

# Wetland Statement of Findings

## Rehabilitate Alder Camp Road Project

### **Redwood National and State Parks**

**Lead Agency: National Park Service**

Recommended:

*for Amy Caldwell* *9/29/04*  
\_\_\_\_\_  
Superintendent, Redwood National Park Date

Certification of Technical Adequacy and Servicewide Consistency:

*Marissa ACTING* *9/20/2004*  
\_\_\_\_\_  
Chief, Water Resources Division, National Park Service Date

Approved:

*Jonathan J. Soren* *10-4-04*  
\_\_\_\_\_  
Director, Pacific West Region, National Park Service Date

## Purpose of this Statement of Findings

The purpose of this Wetland Statement of Findings is to review the Rehabilitate Alder Camp Road Project in sufficient detail to:

- Avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative
- Describe the effects on wetland values associated with the selected action
- Provide a thorough description and evaluation of mitigation measures developed to achieve compliance with Executive Order 11990 (Protection of Wetlands) and the National Park Service Director's Order 77-1 and Procedural Manual 77-1: Wetland Protection
- Ensure "no net loss" of wetland functions or values

## Alternatives Considered

Alternatives considered in the Rehabilitate Alder Camp Road Project Environmental Assessment (Chapter II, Alternatives) include Alternative 1 (No Action) and Alternate 2 (Selected Action).

### ***Alternative 1 (No Action)***

The No Action Alternative represents conditions and management practices as they currently exist at the Alder Camp Road site. The existing drainage structures and road would remain unchanged, except for normal maintenance and repair. Alder Camp Road would continue to have 25 drainage structure crossings, including 15 culverts and 10 other drainage pipes or other drainage structures. Drainage structure sizes would continue to range from 12 to 36 inches in diameter, and box culvert sizes would continue to range from 18 to 36 inches square. Individual culverts would be replaced as needed. Of the 15 existing culverts, 4 would continue to be appropriately sized to convey 100-year flood flows and 11 would remain under-sized to convey 100-year flood flows.

Although there would be no increase in construction-related impacts on special-status aquatic species beyond routine maintenance, the potential for erosion and sediment transport to Richardson Creek and associated tributaries would remain the same, and could continue to affect aquatic species and impede fish passage.

Should a culvert fail, deposition of sediment into Richardson Creek and associated palustrine and riverine tributaries could adversely affect wetlands, particularly during large storm events. As a result, increased sediments in Richardson Creek and associated tributaries could reduce water quality and wetland value, adversely affect habitat for special-status aquatic species and reduce the extent and quality of riparian vegetation.

### ***Alternative 2 (Selected Action)***

Under the selected action, the National Park Service will undertake repair and rehabilitation of Alder Camp Road. The Federal Highway Administration is assisting the National Park Service with planning and designing the proposed road and culvert repairs.

### ***Drainage Structures***

The selected action will include the replacement, rehabilitation, or extension of drainage structures along Alder Camp Road. As shown in table 2-1, there will be 28 drainage structure crossings, including 4 types of drainage structures: culverts, ditch relief pipes, drop inlet ditch relief pipes, and storm drain pipes. The selected action will include the addition of 2 new drainage structures, replacement of 11 drainage structures, extension (i.e., lengthening) of 3 drainage structures, replacing and extending 4 drainage structures, and rehabilitation of 8 culverts. Drainage structure improvements will include a total fill excavation of approximately 9,100 cubic yards. Riprap will be placed at the outlet of all replaced drainage structures, extended culverts, and at several culverts left in place to avoid soil erosion at the drainage structure outlets.

New and replaced culverts, which convey natural spring and drainage water, will be sized to convey 100-year flood flows. It is not necessary to size ditch relief structures and drop inlet/ditch relief structures to convey 100-year flood flows because these structures only convey surface water runoff from the roadway. Of the 16 total culverts under the selected action, 10 culverts will be appropriately sized to convey 100-year flood flows and 6 culverts will not be replaced due to the extensive resource damage and high cost that would result.

### ***Roadway Rehabilitation***

The National Park Service will rehabilitate the surface of the entire 2-mile length of Alder Camp Road. All road work will occur within the existing disturbed roadway corridor. Roadway surface rehabilitation will include pulverizing in place the existing asphalt to an approximate depth of 4 inches. Asphalt pulverization activities will occur between September 16 and October 15. The roadway pavement will be recycled and then overlain with approximately 2 inches of hot asphalt concrete pavement to the 24-foot design width (including shoulders). Recycled asphalt pavement from surface rehabilitation will be used to rebuild the profile and superelevation in fill failure repair areas (see Fill Failure Repair, below). Excess recycled asphalt pavement will be removed from the park and taken to an appropriate asphalt recycling facility.

### ***Fill Failure Repair***

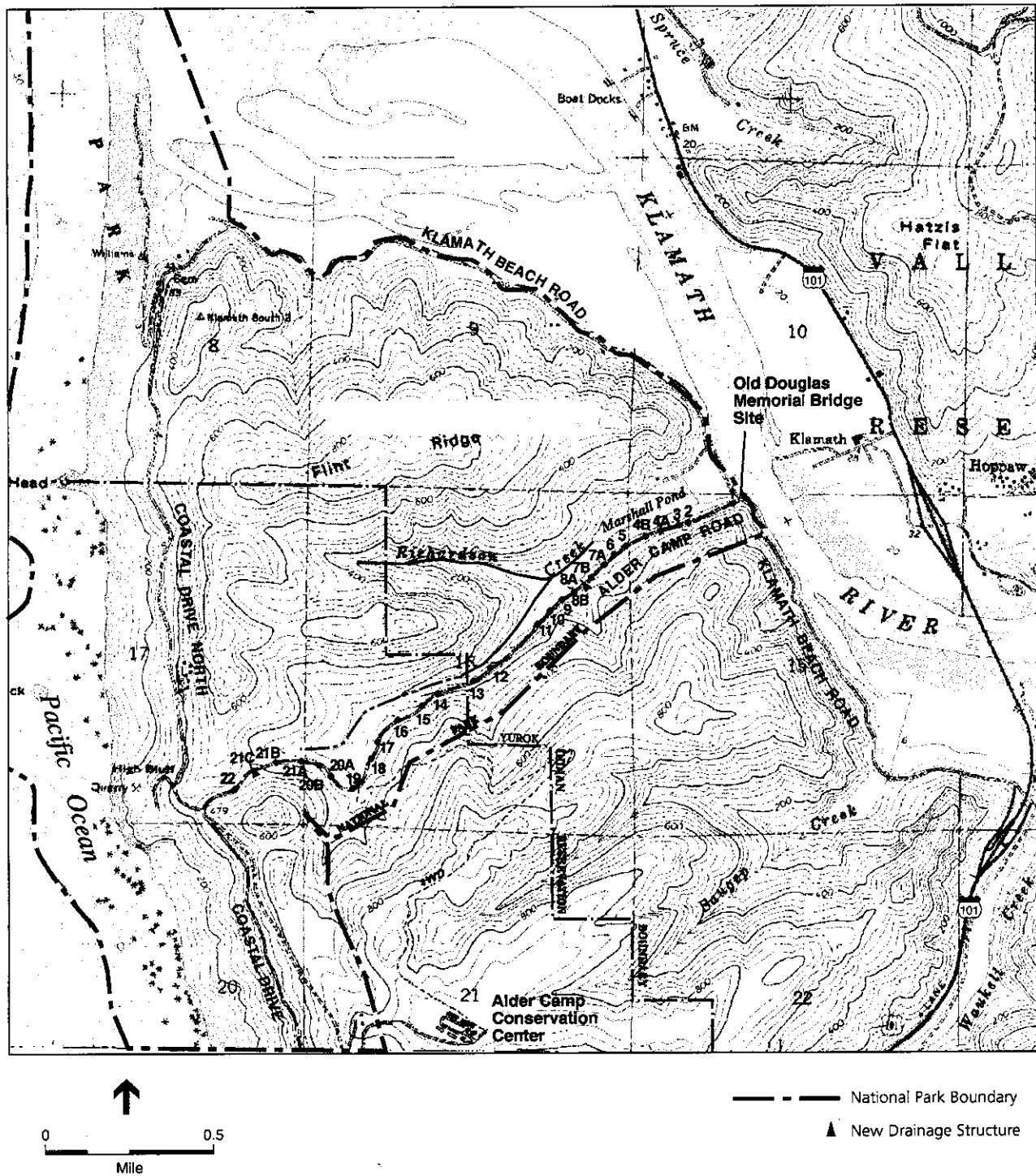
The National Park Service proposes to repair fill failure areas on Alder Camp Road by excavating the surface asphalt and underlying concrete base to a depth of up to 3 feet, and rebuilding the roadway with fill composed of aggregate and/or recycled asphalt pavement. Above the base layer of the road, the fill failure repair areas will be overlain with recycled asphalt pavement and then approximately 3 inches of hot asphalt concrete pavement to the 24-foot design width (including shoulders). The total length of fill failure areas is approximately a half-mile in dispersed areas along Alder Camp Road. The total fill failure repair area is approximately 15,000 square feet (0.3 acres).

## **Affected Wetlands**

### ***Wetland Location***

Using the Cowardin classification system wetlands and deepwater habitats within the project area consist of riverine and palustrine wetlands. Figure 2-1 depicts the general location of drainages within the project area. A Redwood National and State Parks' supervisory ecologist completed an

Figure 2-1  
Selected Action



SOURCE: Environmental Science Associates

Rehabilitate Alder Camp Road Project Environmental Assessment  
Redwood National and State Parks

assessment of the wetland type and extent (estimated in percentages) to identify Cowardin wetlands on April 22, 2004.

## ***Wetland Characteristics***

### **Biotic Value**

Richardson Creek is a perennial stream and drains to the Klamath River. Richardson Creek parallels about one-third of the length of Alder Camp Road and is mostly a riverine wetland. An associated seasonal unnamed tributary conveys flows to Richardson Creek and generally parallels the remaining length of Alder Camp Road. For the purposes of this document, the statement of findings refers to the unnamed tributary as the main tributary to Richardson Creek. The main tributary to Richardson Creek is approximately 40 feet or more downslope of Alder Camp Road and is mostly a palustrine forested wetland.

Numerous drainages convey flows from the mountain ridge in the south to the main tributary to Richardson Creek via drainage structures beneath Alder Camp Road. Fifteen of these drainages are seasonally flooded and ten of them are perennial. Three additional drainages proposed for culvert treatment are seasonal. Drainages within the project area are mostly palustrine forested broad-leaved deciduous. Some drainages are riverine wetlands and a few are palustrine forested needle-leaved evergreen.

Marshall Pond supports palustrine emergent and palustrine forested wetlands. Marshall Pond was created by damming Richardson Creek to form a log holding pond for a former lumber mill. The outlet of Drainages 1, 2, 3, 4A, 4B, and 5 are immediately adjacent to or within Marshall Pond.

Wetlands within the project area are broadly classified as riparian in nature and include aquatic habitat and red alder riparian community. Specific wetland classes identified within the project area are limited to the following:

- Palustrine Emergent Persistent / Unconsolidated Bottom Permanent Diked/Impounded – Drainages 2, 4A, 4B and 5
- Palustrine Forested Broad-Leaved Deciduous Saturated – Drainage 8B
- Palustrine Forested Broad-Leaved Deciduous Seasonal – main tributary to Richardson Creek and Drainages 1, 2, 3, 4A, 4B, 6, 7A, 8B, 14, 18, 20A, 21B and 22
- Palustrine Forested Needle-Leaved Evergreen Seasonally Flooded – Drainages 10, 20B, 21A and 21C
- Palustrine Forested Broad-Leaved Deciduous Permanently Flooded – Drainages 5, 7B, 11, 12, 13, 16, 17 and 18
- Palustrine Forested Needle-Leaved Evergreen Permanently Flooded – Drainage 15
- Palustrine Forested Broad-Leaved Deciduous Artificially Flooded Diked/Impounded – Drainage 8A
- Riverine Upper Perennial Unconsolidated Bottom Seasonally Flooded – Drainage 4A
- Riverine Upper Perennial Unconsolidated Bottom Permanent – Richardson Creek and Drainages 7B, 8B, 12, 13, 16, 17 and 19

Table 2-1 presents a general description of affected riverine and palustrine wetlands that cross Alder Camp Road via culverts. These riverine and palustrine drainages as well as Richardson Creek (riverine wetland) and the main tributary to Richardson Creek (palustrine wetland) are subjected to National Park Service protection policies under Executive Order 11990 as Cowardin wetlands. In addition, these Cowardin wetlands (except Drainages 7A, 7B, and 8B) are within the jurisdiction of the U.S. Army Corp of Engineers under Section 404 of the Clean Water Act and the North Coast Regional Water Quality Control Board under Section 401 of the Clean Water Act as waters of the U.S. The National Park Service conducted a site visit with the U.S. Army Corps of Engineers on March 23, 2004 to determine the wetlands under the jurisdiction of the U.S. Army Corps of Engineers.

### **Vegetation**

The project site supports two primary plant communities, including redwood forest and red alder forest. These communities are second growth forests. Many redwood and alder trees in both of these communities overhang the road and likely have supporting root structures beneath the road.

Redwood forest occurs mostly on the steep upward slope south of Alder Camp Road. Coast redwood (*Sequoia sempervirens*) is the dominant conifer species. Associated species include Sitka spruce (*Picea sitchensis*) and Douglas-fir (*Pseudotsuga menziesii*). Conifers overtop the occasionally occurring red alder (*Alnus rubra*) and dense understory of sword fern (*Polystichum munitum*) on the south side of Alder Camp Road. Only 2 old-growth coast redwood trees are present adjacent to the roadway, near Culvert 12. Old-growth redwood forest occurs within a quarter mile of the project area.

Red alder forest features an open canopy to a dense canopy on the downward, steep, moist slope north of Alder Camp Road. Isolated individual coast redwood trees overtop red alder in some areas along the road. The understory primarily consists of sword fern, berries (*Rubus* spp.) and oxalis (*Oxalis oregana*). Red alder forest is a fairly, dry upland community closest to the road. As moisture increases on the steep slope, this community becomes a riparian forest.

### **Wildlife**

The moist cool coastal environment of Alder Camp Road provides habitat for amphibians such as Pacific giant salamander (*Dicamptodon ensatus*), California slender salamander (*Batrachoseps attenuatus*), red-legged frog (*Rana aurora*) and northern rough-skinned newt (*Taricha granulose*). Marshall Pond and the surrounding disturbed logging area provides habitat for Pacific treefrogs (*Hyla regilla*). Marshall Pond provides habitat for Western pond turtle (*Clemmys marmorata*).

The project site provides habitat for such bird species as chestnut-backed chickadee (*Parus rufescens*), stellar's jay (*Cyanocitta stelleri*), and winter wren (*Troglodytes troglodytes*) within montane riparian habitats. Trees and snags provide nesting habitat for owls and other raptors. Raptors that may breed and nest in riparian woodland communities include red-tailed hawk, sharp-shinned hawk, Cooper's hawk, and others. Marshall Pond provides freshwater pond habitat, which is rare in the parks and in the region. Several species of waterfowl, such as wood ducks, are known to breed there and nowhere else in the parks.

Riparian areas such as Richardson Creek and Marshall Pond provide foraging habitat for shrews, Pacific jumping mouse, western harvest mouse, deer mouse, western gray squirrel and raccoon.

**Table 2-1**  
**General Wetland Descriptions of Drainage Structures at the Rehabilitate Alder Camp Road Project Area**

Pipe I.D.	Station ID (Meters)	Drainage Structure	Pipe Size (Inches)		Excavation (Cubic Yards)	Treatment	Wetland Type	Wetland Percent	Drainage Type	Corps Jurisdictional Wetland
			Existing	Proposed						
1	4+307	Storm Sewer	18" CMP	24"	670	Replace	PFO1C	100	Ephemeral	Yes
2	4+167	Culvert	18" CMP	24"	1,310	Replace	PFO1C PEM1Hh	80 20	Ephemeral Perennial (Marshall Pond)	Yes
3	4+136	Culvert	12" CMP	24"	240	Replace	PFO1C	100	Ephemeral	Yes
4A	4+013	Culvert	18" CMP	24"	1,400	Replace	PFO1C R3UBC PEM1Hh	40 40 20	Seasonal Perennial (Marshall Pond)	Yes
4B	3+890	Ditch Relief	None	24"		Clean/Riprap	Not found; Assumed PFO1C and PEM1Hh	80 20	Ephemeral Perennial (Marshall Pond)	Yes
5	3+823	Culvert	18" CMP	24"	980	Replace	PFO1H PEM1Hh	80 20	Perennial Perennial (Marshall Pond)	Yes
6	3+759	Drop Inlet / Ditch Relief	12" CMP	24"	170	Replace	PFO1C	100	Seasonal	Yes
7A	3+700	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Not found; Assumed PFO1C	100	Assumed Seasonal	No
7B	3+586	Culvert	30" HDPE			Clean/Riprap	PFO1H R3UBH	50 50	Perennial	No
8A	3+415	Culvert	None	36"	400	New Installation	PFO1Kh	100	Seasonal	Yes
8B	3+389	Culvert	36" HDPE			Clean/Riprap	R3UBH PFO1B	40 60	Perennial	No
9	3+283	Drop Inlet / Ditch Relief	12" CMP	24"		Clean and Extend	PFO1C	100	Ephemeral	Yes
10	3+225	Drop Inlet / Ditch Relief	12" CMP	24"	200	Replace/Extend	PFO4C	100	Ephemeral	Yes
11	3+170	Culvert	18" CMP	24"	650	Replace/Extend	PFO1H	100	Perennial	Yes
12	2+964	Culvert	24" CMP	24" Slip-Line		Clean and Slip-Line	PFO1H R3UBH	50 50	Perennial	Yes
13	2+749	Culvert	24"X24" Box			Clean/Riprap	PFO1H R3UBH	40 60	Perennial	Yes
14	2+612	Culvert	12" CMP	24"	300	Replace/Extend	PFO1C	100	Ephemeral	Yes

**Table 2-1 (Continued)**  
**General Wetland Descriptions of Drainage Structures at the Rehabilitate Alder Camp Road Project Area**

Pipe I.D.	Station ID (Meters)	Drainage Structure	Pipe Size (Inches)		Excavation (Cubic Yards)	Treatment	Wetland Type	Wetland Percent	Drainage Type	Corps Jurisdictional Wetland
			Existing	Proposed						
15	2+493	Culvert	24"X24" Box			Clean/Riprap	PFO4H		Perennial	Yes
16	2+409	Culvert	24"X24" Box	30' Extension		Clean and Extend	PFO1H R3UBH	40 60	Perennial	Yes
17	2+167	Culvert	24"X24" Box			Clean	PFO1H R3UBH	100	Perennial	Yes
18	2+050	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	PFO1C	100	Ephemeral	Yes
19	1+934	Culvert	36"X36" Box			Clean/Riprap	PFO1H R3UBH	40 60	Perennial	Yes
20A	1+767	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	PFO1C	100	Ephemeral	Yes
20B	1+722	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	PFO4C	100	Ephemeral	Yes
21A	1+611	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace/Extend	PFO4C	100	Ephemeral	Yes
21B	1+530	Culvert	18"X18" Box	24"		Clean and Extend	PFO1C	100	Seasonal	Yes
21C	1+504	Ditch Relief	None	24"	400	New Installation	PFO4C	100	Ephemeral	Yes
22	1+304	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	PFO1C	100	Ephemeral	Yes

**Code Definitions:**

PEM1Hh: Palustrine Emergent Persistent Permanent Diked/Impounded

PFO1B: Palustrine Forested Broad-Leaved Deciduous Saturated

PFO1C: Palustrine Forested Broad-Leaved Deciduous Seasonal

PFO4C: Palustrine Forested Needle-Leaved Evergreen Seasonally Flooded

PFO1H: Palustrine Forested Broad-Leaved Deciduous Permanently Flooded

PFO4H: Palustrine Forested Needle-Leaved Evergreen Permanently Flooded

PFO1Kh: Palustrine Forested Broad-Leaved Deciduous Artificially Flooded Diked/Impounded

R3UBC: Riverine Upper Perennial Unconsolidated Bottom Seasonally Flooded

R3UBH: Riverine Upper Perennial Unconsolidated Bottom Permanent



Marshall Pond provides important habitat for fish, amphibians, breeding waterfowl, bats, and other wildlife. Salamander larvae, juvenile trout, rails, wood ducks, hooded mergansers, and ringneck ducks have been observed in the pond.

#### ***Special-status Species***

Special-status wildlife species that are known to occur or potentially occur within the project area include listed species (Northern spotted owl, marbled murrelet, and bald eagle) and state species of special concern (tailed frog, northern red-legged frog, foothill yellow-legged frog, western pond turtle, sharp-shinned hawk, Cooper's hawk, yellow warbler, and yellow-breasted chat).

No special-status plant species are known or likely to occur in the project area.

#### **Scenic, Recreation, Socioeconomic, Cultural Values**

In general, wetlands within the project area are considered aesthetically-pleasing natural features and can be observed when hiking on the Coastal Trail or Flint Ridge Trail. There is no socioeconomic value associated with wetlands within the project area.

Wetland cultural values are generally associated with traditional Indian gathering areas. During the cultural resources investigation, an ethnographic resources survey was conducted. No resources were found to be eligible as traditional cultural properties both locally and per the National Register Criteria for Evaluation (36 Code of Federal Regulations Part 60).

## **Environmental Consequences of the Selected Action on Wetlands**

### ***Construction- and Operation-related Effects on Wetlands***

Overall, with implementation of mitigation measures the effect of the selected action on wetlands will result in a local, long-term, minor, adverse impact. Table 2-2 describes the potential area of effect at each of the 28 Cowardin wetlands that cross Alder Camp Road within the project area.

#### **Construction-related Effects on Wetlands**

The selected action will involve culvert repair, replacement, and rehabilitation within riverine and palustrine forested wetlands that cross under Alder Creek Road and convey flows to Richardson Creek and the main tributary to Richardson Creek. Palustrine emergent wetlands associated with Marshall Pond and Richardson Creek will be avoided during culvert activities by installing new culverts and riprap on the slope outside of these wetland areas. Existing culverts in Marshall Pond, specifically Culverts 2, 3, 4A and 5, will be capped at the inlet and abandoned in place. New and replaced culverts, which convey natural spring and drainage water, will be sized to convey 100-year flood flows. To avoid soil erosion and dissipate water during heavy flows, riprap will be placed at the outlet of all replaced drainage structures, extended culverts, and at several culverts left in place. Construction activities will permanently disturb approximately 0.42 acre of Cowardin wetlands due to installation of new pipe materials, structures and/or riprap resulting in moderate, adverse impacts to wetlands. During construction activities, sediments could dislodge downhill from the culverts and discharge into riverine and palustrine wetlands, including Richardson Creek and the Richardson Creek tributary. Increased sediments in Richardson Creek

and associated tributaries could temporarily reduce water quality and wetland value. Each drainage requiring a pipe extension riprap or end section replacement will require a disturbance width of about 15 feet. Within this disturbance area, red alder riparian vegetation will be cut to facilitate culvert repair, replacement, and rehabilitation and to allow access for construction equipment. This vegetation is expected to rapidly recolonize natural disturbed areas. To limit construction-related erosion during the rainy season, project construction activities will begin on June 15 and end in October during the low flow season. Implementation of Best Management Practices and mitigation measures (see the mitigation matrix in the Finding of No Significant Impact) including but not limited to, use of silt fencing and soil dams around excavation areas, and mulching disturbed areas for natural repropagation, will further reduce impacts on wetlands. With mitigation, construction-related effects will have a local, long-term, minor, adverse impact on wetlands.

### **Operation-related Effects**

Exposed bare soil will be mulched and will quickly revegetate following implementation of the project. Resized culverts will improve conveyance of flows to Richardson Creek and associated tributaries. The potential for erosion and sediment transport to Richardson Creek and associated tributaries will be reduced, and as a result will improve water quality and wetland value. Operation-related effects will have a local, long-term, minor, beneficial impact on wetlands.

### ***Construction- and Operation-related Effects on Common Aquatic Wildlife***

Overall, with implementation of mitigation measures the effect of the selected action on riparian and aquatic common wildlife will result in a local, long-term, negligible to minor, beneficial impact.

### **Construction-related Effects**

Removal and replacement of culverts could temporarily increase sediment levels in Richardson Creek, which is downslope of the road, and as a result, adversely affect aquatic wildlife by degrading water quality. Adverse effects on aquatic wildlife could include smothering of eggs, clogged air passages, and suffocation. Implementation of Best Management Practices and mitigation measures, including removing food and waste and implementing erosion and sedimentation controls (see the mitigation matrix in the Finding of No Significant Impact) will reduce the intensity of construction-related effects on common aquatic wildlife to minor.

### **Operation-related Effects**

Upon reestablishment of project area vegetation, there will be no adverse effects on common wildlife associated with operation of the road and culverts. Resized culverts will improve conveyance of flows to Richardson Creek and associated tributaries and improve habitat for aquatic animal species.

**Table 2-2**  
**Estimate of Wetland Disturbance**

Pipe I.D.	Station ID (M)	Drainage Structure	Pipe Size - Inches		Excavation (Cubic Yard)	Treatment	Description of Wetland Disturbance	Acreage of Disturbance (sq. meters)	Corps Jurisdictional Wetland
			Existing	Proposed					
1	4+307	Storm Sewer	18" CMP	24"	670	Replace	Pipe/Structure/Riprap	44	Yes
2	4+167	Culvert	18" CMP	24"	1,310	Replace	Pipe/Structure/Riprap	44	Yes
3	4+136	Culvert	12" CMP	24"	240	Replace	Pipe/Structure/Riprap	44	Yes
4A	4+013	Culvert	18" CMP	24"	1,400	Replace	Pipe/Structure/Riprap	44	Yes
4B	3+890	Ditch Relief	None	24"		Clean/Riprap	Riprap at outlet	22	Yes
5	3+823	Culvert	18" CMP	24"	980	Replace	Pipe/Structure/Riprap	44	Yes
6	3+759	Drop Inlet / Ditch Relief	12" CMP	24"	170	Replace	Pipe/Structure/Riprap	44	Yes
7A	3+700	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Pipe/Structure/Riprap	44	No
7B	3+586	Culvert	30" HDPE			Clean/Riprap	Riprap at outlet	25	No
8A	3+415	Culvert	None	36"	400	New Installation	Pipe/Structure/Riprap	50	Yes
8B	3+389	Culvert	36" HDPE			Clean/Riprap	Riprap at outlet	28	No
9	3+283	Drop Inlet / Ditch Relief	12" CMP	24"		Clean and Extend	Pipe/Structure/Riprap	126	Yes
10	3+225	Drop Inlet / Ditch Relief	12" CMP	24"	200	Replace/Extend	Pipe/Structure/Riprap	44	Yes
11	3+170	Culvert	18" CMP	24"	650	Replace/Extend	Pipe/Structure/Riprap	100	Yes
12	2+964	Culvert	24" CMP	24" Slip-Line		Clean and Slip-Line	Slip-Line/Extend/Riprap	116	Yes
13	2+749	Culvert	24"X24" Box			Clean/Riprap	Riprap at outlet	22	Yes
14	2+612	Culvert	12" CMP	24"	300	Replace/Extend	Pipe/Structure/Riprap	44	Yes
15	2+493	Culvert	24"X24" Box			Clean/Riprap	Riprap lined channel	70	Yes
16	2+409	Culvert	24"X24" Box	30' Extension		Clean and Extend	Pipe/Structure/Riprap	121	Yes
17	2+167	Culvert	24"X24" Box			Clean		0	Yes
18	2+050	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Pipe/Structure/Riprap	94	Yes
19	1+934	Culvert	36"X36" Box			Clean/Riprap	Pipe/Structure/Riprap	81	Yes

**Table 2-2 (Continued)**  
**Estimate of Wetland Disturbance**

Pipe I.D.	Station ID (M)	Drainage Structure	Pipe Size - Inches		Excavation (Cubic Yard)	Treatment	Description of Wetland Disturbance	Acreage of Disturbance (sq. meters)	Corps Jurisdictional Wetland
			Existing	Proposed					
20A	1+767	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Pipe/Structure/Riprap	53	Yes
20B	1+722	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Pipe/Structure/Riprap	53	Yes
21A	1+611	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace/Extend	Pipe/Structure/Riprap	53	Yes
21B	1+530	Culvert	18"X18" Box	24"		Clean and Extend	Pipe/Structure/Riprap	154	Yes
21C	1+504	Ditch Relief	None	24"	400	New Installation	Pipe/Structure/Riprap	94	Yes
22	1+304	Drop Inlet / Ditch Relief	12" CMP	24"	400	Replace	Pipe/Structure/Riprap	44	Yes
<b>Total</b>								<b>1702 square meters 0.42 acres</b>	

### ***Construction- and Operation-related Effects on Riparian and Aquatic Special-status Species***

Overall, with implementation of mitigation measures the effect of the selected action on riparian and aquatic special-status species will result in a local, long-term, minor, adverse impact.

#### **Construction-related Effects**

Proposed activities will create noise and human disturbance and remove trees within suitable breeding habitat for special-status raptors, including Cooper's hawk and sharp-shinned hawk, potentially breeding or foraging within riparian habitat. Although noise and human disturbance during construction activities within this period will be continuous and greater than effects generated by vehicles typically using the road, the attenuation caused by dense vegetation will result in noise levels that roughly match those of passenger vehicles away from the noise source. Thus, noise and human disturbance under the selected action will be similar to the ambient levels generated under Alternative 1 during June 15 through September 15. To further reduce harassment to special-status bird species, less intense construction activities resulting in ambient noise levels beyond the existing conditions (i.e., greater than 60 dBA), will occur June 15 through September 15. Noise intensive construction activities, including roadway pulverizing, repaving, and parking lot reconstruction, resulting in ambient noise levels beyond the existing conditions will occur during the bird non-breeding season (i.e., after September 15). To further protect breeding special-status bird species, the National Park Service will implement on-going program and new measures to reduce potential threats to listed special-status bird species as part of the *Conservation Strategy for Managing Threatened and Endangered Species in Redwood National and State Parks*, including but not limited to, noise reduction measures, stopping work if listed special-status bird species are encountered during project activities and implementing work restrictions in accordance with the limited operating procedures, which restricts work activities between two hours after sunrise to two hours before sunrise and avoids the sensitive nest switching/chick feeding periods. These actions will limit potential disturbance to potentially-occurring special-status bird species, including marbled murrelet.

Implementation of the selected action will potentially discharge sediments to Richardson Creek and associated tributaries during culvert replacement, rehabilitation, or extension, which could adversely affect associated special-status aquatic species, including western pond turtle, northern red-legged frog, foothill yellow-legged frog, and tailed frog, which are known to occur or are potentially present within project area. Special-status amphibian species potentially migrate to the riparian forest between Alder Camp Road and the Richardson Creek tributary. Some alder, second-growth redwood, and spruce trees will require vegetation removal to provide access for equipment to most culvert outlets. The Biological Opinion prepared by NOAA Fisheries for the Redwood National and State Parks Annual Routine and Non-Routine Maintenance Program (Roads Program) determined that the level of anticipated take for the Roads Program is not likely to result in jeopardy to Southern Oregon/Northern California coho salmon. Based on the size, nature, duration, location, and timing of the selected action, The selected action will have no effect on Southern Oregon/Northern California coho salmon, their critical habitat, or Essential Fish Habitat. To reduce effects on special-status fish species, the National Park Service will comply with reasonable and prudent measures as indicated in the Biological Opinion, including but not limited to, minimizing effects, monitoring, fish capture and relocation, constructing during the low flow season and dewatering measures. Implementation of Best Management Practices and mitigation measures, including biological monitoring (see the mitigation matrix in

the Finding of No Significant Impact) will reduce the intensity of construction-related effects on special-status amphibian species and reptile species to minor.

### **Operation-related Effects**

Noise and human disturbance will return to existing levels. In the long-term, vegetation will re-establish and reduce habitat impacts. Special-status wildlife species will use the site similar to existing conditions.

Resized culverts will improve conveyance of flows to Richardson Creek and associated tributaries and improve habitat for special-status aquatic species. The potential for erosion and sediment transport to Richardson Creek and associated tributaries will be reduced. As a result, these actions will improve passage for special-status aquatic species and the quality of their habitat. Operation-related effects on special-status wildlife species will be minor and beneficial.

## **Design or Modifications to Minimize Harm to Wetlands**

Although the selected action has been designed to mitigate harmful effects to wetlands, the National Park Service (and its contractors) will implement mitigation measures, prior to, during and after construction, as appropriate. These mitigation measures are identified in the mitigation matrix in the Finding of No Significant Impact.

### ***Proposed Compensation***

Impacts to 0.42 acre of riverine and palustrine wetlands will be compensated at a minimum 2:1 ratio as part of the proposed watershed restoration actions on the South Fork of Lost Man Creek (*Protect Park Resources by Removing Failing Roads*, PMIS #59730), which begins in 2006. The project is funded by the Line Item Construction program (LIC #355). Lost Man Creek is a major tributary to Prairie Creek, which is within the Redwood Creek watershed. Many of the roads slated for removal are presently disrupting the natural flow and function of small tributaries to the South Fork. A major component of this restoration project is to excavate stream crossings to reduce the threat of sediment delivery from failing roads and to recover natural drainage form and function of the watercourses.

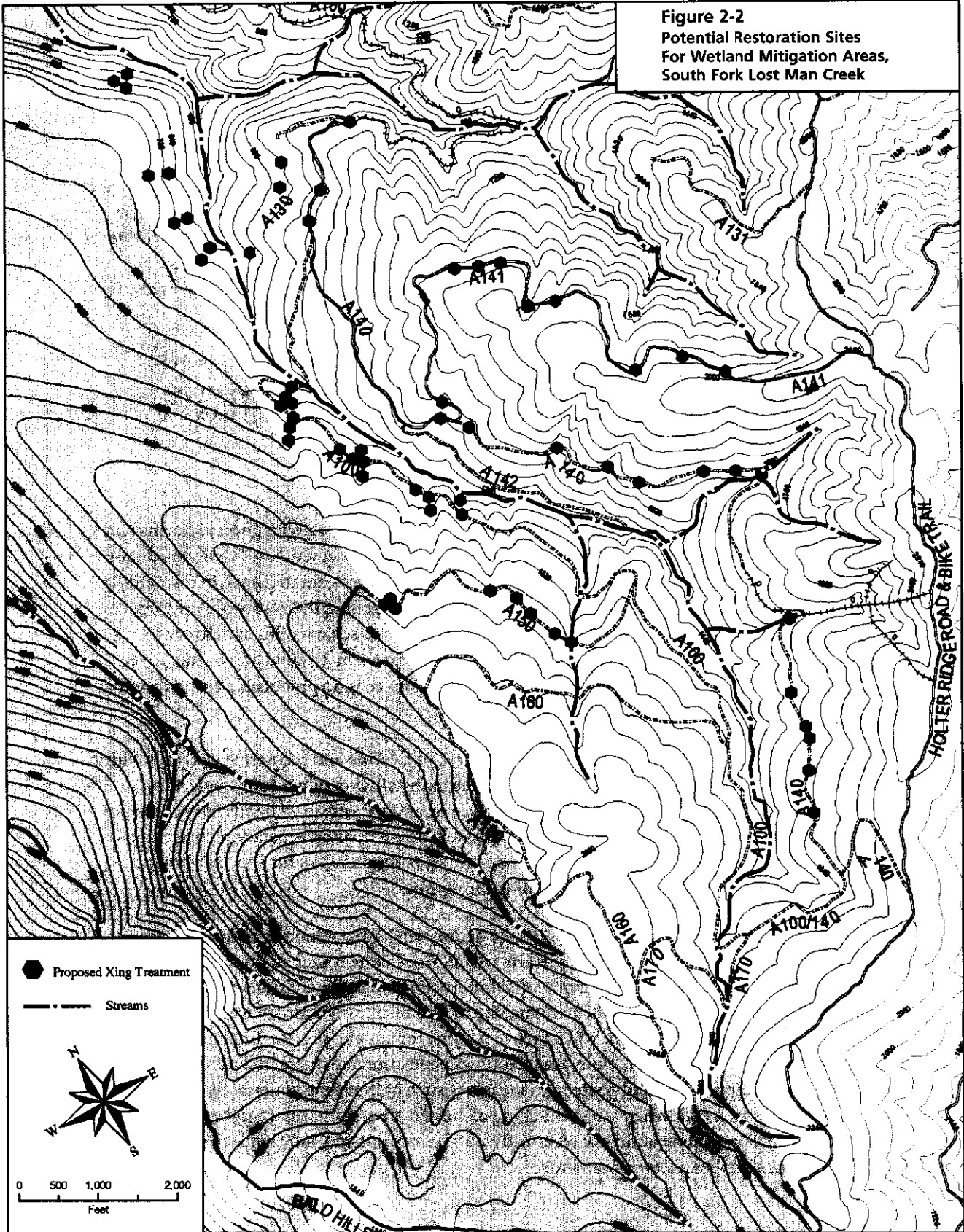
### **Wetland Types**

The potential mitigation sites generally meet the definition of a riverine system, whereby a channel is an open conduit that is either naturally or artificially created and periodically or continuously contains moving water, or forms a connecting link between two bodies of standing water. Because the terrain in the South Fork is generally steep uplands, the subsystem type for these wetlands is upper perennial and intermittent. Over time, the mitigation sites will support palustrine forested wetlands, particularly along intermittent drainages, since the banks will be allowed to revegetate naturally following excavation activities.

### **Acreage**

The National Park Service identified 63 stream-crossing excavation sites for potential use as wetlands mitigation (figure 2-2). An average post-excavation wetted perimeter area (604 square feet/site) was estimated using channel width and length measurements from a subsample

**Figure 2-2**  
**Potential Restoration Sites**  
**For Wetland Mitigation Areas,**  
**South Fork Lost Man Creek**



(i.e., 48 sites) of sites. The average area per site was multiplied by 63 sites for a total of 38,052 square feet (0.87 acre).

### **Techniques**

At each stream crossing, heavy equipment will be used to excavate road fill material down to the natural channel. Culverts will be removed and the natural size and shape of the stream channel will be restored. In the process, the natural stream channel armor and sidebanks will be re-exposed. Large woody debris encountered during stream crossing excavations will be stockpiled and scattered in and around the finished channel. This woody debris will be left free to adjust its position in response to winter high flows. The scattered woody debris will provide immediate cover and organic matter for aquatic species, capture sediment that may be mobilized as the freshly excavated channel equilibrates to the restored flows, and make use of on-site native materials. The banks of the stream will be allowed to revegetate naturally.

The National Park Service will conduct monitoring of the restoration sites, consisting of photopoints, wet-season observations, and occasional turbidity sampling upstream and downstream of sites to measure short-term erosional effects of the restoration work.

### **Justification**

One of the main purposes of the selected action is to improve culvert drainage by repairing and replacing drainage structures. Drainage structure repair and replacement is needed to facilitate conveyance of water under the roadway in areas where the culverts are too small in diameter to convey storm water runoff or flood waters. In proposing this action, the National Park Service will prevent the possibility of culvert failure, and resultant large-scale sediment delivery to Richardson Creek, which has a hydrologic connection to the Klamath Wild and Scenic River. Therefore, the National Park Service has determined that there is no practicable alternative that will be located outside the wetland and aquatic habitat.

The selected action will affect approximately 0.42 acre of riverine and palustrine wetlands within the Alder Camp Road site. These impacts will be due to installation of new pipe materials, structures, and/or riprap at 28 drainages. These riverine and palustrine wetlands have moderate functional value because of the presence of moderately dense riparian vegetation, moderate to high habitat value for wildlife (including riparian and aquatic special-status species), limited scenic and recreational value, and absence of cultural value.

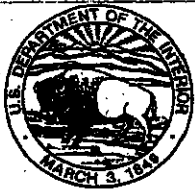
Overall, operation-related effects of the selected action will have a minor beneficial impact on wetland functions and values. Resized culverts will improve conveyance of flows to Richardson Creek and associated tributaries. The potential for erosion and sediment transport to Richardson Creek and associated tributaries will be reduced, and as a result will improve water quality and wetland value. The selected action will improve passage for aquatic species. Implementation of Best Management Practices and biological resources protection measures (including, but not limited to, utilization of wetland protection measures such as installing material to protect wetlands from construction activities, mulching disturbed areas for natural repropagation, using silt fencing and soil dams around excavation areas to reduce erosion, etc.), will lessen construction-related impacts on wetlands.



The National Park Service will obtain separate permits from other federal and cooperating state and local agencies as appropriate prior to construction activities. Mitigation and compliance with regulations and policies to avoid or minimize impacts on water quality and wetland function and values will be strictly adhered to during and after project construction.

No long-term, major, adverse impacts to wetlands will occur from the selected action. Implementation of the proposed wetland compensation plan to restore stream crossings on the South Fork of Lost Man Creek at a minimum of 2-acre for 1-acre basis will offset adverse impacts on wetlands at the Alder Camp Road project site. Therefore, the National Park Service finds the selected action to be consistent with Director's Order 77-1, including the no net loss wetland policy. The Rehabilitate Alder Camp Road Project does not include any elements that will require preparation of a subsequent Statement of Findings.

## Appendix A: U.S. Fish and Wildlife Service Consultation Letter



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Arcata Fish and Wildlife Office

1655 Heindon Road

Arcata, CA 95521

(707) 822-7201

FAX (707) 822-8411

In Reply Refer To:  
1-14-2004-2131

RECEIVED  
14 July 2004  
-KJB

### Memorandum

To: National Park Service Superintendent, Redwood National and State Parks  
Orick, California

From: Field Supervisor, Arcata Fish and Wildlife Office  
Arcata, California

Subject: Informal Consultation on the Alder Camp Road Rehabilitation Project, Redwood National Park, Del Norte County, California

This memorandum responds to your June 3 and July 8, 2004, letters, describing modifications to the Alder Camp Road Rehabilitation Project (project), Del Norte County, California. In our May 18, 2004, memorandum we concurred with your determination that the project as originally proposed may affect, but is not likely to adversely affect, the threatened marbled murrelet (*Brachyramphus marmoratus*) and threatened northern spotted owl (*Strix occidentalis caurina*).

Your letters describe the following changes in the proposed project: (1) all work will occur in 2005 rather than in 2004; (2) project work not involving concussive sound generating activities will commence on June 15 rather than July 11; and (3) work occurring from June 15 through September 15 will be restricted to the time period from two hours after sunrise to two hours before sunset. These project modifications will not cause effects to the marbled murrelet or northern spotted owl not considered in our May 18, 2004, memorandum. Therefore, we still concur with your determination that the project may affect, but is not likely to adversely affect, the marbled murrelet and northern spotted owl.

This consultation is valid until December 31, 2005. This concludes informal consultation on the proposed Alder Camp Road Rehabilitation Project. Unless new information reveals that the proposed action (1) may affect listed species in a manner or to an extent not considered in your correspondence, (2) the action is modified in a manner that causes an effect on the listed species or critical habitat not considered in your correspondence, or (3) a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Endangered Species Act, is necessary. Please contact staff biologist Robin Hamlin at (707) 822-7201 if you should have further questions regarding this consultation.