



## FINDING OF NO SIGNIFICANT IMPACT

### Shoreline Stabilization of the South Manitou Island Lighthouse Complex

#### Sleeping Bear Dunes National Lakeshore

## INTRODUCTION

The National Park Service (NPS) prepared an environmental assessment (EA) to evaluate alternatives for replacing existing shoreline stabilization revetments that protect the South Manitou Island Lighthouse Complex (the lighthouse complex). The revetments protect approximately 975 linear feet of shoreline along South Manitou Island, Michigan. The EA evaluated two alternatives: a no-action alternative and the action alternative (proposed action and NPS preferred) and analyzed the potential impacts that these alternatives would have on the human environment.

The Shoreline Stabilization of the South Manitou Island Lighthouse Complex Environmental Assessment was prepared in accordance with National Environmental Policy Act and its implementing regulations (40 CFR 1500-1508.9); and with *NPS Directors' Order # 12; Conservation Planning, Environmental Impact Analysis, and Decision-Making* (2011) and accompanying DO-12 Handbook (2015).

During preparation of the EA, the NPS consulted with federal and state agencies, tribes, interested and affected parties, and the general public. The EA was made available for a 7-day review period. Comments received expressed support for the selected action, and commenters recognized a need to continue efforts to stabilize the shoreline to protect the lighthouse complex. One commenter instead supported lighthouse relocation and requested more information regarding feasibility of such a relocation. See "Attachment C: Public Comment" for more details.

## PURPOSE AND NEED

The purpose of this project is to protect the lighthouse complex from shoreline retreat and loss. Long-term erosion of the current shoreline stabilization revetments combined with storm events in recent years has resulted in the existing shoreline becoming increasingly unstable. The goals of this project are 1) emergency stabilization of 295 linear feet of shoreline and 2) supplemental stabilization of an additional 680 feet shoreline. The emergency stabilization and the southwestern portion of the supplemental stabilization will be stone revetments, while the northeastern supplemental stabilization will restore approximately 550 linear feet of shoreline using living shoreline techniques.

## SELECTED ACTION

The NPS has selected the action alternative for implementation. The action alternative was identified in the EA as the NPS preferred alternative and is described on pages 21–31 of the EA. The selected alternative will be implemented in phases, according to the availability of funding. The current funded portion consists of constructing the emergency stabilization along 295 linear feet of shoreline and is described on pages 21-31 of the EA. The supplemental stabilization may be undertaken as funding allows and would consist of extension of the rock revetment, stone spur and breakwaters and a living shoreline.

**Emergency Stabilization.** Under the NPS selected alternative, the National Park Service will undertake an initial emergency stabilization effort along 295 linear feet of shoreline, focused on protecting the fog signal building.

This initial stabilization effort will focus on the northern bin wall area and will be expanded farther southwest into the area currently protected only by geotextile and relatively small armor stone, as funding allows. The new stone revetment will be designed in accordance with current coastal engineering practices. It will be built by installing geotextile and new, properly sized and placed armor stone. Existing stone materials will be re-used as bedding and core materials. The new shoreline revetment will likely be built approximately 4 feet higher than the existing structure for increased protection.

Construction is anticipated to require two to three months. Due to weather conditions, the window for construction is May to November. Construction access to the emergency stabilization area will occur from the water. Equipment and materials will be brought to the shoreline via shallow-draft barges and landed at areas within the immediate vicinity of the emergency stabilization. Specific locations for construction access will be defined during future phases and will be located in coordination with National Lakeshore staff to minimize impacts on sensitive resources.

**Supplemental Stabilization.** Following the emergency stabilization described above, supplemental stabilization may be undertaken both to the northeast and to the southwest of the emergency stabilization project area. The supplemental stabilization may be undertaken as soon as funding allows to minimize the risks associated with continued deterioration of the structures not covered by the emergency stabilization and with continued erosion of the natural shoreline to the northeast of the emergency stabilization.

*To the southwest* of the emergency stabilization, the remaining rock revetment would be used as a core for a new 130-foot stone revetment. The new rock revetment would extend southwest and be constructed over the existing southernmost sheet pile wall, as well. The new segment of revetment would likely be supplemented with new core material, as needed, covered with new geotextile, and new, properly sized armor stone will be added. The crest of the structure would extend approximately 3 to 4 feet higher than the existing sheet pile wall to increase the protection and resiliency during storms and high water events.

*To the northeast* of the emergency stabilization project area, additional new shoreline protection measures may occur in response to the shoreline erosion that has occurred since 2015. A combination of stone structures and imported sand would be employed to restore the sandy beach using living shoreline techniques along 550 linear feet of shoreline. The stabilization proposed for this area includes installation of stone structures within the littoral zone to function as breakwaters (barriers built in a body of water to protect a coast from the force of waves), intended to protect a reconstructed sand beach positioned behind the breakwaters. The stone breakwater structures designed to protect the sandy beach would include a stone spur (approximately 100 feet long at the crest), extending from the point near the fog signal building, and a free-standing breakwater (135 feet long at the crest). Each of these structures would extend approximately 6 feet above the existing water level at their crests. The sandy backshore areas would be revegetated with native vegetation to mimic existing sandy backshore/dune areas found elsewhere on the island to create a more natural living shoreline.

Construction is anticipated to require one to two months. The construction window and method of access to the project area is the same as described for the emergency stabilization.

## MITIGATION MEASURES

The selected alternative incorporates the mitigation measures and best management practices listed in attachment A. Additional mitigation measures and best management practices could be added to this list in the future at the discretion of the NPS. Attachment A also includes a list of the permits and approvals that will likely be needed in order to implement the selected alternative.

## SIGNIFICANCE CRITERIA REVIEW

As defined in 40 CFR 1508.27, the significance of an impact is determined by examining the criteria listed below.

Please note that descriptions of impacts have been narrowed from those of the comprehensive alternatives to focus on those impacts relevant to the actions associated with the NPS selected alternative.

### **(1) Impacts that may be both beneficial and adverse. A significant impact may exist even if the federal agency believes that on balance the effect will be beneficial.**

As described in chapter 3 of the EA, the NPS selected alternative will result in beneficial and/or adverse impacts on several park resources, including coastal resources, special status species, cultural resources, and visitor use and experience. No significant impacts were identified that require analysis in an environmental impact statement.

Emergency Stabilization. Implementation of the selected alternative will result in adverse long-term impacts on coastal resources due to human-imposed alteration of natural shoreline processes and the placement of some fill in lacustrine wetlands. It will also result in adverse short-term impacts on coastal resources due to wetland function (habitat, energy dissipation, flood storage) being reduced during construction. However, the approximately 295 linear feet of shoreline along the project area is relatively small when compared to the 2.5 miles of the characteristic dunes on the western shore of the island and the over 5,000 acres of total island area and over 12 miles of shoreline. Although the action alternative will continue to modify coastal processes, it will also protect a fundamental resource and value of the National Lakeshore, the historic lighthouse complex. With respect to wetlands, the primary (emergency) stabilization actions were determined to be excepted actions. A Wetland Statement of Findings was prepared for the project and concluded that the selected action is consistent with NPS Director's Order 77-1, including no-net-loss of wetlands (see Attachment E: Wetland Statement of Findings).

Supplemental Stabilization. Implementation of the selected alternative would result in beneficial long-term impacts on coastal resources due to use of living shoreline elements that allow some natural shoreline processes to continue and that provide replacement wetlands. It would also result in adverse short-term impacts on special status species due to the potential for individual Pitcher's thistle and clustered broomrape plants being damaged or lost. Beneficial long-term impacts on special status species would take place due to replacement and potentially improved habitat being available following construction as would beneficial long-term impacts on cultural resources due to the protection of the structures in and access to the lighthouse complex. Adverse long-term impacts to cultural resources would occur due to relatively minor changes to the viewshed that will not meaningfully disrupt views. Beneficial long-term impacts on visitor use and experience would occur due to the continued opportunity to visit the lighthouse complex along the restored historic route. Although there would be some impacts on coastal resources, the approximately 680 linear feet of shoreline along the supplemental stabilization project area is relatively small when compared to the 2.5 miles of the characteristic dunes on the western shore of the island and the over 5,000 acres of total island area and over 12 miles of shoreline. Although the action alternative would continue to modify coastal processes and would result in changes to the historic appearance and views, it would also protect a fundamental resource and value of the National Lakeshore, the historic lighthouse complex. Despite the adverse impacts on some special status species, the proposed stabilization activities would not jeopardize the continued existence of these species. Although some wetlands would be permanently impacted, these represent only a small area (0.70 acre) of this wetland type. A Wetland Statement of Findings was prepared for the project and concluded that the selected action is consistent with NPS Director's Order 77-1, including no-net-loss of wetlands (see Attachment E: Wetland Statement of Findings).

Additionally, the lacustrine littoral unconsolidated shore wetland type would be re-created in association with the living shoreline, if implemented, including restoring beach and backshore areas. Littoral species habitat would be expanded within the new living shoreline, if implemented. Therefore, no significant impacts would occur on park resources.

**(2) The degree to which the proposed action affects public health or safety.**

The selected alternative has some risk to public safety during the time that construction activities are occurring; however, this risk is very low and will be further minimized during construction/demolition by implementing measures such as fencing and monitoring to block visitor access to the site. Therefore, no significant impacts would occur with respect to public health or safety.

**(3) Unique characteristics of the geographical area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

No prime farmlands, wild and scenic rivers, ecologically critical areas, ethnographic resources, sacred sites, or Indian Trust resources are located within the project area; therefore, none will be affected by the NPS selected alternative.

The South Manitou Island Lighthouse Complex is listed in the National Register of Historic Places (National Register) as a historic district. Although adverse impacts on the historic and cultural resources within the project area will occur due to changes in appearance along the shoreline, there will be no major changes in the site's design, obstruction of significant views or viewsheds, or destruction of character-defining features.

The marine archeological site of a "surfboat" rail launch is located within the project area for the emergency stabilization. The proposed shoreline revetment may result in removal of a portion of this marine archeological site for its construction. If removal occurs, there will be a loss of historic material and some historic context. However, the context of this archeological site has been previously disturbed. The National Park Service will strive to construct the proposed revetment over the site to the extent practicable and preserve the archeological resources in place. If necessary, data recovery of the site will be conducted prior to implementation of the proposed action to mitigate adverse impacts. The National Park Service will continue consultation with the Michigan State Historic Preservation Officer as necessary during implementation of the emergency stabilization.

Wetlands are known to exist within the project areas for both the emergency and supplemental stabilization actions of the NPS selected alternative. Temporary and permanent impacts will occur on wetlands for both the emergency stabilization and the supplemental stabilization due to the presence of construction mats and equipment and for the stone and sand fill of the stone revetments and new living shoreline structures. However, after construction is complete, the emergency and supplemental stabilization structures will offer similar habitat value as offered by that area of the shoreline currently. After construction of the new living shoreline, the functions of the shoreline will return at a greater rate than pre-construction conditions. The National Park Service will mitigate for 30,646 square feet of fill in wetlands to comply with the NPS policy of no net loss of wetlands. A wetland statement of findings was prepared pursuant to NPS Director's Order #77-1: Wetland Protection (2016). The National Park Service will continue to coordinate with the US Army Corps of Engineers as necessary to acquire the necessary permits and approvals listed in attachment A.

**(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.**

No highly controversial effects in terms of scientific uncertainties as a result of the selected alternative were identified during the preparation of the EA or by the public during the public and agency review period.

**(5) The degree to which the potential impacts are highly uncertain or involve unique or unknown risks.**

No highly uncertain, unique, or unknown risks were identified during preparation of the EA or by the public during the public and agency review period.

**(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

The NPS selected alternative neither establishes NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

**(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

As described in chapter 3 of the EA, cumulative impacts were determined by combining the impacts of the actions associated with the NPS selected alternative with other past, present, and reasonably foreseeable future actions. Cumulative actions include the rehabilitation of the lighthouse complex, the creation of accessible routes to the lighthouse complex, the preservation of shipwrecks in the Manitou Passage Underwater Preserve, and dredging at the South Manitou Dock. The beneficial and adverse impacts of these other past, present, and reasonably foreseeable future actions on resources, in conjunction with the impacts of the selected alternative, will result in both beneficial and adverse cumulative impacts; however, the overall cumulative impacts are not significant. The selected action, in combination with the cumulative actions listed above, will result in adverse cumulative impacts on special status species; the selected action, in combination with the cumulative actions listed above, will result in beneficial cumulative impacts on coastal resources, cultural resources, and visitor use and experience. Although the selected alternative contributes a relatively large increment to the cumulative impact scenario within the project area, those cumulative impacts will not be significant.

**(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

The NPS selected alternative will result in adverse impacts on cultural resources but, as described below, will not result in the significant loss or destruction of natural, cultural, or historical resources.

While the construction of the new stone revetment for the emergency stabilization and the revetment and new living shoreline for the supplemental stabilization will somewhat change the appearance of the shoreline as viewed from the lighthouse complex and from Lake Michigan, these changes will be minor when considered with the expansive views and viewsheds. The historic structures and cultural landscape of the lighthouse complex will continue to maintain their historic character and integrity and will remain eligible for listing in the National Register, both under the emergency stabilization and the supplemental stabilization. Though new materials will be introduced into the historic setting, there will be no major changes in the site's design or destruction of character-defining features. The lighthouse complex will continue to reflect its significance and important role it played supporting safe navigation of the Manitou Passage.

Under the emergency stabilization of the selected alternative, the proposed shoreline revetment may result in a removal of a portion of a marine archeological site for its construction. If removal occurs, there will be a loss of historic material and some historic context. However, some of the context of this archeological site has been previously disturbed for the construction of earlier stabilization structures. The National Park Service will strive to preserve the archeological resources in place to the extent practicable. If necessary, data recovery of the site will be conducted prior to implementation of the proposed action to mitigate any adverse impacts. No impacts on archeological resources are expected under the supplemental stabilization of the selected alternative.



Compliance with section 106 of the National Historic Preservation Act was conducted separately from, but concurrently to, the EA process. The National Park service initiated consultation with Michigan State Historic Preservation Office, Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians, Little Traverse Bay Bands of Odawa Indians, and Sault Ste. Marie Tribe of Chippewa Indians via letter dated May 24, 2017. The State Historic Preservation Officer provided conditional concurrence with the no adverse effect on the South Manitou Island Lighthouse Complex and Life Saving Station Historic District in a letter dated August 15, 2017.

The Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians, Little Traverse Bay Bands of Odawa Indians, and Sault Ste. Marie Tribe of Chippewa Indians have not responded to the NPS to indicate interest in this project.

**(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973:**

As described in chapter 3 of the EA, there are two federally-listed endangered or threatened species that may be present in the project area, including the piping plover and the Pitcher's thistle, though impacts to these species and their habitats will be limited. The NPS selected alternative, including both the emergency and supplemental stabilization, will result in no adverse impact on piping plover because of the lack of quality foraging habitat within the project area and the distance between the project area and the nearest nesting habitat. The emergency stabilization will result in no direct impacts on Pitcher's thistle because occurrences of the species will be flagged and avoided during construction activities. The supplemental stabilization has potential to result in impacts on the Pitcher's thistle due to expansion of the stone revetment southwest of the light tower. Appropriate mitigation measures will be used to avoid and minimize impacts on Pitcher's thistle individuals, including flagging of construction access routes to avoid plants, where possible, and translocation of individual plants to the extent feasible, prior to the onset of construction. Because survivability of translocated thistles is variable, some plants would not be expected to survive being transplanted to a new location.

In a letter dated May 24, 2017, the National Park Service initiated consultation with the US Fish and Wildlife Service. In this letter, the National Park Service advised the US Fish and Wildlife Service that the proposed action "*may affect*" federally-listed species but "*was not likely to adversely affect*" federally-listed species. In a letter dated June 28, 2017, the US Fish and Wildlife Service concurred with the NPS's determination.

**(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.** The NPS selected alternative violates no federal, state, or local environmental protection laws.

**DECISION AND FINDING OF NO SIGNIFICANT IMPACT**

The NPS has selected the NPS Preferred Alternative for implementation because the emergency stabilization will, at a minimum, stabilize approximately 295 linear feet of shoreline, which will, in turn, protect the historic structures of the South Manitou Lighthouse complex with minimal impacts on natural resources. This area is at the greatest risk of being undermined during a storm event.

Supplemental stabilization, if implemented, would then expand the stone revetment, provide stone breakwaters to attenuate wave action, and create a living shoreline transitioning into the natural beach on the landward side of the island. This would attenuate wave action, increase the resiliency of the stone revetment and stabilize the shoreline so that it can accommodate periodic high energy storm events. The supplemental stabilization would stabilize a total of 975 linear feet of shoreline, further protecting the lighthouse complex structures and provide an opportunity to restore the historic boardwalk to the lighthouse complex. In addition, the eventual regeneration of dunes and vegetation along the shoreline would absorb wave action, providing additional protection to the lighthouse complex.

SHORELINE STABILIZATION OF THE SOUTH MANITOU ISLAND LIGHTHOUSE COMPLEX  
DRAFT FINDING OF NO SIGNIFICANT IMPACT  
AUGUST 2017

After consideration of the impacts described in the EA, as well as agency and public comments, the National Park Service has decided to implement the NPS selected alternative (Alternative 2—NPS preferred alternative in the EA). Implementing the NPS selected alternative will stabilize the shoreline to protect the South Manitou Island Lighthouse complex, and preserve the historic resources and historic setting more effectively than the no-action alternative presented in the EA.

Based on review of the facts and analysis contained in the Environmental Assessment and a review of the 40 CFR 1508.27 significance criteria, the NPS selected the action alternative, as described above.

The selected alternative will not have a significant impact either by itself or in consideration of cumulative impacts. Accordingly, the requirements of NEPA, regulations promulgated by the CEQ, regulations promulgated by the Department of Interior, and provisions of Director's Order 12 and the 2015 *National Park Service NEPA Handbook* have been fulfilled. Further, the impacts that result from the selected alternative will not impair any park resources or values necessary to fulfill specific purposes identified in the park's enabling legislation (see "Attachment A: Non-Impairment Determination").

It is my determination that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with NEPA and with the CEQ regulations (40 CFR 1500-1508), an environmental impact statement is not required and will not be prepared for implementation of the selected alternative.

Recommended:



Scott Tucker  
Superintendent  
Sleeping Bear Dunes National Lakeshore

8/18/17

Date

Approved:



Cameron H. Sholly  
Regional Director  
Midwest Region

8/29/17

Date

- Attachment A Mitigation, Permits, and Approvals
- Attachment B Agency/Tribal Consultation
- Attachment C Public Comment and Errata Sheet
- Attachment D Non-Impairment Determination
- Attachment E Wetland Statement of Findings

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