



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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June 28, 2013

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**REF: USFWS Consultation Log Numbers: 05E1ME00-2013-1-0145 - Wells Harbor Dredging and Maintenance Programmatic; 53411-2011-I-0034 - Saco-Camp Ellis Beach shoreline Protection Project (Section 111); 53411-2010-TA-0063 - Scarborough**

Dear Mr. O'Donnell:

Thank you for your letters of April 8, 2013 (Wells), May 23, 2013 (Scarborough), and June 3, 2013 (Camp Ellis) requesting informal consultation under section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), for harbor maintenance dredging and beach nourishment projects at Wells and Scarborough, and a jetty and beach nourishment project at Camp Ellis, Maine, respectively. The Army Corps of Engineers (Corps) requests that the U. S. Fish and Wildlife Service (Service) concur that these projects will not adversely affect the piping plover (*Charadrius melodus*), a federally threatened species and the red knot (*Charadrius carnutus*), a candidate for Federal listing. We do not concur that these projects will not adversely affect these species and we will explain both our rationale and a recommended approach to consultation, below.

### **Project Descriptions**

For the Wells project, the Corps requests informal consultation for harbor dredging, navigation channel maintenance and associated beach nourishment project covering the time period from 2013 until 2022 as described in the *Final Long-Term Environmental Assessment for maintenance dredging of Wells Harbor* (2012)(EA). Furthermore, the Corps requests that the Service concur with a determination that the Town of Wells maintenance dredging, an interrelated and interdependent project, will not likely adversely affect piping plovers and red knots. Both projects are to be conducted during the fall of 2013, will dredge approximately 150,000 cubic

yards of sand from Wells Harbor, and use this sand to nourish areas on Wells and Drakes Island beaches as explained in the EA.

For the Scarborough project, the Corps requests informal consultation for a harbor dredging, navigation channel maintenance, and beach nourishment project as described in *Maintenance Dredging of the Scarborough River Navigation Project Environmental Assessment and 404(B)1 Clean Water Act Analysis* (2004). This project will be conducted from October 2013 to March 2014; will dredge approximately 100,000 cubic yards of sand from Scarborough Harbor, and use this sand to nourish areas on Western Beach as explained in the EA.

For the Camp Ellis project, the Corps request informal consultation for a 750 foot spur jetty and beach nourishment as described in *Camp Ellis Beach, Saco, Maine Shore Damage Mitigation Project Public Draft Environmental Assessment and Clean Water Act Section 404(B)(1) Analysis* (2013). This project will be conducted at an unspecified date (Federal funding has been approved) and will place 365,000 cubic yards of beach fill along about 3,250 feet of Camp Ellis Beach, and renew beach nourishment at a period of about every 12 years thereafter as explained in the EA.

The Corps maintains 66 navigation projects in Maine. In addition to the projects above, there could be other navigation channel projects in southern Maine (e.g. Kennebunk River, Royal River, and York Harbor) that could affect sand transport and thereby piping plover and red knot habitat.

### **Analysis**

In evaluating the effects of the Corps Federal action for the Wells and Scarborough projects, 50 CFR 402.2 and 402.14(g)(3), requires that the Service evaluate both the direct and indirect effects of the action on the species, together with the effects of other activities that are interrelated, or interdependent with the action that will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for project justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Cumulative effects are from future State or private activities that are reasonably certain to occur within the action area.

### **Beneficial Effects**

Beach nourishment actions associated with the Wells, Scarborough, and Camp Ellis Federal Navigation Projects are anticipated to produce beneficial effects for piping plovers and red knots. Beach nourishment can maintain and enhance habitat. However, this habitat is often temporary and of lesser quality, and harm could occur if recreational activities taking place in the habitat is not managed for the benefit of piping plovers and red knots. Commitments to long-term recreational activity management can ameliorate these adverse effects to some extent.

The Service believes these projects have direct and indirect effects that could adversely affect piping plovers and red knots. Some adverse effects can be reduced by conservation measures,

while others cannot, and should be minimized through reasonable and prudent measures that we will develop in consultation with the Corps in a biological opinion.

### **Direct Effects**

Piping plovers and red knots could be harmed by beach nourishment activities. The beach nourishment activity itself can disturb piping plovers, especially if conducted during the nesting season. Food sources (accumulated wrack and intertidal invertebrates) are buried during beach nourishment projects. Effects on plover and red knot food sources are largely unknown, but suspected to adversely affect these species.

The Service developed a list of six guidelines (conservation measures), including requirements for time or year restrictions and requirements for beach management, that largely ameliorate direct, adverse effects to piping plovers. For example, all three beach nourishment projects will be conducted outside of the piping plover nesting period and migration of the red knot (September 1 to March 31). Piping plover beach management agreements are in effect with the town of Wells, and in preparation with the Prouts Neck Association, but have not begun with the town of Saco. Until beach recreational activity management plans have been completed, reviewed, and signed by the Service we cannot concur that direct adverse effects have been avoided.

### **Indirect Effects**

- Loss of habitat – The Corps navigation projects and associated jetties at Wells, Scarborough, and Saco have greatly altered natural sand transport and beach processes causing beach erosion and diminished the capacity of Saco Bay, Wells, Drakes, Island, and Laudholm beaches to support piping plovers and red knots. (*e.g.* Kelley and Brothers 2009, Kelley and Anderson 2000, Maine Geological Survey). For more information, please visit <http://www.maine.gov/doc/nrimc/mgs/> (search for “Saco Bay”), accessed June 28, 2013.
- Jetties and navigation channels have a shadow effect by starving adjacent beaches from natural sand supply (*e.g.* sand from the Saco River), blocking sand from reaching beaches (*e.g.* Western Beach, Camp Ellis), or accumulating sand or creating ebb tide deltas (Wells, Scarborough, and Camp Ellis). The Saco and Scarborough projects located at either end of Saco Bay are interrelated and interdependent – beach nourishment at Saco will not remain stationary and will affect plover habitat both positively and negatively from Saco to Scarborough. Northward-moving sand could block Goosefare Brook as it did in 1992, perhaps benefitting plover habitat, but also affecting a salt marsh owned by the Service. Sand from the Camp Ellis project will move northward and could exacerbate problems at the mouth of the Scarborough River. The Corp dredged Wells harbor in 1974 and deposited 384,000 cy of sand on the Webhannet salt marsh, thus removing a significant amount of sand from the Wells system and contributing to increased beach erosion and destroying acres of salt marsh habitat.

The Wells, Scarborough, and Camp Ellis projects maintain harbors in dynamic tidal deltas that require frequent cycles of maintenance dredging. This results in a boom and bust in habitat availability for piping plovers. Habitat availability is not sustainable without the beach nourishment project, which in turn depends on large, periodic input of Federal funds. Nourished beaches do not remain for long (e.g. Western Beach, Drakes Island, and Great Works) and sometimes result in an absence of plover habitat for years.

- Diminished habitat quality – Habitat on nourished beaches is not as high quality as beaches with natural coastal geology. Nourished beaches attract large number of visitors (beaches are promoted by local municipalities) that diminish the habitat quality for piping plovers and red knots. Garbage left by recreational users attracts nest predators to beaches, thus reducing plover productivity.

### **Cumulative Effects**

- Shoreline stabilization – Many shoreline residents at Wells, Scarborough, and Camp Ellis have responded to beach erosion, caused in part by the Corps projects, by stabilizing their shoreline. Seawalls and rock revetments exacerbate beach erosion and further curtail natural coastal process that normally would revitalize or create optimal piping plover nesting and foraging habitat.
- Interrelated and interdependent projects – The Corps projects result in increased municipal attempts to dredge their harbors (e.g. Wells, Saco) and nourish the beach to address erosion (e.g. Laudholm and Drakes Island project). The town of Wells is developing much of the dredge spoil deposit created by the 1974 dredging (and formerly salt marsh) into parking areas and a town park. The Corps should consider marsh reclamation/restoration and as much of this sand as possible should be returned to the beach sand budget.
- Further development – Accreted sand around jetties creates new real estate resulting in new development (e.g. Wells), which increases recreational pressure, degrades new habitat for plovers, and further complicates options for long-term solutions.

These adverse effects to piping plovers will be further exacerbated by climate change. The State of Maine is planning for a two-foot rise in sea level over the next century (Slovinsky and Dickson 2005) and some of the lower-lying beaches (e.g. Drakes Island) within the Corps project area could be severely compromised, further reducing habitat for piping plovers and red knots. Increased storm frequency and severity are anticipated (Jacobson *et al.* 2009) and will accelerate beach erosion (and perhaps increase the periodicity of the Corp's harbor dredge-nourishment cycle). Over the next several decades, the "100-year coastal storm" could occur every two to three years in the Northeast (Frumhoff et al. 2006).

Federal funding available after Hurricane Sandy in 2012 is funding many Corps projects in the Northeast. This presents an opportunity to re-think resilience and sustainability into the Corp's Maine Projects. Nourishment projects that are designed to restore natural beach processes, lengthen the period of time that sand remains on the beach, and restore habitat will benefit the

public and endangered species habitat. In light of climate change, an adaptive management approach is needed to address important areas of uncertainty (*e.g.* document sand movement after beach nourishment, explore new designs and management techniques for beach nourishment projects, adapt management approaches to managing habitat for piping plovers and red knots).

In summary, the Service believes that *direct* adverse effects from the Wells, Scarborough, and Camp Ellis projects can largely be avoided by following the six criteria outlined in your letters. However, we believe there will be indirect and cumulative adverse effects that cannot be avoided and should be addressed in a formal consultation with the Service.

### **Recommended Approach to Consultation**

We realize that the Corps must complete ESA consultation for the projects at Wells and Scarborough before harbor dredging and beach nourishment activities begin as early as October 2013. The Camp Ellis project dates have not been specified.

- Wells – The Service believes that direct, interdependent and interrelated, indirect, and cumulative effects of the 10-year operation of the Wells Federal Navigation Project will cause adverse effects to piping plovers and red knots and their habitat that must be addressed in formal consultation. Implementing the six guidelines in your letter of April 8, 2013 letter will greatly reduce *direct* effects. The Corps has committed to conducting the beach nourishment project outside of the piping plover nesting season. A final piping plover beach management agreement was renewed and signed with the town of Wells in February of 2013.
- Scarborough – The Service believes that direct, interdependent and interrelated, indirect, and cumulative effects of the operation of the Scarborough Federal Navigation Project will cause adverse effects to piping plovers, red knots, and their habitat that must be addressed in formal consultation. Implementing the six guidelines in your letter of May 23, 2013 will greatly reduce *direct* effects of beach nourishment. The Corps has committed to conducting the beach nourishment project outside of the piping plover nesting season. A suitable piping plover beach management plan has not been completed and signed with the Prouts Neck Association.
- Camp Ellis – The Service believes that this project will have direct, indirect, interrelated and interdependent, indirect, and cumulative adverse effects on piping plovers and red knots. These effects need to be analyzed further by the Corps and must be addressed in formal consultation. Implementing the six guidelines will greatly reduce *direct* effects of beach nourishment. The Corps has committed to conducting the beach nourishment outside of the piping plover nesting season. A suitable piping plover beach management plan has not been completed nor signed by the Service and the City of Saco.

The Service recognizes that ongoing and recurring consultations with the Corps on harbor dredging and beach nourishment projects, including maintenance projects, evaluate the same impacts, adverse effects; beneficial effects; and conservation measures. We propose that a programmatic formal consultation would facilitate the long-term, repeated nature of

consultations with the New England District for harbor dredging, maintenance and beach nourishment projects in Maine. For the Corps, this would provide predictability in the ESA section 7 consultation process and predictability to the municipalities and residents affected by these projects. For the Service, this would ensure that consistent conservation measures will be incorporated in future projects and that all direct, indirect, cumulative impacts and the effects of interrelated and interdependent actions will be considered over the life of the projects or as long term as the Corps believes can be evaluated programmatically.

In 2005, the Service's New Jersey Field Office completed a programmatic consultation with the Philadelphia District. For more information, please visit: <http://www.fws.gov/northeast/endangered/TEBO/PDFs/Philly%20Corps%20Programmatic%20BO%20Dec%202005.pdf>, accessed June 28, 2013. Programmatic consultations involve a two-tiered approach: Tier 1 consists of the programmatic consultation on the overall agency program while Tier 2 involves streamlined consultation on individual actions carried out under a program. A programmatic Biological Opinion would not include consultation on potential impacts to federally listed species from construction of new hard structures or realignment or major repairs of hard structures. Thus, the Camp Ellis jetty project would require a separate Biological Opinion, but subsequent harbor dredge and beach nourishment projects at Camp Ellis could be considered under the programmatic consultation. Furthermore, a programmatic Biological Opinion would not contain a Department of the Army Programmatic General Permit (NEGP) for beach maintenance activities that is currently under consideration by the Corp. The Service and the Corps will continue to work cooperatively on a consultation process on the NEGP and will initiate consultation as necessary once sufficient permit details are available to allow an assessment of potential effects to federally listed species.

Individual Corps projects or actions carried out under the Corps Program would require individual (Tier 2) consultations to ensure consistency with programmatic conservation measures outlined within the Corps Program description and the reasonable and prudent measures and terms and conditions of a programmatic Biological Opinion, but the programmatic evaluation would be incorporated by reference and this consultation would be expedited. In addition, project-specific information for individual actions carried out under the Corps Program would be evaluated by the Service to ensure the assumptions regarding overall Program effects to federally listed species were correct and that the level of take anticipated within the incidental take statement included within the Programmatic Biological Opinion is not exceeded.

We propose developing a programmatic (Tier 1) Biological Opinion using the Philadelphia District opinion as a template. Tier 2 Biological Opinions for the Wells and Scarborough Project would be brief. For an example please see the Tier 2 Biological Opinion, (7 pages), for a 10-year beach nourishment project at Avalon Beach at: [http://www.fws.gov/northeast/endangered/tebo/PDFs/avalon\\_sbo.pdf](http://www.fws.gov/northeast/endangered/tebo/PDFs/avalon_sbo.pdf), accessed June 26, 2013.

Our office is experiencing a high volume of work, but we believe the Tier 1 and 2 opinions for Wells and Scarborough could be completed by the end of September. Given the extensive nature of the Camp Ellis/Saco project (a new 700 foot jetty and extensive nourishment) we will have to write a separate BO, but subsequent maintenance of this project could be covered by the programmatic BO.

To facilitate a quicker response, we could discuss whether the Corps could assist by providing funds to the Service (or a consultant) to draft a Programmatic Biological Opinion and Tier 2 Opinions for the Wells and Scarborough projects.

### **Additional Data Needed**

Before we could write a programmatic (Tier 1) and (Tier 2) Biological Opinions, the Service requests additional information that is not contained in the EAs for the Wells and Scarborough projects.

- An evaluation of indirect and cumulative effects on listed species and their habitat. This would include a review of the latest science concerning coastal geology and sand transport in vicinity of the Corps projects - the Wells region and the entire Saco Bay (Camp Ellis to Scarborough).
- An evaluation of interrelated and interdependent actions and activities – what municipal projects are related to the Corps projects.
- An evaluation of cumulative effects – what State projects are likely in the project area? Is there beach/dune initiatives going on that would complement restoration work done by the Corps? There have been many reviews and work groups that have addressed the beach erosion problems in these areas. Is there any useful information or recommendations that should be considered in the BO, and incorporated into Corps planning?
- An evaluation of how these long-term projects will affect listed species – how does the cycle of beach nourishment and erosion affect piping plovers, red knots, and their habitat? How does piping plover productivity compare on these beaches compared to beaches that still have natural beach processes?
- What are the opportunities for mitigating habitat loss? Review and report on the science related to restoring more natural beach processes. Are there alternative designs for beach nourishment at these sites that better address sea level rise and storm frequency and severity? What other activities (*e.g.* predator control) could mitigate for habitat loss and degradation?
- What options could diminish the frequency that harbors need dredged or beaches need nourished – saving money and plover habitat (*e.g.* periodically bringing sand across the ebb tide delta to Western Beach? What options exist to proactively augment sand on eroding beaches with additional sand sources (*e.g.*, restoring previously dredged sand to the beaches at Wells), other sources of dredged material, near-shore offshore deposits, upland sand deposits. Support for developing a beach nourishment plan in Maine.
- Given the information gathered above, how could the Corps incorporate an adaptive management approach to future harbor dredge and beach nourishment activities at these sites? Studies are needed for better understanding the coastal geology of these sites

including where the sand comes from that fills the harbors and where the nourished sand goes. This information could be used to develop “smart,” resilient, strategic projects that anticipate effects of climate change.

### **Comments on the Environmental Assessments**

The EAs for the Wells and Scarborough projects adequately describe the proposed project activities (preferred alternative), but do little to evaluate and address the factors causing beach erosion and sand transport problems on adjacent beaches. At the Service’s request, the Corps provided an analysis of whether the navigation project was causing the erosion of nearby Western Beach, an important piping plover habitat. At one point, the Corps acknowledges “*it is likely that the Scarborough River FNP is hindering the natural supply of sand to Western Beach, and therefore negatively impacting Western Beach,*” but concludes that the Project was not affecting the beach. No explanation is provided about where the nourished sand placed on Western Beach is going, where the sand in the harbor is coming from, and why Western Beach is currently experiencing some of the worse coastal erosion in the State. From other sources, it is apparent that jetty/harbor project has narrowed the Scarborough channel entrance greatly (Kelley and Anderson 2000) and increased current velocities, which contributes to erosion of the beach. For more information, please visit the MGS Web site at:

<http://www.maine.gov/doc/nrimc/mgs/explore/marine/sites/aug11.htm>, accessed June 26, 2013.

Furthermore, a large ebb tide delta that has formed in part because of the jetty and navigation channel. Although no study has examined this formally, this delta and the navigation channel prevents sand from moving further northward to help nourish Western Beach (Kelley and Brothers 2009).

The Wells EA should provide a similar analysis (Kelley and Anderson 2000) to document that the jetties and harbor dredge have caused numerous erosion problems. Sand has accumulated next to the Wells jetties. In a 1974 dredging project, 382,000 cubic meters of sand was removed from the system and placed on the adjacent salt marsh. The shadow effect of the jetties prevented waves from returning sand to the ends of the beaches. As a result, Wells, Drakes Island, and Laudholm beaches eroded, leading to a cessation of dredging after 1974. Placing dredge spoils on these beaches temporarily ameliorates the erosion problem, but these beaches and associated piping plover habitat remain degraded.

Both the Scarborough and Wells EAs only consider alternatives related to the dredging methods and alternate disposal sites. They do not address alternative strategies about how best to address and prevent future beach erosion of Wells, Drakes Island, and Laudholm beaches. The EAs provide little explanation as to why the dredged material placement locations were selected, nor do they project how long the sand will last, or provide commitments by the Corps to monitor the project or better study and understand the sand transport system. Alternate configurations of nourishment are not considered, nor are alternatives considered for augmenting the nourishment with sand from outside sources. For example, given the amount of sand removed from the Wells/Drakes Island beach system from the 1974 dredging project, why is some (or all) of this sand not being returned to nourish the beach (and restoring the salt marsh)? The study on the effects of harbor dredging on the adjacent salt marsh would be a helpful appendix to the Wells EA.

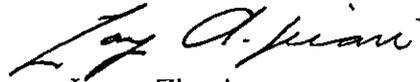
Neither of the EAs addresses the effects of climate change, including sea level rise and increased storm frequency and severity in the project design or outcomes.

The Camp Ellis EA addresses how the jetties have changed coastal geology and caused beach erosion. The EA address alternatives in light of sea level rise. The EA does not address the effects of nourished sand at Camp Ellis moving northward, including the potential for blocking Goosefare Brook and eventually adding to the ebb tide delta at the Scarborough River.

**Summary**

We describe a new strategy for ESA consultation with the Corps on harbor dredging and beach nourishment in Maine. Although initial work is needed to develop a programmatic consultation on the effects of these projects on piping plovers, much of the groundwork has been done with the Philadelphia District consultation with the New Jersey Field Office and others on Long Island with the New York Field Office. Ultimately, this approach will provide a streamlined, predictable approach to consultation in Maine for the Corps New England District, State, and municipalities. We look forward to discussing this with you further.

Sincerely,



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cc: Jack Karalius, U.S. Army Corps of Engineers  
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