed treatment of the South Gateway, the Ferry House, and a portion of the West Ridge property.

Management Zones

Four NPS management zones were developed to guide future management actions within the Reserve. (See Figure 13, Management Zoning: Alternative B.) They include a Cultural and Natural Preservation Zone, Visitor Use and Development Zone, Administrative Zone, and Special Use Zone. Management zones vary according to the kind of resource conditions that exist within the Reserve, the type of visitor experiences that would occur, and how these areas would be managed.

Unlike most national park units that are entirely owned and managed by the NPS, most of the land within the Reserve is in private ownership where local government zoning and regulations prevail. The planning team discussed whether to place management zones on land owned in fee by the NPS and on lands with conservation easements held by NPS. For those lands with NPS easements, it is possible that private owners would object to being in a management zone that addresses public visitation. However, to promote protection of resources on private land, the planning team decided to include the private land within the Reserve as part of the Cultural and Natural Preservation Zone. On private lands there would be no public visitation or activities or facilities. There is also land within the Reserve owned by other public local and state agencies. These other public lands may experience public visitation and could develop facilities within the Reserve, unlike the private lands. These private and other public lands are shown separately on the zoning map with cross-hatching. Private owners, and other public land managers, would be expected to be

stewards on their own lands with NPS and Trust Board assistance. Private owners would be eligible for incentives that would be established and available.

Cultural and Natural Preservation Zone

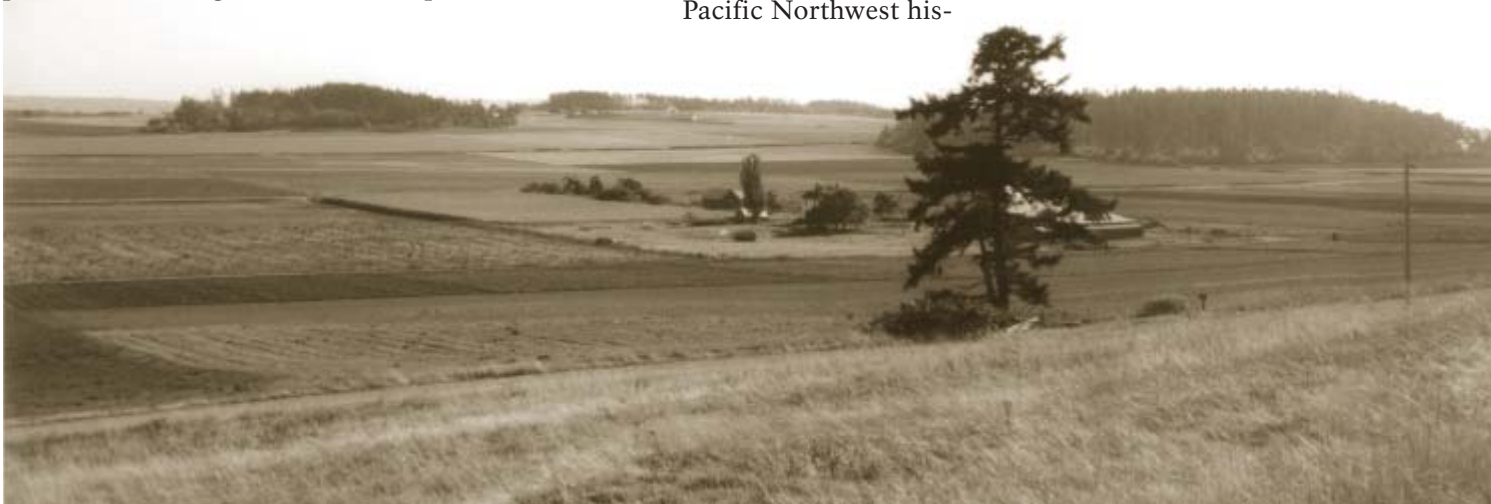
Resource Condition or Character

The management focus of this zone would be on maintaining and protecting the cultural and natural resources, such as the resources and experiences related to pre-history, the first permanent settlement on Whidbey Island by Isaac Ebey, the Donation Land Claim settlements and subsequent settlements, and the development of the Town of Coupeville. Resources and experiences would include those cultural landscape features that contribute to the preservation of the rural community such as agricultural fields and associated outbuildings. Resources and experiences related to coastal, woodland, upland, prairie, and wetland ecosystems and communities would be accommodated. Archaeological resources would be part of this zone.

The setting in this zone would be historic and natural, keeping resources at a high level of integrity. The historic buildings and landscape would be managed to protect the Reserve and to maintain the rural landscape character. The landscape would be managed to support visitor use and enjoyment of park resources to the extent that the Reserve's resources would remain protected.

Visitor Experience

Visitors would be immersed in an outdoor, cultural and natural environment that is rich in Pacific Northwest his-



tory and scenic rural quality. Interpretive and educational opportunities would be available in this zone and opportunities would exist for visitors to experience both natural and cultural resources. Visitor activities would occur primarily in unstructured ways (self-guided tours), though some formal guided tours would be available. The possibility of encountering people would be low to moderate, depending upon the area of the Reserve visited.

At all times, visitors would be encouraged to act in a manner that respects adjacent private landowners and private property. Visitors should expect some minor intrusions to the natural soundscape and viewed by traffic, overflights, and other visitors.

Appropriate Types of Activities or Facilities

Appropriate visitor activities would include learning about the Reserve's natural and cultural resources, its ecological and historical relevance. This zone would offer low impact and non-motorized recreational opportunities, such as walking, hiking, bicycling, picnicking, jogging, bird watching, wildlife viewing, and art and photography.

Examples of this zone would include the Ferry Forest, Ebey's Landing Bluff Trail, Jacob Ebey House and Blockhouse, Ferry House, and other historic buildings. Some aspects of the natural and cultural landscape could be modified to accommodate visitor use such as trail construction and providing for landscaping and exhibits.

Visitor Use and Development Zone

Resource Condition or Character

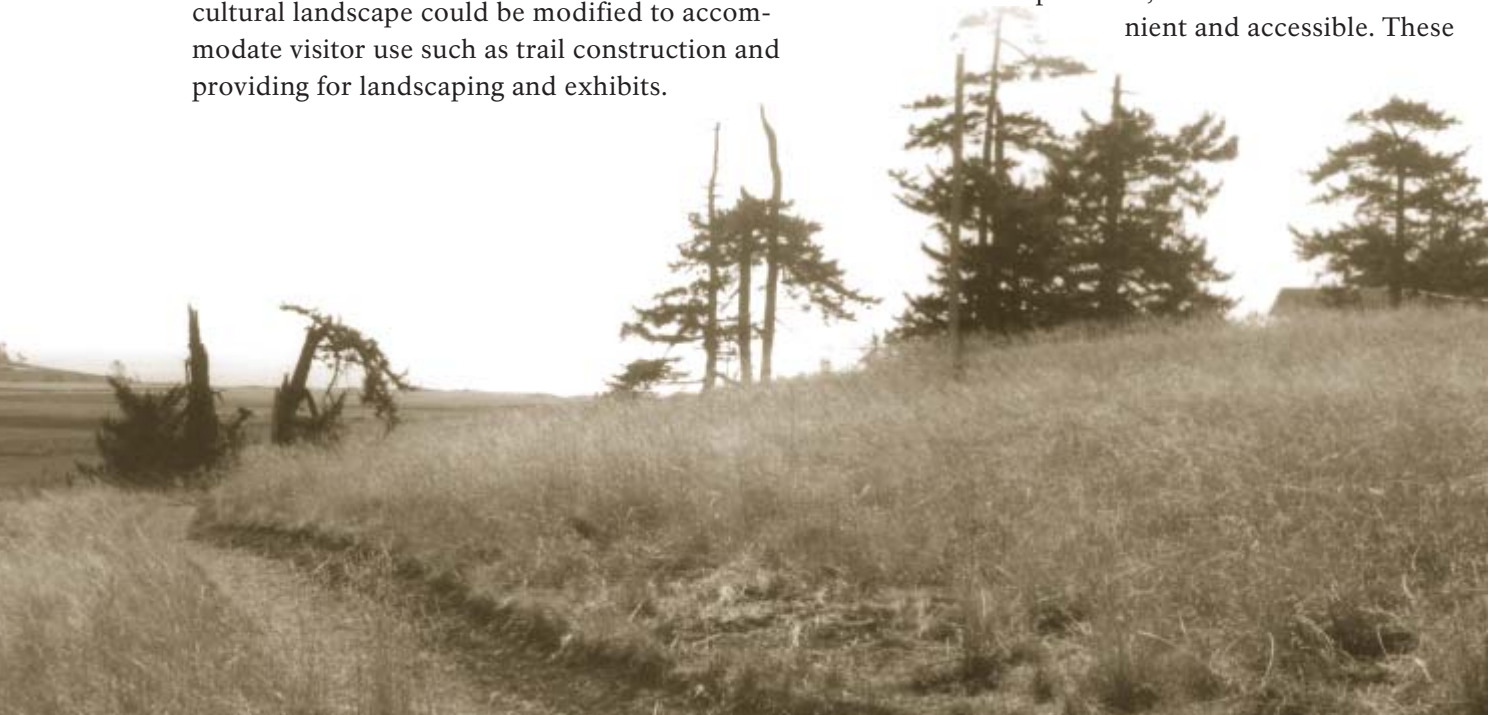
The management focus of this zone would be on interpretation and visitor use opportunities. Resources would be modified for essential visitor and Reserve operational needs. Education and interpretive facilities and services would be provided for visitor use. This zone would serve as a primary entry into other zones within the Reserve.

Tolerance for resource degradation in this zone would be low. Visitors and facilities would be moderately managed in this zone for resource interpretation, visitor safety, and visitor needs. Although buildings, structures, and other signs of human activity would be obvious, there would be natural elements present in a "park-like" setting or in a "small town" environment. The zone would not be located near sensitive natural or cultural resources if such resources could not be adequately protected. Some elements of this zone (for example, waysides or parking) may be located on private property or property owned by Reserve partners through various cooperative agreements.

Efforts would be made to minimize development impacts, and mitigation would minimize landscape and visual impacts, if any exist.

Visitor Experience

In this developed zone, facilities would be convenient and accessible. These



areas would provide many social experiences, and the probability of encountering other visitors or Reserve staff would be expected. At all times, visitors would be encouraged to act in a manner that respects private landowners and private property. Visitors should expect some minor intrusions to the natural soundscape and viewshed by traffic, overflights, and other visitors.

Appropriate Types of Activities or Facilities

Types of activities would include learning about the Reserve's natural and cultural resources and its ecological, agricultural, and historical relevance. A range of interpretive, educational, and orientation programs would be provided, with the majority of orientation and interpretation of resources taking place onsite. Additional educational and recreational opportunities would be available to visitors in other venues within the Reserve, such as at Washington State Parks, and Island County Historical Museum.

Examples of this zone would be the proposed visitor center/contact station and proposed gateway kiosks, such as the South Gateway site at Au Sable, the Prairie Overlook, and the Prairie Wayside.

Administrative Zone

Resource Condition or Character

A variety of facilities and functions that support Reserve operations would be accommodated in this zone. All facilities would be sited and designed to minimize disturbance. Facilities may be modified to harmonize with the Reserve's setting. They would be located in areas of low impact to sensitive natural resources. Green-design, native landscaping, screening for views and noise would be incorporated. Examples would be administrative offices and maintenance facilities. Historic structures may be adapted for administrative use when appropriate.

Visitor Experience

There would be limited opportunities for visitors. An exception would be visitors needing to contact Reserve staff at administrative offices.

Appropriate Types of Activities or Facilities

Appropriate activities would include administrative functions and research. The type of facilities

would include the following for Reserve operations: administrative offices, supply and storage, conference/meeting space; Reserve partner offices and storage; maintenance offices, workshop space and equipment storage; curatorial space; library; administrative space for volunteers, researchers, VIPs; and associated parking and utilities.

Special Use Zone

Resource Condition or Character

The focus of this zone would be on NPS-owned fee-title properties (including structures) that have the potential to be exchanged, leased, or sold with conservation easements such as Farm I, Farm II, and the West Ridge property. In accordance with 36CFR part 17.3, no lease or freehold conveyance can be made except for lands which the GMP has designated as a Special Use Zone for the uses that are permitted by the freehold or leasehold conveyance.

Properties that would be placed into this management zone would be for eventual disposal to the private sector and not kept in fee ownership by the federal government. Less than fee ownership, such as conservation easements, would be retained by the NPS. This would allow the land to retain its scenic and agricultural qualities in keeping with the enabling legislation of the Reserve and those qualities which give the Reserve its national significance and status as a unit of the National Park System.

Visitor Experience

The visitor experience would be limited. In most cases, the public would not be encouraged to visit these farms, since no interpretation opportunities currently exist and none are anticipated in this zone. Visitors would be able to view the farms as they traverse the Reserve and the agricultural operations would continue to contribute to the sustainability of historic patterns of land use and the rural landscape. In some cases hiking trail corridors would traverse through this zone to link other visitor use areas.

Appropriate Types of Activities or Facilities

Appropriate activities would include various agricultural operations in keeping with the scale and character of the Reserve. Appropriate facilities

would be those that sustain the agricultural operations, such as Farm I, Farm II, or the West Ridge property.

Reserve Management

Policy and Oversight

Under this alternative, the responsibility for setting the policies and general actions for the Reserve would continue to be the responsibility of the Trust Board within the framework of the Reserve's legislation, the GMP, and relevant NPS policies and guidelines. Each year, the NPS Pacific West Deputy Regional Director in Seattle would hold an annual policy level review with the Trust Board. The NPS would continue to conduct an appraisal of the management and operation of the Reserve under the requirements of Paragraph (e), Section 508 of Public Law 95-625.

As in Alternative A, the Trust Board would continue to have general policy and oversight of the Reserve partnership and oversee general management and protection of lands with conservation interests acquired using federal money. The Trust Board would continue to pursue the protection of land, provide administration of programs and technical support, participate in the local land use-review process, and be an advocate for and support the concept of the Reserve.

In the Preferred Alternative, the current NPS Cultural Resource Specialist/Trust Board appointee would be separated into two distinct positions. The NPS Deputy Regional Director in Seattle would appoint a representative from the Pacific Northwest Region with the appropriate senior management or professional background to serve as the NPS Trust Board member.

It is further recommended that two of the seven Trust Board appointments from local governments include representatives from the town and county planning commissions or planning staff. It is proposed that the state parks appointee would be at the district or regional park staff level having direct communication with and reporting to the Director of the Washington State Parks and Recreation Commission.

The Trust Board would develop position descriptions and performance standards for members in order to recruit and maintain high quality participants.

Operations and Management

The Reserve Manager continues to have day-to-day operational responsibilities for the Reserve. The description of the Reserve Manager position would be revised to reflect the work responsibilities, and the Reserve Manager would remain a Trust Board employee under this alternative. The Reserve Manager would report directly to the Trust Board and the Trust Board would hold annual performance and operational reviews with the Reserve Manager.

The Trust Board would set priorities, prepare an annual Trust Board budget, and joint workplan for the board in conjunction with NPS staff. The Trust Board would also be responsible for review and management of NPS conservation easements. NPS staff would meet all NPS requirements for performance evaluations. The Trust Board would provide the NPS Deputy Regional Director in Seattle with an annual performance review of the Reserve Manager.

Cultural Resources

Cultural Resource Management would continue in the same manner as in the No Action Alternative with the following additions.

Cultural Landscape

The Trust Board and NPS would develop a system for tracking, evaluating, and monitoring changes to the cultural landscape within the Reserve. This system would help provide baseline information used to take future actions to diminish impacts and losses to cultural landscape features such as fences, hedgerows, farm clusters, and vegetation. The system should identify the impact on the Reserve from such actions as conversion of agricultural lands to residential and other uses, changes in forest practices and transportation networks.

The NPS and Trust Board would provide a stronger advocacy role in historic preservation throughout the Reserve, working closely with and

through other partners, including traditionally associated tribes, to achieve greater protection of historic and ethnographic resources. This expanded advocacy role would include the greater Reserve community, to gain its support for the Reserve operation.

The Reserve staff would expand the technical library and archives related to Reserve history, historic preservation techniques and practices, and natural resource management information. Staff would assist in facilitating historical research, publishing research findings on various topics, and disseminating information to the academic and historical communities, as well as to the Reserve community.

There would be an expanded role for Reserve staff in interpretation, special events, and outreach programs that is intended to heighten public awareness of the unique qualities that define the rural character of the Reserve and its national significance.

Historic Buildings and Structures

Trust Board staff would work with the Town of Coupeville and Island County to update and strengthen design guidelines, zoning, and permitting authorities to assist historic preservation efforts and to promote compatible new construction and in-fill development. Some of this could be accomplished with an overlay zone. (See “Land Protection” section at end of this alternative.)

Stronger design review guidelines are a critical element of a successful cultural landscape protection program. Design guidelines would offer suggestions for how to site new construction without negative visual impacts. These guidelines could recommend architectural and landscape design techniques, styles, colors, and materials in keeping with the Secretary of the Interior’s Treatment of Cultural Landscapes and other recognized and accepted standards for the preservation of cultural landscapes. These actions would provide landowners information and another method in helping them to become stewards for the national historical reserve.

The National Register nomination form would be

updated as necessary to ensure recognition of all significant properties over 50 years of age.

The NPS would stabilize and potentially utilize NPS-owned historic structures in accordance with the Secretary of the Interior’s Standards. These structures include the Ferry House and associated buildings (shed and outhouse); the Jacob Ebey House at the West Ridge property. Actions specific to Alternative B are as follows:

Ferry House

The Ferry House would be stabilized, the front porch reconstructed, and the building brought up to a level of preservation maintenance, including the shed and outhouse behind the house. Due to its historic configuration and limitations with regard to accessibility, limited tours may be offered at the Ferry House. The building would be equipped with site security appropriate to its historic setting and fabric. (See Ferry House Development Concept Plan for detailed treatment of the site at the end of Alternative B.)

Jacob Ebey House and Blockhouse

The Jacob Ebey Blockhouse would be preserved and interpreted as an exterior exhibit. The Jacob Ebey House would be rehabilitated as a seasonal contact station for visitor use. (See Jacob Ebey House and Blockhouse Development Concept Plan for detailed treatment of the site at the end of Alternative B.)

Rockwell House and Reuble Farmstead

The NPS would continue to spend limited funds on the preservation of the historic properties at Farm I and Farm II until an exchange could occur. The NPS would retain protective easements while seeking a private owner to acquire the historic buildings as part of an overall exchange of the farm properties for developments rights elsewhere within the Reserve.

Collections Management

Treatment for collections would be the same as in Alternative A. In addition, the NPS would develop a museum management plan that would allow for collections storage within the local museum. The plan would outline NPS requirements for storage.

Archaeology

The treatment for archaeology would be the same as in Alternative A.

Compliance Activities

Compliance activities would be the same as in Alternative A and as required by federal law.

Natural Resources

The treatment for natural resources would be the same as in Alternative A with the following additions or changes.

Geology, Soils, and Air Resources

The Reserve staff would encourage activities and programs that promote natural quiet and retain the quality of the night sky within the Reserve. The Trust Board and NPS would actively support the Island County Dark Sky ordinance and seek funding to shield fugitive light from fixtures within key night viewsheds, such as the prairies. Additionally, the Reserve would join existing air quality networks within state and federal agencies including the Washington Department of Ecology, the U.S. Forest Service, the Northwest Air Pollution Authority and others, to gather baseline data on air quality sampling and establish a monitoring program for the Reserve, addressing key monitoring subjects such as meteorology and climate, air pollution, nitrate/sulfur deposition and ozone, and lightscape.

Using a variety of land protection measures, including the purchase of conservation, scenic and development easements, fee purchase, and land swaps, the Reserve staff would work with partners to prevent the loss of prime and regionally important agricultural soils through their conversion to development or other incompatible uses, and to preserve economically viable farm units and open space. In order to assist farmers in minimizing adverse wind erosion during severe storms, technical support from the NRCS would be sought. Funding would be solicited for soils monitoring, including soil fertility, shoreline bluff stability, and prairie soil erosion.

The NPS staff would seek NPS resource manage-

ment funding for the Reserve to address important research topics such as sea spray influences, effects of the pulp plant in Port Townsend, tropospheric ozone and airborne toxics. In addition, funding would be sought to study land use change within the Reserve, soil quality and its relationship to land use, delineation of prairies, and soil erosion and compaction in relationship to agricultural practices and recreation.

Water Resources

The Reserve staff would work in partnership with others to protect and restore wetlands, and advocate for mitigating for loss and damage where it occurs. Reserve management and staff would pursue partnership opportunities to protect the shoreline environment within central Whidbey Island. Staff would also pursue partnership opportunities with others to enhance natural habitats and corridors.

The Trust Board would encourage area farmers, Island County staff and officials, and others to help protect aquifer and surface waters within the Reserve and strive to minimize the application of pesticides and associated runoff contamination of surface and groundwater resources.

In addition to actions identified in Alternative A, the Reserve staff would also encourage and seek funding for conducting hydrologic assessments of significant landscape features, including Crockett Prairie/Lake, Ebey's Prairie, and Smith Prairie aquifer recharge area. Proper functioning condition assessment of Crockett Lake would be a basic tool necessary for restoring the ecosystem health of this important wildlife resource.

The Reserve staff, in conjunction with Island County, would encourage the development and implementation of a Penn Cove water quality plan. The intent of this plan would be to encourage the mapping of degradation sources and implement strategies in conjunction with others to reduce impacts that affect the water quality of the Cove. Funding would be sought to address monitoring topics defined in the *Ebey's Landing National Historical Reserve Resources Management Plan* related to the adjacent lands and waters of Penn Cove.

Vegetation

The Reserve staff would use partnerships to encourage the expansion, protection, and wise-use of woodlands and prairie plant communities within the Reserve. These partnerships would include working with Washington State University Extension Office, the University of Washington's College of Forest Resources, state and private foresters, Au Sable Institute, The Nature Conservancy, Whidbey Camano Land Trust, and others. Reserve staff would encourage the voluntary involvement of private property owners in these efforts.

Reserve staff with the National Park Service would design and implement a prairie restoration plan in partnership with landowners and other stakeholders in appropriate locations. Active prairie restoration partnerships with other national parks and agencies in the Puget Sound Trough would be established, and joint funding efforts would be initiated.

The Reserve would encourage planning and use of landscaping strategies promoting the propagation and wide use of drought-tolerant native wildflowers, ground cover, and hedgerow species, important to maintaining native wildlife as required by NPS management policies. This strategy also could be applied to roadsides.

Reserve staff would encourage partners to control exotic invasive plant species such as poison hemlock. Funding would be sought for revegetation with native plants, upon removal of targeted exotic species.

The NPS would seek funding to address monitoring issues such as state and federally listed plant status and trends, exotic plant status and trends, status of plant communities and native forests, and impacts on native vegetation from recreation.

In addition, funding would also be used to research issues developed in the Resources Management Plan on wetlands, hedgerows, golden paintbrush management, fire as a management tool, and other specific topics related to the health of the central Whidbey Island ecosystem.

Wildlife

Under this alternative, there would be an increase in the Reserve's natural resources baseline information through research and field inquiry. In turn, this baseline would be used to update the 1995 resources management plan and project management information system (PMIS) funding requests. Staff would produce and distribute interpretive materials for the public on various natural resource management issues and concerns. In order to educate the Reserve community about wildlife and other natural features in the Reserve, various outreach programs would be conducted along with special events relating to natural resource issues.

The NPS would seek funding to address monitoring questions related to the status and trends of species composition for amphibians, birds, and mammals and other relevant topics. In addition, funding would be sought to address research on topics such as status and trends of species composition, bird assemblages and annual migration, diurnal raptor nesting, and other topics.

Staff would encourage and participate in scheduled inventories by NPS or partners as resources permit.

Agricultural Resources

Protection of Reserve Agricultural Lands

The overall protection of the Reserve's agricultural lands would be the same as in the No Action Alternative.

Prime and Unique Soils

Staff would encourage partners to prevent the loss of prime and locally important agricultural soils and to preserve economically viable farm units and open space. The Trust Board would establish a "friends group" as a means to assist farm preservation efforts and support viable agriculture within the Reserve.

Technical Assistance and Public Awareness

The Reserve would partner with federal, state, and

local entities to provide technical assistance for property owners regarding grant programs, tax incentives, and other measures to support the preservation of historic farm structures and landscapes.

The Reserve would be an advocate for organic and sustainable agriculture.

In keeping with the historic character, the Reserve would encourage innovative agricultural product development, such as niche agriculture development and grass-based dairies within the Reserve. The Reserve would explore a variety of creative approaches to farming large parcels within the Reserve, such as “condominium” farming, whereby smaller scale specialty farmers can jointly own larger parcels of farmland.

In order to interest investors and others in farm operations within the Reserve, the Reserve staff would cooperate with existing established farm organizations to provide information to interested individuals on the community agricultural resources and history of the area.

The Reserve would support partnerships with the Washington State Cooperative Extension Office, Natural Resources Conservation Service, the Whidbey Island Conservation District and others to advance research on the area’s agricultural history, crop management, farm operations, and other topics that support private, sustained, and viable agriculture within the Reserve. Some of the concepts that could be promoted would include community-supported agriculture (CSAs), branded marketing, licensed products, cooperative processing, marketing and sales, and expanding the Coupeville Farmer’s Market.

NPS-Owned Farms

Farm I and Farm II

The treatment of Farms I and II would be the same as in Alternative A. In addition, before exchanging Farm I, one-acre of land would be retained by the Reserve for the development of a trailhead including a kiosk and visitor parking to access the Reserve’s trail network. The Reserve would acquire a trail corridor through the property. Both the trailhead and trail corridor would

be sited in a location that would not conflict with agricultural operations.

West Ridge Property

As in Farm I and Farm II, the West Ridge property would continue in agricultural use while protecting the historic and scenic resources. In Alternative B, the 60-acre agricultural fields would continue to be leased in the short-term. In the long-term, the NPS, in collaboration with the Trust board, would evaluate opportunities to exchange the farmlands after retaining a conservation easement on the fields for conservation easements on other properties within the Reserve. This property would be included in the Special Use Zone of NPS management zoning to allow for disposition.

A sufficient land area would be retained to include trails and to protect the historic setting and historic structures—the Jacob Ebey House and Blockhouse. The Blockhouse would be used as an outdoor exhibit with appropriate interpretive signing. The Jacob Ebey House would be rehabilitated as a seasonal contact station for public use. The Reserve would retain the Cottage for administrative offices. (See West Ridge Property Development Concept Plan at the end of this alternative for detailed treatment of the property.)

Public Awareness of Reserve’s Agricultural Heritage

Reserve staff would work with farmers, Chamber of Commerce, and other partners, to provide and promote agricultural tourism opportunities including farm tours, the sale of local products, and overnight farm stays.

Recreational Resource Management

Trails and Walks

Reserve staff would work closely with various public and private partners to complete and expand the network of hiking, bicycle, and horse trails throughout the Reserve to link existing and proposed waysides and activity areas, including other Whidbey Island trails, as possible. It is intended that public non-motorized use of the Re-

serve would encourage the public to experience a variety of Reserve landscapes and features in a more intimate way. The development of additional trails could help reduce the pressure on currently used popular trails by dispersing users.

Cooperation would be sought with other partners such as Seattle Pacific University (Camp Casey), Au Sable Institute, Washington State Parks, The Nature Conservancy, and others to develop public self-guided nature trails.

A trailhead would be developed at Farm I to serve visitors using the trail network within the Reserve.

Reserve staff would work with partners including Island County to coordinate and develop a water trail along the Reserve's shoreline linking to existing Whidbey Island, Puget Sound and Washington State marine trails.

The existing driving/bicycling tour route would be expanded in the northern portion of the Reserve and the brochure would be updated by adding additional points of interest for the traveling public.

Appropriate Uses

The Reserve would develop a system with partners for monitoring increased recreational use and work with partners to develop measures to mitigate adverse effects on visitor experience, safety, environmental quality, and community character.

Recreational Information Systems, Sites, and Programs

Reserve staff would help to provide or facilitate interpretive training for volunteers and private tour operators about the recreational, historical, cultural, and natural resources of the Reserve.

Economic Benefit of Recreation Expenditures

It is recommended that Reserve staff update the Reserve's socioeconomic study to determine how much money people spend in the Reserve and on what activities. This study could include using the NPS Money Generation Model within the Reserve and may require staff applying for grants from outside sources.

Scenic Resource Management

Management for scenic resources would be the same as in Alternative A, the No Action Alternative. In addition, the following actions would be taken:

In cooperation with Island County and Town of Coupeville planning staff, area real estate offices and others, Reserve staff would develop a handbook for property owners in the Reserve. This new handbook would provide voluntary building design ideas on how new structures can best be sited on property, and how careful planning and selection of appropriate building materials and harmonious colors can help to minimize the visual impact of new development in the Reserve.

Reserve staff would endeavor to partner with Town of Coupeville, Island County, and Washington State Department of Transportation to maintain and enhance the quality and scenic beauty of the roadside areas within the Reserve. Roadside enhancement could include a native wildflower-seeding program, use of native low-maintenance ground cover (which minimizes mowing along road shoulders) and the careful design and placement of signs that do not detract from scenic views.

Reserve policies and staff would encourage clustering of new developments within the town and county to maximize the amount of common open space that is preserved.

State Route 20 is part of the Cascades Loop State Scenic Highway and designation is pending for National Scenic Byway status. The Trust Board would continue to work with partners for scenic designation on key roads through the Reserve.

The development of additional scenic roadside pullouts, overlooks, and waysides would be encouraged as appropriate. These could include gateway or entry locations, marine trail stops, shoreline access and viewpoints, and links to interpretive sites, trailheads, or nature viewing areas.

In addition, the Reserve staff would work with town staff and officials to define the viewshed from the Town of Coupeville across Penn Cove and assist in its protection by promoting the ac-

quisition or donation of conservation or scenic easements on key properties from willing sellers.

The Reserve would work with partners like Island County and Whidbey Camano Land Trust for the protection of scenic lands.

Interpretation and Education

Exhibits and Interpretive Media

The treatment for exhibits and interpretive media would be the same as in Alternative A. In addition, the following actions would occur:

Collections and photos relating to the Reserve would be interpreted at the local museum.

As an outgrowth of the long range interpretive plan, the wayside exhibit plan would be revised and potentially new waysides identified and sited within the Reserve. The Trust Board would have a key role in interpretive wayside planning. The wayside at the Port Townsend Ferry Landing would be improved to better acquaint visitors to Whidbey Island about the Reserve prior to their arrival on Whidbey Island.

The Ferry House and Blockhouse would be signed and interpreted as outdoor exhibits. The Ferry House may be open for limited tours. The Jacob Ebey House would be rehabilitated for visitor use as a seasonal contact station and would include interior exhibits. Signage would be placed in sensitive locations so as not to detract from scenic and historic views.

Oral histories, historic documents and photographs would be placed on the Reserve's Internet homepage to allow a "virtual" Reserve visit for those planning a visit or those unable to travel to the area. The Trust Board would work with partners to enhance their websites with accurate Reserve information and provide links to the NPS site as appropriate.

Visitor Center/Contact Station

The Trust Board would seek a suitable location for an Ebey's Landing National Historical Reserve visitor center/contact station and could partner with others such as the town, museum, or Chamber of Commerce in operating this facility. This

visitor center/contact station would be in an existing historic facility centrally located, preferably in Coupeville, or in the historic district, in keeping with Executive Order 13006 (requiring federal government to seek administrative space in historic downtowns or districts). The facility would have interpretive exhibits related to the various primary interpretive themes of the Reserve. Reserve administrative offices could be located here.

Within the new visitor center, or a smaller visitor contact station, space could be available to other compatible groups to convey information about area lodging, food, and other activities of interest to the public. The facility should also include a multi-purpose space with audio-visual equipment for orientation and interpretive functions for Reserve visitors, and could serve as classroom space for students, Elderhostel, and others.

Partnership Programs

A docent/volunteer program would be initiated within the Reserve and coordinated through a Reserve staff volunteer coordinator and education specialist function that is part of the proposed staffing plan under this alternative.

With the assistance of the Trust Board and a Reserve volunteer coordinator, a Reserve "friends group" would be established to assist Reserve outreach, activities, and programs.

To promote public education about the Reserve, the Reserve staff would hold workshops or special events in conjunction with partners about the historic and natural resources of the Reserve. This education campaign could be done through a variety of methods such as a speakers' bureau, guest lectures, site bulletins, posters, the Reserve newsletter, and the Internet.

Reserve interpretive and education staff would participate in the NPS "Parks as Classrooms" program to acquaint large audiences with the history and ecology of the Reserve.

Reserve staff would work with partners such as Seattle Pacific University, Au Sable Institute, Audubon Society, The Nature Conservancy and others to hold field schools and other educational and interpretive programs relating to the history

and ecology of the Reserve.

Reserve staff would participate with other partners to develop interpretive exhibits relating to Reserve ecology at places such as the Coupeville Wharf, Camp Casey, or Captain Coupe Park with an emphasis on shoreline and aquatic resources.

Gateway Contact Facilities

Three small “gateway” contact facilities would be developed to aid visitors at the three main entry points into the Reserve—a southern gateway along State Route 20 in the Smith Prairie area, the Washington State Ferry landing at Keystone and/or Port Townsend, and a northern gateway along State Route 20. The facilities would be high quality, professionally designed, interpretive kiosks that are intended to be modest in size, user-friendly, and would not require staff. As funding and staffing is available, the design could incorporate a small desk space for a Reserve seasonal interpreter or volunteer to greet the public and used to staff these facilities seasonally during peak hours. Use of volunteers for these sites would be encouraged. These gateway contact facilities would provide general information about and orientation to the Reserve, including maps.

Interpretive Guided Tours

The Reserve staff would conduct interpretive guided tours within the Reserve and not contract out these services. The NPS staff would provide training for personal services for interpretation to NPS standards.

In addition, the NPS would provide training and certification to ensure interpretive standards are met by private operators and partners.

Scenic Auto Tour Routes

To maximize the public’s exposure to scenic resources and open space of the Reserve, additional public auto tour routes with directional and informational signing would be encouraged. This effort would be coordinated with partners to ensure integration with a future Long Range Interpretive Plan and sign plan.

Educational Outreach to Reserve Residents

In cooperation with local real estate companies, Reserve staff would develop a new brochure about living in Ebey’s Landing National Historical Reserve. This brochure would encourage new residents to reflect upon opportunities for private stewardship and provide information about farming practices, easement information, sensitive construction, and other useful items.

Reserve Facilities

Visitor Facilities

The Trust Board would seek a suitable location for an Ebey’s Landing National Historical Reserve visitor center/contact station and partner with others such as the town, museum, or Chamber of Commerce. This visitor center/contact station would be in an existing historic facility centrally located, preferably in Coupeville, or in the historic district, in keeping with Executive Order 13006.

Administrative Facilities

In the short term, the Reserve’s administrative staff would continue to occupy the Cottage at the Sunnyside Cemetery near the edge of Ebey’s Prairie. In the long-term a new administrative site would be located in an historic building in Coupeville or within the historic district, possibly in conjunction with the visitor center/contact station. The Cottage would be retained for use as resource offices.

In the long term, the Cottage would either be converted to other Reserve uses, or be disposed of through a land exchange for development rights on other priority properties in accordance with 36 CFR, Part 18.

Maintenance Facilities

Under Alternative B, an NPS maintenance foreman would be hired and assigned to provide for the long term care and maintenance of NPS-owned structures (both historic and non-historic) and property using NPS contract and volunteer services. The maintenance foreman would be trained on the NPS MAXIMO system, and would oversee long-range maintenance planning and

complete minor maintenance work. For those maintenance operations requiring a minimum of two people to work safely in accordance with Occupational Safety and Health Administration and Labor and Industry safe work standards (work including ladder use, roof access, moving equipment, and other tasks involving hazards), the Reserve could use seasonals, volunteers, employees from cooperating network parks, or other partners.

North Cascades National Park Service Complex maintenance staff may continue to provide special project assistance such as historic structure preservation and trail development and brush clearing from waysides, subject largely to the availability of special project funds.

The maintenance facilities now located at the Reuble Farmstead would need to be relocated to a site elsewhere within the Reserve once Farm II is exchanged or sold. The NPS and Trust Board would explore various partnering opportunities for short and long-term maintenance needs with units of local and state government (potentially as part of the in-kind match requirement for the Trust Board budget), non-profits, and individuals.

Facility experts at North Cascades National Park Service Complex familiar with the needs of the Reserve conducted a maintenance needs assessment in December 2004. The report (Belcher and Holmquist 2004) concluded that at a minimum, a maintenance operation at the Reserve would require the following: approximately 600-800 square feet of office space, a 1,600 square foot

workshop to set up stationary woodworking equipment, a 4,000 square foot dry storage area for storing building materials and maintenance equipment, a garage with two bays for parking vehicles or other equipment such as mowers/tractors with an enclosed heated area for storage. The maintenance area would require adequate open space for maneuvering trucks, trailers, and other needs. As a contributing partner in the North Coast and Cascades Network, the Reserve could contribute opportunities to assist other parks. Examples of opportunities to assist would include providing space for dry covered 100-ton hay storage, dry covered storage for boats/trailers, and pasture for over-wintering pack stock from North Cascades National Park Service Complex and Olympic National Park. These partnerships would serve the Reserve within the network by earning in-kind services in return that would further benefit the maintenance operation.

Development Cost Estimates

The following costs are estimates for implementing Alternative B. It is assumed that meeting the long-range development needs of the Reserve would not just rely upon federal appropriated funds. A wide variety of other public and private sector funding sources would be sought by the Trust Board to assist in implementation efforts over the next 15-20 years. As has been evidenced in the past, some development costs assigned to certain actions may prove to be less expensive when donated materials, labor, and other support are forthcoming. Costs are expressed in gross construction dollars and include design, compliance,

Table 17: Development Cost Estimates

Development Actions for Alternative B	Total Estimated Costs
Visitor Facilities	\$2,100,000 - 2,300,000
Administrative/Maintenance Facilities	\$500,000 - 600,000
Historic Rehabilitation*	\$100,000 - 150,000
Trails	\$100,000 - 150,000
Total NPS Capital Costs	\$2,800,000 - 3,200,000
Total Average Annual Life-cycle Costs (25 years)	\$12,000
Total NPS Lands Costs	\$975,000 - 1,150,000

*Funding for rehabilitating the Jacob Ebey House has already been secured

Table 18: Staffing under Alternative B

	Administrative	Maintenance	Interpretation/ Education	Resource Management	Total Staff	Total FTE
Trust Board Staff	3 Full-time	0	0	1 Full-time	4	4
NPS Staff	0	1 Full-time 1 Part-time	1 Full-time 1 Part-time	2 Full-time	6	5
Total	3	2	2	3	10	9

and supplemental services.

These costs are based upon general “class C” estimates of site development. These estimates are not intended to be used for budgetary purposes. Prior to submitting funding requests for the design and construction phases, “class B” estimates are required, based upon detailed site design that will provide decisions about facility size and cost. Costs are expressed in 2005 dollars and phased over 15-20 years.

Reserve Operations

Staffing

This alternative calls for a total of ten staff to carry out the operational responsibility of the Reserve. These positions would be comprised of both Trust Board and NPS employees.

The Reserve staff would consist of personnel hired by the Trust Board and National Park Service personnel assigned to the Reserve. The Reserve Manager would directly supervise those Reserve staff hired by the Trust Board. Reserve staff would assist the operations of the Reserve in the areas of administrative support, community and land use planning, volunteer recruiting, retention and training, and coordination of Reserve-wide educational programs. The NPS Cultural Resource Specialist would provide on-site supervision of NPS staff assigned to the Reserve. The Reserve Manager would be expected to coordinate closely with the NPS Cultural Resource Specialist and the other NPS staff assigned to support the Reserve to ensure cohesive management. Annual workplans and budgets would be developed cooperatively.

NPS staff assigned to the Reserve would be responsible for preserving, maintaining and managing the NPS-owned historic structures and non-historic properties and facilities of the Reserve.

NPS staff assigned to the Reserve would provide expertise in the areas of cultural and natural resource management, providing or assisting in various Reserve interpretation and education programs, facility maintenance and management of NPS-owned properties and compliance and enforcement of NPS-owned easements.

In addition to assigned staff, the Trust Board would rely extensively on partners for visitor and resource protection and visitor services, including contribution of in-kind services.

Staffing would include the following positions:

- Reserve Manager (Full-time Trust Board employee).
- Administrative Assistant (Full-time Trust Board employee).
- Community Planner (Full-time Trust Board employee).
- Volunteer Coordinator/Grant Writer (Full-time Trust Board employee).
- Cultural Resources Specialist (Full-time NPS employee).
- Natural Resource Manager (Full-time NPS employee).
- Interpretation/Education Specialist (1 NPS full-time and 1 seasonal employee).
- Maintenance Manager (Full-time NPS employee).
- Maintenance Worker (1 NPS seasonal employee).

Estimated Operating Costs (2005 Dollars)

Base allocation	\$282,000
Additional staff and support costs	\$695,000*
Total NPS cost	\$977,000

(*includes leased space, supplies, vehicles and equipment)

The difference in operating costs between Alter-

native A (current base) and Alternative B is \$695,000.

Fees

There are no fees for entering the Reserve. However, there is a daily parking fee at both Fort Ebey and Fort Casey state parks. The Island County Historical Museum located in the Town of Coupeville charges an entrance fee. There would be no fee for entering the Reserve's visitor center/contact station.

Hours of Operation

Since the Reserve is primarily private land, there are no standard "park" hours. However, the Reserve's administrative offices are generally open on weekdays from 9:00 am to 5:00 pm. Island County Historical Museum is open year-round on the weekends and has varying seasonal weekday hours. Most of the town shops and restaurants are open from 10:00 am until 5:00 pm daily. The Reserve visitor center/contact station in town would be open daily from 10:00 am to 5:00 pm.

Transportation, Access, and Circulation

In addition to those measures highlighted in Alternative A, the following actions under transportation would be included in this Alternative.

A circulation study, both water and land based, is recommended to examine visitor use patterns and identify conflicts between recreation and other traffic. Study recommendations should address improved vehicular, bicycle, pedestrian access and circulation issues, relief of congestion at key sites, and assist in public safety.

Carrying Capacity

Carrying Capacity would be the same as in Alternative A. In addition, the Trust Board would work with Island Transit and private operators to provide increased access to other public areas with the Reserve. This would help disperse visitor use at the various sites. Parking would be expanded at the Prairie Overlook Wayside (refer to the development concept plans at the end of this chapter).

Reserve Boundary

Under Alternative B, it is recommended that Congress amend the boundary of Ebey's Landing National Historical Reserve. As part of the GMP planning process, the planning team identified and evaluated any boundary adjustment that would be necessary or desirable to carry out the purposes of the Reserve. This boundary modification would be done to protect significant resources, values, and visitor experience related to the purpose of the Reserve and to address operational and management issues.

Based on these criteria, the boundary of the Reserve would be adjusted to include the following lands:

- Smith Prairie—Additional portions of Smith Prairie including the remainder of Au Sable Institute lands.
- U.S. Navy Outlying Landing Field—Portion of the OLF not currently included within the Reserve boundary.
- Crockett Lake—the eastern portion of the Crockett Lake wetlands area that is not currently within the Reserve.
- Bell Farm—active farm northwest of the Reserve.

These changes would be done in full coordination and communication with property owners. Amending language could specify that if the remaining portion of the OLF outside of the Reserve boundary was ever declared excess to the needs of the Secretary of the Navy, the NPS would seek Congressional action to authorize transfer to NPS to manage as part of the Ebey's Landing National Historical Reserve. (See Figure 14, Boundary Modification: Alternative B, and Appendix E, Analysis of Boundary Adjustment and Land Protection Criteria.)

Through public/private partnerships, the Trust Board and Reserve staff would encourage the protection and retention of valued agricultural, open space, and scenic lands in the remainder of Smith Prairie and in the area outside of the Reserve north and east of the airport area north of Penn Cove. However, the NPS and Trust Board would not recommend these areas to be included within the modified Reserve boundary.

Land Protection

Land Protection Methods

The same land protection methods as in the No Action Alternative would be employed under this alternative.

Given the unpredictability of annual appropriations from the Land and Water Conservation Fund, the NPS and Reserve staff would seek other funding sources besides LWCF and implement other strategies to protect lands.

Alternative B strives to give further protection to the open space and rural character within the national historical reserve. The NPS, Trust Board, and Reserve staff would be encouraged to use other available land protection approaches such as purchase and sellback with restrictions, leaseback, historic property leasing, land donation, and other techniques as appropriate.

As with much of the Reserve land protection philosophy, relationships with land trusts would be used to promote and to facilitate less than fee approaches to land protection by assisting the NPS to pursue various measures and creative strategies involving the use of Land and Water Conservation Fund monies.

Additionally, under this alternative, the Reserve would work with others to assist in the protection of water recharge areas including prairie and forests within the Reserve along with agricultural lands protected by conservation easements.

The Trust Board would work with Washington State Department of Natural Resources in the protection of intertidal areas.

Finally, the Trust Board would work with the public, the Island County Marine Resources Committee, and involved agencies to protect the coastal waters adjacent to the Reserve and Penn Cove. Various county and state designations would be explored and possibly sought if appropriate. One possibility would be the Department of Natural Resource's Aquatic Reserve designation. This designation is to promote preservation, restoration, and enhancement of state-owned aquatic lands that provide direct and indirect benefits to the

health of native aquatic habitat and species and other resources in the state of Washington. Another potential designation could be an Island County Aquatic Reserve. This designation is a county status similar to that of the DNR tailored for specific conservation purposes and enforced by Island County.

Land Protection Priorities

In conjunction with the Trust Board and Reserve staff, the NPS Lands Resources Program Division would assist in locating suitable acquisitions within the Reserve and make recommendations for spending limited land acquisition funds according to the land protection plan to be completed following this GMP.

The land protection priority would be on eight intact areas within the Reserve that possess significant values critical to sustaining the rural character of the landscape. This land protection effort would focus on high scenic, natural, and cultural values. Protecting the scenic quality is in fact, protecting the rural quality and historic uses that create the cultural landscape.

The Reserve's land protection strategy (2003) focuses on the following areas of the Reserve (not prioritized):

- Blower's Bluff and airpark
- Zylstra and Arnold roads
- Smith Prairie
- East Crockett Lake wetlands
- West coastal strip
- Inter-prairie ridge between Ebey and Crockett prairies
- Grasser's Hill and lagoon
- North Fort Casey Road

Blower's Bluff and Airpark

Blower's Bluff and open pasture are highly visible from Coupeville across Penn Cove. The Muzzall Farm is included within this unit and extends north from Blower's Bluff across Scenic Heights Road. Muzzall Farm is presently in agricultural use and has only two owners. The Blower's Bluff unit (these units are defined in the *Recommendations for a Land Protection Strategy for Ebey's*

Landing National Historical Reserve) has high agricultural, scenic, and natural resource values; medium values are given to historical and cultural features, as well as potential visitor experience. Protecting this unit with conservation easements will increase connectivity to open agricultural fields extending west to Monroe's Landing, and to the open lands of the Oak Harbor Airpark to the north.

Zylstra and Arnold Roads

This unit includes the historic Arnold Farm (including the building cluster) on either side of Zylstra Road and has a single owner. The area also includes open fields extending to the west, on either side of West Beach Road, with views to the Olympic Peninsula and the Strait of Juan de Fuca. Two main landowners actively farm these open fields at the northern Reserve boundary. Three of the parcels (Bell Farm) along West Beach Road are outside of the Reserve boundary and should be considered for inclusion within the Reserve. The Arnold Farm unit has high agricultural and cultural feature values and medium scenic values. Conservation easements will protect these large, intact agricultural landscapes.

Smith Prairie

This unit is a large open agricultural field/prairie bordered by Douglas fir forest along State Route 20, at the southern entry of the Reserve. It has two tree farms and is the site of the Whidbey Island Naval Air Station's Outlying Landing Field. This unit has high scenic, agricultural, and potential visitor experience values. It also has natural value since it contains Whidbey Island's largest remnant native prairie community. Conservation easements would protect the cultural features and scenic views of this important entry area. There are seven landowners within this unit. Two areas within this unit are outside of the current Reserve boundary and are recommended to be included within the Reserve.

East Crockett Lake Wetlands

This large marsh, lying east of State Route 20 where it cuts through Crockett Lake wetlands, lies outside the Reserve boundary although it is an integral part of the Crockett Lake ecosystem. Overlooking Admiralty Bay and the Olympic Peninsula,

it has high scenic and natural values. It is a prime bird habitat and nesting area. For these reasons the wetlands area should be included within the Reserve and should be protected with conservation easements or purchased in fee. There are three owners (one is Island County).

West Coastal Strip

This unit comprises the two remaining unprotected sections of the northern portion of the Coastal Bluff and Beach Trail between Fort Ebey State Park and the Bluff Trail. These sections are forested along steep coastal bluffs with views of the Strait of Juan de Fuca and the Olympic Peninsula. Protecting this unit with scenic or trail easements would enhance visitor experience and increase connectivity between the protected public areas adjacent to the West Coastal area of the Reserve. This unit has high visitor experience, scenic, and natural features values.

Inter-prairie Ridge between Ebey and Crockett Prairies

This unit extends from Engle Road at the Jenne Farm across the inter-prairie ridge to Fort Casey Road. It contains mostly open fields in agricultural use and has high agricultural and historic values. Conservation easements would protect its cultural and open space values. There are four landowners. Building or façade easements could be placed on the historic Jenne Farm building cluster to gain additional protection of historic resources.

Grasser's Hill and Lagoon

This unit includes Grasser's Lagoon and Grasser's Hill, the sloping fields upland from the lagoon, as well as the open field and forested area between State Route 20 and Madrona Way. Grasser's Lagoon is under one ownership and could be protected either with fee acquisition or preferable, through conservation easement to ensure appropriate public access. The existing conservation easement for the upland portion of Grasser's Hill could be strengthened to include rare and unusual plant protection and trail easements. Purchasing the remaining house site in fee could preserve views of the scenic hillside. The open field and forested area across Madrona Way south of Grasser's Lagoon is in a single ownership and could be protected with a conservation easement

with a north Reserve entry wayside site leased or acquired in fee to interpret the Reserve and the significance of the lagoon and Penn Cove. The Grasser's Hill unit is a highly visible area with high scenic, visitor experience and natural features values.

North Fort Casey Road

This unit is comprised of open fields in agricultural use. It has high agricultural, cultural feature and scenic values that could be protected with conservation easements. This unit is highly visible from many locations within the Reserve. Connectivity exists with adjacent protected farmland in Ebey's Prairie. Protecting this unit will increase the scenic value of these adjacent areas. There are four main landowners.

The revised Land Protection Plan, which would be produced following the General Management Plan, would provide detailed description of the desired land protection methods to be used in each area of the Reserve. Significant habitat areas would be identified and included as information and criteria in land protection planning are developed.

Land Use Measures

In addition to the land use measures in the No Action Alternative, the following would apply:

It is recommended that Island County adopt a regulatory overlay zone over the entire unincorporated portion of the Reserve similar to the town of Coupeville for the purposes of implementing design review and other land use controls that fulfill the Reserve's mission to preserve the historic and rural cultural landscape.

The adoption of this overlay zone is intended to help county government meet its obligations under the existing Interlocal agreement. In addition, it would provide the county with valued input concerning the potential effect (positive or negative) that development or land use change proposals would have on the character of the Reserve. It is expected that this would provide Island County with added regulatory authority to help ensure that proposed land uses and land use changes are consistent with the purposes of the Reserve.

Funding for Land Protection

Funding sources would be the same as in Alternative A. In addition, the following actions would occur.

The Trust Board, the Reserve staff and Reserve partners would seek new sources of funding support for land protection. It is further recommended that a "friends group" be established as a 501(c) (3) non-profit entity to support various Reserve-wide programs including land protection. Such private funding would complement LWCF appropriations and provide support for other Reserve goals and objectives.

The Trust Board would solicit private foundation and individual support, bequests from private estates, and other funding that would be used for two primary purposes:

- To support land protection efforts within the Reserve.
- To support the creation of an endowment fund for the maintenance and long-term stewardship of the lands and structures acquired.

Action Items

The action items would be the same as in Alternative A with the following additions:

- Develop a system for tracking, evaluating, and monitoring changes to the cultural landscape.
- Develop a museum management plan with direct assistance from North Cascades National Park Service Complex staff.
- Develop a design guidelines handbook for property owners in conjunction with partners.
- Work with Island County to develop a regulatory overlay zone over unincorporated portion of the Reserve.
- Upgrade training opportunities for Trust Board members and staff.
- Establish a friends group for the Reserve.
- Establish new cooperative agreements with organizations to facilitate Reserve operations and programs.
- Identify long-term maintenance facility for the Reserve.
- Develop a circulation study for visitor use patterns within the Reserve.

Development Concept Plans for Alternative B

Following are development concept plans that would be implemented as part of Alternative B. Development concept plans are drawings and narrative that shows in a conceptual way how actions in a GMP would be developed for specific areas. Two of these areas, the Ferry House and the West Ridge property are owned by the NPS. The South Gateway is not, but the Trust Board and NPS may be able to secure interests in land or enter into partnerships with the county or Au Sable Institute.

South Gateway

A covered information kiosk or shelter would be constructed on land near State Route 20 entering the Reserve from the south at the Au Sable Institute property. The kiosk would be three-sided to match existing kiosks elsewhere in the Reserve, and would contain maps of the Reserve, along with other orientation information. The Reserve staff would coordinate with the Institute in reestablishing prairie surrounding this site. The elevation to the east of the kiosk area could be lowered from the existing ground level and constructed in a way to expose for viewing a section of the prairie soil profile with prairie plant species. The precise messages conveyed to the public and the type of interpretive exhibits used would be detailed in a long range interpretive plan produced for the Reserve by the NPS Harper's Ferry Center, but would include interpreting the prairie ecosystem. Reserve staff would also work cooperatively with Institute staff to explore opportunities to incorporate information on the Institute's programs, facilities, and environmental learning opportunities.

The NPS would coordinate with the Au Sable Institute concerning the establishment of a loop hiking trail through their property to provide an interpretive experience for Smith Prairie ecology. The trailhead for this loop trail is proposed to be from the interpretive kiosk and prairie soil exhibit.

The Reserve staff would manage the site in cooperation with the county and Institute. It is proposed that the NPS acquire a conservation easement for the site. The realignment for Parker Road

is on the county's Public Works Department's six-year road program and is waiting for funding. This project would require participation with WSDOT.

A one-way circular drive would be developed using part of the existing Parker Road alignment. Parking spaces would be provided for approximately three to five vehicles with two larger pull-through spaces for RV's or bus parking. This site could also provide trailhead parking for proposed trails in and around Au Sable linking the institute with other areas of the Reserve. (See Figure 15, South Gateway Development Concept Plan.)

Ferry House

The Ferry House is one of the oldest structures in Washington State. It was constructed by the Isaac Ebey family as a way station for travelers plying Puget Sound. Historically, access to the Ferry House was from the beach at Ebey's Landing, southwest of the house. A wagon road led up the ravine from the beach to the house. The historic house is in NPS ownership along with approximately five acres of land surrounding the house and ravine.

The Preferred Alternative calls for the historic preservation of the house by the NPS primarily as an exterior exhibit. The Ferry House would be stabilized, the front porch reconstructed, and the house, shed, and outhouse upgraded to a level of preservation maintenance. Due to the historic configuration, fragility, and limitations for accessibility, the house would not be accessible to the public on a regular basis, but educational and research activities would continue to be conducted there, and special tours of the structure could be provided as appropriate. To interpret the house to the public, the shed and outhouse behind the Ferry House would be stabilized and rehabilitated. Related interpretive exhibits would be placed in unobtrusive areas on the property. The Ferry House would be equipped with site security appropriate to its historic setting and fabric.

Visitors arriving by motor vehicle would be instructed (by signs) to park at Ebey's Landing State Park where a restroom facility is located. Visitors would walk from the state park to the Ferry House on a proposed trail along Ebey Road and into the

Ferry House drive. A segment of the trail from Ebey Road to the Ferry House would be ADA accessible and would use the existing drive; the character of the two-track entry drive would be retained. Two ADA parking spaces would be located along Ebey Road in proximity to the Ferry House adjacent to the existing driveway into the property. If consistent with the long range interpretive plan, an interpretive panel may be included at this location as appropriate. The driveway would be gated and vehicular access restricted. Only vehicles for administrative use (such as those for site maintenance, law enforcement, and researchers) would be allowed.

A trail would be developed along the former historic wagon road alignment leading from the beach. The steep trail would not meet ADA standards. Before the trail could be constructed, the thicket of exotic plants on NPS property would be removed and native plants indigenous to the area would be planted. The development of this trail segment would allow for a loop trail system from the state park to the Ferry House. If it is not possible to construct the entire trail due to safety and security issues, a trail along a portion of the wagon road could be developed.

These trails, and other trail linkages would be incorporated as part of the Reserve-wide trail network and would also allow hikers who park at other locations within the Reserve to access the Ferry House and Ebey's Landing. (See Figure 16, Ferry House Development Concept Plan.)

West Ridge Property

The Jacob Ebey House and Blockhouse were first constructed in the 1850s as part of the Jacob Ebey donation land claim on the upper bench above Ebey's Prairie adjacent to dense woodlands. The Jacob Ebey House was extensively modified in the 1880s. The Blockhouse is one of four remaining blockhouses in the Reserve and was originally built to provide safety for early settlers from the threat of Indian attack. The Blockhouse also underwent alterations in the 1930s when restoration was attempted on the structure.

The Cottage was constructed in the 1940s as a

house and is presently used as the Reserve's administration building by the Trust Board. The parcel totals eight-tenths of an acre and is located off Cemetery Road to the south of State Route 20, about a mile from the Town of Coupeville.

The administrative headquarters would be relocated to the Town of Coupeville and the Cottage would augment administrative office needs.

In the Preferred Alternative, the Blockhouse would be continue to be interpreted as an exterior exhibit only, but would be signed. The Jacob Ebey House would be rehabilitated as a seasonal contact station for visitors wanting information about the Reserve. It could also be used for special events. Interior exhibits would be included in the house. The seasonal contact station would be potentially staffed with a volunteer.

A small lot providing four parking spaces would be constructed southwest of the current Ebey's Prairie Overlook. An additional two parking spaces for persons with disabilities would be constructed off the existing Cottage driveway. At the back of the Cottage, administrative staff parking would be provided for three cars. The Ridge Trail from the Cottage to the Jacob Ebey House would be relocated and realigned for ADA accessibility. A hiking trail alignment could be developed from the Jacob Ebey House connecting to the Bluff Trail.

Interpretive panels would be placed in proximity to the walking path and trail leading from Sunnyside Cemetery and the Prairie Overlook to the Jacob Ebey House and Blockhouse. One or two wayside exhibits could be sited some distance from the historic views to and from the structures.

A hedgerow would be planted along the NPS property line to screen private residences located downhill (east) of the Jacob Ebey House. This would both physically and aesthetically enhance a visitor's experience on the trail.

A trail map at the Prairie Overlook could also denote the location of the Jacob Ebey House and Blockhouse. (See Figures 17, 18, and 19 West Ridge Property Development Concept Plans.)

Alternative C

General Description

This alternative would capture many of the components of Alternative B, but with a few important distinctions.

First, the overall policy management of the Reserve would be executed by a part-time Commission that would be compensated through a stipend for their service. This Commission would replace the current Trust Board management structure. Reserve Staff would increase from four (No Action Alternative) to ten positions that would be exclusively hired and managed by the Commission. In Alternative C, the Commission would seek increased budget appropriations from the National Park Service operating base to enlarge staff.

As in Alternative B, the land protection emphasis would primarily focus on securing conservation easements on important landscapes from willing sellers, augmented by local land use controls. In addition, Alternative C would recommend that Island County reinstitute a system of transfer of development rights for the protection of agricultural and other important lands.

Rather than exchanging all NPS-owned farmland, the NPS would retain a five-acre portion of NPS-owned Farm II, including the historic farm buildings, for use as the Reserve's administrative and maintenance facilities, then exchange the remainder of agricultural land for additional protection on other properties within the Reserve. The historic Reuble Farmstead buildings at Farm II would be stabilized and rehabilitated to the Secretary of Interior's Standards and adaptively reused as NPS administrative offices and workshop facilities. Some non-historic buildings may be removed. Preservation maintenance training could be incorporated into any rehabilitation work done on the historic buildings.

The Ferry House would be stabilized and a barn-like building would be built at the Ferry House using compatible new construction to serve as a visitor information and interpretive center.

The Jacob Ebey House would be treated the same

as in Alternative B using the house as a seasonal contact station and the Blockhouse as an exterior exhibit. Before exchanging the farmland to a farmer, the NPS would retain protective easements.

For enhancement of visitor service, the Commission staff would partner with other organizations in the development of a visitor contact facility at a proposed marine science center to educate visitors and interpret the marine environment. The Commission staff would explore the potential to use an historic building to serve as a northern gateway contact facility in addition to two other gateways proposed.

The same minor boundary expansion would be recommended as in Alternative B; however, it is recommended that the legislation authorizing the change in the Reserve boundary direct a suitability/feasibility study of the western coastal area of Whidbey Island for potential designation as a National Marine Sanctuary managed by the National Marine Fisheries Service.

Management Zones

Management zoning for Alternative C would be the same as in Alternative B with the exception of Farm II. An approximate five-acre parcel would be placed in the Administrative Zone. The remainder of the farm would stay in the Special Use Zone to allow for disposition. (See Figure 20, Management Zoning: Alternative C.)

Reserve Management

Policy and Oversight

The Trust Board management structure would be replaced with an Ebey's Landing National Historical Reserve Commission. The Commission would work within the framework of the Reserve's legislation, the GMP, and relevant NPS policies and guidelines. The commission would be compensated through a stipend for their service. Similar to the current Trust Board format, there would be nine commission members.

Four commission members would continue to be appointed by the Island County Commissioners,

with two of these being at-large positions (outside the Reserve). To strengthen participation and effectiveness on the Trust Board, it is proposed that one of the four County appointees be an elected official from Island County. Three commission members would serve as appointments from the Town Council of Coupeville. It is recommended that one of the town appointees be an elected official from the Town of Coupeville.

The two remaining appointments to the Commission would come from the National Park Service and Washington State Parks. The Washington State Parks appointee would be at the district or regional park staff level having direct communication with and reporting to the Director of the Washington State Parks and Recreation Commission. The NPS Deputy Regional Director in Seattle would appoint a representative from the Pacific Northwest Region with the appropriate senior management or professional background to serve as the NPS Trust Board member.

The NPS would continue to conduct an appraisal of the management and operation of the Reserve under the requirements of Paragraph (e), Section 508 of Public Law 95-625. The NPS Deputy Regional Director in Seattle would conduct the performance review of the Commission. The Commission would oversee the Reserve Manager and conduct annual performance evaluations on the operational effectiveness of the Reserve Manager and staff.

Operations and Management

Under this alternative, the Reserve Manager would have daily operational responsibilities for the Reserve. The Reserve Manager would be an employee of the Commission, and would be evaluated annually by the Commission or a committee of the Commission. The Reserve Manager would supervise the Commission staff. The Commission and Reserve Manager would work together to set priorities, the annual Reserve budget, and workplan.

The NPS Cultural Resource Specialist/Trust Board member position would be eliminated, though there would still be NPS representation on the Commission. Commission staff having various

functional responsibilities would be trained on NPS procedures and practices in areas such as interpretation, maintenance, budget, contracting, resource management, and other areas, as appropriate. A cooperative agreement to accomplish these tasks would be developed with NPS. A staff point of contact at a nearby park or the Pacific West Region Seattle Office would be established to deal with legal or policy issues that preclude non-government officials or staff from acting unilaterally.

Cultural Resources

Cultural Landscape

The treatment of the Cultural Landscape would be the same as Alternative B.

Historic Buildings and Structures

The treatment of historic buildings and structures would be the same as in the No Action Alternative with the following additions.

Through outreach programs, and as funding permit, NPS staff and Reserve partners would use NPS properties as demonstration and training sites for historic preservation. The Reserve staff would also identify adaptive reuse and interpretive uses for NPS properties and would identify other significant cultural resources within the Reserve for additional protection by the Trust Board and other partners.

The Reserve Commission and staff would work with a “friends group” as proposed in Alternative B. Alternative C proposes that this group help establish a revolving low-interest loan program to assist owners of private historic properties within the Reserve for “bricks and mortar” preservation work. As the loans are paid back into the fund, it would be available for other owners to use if they meet established criteria.

The Reserve Commission and staff would work cooperatively with town and county staff to encourage elected officials to use local tax programs and other incentives to assist property owners who choose to restore or rehabilitate National Register of Historic Places properties within the Reserve.

The NPS would stabilize and potentially utilize NPS-owned historic structures in accordance with the Secretary of the Interior's Standards. These include the Ferry House and associated shed and outhouse; the Jacob Ebey House at the West Ridge property; the Rockwell House at Farm I; the Reuble Farmstead cluster at Farm II. Actions specific to Alternative C are as follows:

Ferry House

As in Alternative B, the Ferry House would be stabilized and rehabilitated including the two out-buildings (shed and outhouse) behind the house. Due to the Ferry House's fragile condition, limited tours would be offered. The house would be equipped with site security appropriate to its historic setting and fabric. In addition, a barn stood to the north of the house until recently; it was demolished in 1990 due to deterioration. A barn-like building would be built to serve as a point of visitor information and interpretation and would follow the Secretary of Interior's Standards for new construction.

Jacob Ebey House and Blockhouse

Treatment of the Jacob Ebey House and Blockhouse would be the same as in Alternative B.

Rockwell House

Treatment of the Rockwell House would be the same as in Alternative B.

Reuble Farmstead

At the Reuble Farmstead, the historic buildings would be stabilized and rehabilitated to the Secretary of Interior's Standards to augment the Reserve's administrative space requirements and to provide space for maintenance operations.

Collections Management

Treatment for collections would be the same as in Alternative B. In addition, some space within the proposed visitor center/visitor contact station could be allocated to house some of the collection of artifacts, manuscripts and other items from the Reserve.

Archaeology

The treatment for archaeology would be the same as Alternative B.

Natural Resources

Natural Resource Management would be the same as in Alternative B.

Agricultural Resources

The Agriculture section of this alternative would be the same as Alternative B, except for the following change for the NPS-owned farms.

NPS-Owned Farms

Farm I and Farm II

As with Alternative B, it is recommended that the majority of the two NPS-owned farm properties be disposed of to the private sector, while protecting open space and historical values.

The NPS would maintain fee title ownership of approximately five acres of Farm II, including the Rueble Farmstead, retain a conservation easement on the remainder of the property, and dispose of it through an exchange or other means. The farmstead includes the Reuble Barn, the Gillespie House, the granary, old barn, garage, and a shed (and several non-historic structures that could be removed if determined appropriate). The NPS would rehabilitate this five-acre farmstead to the Secretary of Interior's Standards for adaptive reuse to augment the Reserve's administrative and maintenance needs and storage.

Under Alternative C, Farm I and Farm II, minus a five acre Reuble Farmstead parcel, would be included in the Special Use Zone of the Reserve in accordance with 36 CFR Part 17.3. This zoning designation would take into account the special considerations for these two farm properties that allow for their disposition, preferably through a land exchange for other development rights on priority properties in accordance with 36 CFR Part 18. The NPS would explore opportunities for land exchanges in return for a conservation easement interest of equal value on other priority lands located within the Reserve that are not yet protected.

A land exchange would be preferred, but as an interim measure, the NPS could consider other strategies, such as historic property leases or co-operative agreements, to promote appropriate use of the farm properties. These approaches would be detailed in the land protection plan prepared following this general management plan. Under any circumstances, the NPS would retain a conservation easement on the farm properties exchanged to protect the historic character and ensure their long-term protection as valued open space and scenic resources.

Before exchanging Farm I, one-acre of land would be retained by the Reserve for the development of a trailhead including a kiosk and visitor parking to access the Reserve's trail network. In addition, the Reserve would acquire a trail corridor through the property. Both the trailhead and trail corridor would be sited in a location that would not conflict with agricultural operations.

West Ridge Property

Treatment of the West Ridge Property would be the same as in Alternative B.

Recreational Resources Management

The treatment of recreational resources would be the same as in Alternative B.

Scenic Resource Management

The treatment of scenic resources would be the same as in Alternative B.

Interpretation and Education

The interpretation and education section of this alternative would be the same as Alternative B, including the following additions.

Exhibits and Interpretive Media

Collections and photos relating to the Reserve would be interpreted in a Reserve visitor center/contact station (see discussion following) operated by the Commission, the local museum, and potentially with other partners.

The NPS would work with partners to expand

outreach using the latest technology to reach larger, broader, and more diverse audiences across the country.

Visitor Center/Contact Station

Treatment of the Reserve visitor center/contact station would be the same as in Alternative B, but the Commission would explore various opportunities to partner with other groups.

With partners taking the lead, an additional visitor contact facility would be co-located with a proposed marine science center with appropriate interpretive media.

Partnership Programs

The Commission, staff, and Reserve partners would seek to develop educational partnerships not only locally, but also regionally and nationally on topics such as resource management and protection, landscape preservation, and other topics.

As possible, and in conjunction with partners, seasonal administrative space would be secured for visiting researchers, guest lecturers, and educators as part of special programs and events featured at the Reserve.

The Reserve Commission would consider sponsoring a writer, scientist, or "artist in residence" program in cooperation with community groups.

Gateway Contact Facilities

The Reserve Commission would explore the potential for an historic building to serve as a northern gateway visitor contact facility.

Interpretive Guided Tours

Treatment for interpretive guided tours would be the same as in Alternative B.

Scenic Auto Tour Routes

Treatment for scenic auto tours would be the same as in Alternative B.

Educational Outreach to Reserve Residents

Treatment for educational outreach to Reserve Residents would be the same as in Alternative B.

Reserve Facilities

Visitor Facilities

The proposals for visitor facilities would be the same as Alternative B. In addition, the Commission would partner to find a suitable building in San de Fuca, which would be used as the northern gateway contact facility. The Reserve Commission and staff would encourage a partner (such as Au Sable Institute, or Seattle Pacific University's Camp Casey) to develop a marine science center at a suitable location, such as the Coupeville Wharf. The partner would manage and operate the center and develop educational curricula and programming. The Commission could support the center by helping to develop some exhibits relating to Reserve ecology and marine environments.

Administrative Facilities

Administrative facilities would be the same as in Alternative B in the short-term. During the short-term, administrative offices would remain in the Cottage and a resource management office would remain at Farm I. Once facilities at the Reuble Farmstead have been rehabilitated, additional administrative office space would be established there. The Cottage would be retained and would be used as additional resource staff offices. Any historic buildings retained for administrative use

would be rehabilitated to the Secretary of Interior Standards.

Maintenance Facilities

Reuble Farmstead facilities would be rehabilitated and used for maintenance staff office space, workshop, dry storage area, and a two-bay garage. In addition to the Reserve's maintenance staff, the North Cascades National Park Service Complex maintenance staff may continue to provide special project assistance such as trail development, brush clearing from waysides, as time, money, and staff permit. Any historic buildings retained for maintenance use would be rehabilitated to the Secretary of Interior Standards.

Development Cost Estimates

The following costs are estimates for implementing Alternative C. It is assumed that meeting the long-range development needs of the Reserve would not just rely upon federal appropriated funds. A wide variety of other public and private sector funding sources would be sought to assist in implementation efforts over the next 15-20 years. As has been evidenced in the past, some development costs assigned to certain actions may prove to be less expensive when donated materials, labor, and other support are forthcoming. Costs are expressed in gross construction dollars

Table 19: Development Cost Estimates

Development Actions for Alternative C	Total Estimated Costs
Visitor Facilities	\$3,160,000 - 3,300,000
Administrative/Maintenance Facilities	\$600,000 - 700,000
Historic Rehabilitation*	\$540,000 - 600,000
Trails	\$100,000 - 150,000
Total NPS Capital Costs	\$4,400,000 - 4,750,000
 Total Average Annual Life-cycle Costs (25 years)	 \$18,000
 Total NPS Lands Costs	 \$975,000 - 1,150,000

*Funding for rehabilitating the Jacob Ebey House has already been secured

and include design, compliance, and supplemental services.

These costs are based upon general “class C” estimates of site development. These estimates are not intended to be used for budgetary purposes. Prior to submitting funding requests for the design and construction phases, “class B” estimates are required, based upon detailed site design that will provide decisions about facility size and cost. Costs are expressed in 2004 dollars and phased over 15-20 years.

Reserve Operations

Staffing

This alternative calls for a total of ten Commission staff to carry out the operational responsibilities of the Reserve. The Commission staff would be supervised by the Reserve Manager.

Staffing includes the following positions:

- Reserve Manager (Full-time Commission employee).
- Administrative Assistant (Full-time Commission employee).
- Volunteer Coordinator/Grant Writer (Full-time Commission employee).
- Community Planner (Full-time Commission employee).
- Cultural Resource Management Specialist (Full-time Commission employee).
- Natural Resource Management Specialist (Full-time Commission employee).
- Interpreter/Education Specialist (Full-time Commission employee).
- Two Seasonal Interpretation Specialists (Part-time Commission employees).
- Maintenance foreman performing contracted maintenance (Full-time Commission employee).

Estimated Operating Costs (2005 Dollars)

Base allocation	\$282,000
Additional staff and support costs	\$540,000*
NPS program support and training	\$125,000
Commission expenses	\$180,000
Total NPS costs	\$1,127,000

(*includes leased space, supplies, vehicles and equipment)

The difference in operating costs between Alternative A (current base) and Alternative C is \$850,000.

Fees

The fees would be the same as in Alternative B. There may be some potential fees at a proposed marine science facility.

Hours of Operation

The Reserve’s hours would be the same as in Alternative B.

Transportation, Access, and Circulation

Transportation, access, and circulation would be the same as in Alternative B with the following addition.

The Reserve Commission would request Island Transit to consider establishing regular weekend shuttles to and from the Town of Coupeville to Ebey’s Landing, Fort Casey, and Fort Ebey state parks or to other trailheads within the Reserve. The buses could be used for various interpretive opportunities. The additional service would be encouraged to enhance the visitor experience and to help relieve vehicular crowding at these popular destinations during the peak season and peak weekend days. A volunteer on the bus might offer an interpretive program and/or answer questions about the Reserve that riders might have.

Table 20: Staffing under Alternative C

	Administrative	Maintenance	Interpretation/ Education	Resource Management	Total Staff	Total FTE
Commission Staff	3 Full-time	1 Full-time	1 Full-time 2 Part-time	3 Full-time	10	10
Total	2	1	3	3	10	10

Carrying Capacity

Carrying Capacity would be the same as in Alternative B.

Reserve Boundary

Alternative C would be the same as Alternative B. (See Figure 2I, Boundary Modification: Alternative C.)

Land Protection

Land Protection Methods

Land protection methods would be the same as in Alternative B with the following exception. It is recommended that the legislation authorizing the change in the Reserve boundary also direct that a suitability/feasibility study be done of the western coastal area of Whidbey Island for potential designation as a National Marine Sanctuary managed by the National Marine Fisheries Service.

Land Protection Priorities

Land protection priorities for Alternative C would be the same as in Alternative B.

Land Use Measures

Most of the land use measures would be the same in Alternative B with the following exceptions.

It is recommended that Island County consider re-instituting a system of transfer of development rights (TDRs) to enable landowners to transfer density credits to “receiving areas” and further protect critical cultural landscapes, viewsheds, and natural habitats. It is further suggested that these receiving areas be designated countywide. Within the Reserve, “acquisition deferred” areas identified in the land protection plan could be included as receiving areas. “Acquisition deferred” refers to those situations where it is recommended that acquisition of an interest in land be deferred, even when an opportunity for purchase exists, the NPS has the funds, and a willing seller is present. It is furthermore suggested that these receiving areas be covered by county design review standards as described in Alternative B. (For a discussion on transfer of development rights, see Volume II, *Farmland Preservation Case studies for Ebey’s*

Landing National Historical Reserve.)

Funding for Land Protection

Funding would be the same as in Alternative B.

Action Items

Action items for Alternative C would be the same as in Alternative B. In addition:

- Train Commission members and staff.
- Expand routes and service for Island Transit.
- Explore partnership development of a marine science center.

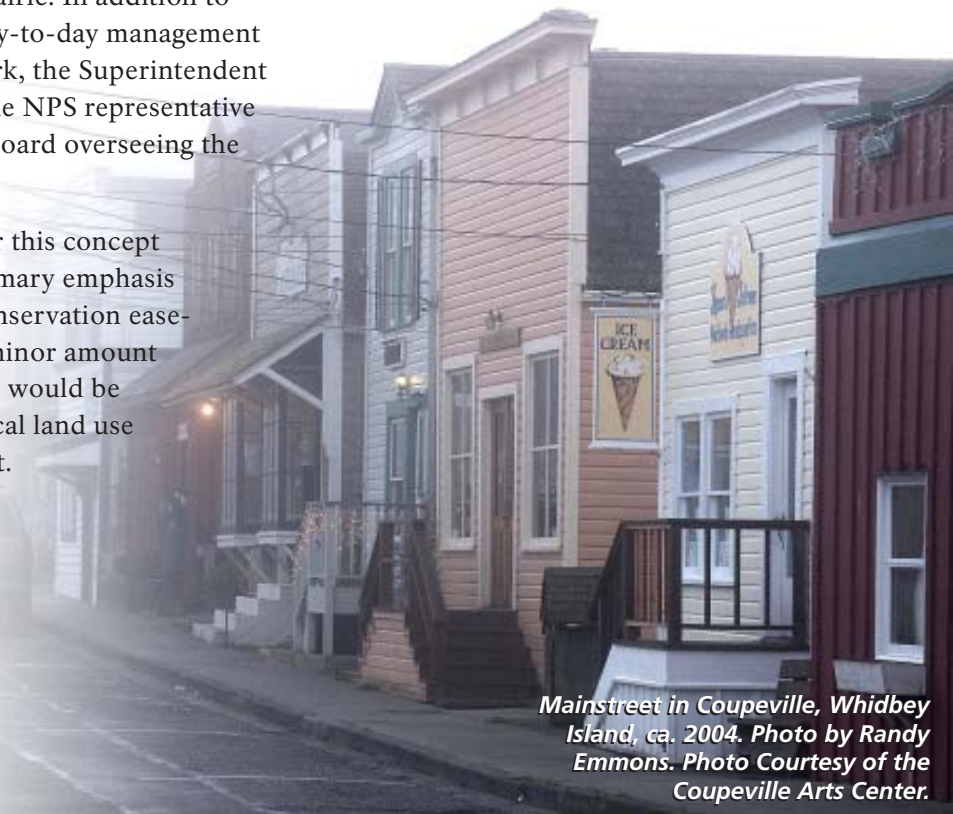
Alternatives Considered but Rejected

The Council on Environmental Quality (CEQ) guidelines for implementing NEPA requires federal agencies to analyze all “reasonable” alternatives that substantially meet the purpose and need for the proposed actions.

An alternative considered but rejected for the draft GMP/EIS would establish an Ebey’s Landing National Historical Park and Reserve. Under this concept, the existing national historical reserve designation, the Reserve’s boundary, Trust Board management and operational status would remain intact. However, a core area within the Reserve would be redesignated a national historical park for additional protection from the National Park Service. This core area would be directly managed by a National Park Service Superintendent. The national historical park would encompass the following areas: Ebey’s Prairie east to the municipal boundary of the Town of Coupeville, Ebey’s Landing and the bluff area along the Strait of Juan de Fuca between Fort Casey State Park and Fort Ebey State Park, the upland forested area east and south of Ebey’s Prairie, and all of Crockett Lake and portions of Crockett Prairie. In addition to being responsible for the day-to-day management of the national historical park, the Superintendent would have also served as the NPS representative on the nine-member Trust Board overseeing the remainder of the Reserve.

Land protection goals under this concept would continue to place primary emphasis upon NPS acquisition of conservation easements complemented by a minor amount of fee title ownership. There would be less reliance on changing local land use measures under this concept.

This alternative was rejected because it did not support the cooperative spirit and partnership concept originally conceived for the Reserve. It would place heavier reliance upon the NPS for land protection and management. Under the current Reserve concept, the Reserve remains a unit of the National Park System and the NPS Regional Director has ultimate oversight. However, the NPS operational role in the Reserve is one of a cooperator and provider of technical assistance, whereas the day-to-day operational and management responsibility is largely the purview of the Reserve staff and the Trust Board made up of volunteers including appointees of local government. This has been the management formula for the protection of key Reserve resources. Though offering stronger protection of Reserve’s resources, establishing a national historical park within the core of the Reserve with an NPS Superintendent countered this management philosophy. It was also determined that having two management entities within the same relatively small area could prove to be duplicative and confusing to the public and local elected officials. The dual concept may also cause concerns relating to policy, procedures, and jurisdictional issues when applied to the same general area of central Whidbey Island.



Mainstreet in Coupeville, Whidbey Island, ca. 2004. Photo by Randy Emmons. Photo Courtesy of the Coupeville Arts Center.

Summary of Actions for Each Alternative

Actions	Alternative A-No Action	Alternative B-Preferred	Alternative C
Reserve Management			
Policy and Oversight	Continue to provide policy and oversight by volunteer Trust Board representing local, state, and federal interests.	Same as Alternative A	Provide policy and oversight by a Commission structure, which would be compensated through a stipend for their service.
Operations and Management	Provide operations and management by Reserve Manager and staff reporting to Trust Board for duties/roles assigned; retain NPS Cultural Resource Specialist/Trust Board member position; have NPS staff report to NPS supervisors	Provide operations and management by Reserve Manager and staff reporting to Trust Board; split NPS Cultural Resource Specialist/Trust Board member position into 2 positions; Trust Board staff report to Trust Board; NPS staff report to NPS supervisors.	Provide operations and management by Reserve Manager and staff reporting to Commission; eliminate all NPS staff positions; keep NPS Trust Board member.
Cultural Resource Management			
Cultural Landscape	Continue to participate in county/town design review boards; document prehistoric resources and update the National Register District properties as necessary.	Same as Alternative A plus: Develop system for tracking, evaluating, and monitoring changes to cultural landscape in Reserve; provide stronger advocacy role; expand technical library and archives related to Reserve history; facilitate historical research, publish research on various topics, and disseminate information; expand interpretation, special events, and outreach programs related to history, cultural landscapes, rural character of the Reserve.	Same as Alternative B.
Historic Buildings and Structures	Conduct research to preserve and protect NPS-owned historic properties; work cooperatively with property owners to provide technical assistance; revise historic preservation guidelines; stabilize and potentially utilize NPS-owned structures according to Secretary of the Interior's Standards.	Same as Alternative A plus: Update and strengthen design guidelines, zoning, and permitting authorities to assist preservation efforts and promote compatible new construction and in-fill development; initiate overlay zone. <i>Ferry House:</i> stabilize, reconstruct front porch; allow limited tours. <i>Jacob Ebey House:</i> stabilize and rehabilitate for use as a seasonal contact station. <i>Blockhouse:</i> preserve as exterior exhibit. <i>Rockwell House:</i> retain protective easements and seek to exchange;	Same as Alternative B with the following exceptions: Use NPS properties for demonstration and training sites or interpretive uses for historic preservation, through outreach programs; establish a "friends group" to help establish revolving low-interest loans to property owners for preservation work; encourage elected officials to use incentives to assist property owners in rehabilitation efforts. <i>Ferry House:</i> Same as Alternative B plus: build new barn-like building to serve as a visitor information and interpretive center.

Historic Buildings and Structures (cont.)		provide limited maintenance work and complete if funds are available. <i>Reuble Farmstead</i> : retain protective easements and seek to exchange.	<i>Jacob Ebey House</i> : Same as in Alternative B. <i>Blockhouse</i> : Same as in Alternative B. <i>Rockwell House</i> : Same as in Alternative B. <i>Reuble Farmstead</i> : stabilize and rehabilitate to Secretary of Interior's Standards to augment Reserve's administrative offices and provide for maintenance facility.
Collections Management	Maintain existing collection at North Cascades National Park Service Complex.	Same as Alternative A plus: Develop museum management plan that provides for local museum to hold limited artifacts provided NPS storage requirements are met;	Same as Alternative A, plus: Provide space for limited collections within new visitor center/contact station.
Archaeology	Continue established resource protection measures for the identification and treatment of archaeological resources.	Same as Alternative A.	Same as Alternative A.
Compliance Activities	Continue required federal compliance by NPS with the NHPA; strive for enhanced consultation and relationships with affiliated tribes.	Same as Alternative A.	Same as Alternative A.
Natural Resources	Alternative A	Alternative B	Alternative C
Geology, Soils, and Air Resources	Continue to support preservation of prime and unique farmland soils; incorporate night sky preservation provisions in easement language.	Same as Alternative A plus: Encourage natural quiet/night sky programs and activities; join existing air quality networks within state and federal agencies to gather baseline information and establish monitoring program; work with partners to prevent the loss of prime and regionally important agricultural soils; solicit resource management funding for important research topics.	Same as Alternative B.
Water Resources	Continue to support and encourage existing water quality programs and protection of wetlands, impoundments, riparian areas, and aquifer recharge areas.	Same as Alternative A plus: Work with partners to protect, restore, mitigate for wetlands; protect shoreline; protect aquifer and surface waters; encourage development of Penn Cove water quality plan; seek funding for hydrological assessments.	Same as Alternative B.
Vegetation	Coordinate vegetation management with the Reserve's fire management plan; continue to advo-	Same as Alternative A plus: Work cooperatively with partners to expand and preserve wood-	Same as Alternative B.

Vegetation (cont.)	cate for native plant community preservation; monitor NPS-owned woodlands; identify/re-establish specific prairie sites; secure funding for the protection of listed golden paintbrush; promote importance of hedgerows; remove exotic species as possible; encourage compatible roadside vegetation program with others; continue vascular plant inventory and surveys.	land and prairie ecology; design and implement prairie restoration plan; promote compatible roadside vegetation program; work with partners in Weed Management Area to control exotic plant species; seek funding for research and monitor projects.	
Wildlife	Continue to support T&E species at federal and state level; increase knowledge in baseline species information; continue to seek cooperation from NCCN network.	Same as Alternative A plus: Increase baseline information, produce interpretive materials, and conduct outreach programs; seek funding for research and monitoring	Same as Alternative B.
Compliance Activities	Continue required federal compliance by NPS with NEPA and Section 7 of the Endangered Species Act	Same as Alternative A.	Same as Alternative A.
Agricultural Resources	Alternative A	Alternative B	Alternative C
Protection of Agricultural Lands	Continue to acquire easements on key parcels; encourage protection of prime soils; define the extent of acceptable change in easements; continue to track pest management on NPS-owned farmland; continue to provide technical assistance on farming topics; continue limited community programs, which promote public awareness of agriculture.	Same as Alternative A plus: Partner with federal, state, and local entities to provide technical assistance for property owners regarding grant proposals, tax incentives, and other measures; establish friends group; advocate for organic and sustainable agriculture; encourage innovative agricultural product development; cooperate with existing farm organizations to interest investors in farm operations; work with others to advance agricultural research marketing, and sales.	Same as Alternative B.
NPS-owned Farms	<i>Farm I:</i> Place NPS conservation easement and rehabilitate historic buildings where possible; then exchange out of federal ownership to private farm operator. <i>Farm II:</i> Place NPS conservation easement and rehabilitate historic houses where possible; then exchange out of federal ownership to private farm operator. <i>West Ridge Property:</i> continue to retain property in NPS ownership; continue to lease 60 -acre tract for farming; retain Cottage for Reserve administration offices and	<i>Farm I:</i> Same as Alternative A, plus retain one-acre for development of trailhead. <i>Farm II:</i> Same as Alternative A. <i>West Ridge Property:</i> short-term—continue to lease 60-acre tract for agricultural uses; long-term place conservation easement on land and exchange for conservation easement on other priority properties within the Reserve; retain sufficient acreage to include Jacob Ebey House, Blockhouse, and Cottage.	<i>Farm I:</i> Same as Alternative B. <i>Farm II:</i> Place NPS conservation easement and rehabilitate historic houses; retain Reuble Farmstead and approximately 5 acres to augment administration capability and for maintenance facility; exchange remainder of farm out of federal ownership to private farm operator. <i>West Ridge Property:</i> Same as Alternative B.

NPS-owned Farms (cont.)	maintain Jacob Ebey House and Blockhouse as exterior interpretive exhibits without interpretation.		
Public Awareness of Reserve's Agricultural Heritage	None.	Provide agricultural tourism opportunities; including sale of local farm products.	Same as Alternative B.
Recreational Resources	Alternative A	Alternative B	Alternative C
Trails and Walks	Continue to work with partners in maintaining existing trails into an integrated network within the Reserve; continue to promote and publish driving, biking, and walking tour brochures; implement Reserve-wide sign plan with partners.	Same as Alternative A, plus: Complete and expand trail network; retain one-acre at Farm I for development of trailhead; co-operate with others on developing public self-guided nature trails; partner with county on water trail; expand auto tour route in northern Reserve.	Same as Alternative B.
Appropriate Uses	Encourage appropriate watercraft usage; provide information about water-based recreation opportunities; develop standards and locations for paragliding, model airplane flying, and other recreational uses within the Reserve with partners; continue to support passive recreational activities.	Same as Alternative A, plus: Develop system for monitoring increased recreational use; mitigate with partners for adverse effects.	Same as Alternative B.
Information Systems, Sites, and Programs	Provide no new actions	Provide or enable interpretive training for tour operators on Reserve's resources.	Same as Alternative B.
Economic Benefit of Recreation Expenditures	Provide no new actions	Update Reserve's socioeconomic study on visitor expenditures	Same as Alternative B.
Scenic Resources			
Protection of Scenic Lands, Roadsides, and Vistas	Maintain scenic/historic views; maintain open space along existing waysides and pullouts; continue to influence placement of new structures on landscape to minimize visual impact.	Same as Alternative A, plus: Develop with partners design guidelines handbook for homeowners; enhance scenic beauty of roadside areas; encourage clustering provisions; continue to encourage the designation of key scenic roads; encourage development of scenic pullouts, overlooks, and waysides.	Same as Alternative B.
Viewshed Protection	Acquire easements to protect scenic quality.	Same as Alternative A, plus: Work with town to define and protect viewshed across Penn Cove.	Same as Alternative B.

Interpretation and Education	Alternative A	Alternative B	Alternative C
Exhibits and Interpretive Media	Maintain current wayside exhibits to NPS standards; produce long range interpretive plan; work with partners to expand exhibits and pullouts; support the traveler information station; upgrade website; provide general information about Reserve; find new locations for NPS Passport Stamp station; maintain Ferry House, Jacob Ebey House and Blockhouse as exterior exhibits for visitor viewing.	Same as Alternative A, plus: Revise wayside exhibit plan; improve wayside at Port Townsend Ferry Landing; place oral histories, historic documents and photos on Reserve's Internet homepage; sign and actively interpret the Ferry House and Jacob Ebey Blockhouse as exterior exhibits; rehabilitate Jacob Ebey House for use as seasonal contact station and include interior exhibits.	Same as Alternative B, plus: Interpret collections at Reserve visitor center/contact station operated by the Commission, potentially with partners; work with partners to expand outreach using latest technology to reach larger, broader, and more diverse audience across country.
Reserve Visitor Center/Contact Station	Island County Historical Museum continues to serve as Reserve visitor center.	Find suitable historic building in Coupeville or historic building elsewhere within Reserve for a visitor center/contact station; include interpretive exhibits on primary interpretive themes; could locate administrative offices here.	Same as Alternative B, but explore partnering opportunities with others, plus: Partner for development of a visitor contact facility at a proposed marine science center.
Partnership Programs	Continue to partner with others in existing limited educational and interpretive programs.	Initiate docent/volunteer program coordinated by a Reserve staff coordinator/education specialist; establish "friends group"; promote public education on Reserve through programs, posters, and workshops; participate in NPS Parks as Classrooms Program; offer field schools with partners; develop interpretive exhibits related to aquatic environment.	Same as Alternative B, plus: Develop regional and national educational partnerships on resource management and protection, landscape preservation and other topics.
Gateway Contact Facilities	The Reserve would not develop gateway contact facilities.	Develop 3 gateway interpretive kiosks.	Same as Alternative B, plus: Explore the potential to use an historic building to serve as the northern gateway contact facility.
Interpretive Guided Tours	Provide limited guided tours by private operators.	NPS would provide personal services, including training and certification to private operators; encourage public auto tour routes.	Same as Alternative B.
Educational Outreach to Reserve Residents	Continue to provide limited outreach.	Partner with real estate companies to develop a brochure about living within the Reserve.	Same as Alternative B.

Reserve Facilities	Alternative A	Alternative B	Alternative C
Administration Facilities	Retain staff offices in Cottage by Sunnyside Cemetery and a natural resources management office at Farm I.	Same as Alternative A in the short-term; for long-term, secure administrative space in Coupeville in historic building in conjunction with visitor center/contact station if possible; retain Cottage for resource offices.	Same as Alternative A in the short-term; for long-term, adaptively reuse portion of Farm II, Reuble Farmstead with 5-acre tract to augment administrative needs. Continue to use Cottage for resource offices.
Maintenance Facilities	In short-term, continue to use Reuble Farmstead for storage and shop; continue to use seasonal employees and volunteers; no funded/established maintenance program. In long-term, explore various opportunities by co-locating maintenance facilities within the Reserve with others, such as units of local government, nonprofits, or individuals.	In short-term, continue to use Reuble Farmstead for storage and shop; when Farm II is exchanged, explore various opportunities by co-locating maintenance facilities within the Reserve with others, such as units of local government, nonprofits, or individuals; hire NPS maintenance foreman; adopt procedures/programs for maintenance of NPS-owned structures.	Same as Alternative B in the short-term; for long-term, adaptively reuse portion of Farm II, Reuble Farmstead with 5-acre tract for maintenance complex.
Reserve Operations			
Staffing	3 Full-time equivalents 4 Staff	9 Full-time equivalents 10 Staff	10 Full-time equivalents 10 Staff
Fees	Maintain no fee collection for entering Reserve; fee collection would continue at state parks and county museum.	Same as in Alternative A	Same as in Alternative A
Hours	Maintain existing office hours.	Same as in Alternative A	Same as in Alternative A
Transportation, Access, and Circulation			
	Continue to work with WDOT regarding road improvements; continue to publish self-guided tour brochures; Island County would continue to offer free bus service; encourage residents to use trails for commuter routes.	Same as in Alternative A, plus: Conduct water/land circulation study throughout the Reserve to examine visitor use patterns and identify conflicts.	Same as in Alternative B plus: Request Island Transit to consider establishing summer weekend shuttles to and from Coupeville, Ebey's Landing, Fort Casey and Fort Ebey state parks and other trailheads within the Reserve.
Reserve Boundary			
	Maintain existing boundary.	Expand boundary to include remaining portions of US Navy OLF, Smith Prairie, Crockett Lake wetlands; Bell Farm.	Same as in Alternative B.
Land Protection			
Land Protection Methods	Continue to rely on existing county and town land use controls; secure conservation easements and limited fee-title; partner with nonprofit land trusts and organizations.	Same as Alternative A, plus: Institute other creative land protection techniques; establish relationships with land trusts; seek other funding besides LWCF; seek to protect recharge areas through	Same as Alternative B, with the following exception: Recommend that legislation authorizing the change in the Reserve boundary direct a suitability/

Land Protection Methods (cont.)		easement protection; work with DNR to protect intertidal areas; work with other agencies to protect marine waters through county/state designation.	feasibility study of western coast areas of Whidbey Island for potential designation as a National Marine Sanctuary managed by NOAA.
Land Protection Priorities	Seek to preserve key parcels in accordance with the Reserve's land protection plan.	Focus land protection measures on 8 intact areas within the Reserve based on new Land Protection Plan.	Same as Alternative B.
Land Use Measures	Rely on county/town zoning and land use regulations; rely on town's historic overlay zone; inform officials of proposals contrary to Reserve mission; provide design review input to town and county.	Same as Alternative A plus: Encourage Island County to adopt regulatory overlay zone over unincorporated portion of the Reserve similar to the Town of Coupeville for implementing design review and other land use controls that aid in rural preservation.	Same as Alternative B, plus: Recommend that Island County reinstitute transfer development rights as a method for protection of agricultural land.
Funding	Provided by LWCF and supplemented by nonprofit organizations.	Same as Alternative A plus: Seek new sources of funding support for land protection; establish "friends group" to support various land protection opportunities; solicit foundations and individuals for support, donations, and bequests from private estates.	Same as Alternative B.
Action Items	Alternative A	Alternative B	Alternative C
	Initiate Prairie restoration; revise historic preservation guidelines; develop trail sign plan; develop recreational plan; participate in Washington State Parks planning process; monitor conservation easements tract IPM practices; develop long range interpretive plan; update land protection plan; revise cooperative agreements between NPS, Trust Board, and partners; assure NEPA/NPHA compliance an all federal actions.	Same as Alternative A, plus: Develop a museum management plan; develop design guidelines handbook for property owners in conjunction with partners; develop a system for tracking, evaluating, monitoring changes to the cultural landscape; upgrade training opportunities for Trust Board members and staff; establish a friends group; establish new cooperative agreements with organizations to facilitate Reserve operations and programs; identify long-term maintenance facility.	Same as Alternative B, plus: Train Commission members; expand routes and service for Island Transit; explore partnership development of a marine science center.

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Summary of Impacts

Actions	Alternative A	Alternative B	Alternative C
Effects on Cultural Resources	Alternative A	Alternative B	Alternative C
Cultural Landscape	Negligible to minor adverse impacts on the integrity of the cultural landscape and no major adverse impacts caused by NPS actions. Actions to promote the historic land use patterns with private farms leasing federally owned land provide a moderate benefit. Existing local and state zoning and development regulations do not adequately protect significant features of cultural landscape creating potential for moderate to major adverse impacts.	Developing a tracking system for cultural landscape changes would have positive, long-term effects. Working with Island County to develop an overlay zone including stronger design guidelines, larger minimum zoning, and stricter permitting, for the Reserve also has long-term benefits to resources but may be viewed by landowners as an adverse action. Stronger advocacy role in historic preservation to help maintain historic character has long-term beneficial effect.	Same as Alternative B, plus: Elevating status of Reserve management to paid Commission could have moderate to major beneficial impacts by heightening awareness of preservation.
Historic Buildings and Structures	Research and stabilization efforts necessary to preserve and protect NPS-owned structures provide minor benefit. Continued loss of non-NPS historic buildings and structures through demolition, neglect, or inappropriate alterations could have major, long-term, adverse impact and threaten integrity of the Reserve. Continued research and information sharing could have long-term benefit.	Same as Alternative A, plus: Adaptive reuse and interpretation of NPS-owned structures has long-term benefits. Expanded efforts for community outreach including a technical library and research program provide moderate to major benefits.	Same as Alternative B, plus: Using NPS-owned properties for historic preservation demonstrations and trainings has long-term beneficial effects. An historic building would be restored to Secretary of the Interior standards and Commission would work with officials to use incentives for owners in restoring and rehabilitating historic properties within the Reserve, providing beneficial, long-term effects.
Archaeological Resources and Collections Management	No adverse effects on archaeological resources. Collections management continues at North Cascades National Park results in minor to moderate adverse impact by removing collections from historic setting, but adequate storage and protection of collections also provides long-term benefits.	Same as Alternative A, plus: Long-term moderate benefits from development of a collections plan that provides for a local museum to hold limited artifacts provided NPS storage requirements are met.	Same as Alternative B New visitor center/contact station could potentially house collections providing local access resulting in long-term moderate benefit.

Effects on Natural Resources	Alternative A	Alternative B	Alternative C
Geology, Soils, and Air Resources	Negligible impacts on air resources and geology. Short and long-term adverse impacts on soils from habitat restoration and maintenance actions would be negligible to minor in intensity and duration and would result in long-term beneficial effects due to reductions in trampling, erosion, and exotic plants.	Impacts on air resources and geology same as Alternative A. Soil impacts same as Alternative A, plus: Additional land protection measures have beneficial effects to prevent the loss of prime and locally important agricultural soils. Active support of agency partnerships to advance research on area's agricultural history, crop management, farm operations and other topics provide long term benefits by improving understanding of soil quality and preservation. Research monitoring would have short-term negligible impacts.	Same as Alternative B
Soundscape	The natural soundscape at the Reserve, consisting of both natural quiet and sounds associated with rural agricultural operations, would experience short-term minor adverse impacts from Alternative A, primarily through cumulative impacts generated outside the Reserve. Short-term moderate adverse impacts from construction noise could occur if the five-acre minimum build-out potential is realized.	Moderate benefits to the Reserve by enabling the Reserve to track changes that may impact the natural soundscape containing sounds traditionally associated with rural agriculture and natural quiet. Encouraging Island County to adopt an overlay zone would provide added benefits by maintaining the traditional soundscape and preventing intrusion of sounds associated with higher density residential development.	Same as Alternative B
Water Resources	Retaining land within the Reserve in agricultural use has positive long-term impact on freshwater resources; irrigation water used to grow crops is available for aquifer recharge and does not have to be treated. Continuation of existing management activities results in overall long-term negligible to minor beneficial effects on water quality with measurable effects limited to small localized areas.	Comprehensive research and monitoring agenda and working with farmers in aquifer protection would improve the local long-term beneficial effects on water resources at intensity levels ranging from negligible to potentially major. Creating impoundments or riparian corridors could create minor to moderate, short-term localized adverse impacts and minor to major beneficial, long-term impacts on wildlife and agricultural irrigation.	Same as Alternative B
Vegetation	Short- and long-term negligible to minor adverse impacts on vegetation from continued use of trails, plus off-trail trampling and spread of noxious weeds. Native plant community restoration activities and facilities maintenance	Forest management actions result in long-term moderate beneficial impacts to forest health and wildlife species despite short-term minor adverse impacts on removed vegetation. Native plant community restoration activities and fa-	Same as Alternative B

Vegetation (cont.)	activities cause short-term negligible to minor adverse impacts but result in long-term indirect and direct minor to major beneficial effects as a result of vegetation restoration and public education.	ilities maintenance activities cause short-term negligible to minor adverse impacts, but result in long-term indirect minor to major beneficial effects as a result of vegetation restoration and public education. Continued project funding for protection and recovery of threatened golden paintbrush would have minor to moderate beneficial impacts. Other research and monitoring activities would involve negligible to minor impacts on vegetation; however, research outcomes would yield more baseline information that would be beneficial to native plant preservation. Expanded prairie restoration would increase potential for localized short-term adverse impacts due to wind and rain caused erosion but provide long-term benefits to prairie preservation.	
Wildlife	Effects on wildlife continue to result primarily from conflicts with human uses of Reserve. Access, roads, and visitor recreation result in minor long-term adverse impacts on some species in high use areas. Prairie restoration and wildlife survey efforts cause some short-term minor adverse impacts, but with minor to moderate long-term beneficial impacts. Bald eagles common in the Reserve continue to experience negligible to minor impacts from current activities.	Same as Alternative A, plus: Prairie plant restoration efforts cause some short-term minor impacts, with minor to moderate long-term beneficial impacts, depending on species. Large scale restoration project such as Crockett Lake would have major long-term benefits on native flora and migratory waterfowl. Conservation of hedgerow habitat would have long-term beneficial impacts on numerous wildlife species dependent on plant community.	Same as Alternative B
Effects on Agricultural Resources	Alternative A	Alternative B	Alternative C
Protection of Agriculture Lands	Protection of agricultural lands in Alternative A continues to rely on scenic easements which result in moderate benefits by stabilizing the land base of agriculture. However, the high cost and pace of purchasing easements may not be fast enough to counteract the pressure to convert agricultural land which could be a moderate to major adverse impact.	Same as Alternative A, plus: Additional emphasis on promoting agriculture, agricultural process and innovative marketing would provide additional benefits to agricultural resources in the Reserve.	Same as Alternative B

NPS-owned Farms	Leasing NPS owned farms for agricultural purposes until their ultimate disposition provides a short-term, moderate benefit by retaining land in agricultural production. Disposing these properties, with the protection of scenic easements, in exchange for additional easement protection on lands within the Reserve is a long-term moderate benefit.	Same as Alternative A, plus: Retaining one acre at Farm I would be a moderate benefit by providing an opportunity for Reserve trail connections.	Retaining the Reuble Farmstead and five acres for Reserve functions provides several moderate, long-term benefits. Benefits include restoring buildings to Secretary of the Interior's Standards; using restoration projects as training opportunities; adaptively re-using buildings for Reserve functions. However, this adaptive reuse does contribute to the conversion of farming structures to other uses.
Prime and Unique Soils	Prime and unique soils would continue to be lost if land is converted out of agriculture, a moderate adverse impact.	Taking a greater role working with other partners to prevent the loss of prime and unique agricultural soils would be an indirect benefit by educating the public about loss of important agricultural soils and a direct benefit by helping farmers retain important agricultural lands.	Same as Alternative B
Effects on Visitor Experience	Alternative A	Alternative B	Alternative C
Interpretation and Education	Maintenance and expansion of waysides, depending on funding availability, has a minor beneficial effect. Using the Island County Historical Museum has minor adverse impacts that result from an entrance fee and the lack of any signs advertising the Reserve's exhibit.	Development of facilities, waysides, and updating the Port Townsend Ferry Landing wayside provide direct benefits. Providing a centrally located visitor center in a historic building also has direct benefits. Increased emphasis on expanding outreach for interpretation and education provides long-term indirect benefits by improving understanding about the significance of the Reserve.	Same as Alternative B, plus: Addition of a gateway contact facility and a marine science center would be a moderate benefit. Loss of NPS uniformed rangers would be a moderate adverse impact.
Recreational Resources	Maintaining existing trails, implementing a sign plan for trails, and printing and distributing interpretive brochures would result in long-term beneficial impacts for visitors to the Reserve. Encouraging appropriate guidelines and enforcement of town speed limits for personal watercraft use would have long-term benefits by promoting safe recreation opportunities. Regulations of personal watercraft use may be viewed as an adverse impact by current users.	Overall, the actions proposed in Alternative B will have beneficial effects and minor impacts on the recreational resources of the Reserve. Establishing a recreational monitoring system would have long-term beneficial impacts on recreational resources. Enhancing cooperation among partners to develop a water trail around Whidbey Island with linkages to exiting marine trails would be a moderate, long-term benefit.	Same as Alternative B

Recreational Resources (cont.)	These watercraft can be a point source of pollution and have minor adverse impacts to natural quiet.	Some private property owners may view the trail as a threat if proposals suggest traversing their land.	
Scenic Resources	Relying on voluntary landowner action to maintain historic views, protect scenery and open space, and minimize visual impact of new development could result in moderate to major adverse impacts to scenic resources if measures are not implemented. NPS would continue to acquire conservation easements by willing sellers that include provisions to address scenic resources providing long-term, direct benefits.	Creating a design guidelines handbook for property owners in the Reserve would provide a moderate, long-term benefit by educating homeowners on design and siting principles. Developing a viewshed map would also be a minor to moderate benefit and could be a useful tool to acquire voluntary conservation easements from willing sellers. Some minor adverse impacts could result if property owners view these actions as potential threats to their private property.	Same as Alternative B
Effects on Reserve Facilities	Alternative A	Alternative B	Alternative C
Visitor Facilities	No impacts are related to visitor facilities.	Relocating the visitor center/contact station and constructing three new gateway facilities would have minor short-term adverse impacts to resources during construction but would provide moderate long-term benefits to Reserve visitors. Locating the visitor center/contact station in a historic building would be a long-term moderate benefit by providing maintenance to the Secretary of the Interior's Standards to an additional historic structure.	Same as Alternative B, plus: Site specific impacts from partnering to develop a marine science center would be addressed in a separate compliance document.
Administrative Facilities	Current administrative facilities outside of Coupeville limit the visibility of the Reserve and the multiple locations create some inefficiency and a minor adverse impact.	Short-term impacts to administrative facilities are the same as Alternative A. Long-term relocation of administrative facilities to an existing location in Coupeville offers moderate benefits by providing a central location with more visibility to both the public and Reserve partners	Retaining the five acre tract and buildings at Farm II for both administrative and maintenance facilities provides moderate to major benefits by offering a long-term solution to the space needs for these Reserve operations location of the administrative facilities at Farm II could be a minor adverse impact by decreasing visibility and accessibility to the public and partners from town center.

Maintenance Facilities	Reuble farmstead cluster at Farm II currently in use as a maintenance facility is adequate for the operation, creating no short-term impacts but potential moderate impacts in the long-term if the facility was relocated.	Same as Alternative A.	Retaining the five acre tract and buildings at Farm II for both administrative and maintenance facilities provides moderate to major benefits by offering a long-term solution to the space needs for these Reserve operations.
Effects on Reserve Management and Operations	Alternative A	Alternative B	Alternative C
Reserve Management	Varied composition of the Trust Board is a moderate to major benefit. Ability of the NPS to obtain easements to protect key areas major long-term adverse impact on Reserve values.	Same as Alternative A.	Replacing the Trust Board with a paid Commission would result in moderate benefits to the Reserve by ensuring Commission members dedicate the time necessary to manage the Reserve.
Reserve Operations	Funding for staffing levels would continue to be inadequate to meet the increased interpretation, administration and resource management needs of the Reserve. Some existing program needs at the Reserve would continue to go unmet by Reserve staff.	Providing additional staff for additional preservation and Reserve operations and maintenance would enhance park values, a moderate benefit. Staffing division between NPS and Trust Board employees is a moderate to major benefit by balancing local and national expertise and responsibilities.	Replacing the shared staff in Alternative B with Commission staff only would result in major short-term adverse impacts that could become moderate adverse impacts in the long-term. If a high level of staff turnover occurs, these impacts would remain major and adverse. Major, short-term, adverse impacts from the cost and time required to train non-NPS Commission employees in the use of required NPS systems and procedures. The Reserve Manager and Commission staff would be responsible for ensuring all legal, policy and procedural requirements of maintaining federally owned land, including easement and fee interest, and managing federal funding and program areas. Long-term, moderate adverse impact from the sustained program oversight responsibility of staff in the NPS Pacific West Region-Seattle Office.

Effects on Transportation, Access, and Circulation	Alternative A	Alternative B	Alternative C
Transportation, Access, and Circulation	The expansion of State Route 20 is the predominant influence on transportation and circulation in the Reserve. Reserve staff involvement in transportation project review will help ensure Reserve characteristics are considered in design and implementation as well as help mitigate cumulative impacts of road projects.	Expanded tour routes could have a positive impact on spreading out visitation in the Reserve, minimizing some potential congestion. Land and water circulation study could provide new information to help identify patterns useful in managing visitors and assisting in public safety.	Same as Alternative B, plus: Expansion of transit shuttle service will provide an additional means for traveling through the Reserve and could help reduce potential conflict among visitors in and travelers passing through the Reserve.
Effects on Socioeconomics			
Socioeconomics	Continued presence of farms and agricultural land uses within the Reserve contribute positive socioeconomic benefits. Slow increase in development of new tourism opportunities will have a moderately positive socioeconomic impact. Reduction in the number of farm related workers and recent immigration of non-agriculture workers has changed the character of the Reserve's population, a moderate adverse impact.	Greater socioeconomic benefit than Alternative A with increased emphasis on public information and education. Enhanced programs of land protection in concert with growth management efforts of Island County and the Town of Coupeville could result in a pattern of more concentrated land development in and adjacent to the Town of Coupeville.	Effects on socioeconomics under Alternative C would have a greater long-term, direct and indirect, beneficial impact with the development of a marine science center, and visitor center/contact station.
Effects on Reserves Boundary and Land Protection			
Reserve Boundary Land Protection	No boundary changes proposed. Land use protection measures rely heavily on efforts at the county and municipal level. Rural zoning district change from one home per ten acres to one home per five acres would have a major adverse impact on the visual character of the Reserve if future build-out occurred at this density (see Figure 12). County development standards would not likely mitigate the impacts of development at five-acre density. Many permitted and conditional uses allowed in zoning districts within the Reserve could be incompatible with the Reserve's objectives, a moderate adverse impact.	Boundary changes proposed in Alternative B that attempt to retain Smith prairie, the remainder of the OLF in the Reserve boundary, and the eastern wetlands of Crockett Lake would provide major, long-term benefits to protecting the integrity of the Reserve. Incorporating other land protection measures such as leaseback, historic property leasing, donation and others allow more options for conservation than Alternative A, providing moderate to major benefits. Encouraging Island County to adopt an overlay zone for implementing design review and other land use controls could have moderate to major long-term benefits that aid in rural preservation	Same as Alternative B Same as Alternative B, plus: Creating a system of transfer of development rights, if successful, would have long-term, moderate benefits. Cost associated with creating and maintaining this system would have a moderate adverse financial impact. National Marine Sanctuary designation could have moderate to major long-term benefits by protecting marine resources.