SACO RIVER AND CAMP ELLIS BEACH

SECTION 111 SHORE DAMAGE MITIGATION STUDY

APPENDIX A

PERTINENT CORRESPONDENCE

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. Tom Chapman, Supervisor
U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

Dear Mr. Chapman:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives, ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated. This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill-only alternative. Modeling has yielded a number of combined beachfill-stone structures plans. New stone structures considered included (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life; the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs; the implementability and completeness of plans with high re-nourishment rates and frequencies; and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the Federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number (4) of breakwaters, Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the near shore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the Federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than 1 vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay/Scarborough River system is needed before its use can be recommended.

It is requested that a Planning Aid Letter under the Fish and Wildlife Coordination Act, and initial consultation under the Endangered Species Act be provided no later than October 22, 2010. Any questions can be addressed to Ms. Catherine Rogers at (978) 318-8231 or catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht at (978) 318-8513 or richard.w.heidebrecht@usace.army.mil.

Sincerely,

for John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

September 24, 2010

REPLY TO
ATTENTION OF

Engineering/Planning Division
Evaluation Branch

Mr. David A. Cole, Commissioner
Maine Department of Transportation
16 State House Station
Augusta, Maine 04333-0016

Dear Mr. Cole:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives, ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated. This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill-only alternative. Modeling has yielded a number of combined beachfill-stone structures plans. New stone structures considered included (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life; the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs; the implementability and completeness of plans with high re-nourishment rates and frequencies; and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the Federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number (4) of breakwaters, Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the near shore zone, further extending the life of the sand placed on the beach. Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the Federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than 1 vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay/Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments from your agency on the above described change to the proposed project. Written comments are requested by October 22, 2010. Any questions can be addressed to Ms. Catherine Rogers at (978) 318-8231 or catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht at (978) 318-8513 or richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

September 24, 2010

REPLY TO
ATTENTION OF

Engineering/Planning Division
Evaluation Branch

Mr. Melvin P. Coté, Jr., Manager
Ocean and Coastal Protection Unit
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100 (COP)
Boston, Massachusetts 02114-2023

Dear Mr. Coté:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives, ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated. This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill-only alternative. Modeling has yielded a number of combined beachfill-stone structures plans. New stone structures considered included (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life; the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs; the implementability and completeness of plans with high re-nourishment rates and frequencies; and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the Federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number (4) of breakwaters, Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the near shore zone, further extending the life of the sand placed on the beach.

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the Federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than 1 vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay/Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments related to your agency's authorities under the Clean Water Act and the Clean Air Act. Written comments are requested by October 22, 2010. Any questions can be addressed to Ms. Catherine Rogers at (978) 318-8231 or catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht at (978) 318-8513 or richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

September 24, 2010

REPLY TO
ATTENTION OF

Engineering/Planning Division
Evaluation Branch

Ms. Molly Docherty, Coordinator
Maine Natural Areas Program
157 Hospital Street
93 State House Station
Augusta, Maine 04333-0093

Dear Ms. Docherty:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives, ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated. This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

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b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill-only alternative. Modeling has yielded a number of combined beachfill-stone structures plans. New stone structures considered included (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life; the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs; the implementability and completeness of plans with high re-nourishment rates and frequencies; and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the Federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number (4) of breakwaters, Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the near shore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the Federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than 1 vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay/Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request any additional comments related to your agency's authorities for State listed threatened and endangered species. Any questions or comments can be addressed to Ms. Catherine Rogers at (978) 318-8231. Any questions can be addressed to Ms. Catherine Rogers at (978) 318-8231 or catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht at (978) 318-8513 or richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. Tim Glidden, Acting Director
Maine State Planning Office
184 State Street
Augusta, Maine 04333-0038

Dear Mr. Glidden:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

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a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill-only alternative. Modeling has yielded a number of combined beachfill-stone structures plans. New stone structures considered included (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life; the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs; the implementability and completeness of plans with high re-nourishment rates and frequencies; and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the Federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number (4) of breakwaters, Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the near shore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feetlong and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the Federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than 1 vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay/Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request any comments related to your agency's authorities under the Coastal Zone Management Act. Written comments are requested by October 22, 2010. Any questions can be addressed to Ms. Catherine Rogers at (978) 318-8231 or catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht at (978) 318-8513 or richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Ms. Patricia Kurkul
NOAA Fisheries
One Blackburn Drive
Gloucester, Massachusetts 01930-2298

Dear Ms. Kurkul:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated.

This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and

pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill; only alternative. Modeling has yielded a number of combined beachfill stone structure plans. New stone structures considered included: (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life, the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs, the implementability and completeness of plans with high re-nourishment rates and frequencies, and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number of breakwaters (4), Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the nearshore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than one vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in the water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay and Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments under the authorities of the Fish and Wildlife Coordination Act, as well as initial consultation under the Endangered Species Act and Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act. Written comments are requested by October 22, 2010.

Any questions can be addressed to Ms. Catherine Rogers, at (978) 318-8231 or email, catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht, at (978) 318-8513 or email, richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. George Lapointe, Commissioner
Maine Department of Marine Resources
21 State House Station
Augusta, Maine 04333-0021

Dear Mr. Lapointe:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

b. Beach nourishment to restore lost sand along the Camp Ellis shore.

c. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives, ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated.

This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and

pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

a. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill; only alternative. Modeling has yielded a number of combined beachfill stone structure plans. New stone structures considered included: (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life, the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs, the implementability and completeness of plans with high re-nourishment rates and frequencies, and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number of breakwaters (4), Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the nearshore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than one vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in the water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay and Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments related to your agency's authorities under the Fish and Wildlife Coordination Act. Written comments are requested by October 22, 2010.

Any questions can be addressed to Ms. Catherine Rogers, at (978) 318-8231 or email, catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht, at (978) 318-8513 or email, richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. David P. Littell, Commissioner
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Dear Mr. Littell:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

a. Beach nourishment to restore lost sand along the Camp Ellis shore.

b. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated.

This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and

pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

c. Combinations of sand beach fill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill; only alternative. Modeling has yielded a number of combined beachfill stone structure plans. New stone structures considered included: (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life, the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs, the implementability and completeness of plans with high re-nourishment rates and frequencies, and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number of breakwaters (4), Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the nearshore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than one vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in the water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay and Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments related to your agency's authorities under the Clean Water Act, the Clean Air Act, and other pertinent authorities. Written comments are requested by October 22, 2010.

Any questions can be addressed to Ms. Catherine Rogers, at (978) 318-8231 or email, catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht, at (978) 318-8513 or email, richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. Roland D. Martin, Director
Maine Department of Inland Fisheries and Wildlife
284 State Street
Augusta, Maine 04333

Dear Mr. Martin:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

a. Beach nourishment to restore lost sand along the Camp Ellis shore.

b. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated.

This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and

pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

a. Combinations of sand beachfill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill; only alternative. Modeling has yielded a number of combined beachfill stone structure plans. New stone structures considered included: (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life, the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs, the implementability and completeness of plans with high re-nourishment rates and frequencies, and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number of breakwaters (4), Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the nearshore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill- This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur

jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than one vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in the water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay and Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments related to your agency's authorities under the authority of the Fish and Wildlife Coordination Act and a list of State listed threatened and endangered species. Written comments are requested by October 22, 2010.

Any questions can be addressed to Ms. Catherine Rogers, at (978) 318-8231 or email, catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht, at (978) 318-8513 or email, richard.w.heidebrecht@usace.army.mil.

Sincerely,

for John R. Kennelly
Chief of Planning

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 24, 2010

Engineering/Planning Division
Evaluation Branch

Mr. Robert G. Marvinney, Director and State Geologist
Maine Geological Survey
22 State House Station
Augusta, Maine 04333-0022

Dear Mr. Marvinney:

The U.S. Army Corps of Engineers, New England District (Corps) would like to update your staff on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. In a previous letter sent to your office dated April 15, 2002, the Corps had outlined three interrelated actions to alleviate shoreline erosion along Camp Ellis Beach. These interrelated actions included:

a. Minor modifications to the existing north jetty to prevent or impede the coastal wave and current processes that contribute to the beach erosion.

a. Beach nourishment to restore lost sand along the Camp Ellis shore.

b. Maintenance dredging of the adjacent Federal navigation channel in the Saco River, and also potentially the Scarborough River, as a source of material for the beach nourishment.

Since that time, additional detailed studies of the Camp Ellis area, which included the development of an extensive numerical model of Saco Bay, were conducted to develop and assess various measures to mitigate erosion along the shoreline. Nearly 30 alternatives ranging from jetty removal to construction of various coastal structures in conjunction with beach nourishment were evaluated.

This evaluation, which included input from State and local officials, resulted in the following reduced selection of alternatives for further assessment:

a. Sand placement to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including significant re-nourishment from the Saco River and other sand sources on a very frequent basis.

b. Buyout and removal of the affected properties in the projected 50-year beach loss zone, including demolition of structures, and removal of debris, utilities, foundations, and

pavement, relocation costs for those displaced, restoration of the frontal dune, and landward revetment to prevent flanking of the jetty and preserve access to the State pier.

a. Combinations of sand beachfill and new stone structures to restore and protect the beach and the remaining properties in the projected 50-year beach loss zone, including less frequent re-nourishment from the river and other sources than with the sandfill; only alternative. Modeling has yielded a number of combined beachfill stone structure plans. New stone structures considered included: (1) a spur jetty extending north at various lengths off the existing north breakwater, and (2) a series of two, three or four shore-parallel stone breakwaters, aligned with the spur jetty, to protect an increased length of the nourished beach.

Final plan selection is dependent on several factors, including: how the plan fits within the Congressional authorization of a $26.9 million project limit, including costs for re-nourishment over the project's life, the local sponsor's willingness and ability to participate in future maintenance and re-nourishment costs, the implementability and completeness of plans with high re-nourishment rates and frequencies, and plan performance in terms of net savings in coastal erosion costs.

Based on these factors, Alternative 6 has been identified as the federally preferred plan and is described as follows:

Alternative 6: 750-Foot Spur Jetty with Beach Fill - This alternative would consist of the construction of a 750-foot long spur jetty that would be attached to the existing northern jetty. The spur would be located approximately 1,500 feet from the shoreline. The spur would be perpendicular to the existing jetty and have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 460,000 cubic yards. See Figure 1.

However, the local sponsor would prefer an alternative that includes breakwaters, as described for each alternative below, with greater preference shown for the alternative with the largest number of breakwaters (4), Alternative 26. The addition of breakwaters in Plans 25A, 25 and 26 would further reduce wave energy in the nearshore zone, further extending the life of the sand placed on the beach.

Alternative 25A: 500-Foot Spur Jetty, Two Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and two (2) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 425,000 cubic yards. See Figure 2.

Alternative 25: 500-Foot Spur Jetty, Three Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and three (3) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,000 feet from shore, and extend perpendicular to the existing northern jetty. The two southern most breakwaters would be approximately 400 feet long and placed about 900 feet from shore. The third and most northern breakwater would be approximately 330 feet long and be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 3.

Alternative 26: 500-Foot Spur Jetty, Four Segmented Breakwaters and Beach Fill - This alternative would consist of a spur jetty and four (4) detached breakwater segments. The spur jetty would be 500 feet in length, about 1,500 feet from shore, and extend perpendicular to the existing northern jetty. The four breakwaters would be approximately 330 feet long. The three southern most breakwaters would be placed about 1,100 feet from shore, and the fourth, or most northern breakwater, would be placed about 400 feet from shore. The spur and breakwaters would have a top elevation about nine feet above mean sea level. This alternative also includes placing beach fill along Camp Ellis Beach from the existing jetty to a point about 3,250 feet to the north. The proposed beach fill volume is about 410,000 cubic yards. See Figure 4.

The beach fill proposed in each of the federally and locally preferred plan would have a berm width of about 60 feet and a slope no greater than one vertical on 10 horizontal. The purpose of the spur jetty is to reduce wave energy near the junction of the north jetty and Camp Ellis Beach by eliminating the stem current that presently moves material off the beach and seaward along the breakwater. This will reduce beach erosion and thereby extend the life of the beach fill. In addition to upland sand sources, maintenance dredging of the Saco River Federal navigation project was retained as a potential source of sand for the beach. Although sand dredged from the Scarborough River Federal navigation project has been placed in the water off of Camp Ellis Beach in the past, use of that project as a source of sand was eliminated from consideration because detailed analysis of the Saco Bay and Scarborough River system is needed before its use can be recommended.

The purpose of this letter is to request comments from your agency on the above described change to the proposed project. Written comments are requested by October 22, 2010.

Any questions can be addressed to Ms. Catherine Rogers, at (978) 318-8231 or email, catherine.j.rogers@usace.army.mil; or the study manager Mr. Richard Heidebrecht, at (978) 318-8513 or email, richard.w.heidebrecht@usace.army.mil.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

September 28, 2010

Engineering/Planning Division
Evaluation Branch

Mr. Earle G. Shettleworth, Director
Maine Historic Preservation Commission
55 Capitol Street, Station 65
Augusta, Maine 04333

Dear Mr. Shettleworth:

The U.S. Army Corps of Engineers, New England District, has been in coordination with your office on the construction of a spur jetty and nearshore breakwaters at Camp Ellis Beach in Saco, Maine (see enclosed March 8, 2007 reply). Fathom Research, LLC, under contract to Woods Hole Group and the Public Archaeology Laboratory, Inc. (PAL), has recently completed a remote sensing archaeological survey at the site. A copy of the report is enclosed for your project files.

A systematic remote sensing archaeological survey was performed in November 2009 at the location of the Corps proposed construction of nearshore breakwaters and a spur jetty at the Camp Ellis Beach site. The investigation involved archival background research, field survey to record marine geophysical and geotechnical data, and analysis and synthesis of the research and survey results to assess the project study area's archaeological sensitivity and to determine the presence/absence of pre-contact and historic period submerged archaeological deposits within it.

No previously documented Native American sites are recorded in the Camp Ellis Beach survey area; however, your site files do have records of six archaeological sites located less than one mile from the project area. Review of environmental data and sea level rise curves for coastal Maine indicate that the entire Camp Ellis Beach area was likely exposed land available for human occupation from the Paleoindian period (circa 11,500 Before Present (BP)) up to the start of the Late Archaic period (circa 6,000 BP). After this time, Camp Ellis Beach was gradually inundated by rising sea level and by 3,000 BP; it would have been completely underwater.

However, due to the combined effects of the area's inundation through shore-face retreat processes, its exposure to high-energy impacts from wind-driven oceanic waves and tidal currents and the recent erosion that Camp Ellis Beach has been experiencing, any archaeologically sensitive paleosols and Native American sites that may have been present have most likely been eroded and destroyed. Therefore, there is a low potential for formerly terrestrial and/or maritime Native American archaeological sites within the project area.

A review of shipwreck databases and coordination with your office reported a total of 24 vessel casualties along the Saco and Biddeford coasts; however, none of these shipwrecks are recorded within the Camp Ellis Beach project area and adjacent shore. Most of the reported shipwrecks occurred in close proximity to land and were witnessed by shoreline observers. Given the project area's close proximity to shore, it seems unlikely that if a shipwreck occurred, it would have gone unnoticed and not been documented in the historic record. However, earlier and smaller vessels may have been grounded on the beach without being documented. Therefore, the project area was assessed as having a moderate potential for historic archaeological deposits, namely shipwrecks.

A total of 22 side scan sonar anomalies and 9 separate magnetic anomalies were inventoried during the remote sensing survey. These anomalies were interpreted to be associated with a sunken modern core drilling barge and its associated steel boring tubes and debris, other pieces of isolated modern debris, or exposed and buried geological features. None of the targets or anomalies were interpreted to be archaeological deposits. Additionally, sub-bottom profile data produced no acoustic reflectors indicative of buried cultural or geological features.

A total of 20 geotechnical boring samples recovered in the Camp Ellis Beach project area under a separate contract were provided to Fathom for analysis and comparison with the sub-bottom profiler data for the presence of possible stratified paleosols. The stratigraphic sequence consisted primarily of sand mixed with silt and gravel overlying clay or, in some cases, compacted gravel or bedrock. None of the boring samples exhibited sediments that are characteristic of archaeologically sensitive paleosols.

Based on the results of this study, no remote sensing targets or anomalies or buried geological features indicative of archaeological deposits were identified. As a result, no further archaeological investigation of the proposed Camp Ellis Beach nearshore breakwaters and spur jetty project area is recommended. Additionally, the placement of sand on the beach in conjunction with the offshore structures is unlikely to impact significant historic properties due to the high energy impacts from waves and tidal currents and recent erosion discussed above.

Therefore, in summary, the Corps feels that the proposed shoreline protection measures at Camp Ellis Beach should have no effect upon any structure or site of historic, architectural or archaeological significance as defined by Section 106 of the National Historic Preservation Act of 1966, as amended, and implementing regulations 36 CFR 800. We would appreciate your concurrence with this determination.

If you have any questions, please contact Mr. Richard Heidebrecht, the Study Manager at 978-318-8513 or Mr. Marc Paiva, Project Archaeologist, at 978-318-8796.

Sincerely,

John R. Kennelly
Chief of Planning

Enclosures

Copies furnished (with enclosures):

Mr. Donald Soctomah
Tribal Historic Preservation Officer
Passamaquoddy Indian Tribe
Indian Township Reservation
P.O. Box 102
Princeton, Maine 04668

STATE OF MAINE
DEPARTMENT OF CONSERVATION
93 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0093

JOHN ELIAS BALDACCI
GOVERNOR

ELIZA TOWNSEND
COMMISSIONER

October 1, 2010

Catherine Rogers
New England District, Corps of Engineers
696 Virginia Road
Concord, Massachusetts 01742-2751

Re: Rare and exemplary botanical features in proximity to: Proposed Shoreline Protection Project, Saco, Maine

Dear Ms. Rogers:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of September 24, 2010 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Saco, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MAINE NATURAL AREAS PROGRAM
MOLLY DOCHERTY, DIRECTOR

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Sarah Demers

Sarah Demers
Environmental Review Coordinator
Maine Natural Areas Program
207-287-8670
sarah.demers@maine.gov

Enclosures

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the proposed Shoreline Protection Project, Saco, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Ilex laevigata	G5	S3	SC	13	1979	Forested wetland
Eupatorium fistulosum	G5?	S2	SC	1	1989-08-21	Old field / roadside (non-forested, wetland or upland)
Eupatorium fistulosum	G5?	S2	SC	2	1989-08-14	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eupatorium fistulosum	G5?	S2	SC	3	1989-08-22	Old field / roadside (non-forested, wetland or upland)
Eupatorium fistulosum	G5?	S2	SC	5	2006-08-07	Open wetland, not coastal nor rivershore (non-forested, wetland)
Eupatorium fistulosum	G5?	S2	SC	6	1994-06-06	Open wetland, not coastal nor rivershore (non-forested, wetland)
Clethra alnifolia	G5	S2	SC	8	1989-08-01	Forested wetland
Sassafras albidum	G5	S2	SC	16	2006-07-17	Hardwood to mixed forest (forest, upland)
Prunus maritima	G4	S1	E	3	2006-07-17	Rocky coastal (non-forested, upland)
Agalinis maritima	G5	S3	SC	6	2000-10-02	Tidal wetland (non-forested, wetland)
Selaginella apoda	G5	S2	E	2	1989-08-14	Old field / roadside (non-forested, wetland or upland)
Salicornia bigelovii	G5	S1	SC	2	1981-09-16	Tidal wetland (non-forested, wetland)
Iris prismatica	G4G5	S2	T	18	1995-07-18	Tidal wetland (non-forested, wetland)
Sagittaria calycina var. spongiosa	G5T4	S3	SC	42	2009-07-30	Tidal wetland (non-forested, wetland)
Spiranthes lacera var. gracilis	G5T4T5	SH	PE	1	1918-08-27	Dry barrens (partly forested, upland)
Iris prismatica	G4G5	S2	T	4	1879-08	Tidal wetland (non-forested, wetland)

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the proposed Shoreline Protection Project, Saco, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Agalinis maritima	G5	S3	SC	9	1982	Tidal wetland (non-forested, wetland)
Selaginella apoda	G5	S2	E	6	1920-07-30	Old field / roadside (non-forested, wetland or upland)
Cenchrus longispinus	G5	SH	PE	1	1984	Rocky coastal (non-forested, upland)
Agalinis maritima	G5	S3	SC	12	1982	Tidal wetland (non-forested, wetland)
Zannichellia palustris	G5	S2	SC	10	1907-08-18	Tidal wetland (non-forested, wetland)
Clethra alnifolia	G5	S2	SC	9	1917-09	Hardwood to mixed forest (forest, upland)
Prunus maritima	G4	S1	E	9	1933-06-21	Rocky coastal (non-forested, upland)
Prunus maritima	G4	S1	E	12	1932-09	Rocky coastal (non-forested, upland)
Aster schreberi	G4	SX	PE	1	1894-09	Rocky coastal (non-forested, upland)
Hemlock - hardwood pocket swamp	G5	S2		4	1995-07-18	Hardwood to mixed forest (forest, upland)
Spartina saltmarsh	G5	S3		15	2000-10-02	Tidal wetland (non-forested, wetland)
Freshwater tidal marsh	G4?	S2		1	2009-07-30	Tidal wetland (non-forested, wetland)
Coastal dune-marsh ecosystem	GNR	S3		1	2006-07-17	Tidal wetland (non-forested, wetland)
Lilaeopsis chinensis	G5	S2	T	10	2009-07-30	Tidal wetland (non-forested, wetland)
Crassula aquatica	G5	S2S3	SC	25	2009-07-29	Open water (non-forested, wetland)
Eriocaulon parkeri	G3	S3	SC	33	2009-07-30	Tidal wetland (non-forested, wetland)
Zannichellia palustris	G5	S2	SC	15	2000-08-28	Tidal wetland (non-forested, wetland)

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the proposed Shoreline Protection Project, Saco, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Salicornia bigelovii	G5	S1	SC	8	2001-09-12	Tidal wetland (non-forested, wetland)
Agalinis maritima	G5	S3	SC	31	2001-09-12	Tidal wetland (non-forested, wetland)
Spartina saltmarsh	G5	S3		22	2001-09-12	Tidal wetland (non-forested, wetland)
Ilex laevigata	G5	S3	SC	30	1995-07-18	Forested wetland
Carex vestita	G5	S1	E	8	2006-06-16	Dry barrens (partly forested, upland)
Sagittaria rigida	G5	S2	T	15	2006-06-16	Tidal wetland (non-forested, wetland)
Calamagrostis cinnoides	G5	S3	SC	14	2006-08-08	Old field/roadside (non-forested, wetland or upland)
Spartina saltmarsh	G5	S3		27	2006-07-17	Tidal wetland (non-forested, wetland)
Crassula aquatica	G5	S2S3	SC	28	2007-07-05	Open water (non-forested, wetland)
Lilaeopsis chinensis	G5	S2	T	11	2007-07-05	Tidal wetland (non-forested, wetland)
Zannichellia palustris	G5	S2	SC	19	2007-07-05	Tidal wetland (non-forested, wetland)
Agalinis maritima	G5	S3	SC	34	2008-06-27	Tidal wetland (non-forested, wetland)
Tidal marsh estuary ecosystem	GNR	S3		4	2006-08-08	Tidal wetland (non-forested wetland)
Spartina saltmarsh	G5	S3		12	2006-08-08	Tidal wetland (non-forested, wetland)
Carex bullata	G5	S2	SC	2	1880-09-06	
Spartina saltmarsh	G5	S3		13	2008-06-27	Tidal wetland (non-forested, wetland)
Agalinis maritima	G5	S3	SC	18	2006-07-17	Tidal wetland (non-forested, wetland)

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the proposed Shoreline Protection Project, Saco, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Lilaeopsis chinensis	G5	S2	T	12	2007-08-14	Tidal wetland (non-forested, wetland)
Ilex laevigata	G5	S3	SC	39	2009-07-05	Forested wetland
Bidens hyperborea	G4	S3	SC	35	2009-07-30	Tidal wetland (non-forested, wetland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/doc/nrimc/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/doc/nrimc/mnap

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

October 6, 2010

Mr. John R. Kennelly
Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE:(MHPC 0294-07), Saco, spur jetty and nearshore breakwaters, Cape Ellis Beach

Dear Mr. Kennelly:

My staff archaeologist, Dr. Arthur Spiess, has reviewed the remote sensint archaeological survey report for the Camp Ellis Beach breakwater project by David S. Robinson and Fathom Research LLC, dated July, 2010, received here with your letter on September 30. The report is acceptable as written, and we agree with the conclusions in the report (no potentially eligible archaeological sites present).

Incorporating our previous review findings (no effect on architectural resources) I concur that there will be no historic or archaeological properties affected by the proposed spur jetty and nearshore breakwaters project for Cape Ellis Beach.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

PHONE: (207) 287-2132

FAX: (207) 287-2335

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

November 4, 2010

John. R. Kennelly, Chief of Planning
Engineering/Planning Division
New England District, Corps of Engineers
696 Virginia Road
Concord, Massachusetts 01742-2751

Re: Camp Ellis Beach Shoreline Protection Project, Saco, Maine

Dear Mr. Kennelly:

Thank you for updating EPA on the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine, as described in your September 24, 2010 letter to our office. EPA understands Alternative 6, which would construct a 750-foot spur jetty with beach fill, has been identified as the federally preferred plan.

EPA also understands that the local sponsor would prefer an alternative that includes offshore breakwaters. Further information is needed about the potential adverse impacts and potential benefits of the spur jetty, and breakwaters. Aquatic resource information about bottom habitat conditions at the locations of the spur jetty and breakwaters should be included. Impacts to shellfish habitat and/or winter flounder spawning habitat may need mitigation for the direct or indirect impacts of the rock fill structures.

EPA understands that there have been some detailed studies and modeling of the erosion problems and potential spur jetty and breakwater construction. Potential effects of the project on the normal pattern of offshore sediment movement to the north and how this may impact northern shoreline areas should be included in your Environmental Assessment for the project.

We look forward to receiving additional information which would help us understand the nature of the erosion problem and the potential Corps actions to protect the shoreline properties at risk.

If you have any questions about these comments and for further coordination, please call Ed Reiner of my staff at 617-918-1692, reiner.ed@epa.gov .

Sincerely,

Matt Schweisberg, Chief
Wetlands Protection Unit

cc: Catherine Rogers, USACE, Concord, MA
Maria Tur, USFWS, Concord, NH
Chris Boelke, NMFS, Gloucester, MA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. John R. Kennelly
Chief of Planning
Engineering/Planning Division
Evaluation Branch
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, Massachusetts 01742-2751

NOV 23 2010

Re: Section 111 Camp Ellis Beach Shoreline Protection Project

Dear Mr. Kennelly:

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) has reviewed your letter, dated September 24, 2010, regarding the Section 111 Camp Ellis Beach Shoreline Protection Project in Saco, Maine. According to your letter, the US Army Corps of Engineers (ACOE) has conducted studies, including an extensive numerical model of Saco Bay, to develop various alternatives to mitigate erosion along the shoreline at Camp Ellis Beach. Those studies included nearly 30 alternatives and have resulted in a reduced selection of alternatives briefly described in your letter. The ACOE is requesting comments from NMFS under the Fish and Wildlife Coordination Act (FWCA), the Endangered Species Act (ESA), and the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The MSA and the FWCA require federal agencies to consult with one another on projects such as this. Insofar as a project involves Essential Fish Habitat (EFH), as this project does, this process is guided by the requirements of our EFH regulation at 50 CFR 600.920, which mandates the preparation of EFH Assessments and generally outlines each agency's obligations in this consultation procedure. Unfortunately, our ability to assess potential impacts to EFH and associated marine resources is being complicated by a lack of information. Specifically, you have not provided NMFS with an EFH Assessment as is required pursuant to 50 CFR 600.920.

The required contents of an EFH Assessment includes: 1) a description of the action; 2) an analysis of the potential adverse effects of the action on EFH and the managed species; 3) the ACOE's conclusions regarding the effects of the action on EFH; and 4) proposed mitigation, if applicable. Other information that should be contained in the EFH Assessment, if appropriate, includes: 1) the results of on-site inspections to evaluate the habitat and site-specific effects; 2) the views of recognized experts on the habitat or the species that may be affected; 3) a review of pertinent literature and related information; and 4) an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH.

Because your letter does not contain a description of aquatic resources and habitats within the vicinity of the proposed project or an EFH Assessment, which should include an analysis of the potential adverse effects of the action on EFH, the managed species and other NMFS trust resources in the area, we are unable to provide comments at this time. Upon receipt of your EFH Assessment for the proposed project, NMFS will evaluate the adverse effects on NMFS trust resources and provide comments under MSA and FWCA, as appropriate.

General Comments

The Saco Bay and Saco River, including Camp Ellis Beach, are highly productive estuarine and marine systems and the habitats within these areas support important living marine resources. For example, several species of diadromous species are known to occur in this area, including alewife, blueback herring, rainbow smelt, and American eel. Due to declines in the populations of alewife, blueback herring, and rainbow smelt, these species have been classified as "species of concern" by NMFS. Although the "species of concern" status does not carry any procedural or substantive protections under the Endangered Species Act (ESA), concerns regarding their status and threats warrant proactive attention and conservation action. In addition, a number of recreationally and commercially important invertebrates are also found in the Saco Bay and Saco River estuary such as American lobster, softshell clam, and blue mussel. These species are also important forage base for a number of federally managed species and, in the case of shellfish, provide important benthic habitats for these species. Recent surveys within these areas will be necessary to delineate existing shellfish beds, and measures should be employed in the proposed project's design to avoid direct adverse impacts to these resources, as well as indirect impacts from turbidity plumes and sedimentation.

In addition, the Saco River and Saco Bay estuary supports submerged aquatic vegetation, which is an important habitat for many juvenile and adult fish and invertebrates and has been designated as a "special aquatic site" by the US Environmental Protection Agency under Section 404(b)(1) of the Federal Clean Water Act, due to its important role within the marine ecosystem. According to surveys conducted by the Maine Department of Marine Resources eelgrass beds were identified in the mouth of the Saco River, as well as the area around the existing breakwater. It will be critical that recent surveys be conducted in these areas during the eelgrass growing season to delineate the location of any beds that may exist in the vicinity of the proposed project.

The State of Maine Geographic Information System (ME GIS) provides on-line data and maps with various fishery resources and habitats in this area, such as eelgrass, molluscan shellfish, and diadromous fish resources, at http://megis.maine.gov/catalog/.

Essential Fish Habitat

This area of the Saco Bay and Saco River estuary has been identified as EFH under the MSA for 18 federally-managed species. These include all life stages (eggs, larvae, juveniles, and adults) of Atlantic cod, winter flounder, windowpane flounder, American plaice, ocean pout, Atlantic halibut, and Atlantic sea scallop; juvenile and adult Atlantic salmon, red hake, white hake, bluefish, and Atlantic mackerel; juvenile pollock; adult whiting and bluefin tuna; haddock eggs; eggs, larvae, and adult yellowtail flounder; and larvae, juvenile, and adult Atlantic sea herring.

Endangered Species Act
Two species of federally endangered fish (shortnose sturgeon, *Acipenser brevirostrom,* and the Gulf of Maine Distinct Population Segment (DPS) of Atlantic salmon, *Salmo salar)* listed under the jurisdiction of NMFS occur in Maine. However, the proposed action in Saco, Maine is outside of the Gulf of Maine DPS of Atlantic salmon. The project area is also outside of the area designated as critical habitat for listed Atlantic salmon. The range of shortnose sturgeon extends from the St. Johns River in Canada to the St. John River in Florida. Shortnose sturgeon have been documented in the Saco River and may be present from the estuary upstream to the Cataract Dam.

Shortnose sturgeon may be affected by in-water construction activities, including dredging and bank stabilization. As listed species may be present in the action area of this project, a consultation, pursuant to section 7 of the Endangered Species Act (ESA) of 1973, may be necessary. The ACOE, as the lead Federal agency, is responsible for determining whether the proposed action is likely to affect listed species. The ACOE should submit their determination of effects, along with justification for the determination and a request for concurrence, to the attention of the Section 7 Coordinator, NMFS, Northeast Regional Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, NMFS would then be able to conduct a consultation under section 7 of the ESA. Please note that if any take of listed species is likely, formal consultation, resulting in the issuance of a Biological Opinion, would be necessary.

Technical Assistance for Proposed Species
On October 6, 2010, NMFS published two rules proposing to list four distinct population segments (DPS) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus)* as endangered and one DPS as threatened (Gulf of Maine DPS) under the ESA (75 FR 1872). The Gulf of Maine (GOM) DPS of Atlantic sturgeon includes the following: all anadromous Atlantic sturgeon whose range occurs in watersheds from the Maine/Canadian border and extending southward to include all associated watersheds draining into the Gulf of Maine as far south as Chatham, MA, as well as wherever these fish occur in coastal bays and estuaries and the marine environment. Within this range, Atlantic sturgeon have been documented in the following rivers: Penobscot, Kennebec, Androscoggin, Sheepscot, Saco, Piscataqua, and Merrimack. The marine range of Atlantic sturgeon from the GOM DPS extends from the Bay of Fundy, Canada to the Saint Johns River, FL. The GOM DPS also includes Atlantic sturgeon held in captivity (*e.g.,* hatcheries, scientific institutions) and which are identified as fish belonging to the GOM DPS based on genetics analyses, previously applied tags, previously applied marks, or documentation to verify that the fish originated from (hatched in) a river within the range of the GOM DPS, or is the progeny of any fish that that originated from a river within the range of the GOM DPS. The proposed action in the Saco River falls within the geographic range of the GOM DPS of Atlantic sturgeon. Similar to shortnose sturgeon, Atlantic sturgeon may be affected by in-water work including dredging.

Under the provisions of 50 CFR §402.10, federal agencies shall confer with NMFS on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat. As the GOM DPS of Atlantic sturgeon has been proposed as a threatened species under the ESA, the ACOE should work with NMFS to determine if a conference is necessary for this project.

Additional Information
Based upon the available information, we believe that the proposed project may have adverse affects on EFH, managed species and other NOAA trust resources that use the Saco River and Saco Bay estuary for spawning, forage and shelter. NMFS understands that a draft Environmental Assessment (EA) is being prepared for this project and will be made available to NMFS later this year. In addition to the information pertaining to environmental assessments described above, NMFS requests the following information be included in the draft EA for our review.

1. Drawings of the proposed dredge area depicting separately the required dredge area and the allowable overdepth area in an 11"x 17" format, and which incorporates the most recent bathymetric data. In addition, the total acreage of both required dredge area and allowable overdepth area should be provided.
2. Information relating to direct and indirect impacts to intertidal and subtidal habitats within the proposed project's footprint should be provided. For example, benthic habitats within or adjacent to the footprint of the proposed project that may be impacted directly or indirectly by erosion or accretion of sand as a result of the beach nourishment or new structures constructed as part of this project (e.g., stone jetty, breakwater).

Conclusions
In summary, an environmental assessment for the proposed project should be provided to NMFS by the ACOE, including an EFH assessment which should include an analysis of the potential adverse effects of the action on EFH, the managed species and other NMFS trust resources in the area. In addition, bathymetry maps depicting separately the required dredge area and the allowable overdepth area, the acreage impacted by the required dredge area and the allowable overdepth area, and intertidal and subtidal areas impacted directly or indirectly by the project. Upon receipt of this information, NMFS will assess the potential adverse impacts of the proposed project and provide EFH conservation recommendations, as necessary. Related correspondence on EFH and FWCA should be addressed to the attention of Michael Johnson at the letterhead address above, or by phone at (978) 281-9130. Should you have any questions regarding the section 7 consultation process or the listed or proposed species discussed in this letter, please contact Julie Crocker at (978)282-8480.

Sincerely,

Louis A. Chiarella
New England Field Office Supervisor
for Habitat Conservation

cc: Cathy Rogers, ACOE
Mary Colligan, PRD
Brian Swan, ME DMR

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
1168 Main Street
Old Town, ME 04468
(207) 827-5938 Fax: (207) 827-6099

In Reply Refer To: 53411-2010-TA-0034
FWS/Region5/ES/MEFO

December 16, 2010

Catherine Rogers
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Dear Ms. Rogers:

Thank you for your letter dated September 24, 2008 requesting information or recommendations from the U.S. Fish and Wildlife Service (Service). This letter provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Project Name: Camp Ellis Beach Shoreline Protection Project

Federally listed species

The federally threatened piping plover is known to occur in the project area. Piping plovers last nested at nearby Ferry Beach State Park in 2007. Eroded beach conditions in the Camp Ellis area have prevented plovers from nesting on this portion of Ferry Beach in recent years.

Your letter describes proposals to dredge about 410,000 – 460,000 cubic yards of sand from the Saco River Federal navigation project and nourish Ferry Beach. Adding 60 feet of berm width and minimizing erosion will create habitat for nesting piping plovers. It is imperative that the Corps consult with the Service on this project under Section 7 of the Endangered Species Act. As with other beach nourishment projects, we will require assurances from the Corps that this habitat will be managed in a way that will not result in the take of this federally-listed species. Throughout the Northeast, piping plover beach management agreements have been routinely requested by the Service where Corps dredging and beach nourishment may affect piping plover habitat. For example, a piping plover beach management agreement was required as part of the Scarborough River Maintenance Dredge Federal Navigation Project and will be required of the Wells Beach Nourishment Project.

As part of the consultation process, the Service requests that the Corps determine the ownership of Ferry Beach and develop a process to assure management of the beach for piping plovers. The Service and Maine Inland Fisheries and Wildlife currently have no piping plover beach

management plans with the town of Saco or private landowners on Ferry Beach, however, there are other beach management plans in Maine (Scarborough, Wells, Ogunquit, Old Orchard Beach) that could serve as models.

Below are the current standard piping plover special conditions that we request of the Corps include as terms and conditions in permits they issue throughout the Northeast region to avoid adversely affecting the piping plover.

1. Any suitable piping plover habitat created by work performed under this authorization shall be managed in accordance with the Service, Northeast Region, April 15, 1994 document titled, Guidelines for Managing Recreational Activities in Piping Plover Breeding Habitat on the U.S. Atlantic Coast to Avoid Take Under Section 9 of the Endangered Species Act ("Guidelines") for managing recreational beaches when federally listed piping plovers are present. See www.fws.gov/northeast/pipingplover/recguide.html.

2. Before work takes place, assurance of plover management must be provided to the Service through a management plan implemented by the permittee or a signed management agreement between the permittee and a qualified entity. The Service must approve the management plan. Permittees must contact Mark McCollough, U.S. FWS at (207) 866-3344 x115 or mark_mccollough@fws.gov for information on preparing a management agreement and its approval. Beach management agreements would meet this condition if:

- The plan contains signed permission from all landowner permissions to allow piping plovers to be managed on Ferry/Camp Ellis beach.
- Paths from private residences to the beach should be consolidated and shared.
- The town's piping plover manager will assume responsibility for installing and taking down stake and twine to symbolically fence plover nesting areas.
- Dogs can be present on the beach only on a leash during the piping plover nesting season (April 1 to September 1).

A signed copy of the Ferry Beach piping plover beach management plan should be attached to the Corps permit or authorization.

3. Beach nourishment in existing plover habitat should maintain a 10:1 slope and have no vegetation plantings.

4. Each year, a qualified piping plover monitor shall determine whether suitable piping plover nesting habitat exists at that site as evidenced by piping plovers, nest scrapes, or nests. If such habitat is present, it shall be posted with warning signs and/or "symbolic fencing" before April 1 of each year and managed according to the Guidelines. A qualified piping plover monitor is a person who has the skills, knowledge, and ability to conduct monitoring.) ("Symbolic fencing" refers to two strands of light-weight string, tied between posts to delineate at least a 50 meter radius around nest areas where pedestrians, domestic animals and vehicles should not enter.)

5. Each year, a qualified monitor shall conduct surveys and determine whether suitable piping plover nesting habitat exists at disposal sites that have received dredged material under this authorization. If such habitat is present, it shall be posted with warning signs and/or "symbolic fencing" by April 1 of each year and managed according to Guidelines referenced above.

6. On suitable piping plover nesting habitat, all construction and beach nourishment activities are prohibited during the period March 30 to September 1 of each year, unless the Service

(Supervisor, Maine Field Office, 17 Godfrey Drive, Suite #2, Orono, ME 04473 (207) 866-3344) is notified two weeks prior and:

a. A qualified monitor is in place by April 1 to document location and activities of breeding plovers and to observe disposal activities relative to plover activities during the disposal period. In any calendar year pre-activity surveys shall begin at least one week prior to April 1 or one week prior to the commencement of any on-site project activity, whichever occurs first. On at least four non-consecutive days the piping plover monitor shall survey the project area (including landing, staging, operation, sand-transport and beach nourishment areas) for the occurrence of territorial, courting or nesting piping plovers. Each day's monitoring shall consist of two separate surveys conducted during different times of the tidal cycle;

b. Dredge/disposal activities are located 100 meters or more from piping plover territories and/or nests;

c. Plovers are monitored continuously and, if it is determined that piping plovers are disturbed by the activity, (1) all work ceases immediately and (2) the Service is notified immediately at (207) 866-3344 for further consultation. Piping plover monitoring field notes shall be provided to the Service upon request. Piping plover monitoring is the process of observing and recording data on piping plover breeding activities without causing disturbance to the birds under observation. Monitoring is done during the entire time project activities are being carried out on the beach. Monitoring includes, but is not limited to, detecting and recording locations of territorial and courting adults, locating nests and incubating adults, locating broods, interpreting piping plover behaviors, and documenting observations in legible, complete field notes. Except to determine the number of eggs in a newly discovered nest, monitoring is done using binoculars or spotting scopes from a distance of at least 50 meters;

d. If a crushed nest or a dead piping plover chick or adult is found, the permittee immediately contacts the Division of Law Enforcement, U.S. FWS, Office of Law Enforcement, 70 Everett Avenue, Suite 315, Chelsea, MA 02150; (617) 889-6616.

If these conditions are met we would concur with a determination from the Corps that this project is not likely to adversely affect the piping plover and we could conclude this consultation informally. If these conditions cannot be met, we believe this project is likely to adversely affect the piping plover and we would enter into formal consultation with the Corps. The state of Maine Endangered Species Act, Sand Dune Regulations, and Natural Resource Protection Act will require similar assurances. We request that the Corps conduct a process of bringing state and federal regulators, municipality, and beach owners together to assure the beach nourishment project is conducted in such a way to avoid adverse effects and take of the threatened piping plover.

Other protected species

We have not reviewed this project for state-threatened and endangered wildlife, wildlife species of special concern, and significant wildlife habitats protected under the Maine Natural Resources Protection Act. We recommend that you contact the Maine Department of Inland Fisheries and Wildlife

Steve Timpano
Maine Department of Inland Fisheries and Wildlife
284 State St.

State House Station 41
Augusta, ME 04333-0041
Phone: 207 287-5258

I recommend that you contact the Maine Natural Areas Program for additional information on state-threatened and endangered plant species, plant species of special concern, and rare natural communities.

Lisa St. Hilaire
Maine Natural Areas Program
Department of Conservation
93 State House Station
Augusta, ME 04333
Phone: 207 287-8046

Bald eagles

Occasional, transient bald eagles (*Haliaeetus leucocephalus*) may occur in the area. Based on the information currently available to use, there are no bald eagle nests near your project. The bald eagle was removed from the federal threatened list on August 9, 2007 and is now protected from take under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act. "Take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The term "disturb" under the Eagle Act was recently defined within a final rule published in the Federal Register on June 5, 2007 (72 Fed. Reg. 31332). "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

Further information on bald eagle delisting and their protection can be found at http://www.fws.gov/migratorybirds/baldeagle.htm.

Please consult with our new national bald eagle guidelines, which can found at http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf.

These Guidelines are voluntary and were prepared to help landowners, land managers and others meet the intent of the Eagle Act and avoid disturbing bald eagles. If you believe your project will result in taking or disturbing bald or golden eagles, please contact our office for further guidance. We encourage early and frequent consultations to avoid take of eagles.

Your letter requests initiation of consultation under Section 7(a)(2) of the ESA. You should continue to closely coordinate with our Maine Field Office during development of the Ferry Beach/Camp Ellis Beach and Saco River Federal Naviigation Project, particularly as you consider impacts to the piping plover.

When the project details have been determined, the Service requests that the following information relating to endangered species be included in your Environmental Assessment. When the Service receives a final Environmental Assessment and letter providing assurances the recommendations outlined above will be met, we will concur with the Corps that there is "no adverse effect" of this project on piping plovers and conclude informal consultation.

Information to include:

1) A complete and final description of the action - The Service requires an Environmental Assessment (EA) that identifies the final choice of the site for disposal of sand. The deposition and nourishment actions are interrelated and interdependent. Details of both the deposition and nourishment projects should be outlined in the EA.

2) A final description of the specific area affected by the action - The Service will need maps describing the extent of the beach nourishment project(s).

3) A description of listed species/critical habitat that may be affected - A list of the threatened and endangered species and critical habitats affected by this project.

4) A description of the manner in which the listed species may be affected - A description of the direct, indirect, insignificant and discountable, and beneficial effects of the project on piping plovers should be included in the EA.

5) Relevant reports prepared on the proposal - The Service requests that a summary of the verbal and written reports by of the professional coastal geologist consulted as part of our informal consultation be included in the final EA.

At this time, the Service has no further comments to offer related to the potential impacts on fish and wildlife resources other than the piping plover. Pursuant to the Fish and Wildlife Coordination Act, we may offer additional comments as your planning process continues.

Please address all future correspondence on this project to the Maine Field Office, U. S. Fish and Wildlife Service, 17 Godfrey Drive, Suite #2, Orono, ME 04473 (not the New England Field Office in Concord, NH).

We encourage meetings with the Corps, state regulatory agencies, landowners, and the town of Saco. If the Corps arranges such meetings, we request that the Maine Department of Inland Fisheries and Wildlife (MDIFW) and Maine Department of Environmental Protection be present at these meetings. We understand, the state is considering similar conditions for state-permitting of this project. MDIFW has been a signatory to all other piping plover beach management plans in Maine. If you have any questions, please call Mark McCollough, endangered species biologist, at (207) 866-3344 x115.

Sincerely,

Antonio Bentivoglio,
Acting Project Leader
Maine Field Office

cc: Steve Timpano, MDIFW

STATE OF MAINE
DEPARTMENT OF CONSERVATION
22 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0022

JOHN ELIAS BALDACCI
GOVERNOR

ELIZA TOWNSEND
COMMISSIONER

29 December 2010

John R. Kennelly, Chief of Planning
New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Dear Mr. Kennelly

I am responding on behalf of the Maine Geological Survey, the Maine Department of Environmental Protection, the Maine State Planning Office, the Maine Department of Marine Resources, and the Maine Department of Inland Fisheries and Wildlife (referred to collectively as "Maine agencies") to your letter of 9/24/10 requesting written comments regarding possible shoreline projects by the U.S. Army Corps of Engineers (ACOE) at Camp Ellis, Maine. The letter requests written comments by October 22, 2010 on the several alternative jetty alteration projects it describes. In a previous communication, I informed you that it would take more time for the state agencies to develop meaningful comments. Our response identifies issues that the ACOE should address in its Environmental Assessment (EA) to demonstrate consistency with the enforceable policies of Maine's coastal zone management program. We are viewing your request as an informal one, since there is no application that we know of pending consistency review. Please be advised that we anticipate that, following detailed, project-specific consultation with DEP, the ACOE will provide necessary data and information to support its consistency determination in the form of the pertinent state permit application(s). As discussed with the ACOE on other matters, this approach greatly facilitates consideration of the ACOE's consistency determination. We acknowledge and appreciate the ACOE's cooperation in working with us in this way on consistency review in the past and trust we may do so on this matter as well. We assume that there will be the usual opportunities under the NEPA process to provide substantial comments in response to a full application.

Comments

Alteration of the coastal sand budget, impacts to water quality, and stability of the Surf Street revetment during construction
[Title 38 M.R.S.A. Section 480-D(1, 2, 5, 7) and Ch. 355, Coastal Sand Dune Rules]

The EA should address erosion and accretion during construction and before sand is added to the beach in the second or third project year. During the first and possibly second years of construction, sand will move as a result of (a) wave reflection off the seaward side of the spur and breakwaters, (b) wave refraction from the ends of the structures.

Analysis of wave reflection should include determination of scour seaward of the engineering structures. On the seaward side of the structures both the area and depth of scour should be determined. From this result, whether or not mud beneath the thin layer of sand on the seafloor will be exhumed and eroded should be determined. Subsurface erosion of mud could induce turbidity in the water column so potential water quality impacts from scour need to be assessed.

Analysis of wave refraction should determine erosion and accretion patterns on the landward side of the structures, between the structures, and north of the structures. The EA should identify the source(s) and volumes of the sand accumulating behind the breakwaters or spur during the construction period. Sand accumulation in salients has the potential to induce erosion either on Camp Ellis Beach or the adjacent

Ferry Beach and its primary frontal dune. Impacts to the beach and coastal sand dune system need to be addressed.

The potential location, size, and sand volume loss at erosion hot spots created during construction need to be identified. Beach erosion at the base of the Surf Street revetment and the potential for destabilizing the engineering structures, road, and buried infrastructure needs to be addressed. The potential for increased beach and dune erosion rates along Ferry Beach during the construction phase of the project need to be addressed.

Permanent alteration of coastal sand budgets
[Title 38 M.R.S.A. Section 480-D(2, 7) and Ch. 355, Coastal Sand Dune Rules]

Post-construction alteration of the coastal sand budget, including shoreline change in the coastal sand dune system should be addressed. Areas with increased and decreased erosion rates should be identified on maps and projected erosion rates delineated along the shoreline within and north of the project area along Ferry Beach. Alteration of the historical rate of longshore drift within and north of the project area should be addressed. Consequences of a reduced longshore drift rate on beach and dune erosion rates should be identified for Camp Ellis and Ferry Beaches. Impact of engineering structures on the natural movement and supply of sediment to beaches in the cross-shore and alongshore directions should be addressed.

Permanent alteration of coastal sand budgets
[Title 38 M.R.S.A. Section 480-D(2, 7). Ch. 310, Ch. 355]

Post-construction shoreline change in the Coastal Sand Dune System should be addressed. Areas with increased and decreased erosion rates should be identified on maps and projected erosion rates delineated along the shoreline within and north of the project area along Ferry Beach. Alteration of the historical rate of longshore drift within and north of the project area should be addressed. Consequences of a reduced longshore drift rate on beach and dune erosion rates should be identified for Camp Ellis and Ferry Beaches. Impact of engineering structures on the natural movement and supply of sediment to beaches in the cross-shore and alongshore directions should be addressed.

Alteration of coastal flooding
[Title 38 M.R.S.A. Section 480-D(6) and Ch. 355, Coastal Sand Dune Rules]

The analysis should address anticipated changes to coastal flooding expected from alteration of the nearshore environment with engineering structures. Impacts to the coastal floodplain (FEMA V-Zone, AO-Zone, AE-Zone Flood Hazard Areas) should be mapped and altered elevations described. Wave run-up characteristics behind, between, and north of the engineering structures during a 100-year storm event should be compared to effective FEMA Flood Insurance Rate Maps. Infrastructure and buildings that might experience an increase in coastal flood hazards during and after project construction should be identified.

Alteration of coastal habitats and state submerged lands
[Title 12 M.R.S.A. Section 1801 and 1862-1867 and Submerged Lands Rules]
[Title 38 M.R.S.A. Section 480-D(1, 3) and Ch. 355, Coastal Sand Dune Rules]

Any construction below mean low water (tide table elevation of zero) will be on state submerged lands. The analysis should describe the sedimentary characteristics of the area of sea floor that will be altered. The amount of area converted from subtidal sandy environments to rocky intertidal area should be calculated. The area converted from different seafloor types (rocky, gravelly, sandy, muddy) to raised rocky subtidal and intertidal environments should be described, including conversion of the submerged portion of Maine's coastal sand dune system to rocky intertidal coastal wetlands. The horizontal and vertical extent of changes from subtidal sand areas to intertidal beach or salient and vice versa should be calculated.

The EA should describe in detail the habitat that would be covered by the proposed structure(s). This should include substrate and benthic flora and fauna characterization. Other non-benthic species that utilize the area should also be described. Potential direct and indirect impacts on these species should be evaluated.

Potential direct and indirect impacts on existing uses of the area including navigation, recreation and public access (both offshore and along the beach), and traditional fishing activity should also be analyzed as well as potential indirect impacts to water quality and water quality classification for bathing and/or shellfish harvesting.

Mitigation measures should be included as well as anticipated benefits from the project.

Other issues

If the project includes the transportation of sand from upland sources for beach fill at Camp Ellis, the EA should consider the impact on roads and describe in detail mitigation measures to address these impacts. Alternatives such as transporting sand by barge should be considered.

As the proposed structures will apparently be significantly higher than Mean High Water, there should be an evaluation of the scenic impacts of this alternative in order to address the statutory criteria of the NRPA [480-D (1)].

The EA should include among the alternatives examined a voluntary, targeted buy-out program designed to improve the dimensions and location of beach and dune.

Thank you for the opportunity to comment on the Camp Ellis project and we look forward to working with you as this project progresses.

Sincerely,

Robert G. Marvinney
State Geologist and Director

References

Natural Resources Protection Act

Protected Natural Resources. *Protected natural resources* are coastal sand dune systems, coastal wetlands, significant wildlife habitat, fragile mountain areas, freshwater wetlands, great ponds and rivers, streams or brooks. See 38 MRSA 480-B for statutory definitions. (Source: http://www.maine.gov/dep/blwq/docstand/nrpapage.htm)

38 M.R.S.A. Section 480-D

1. Existing uses. The activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses.
2. Soil erosion. The activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.
3. Harm to habitats; fisheries. The activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.
4. Interfere with natural water flow. The activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
5. Lower water quality. The activity will not violate any state water quality law, including those governing the classification of the State's waters.
6. Flooding. The activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
7. Sand or gravel supply. If the activity is on or adjacent to a sand dune, it will not unreasonably interfere with the natural supply or movement of sand or gravel within or to the sand dune system or unreasonably increase the erosion hazard to the sand dune system.
8. Outstanding river segments. If the proposed activity is a crossing of any outstanding river segment as identified in section 480-P, the applicant shall demonstrate that no reasonable alternative exists which would have less adverse effect upon the natural and recreational features of the river segment.
9. Dredging. If the proposed activity involves dredging, dredge spoils disposal or transporting dredge spoils by water, the applicant must demonstrate that the transportation route minimizes adverse impacts on the fishing industry and that the disposal site is geologically suitable.

State Submerged Lands

The State of Maine defines publicly owned submerged lands as:

- **Coastal region (including islands)**: All land from the mean low-water mark out to the three mile territorial limit. Where intertidal flats are extensive, the shoreward boundary begins 1,650 feet seaward from the mean high-water mark. (Source: http://www.maine.gov/doc/parks/programs/sublands/index.html.)

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

February 25, 2013

Engineering/Planning Division
Evaluation Branch

Mr. John Bullard
Regional Administrator
NOAA Fisheries
Northeast Regional Office
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

Dear Mr. Bullard:

This letter is written to update your office on the latest project recommendation and information relevant to Section 7(c) of the Endangered Species Act (ESA) for the Camp Ellis Beach Shore Damage Mitigation Project located in Saco, Maine. In a letter dated, September 24, 2010, we updated your office on the latest project description for Camp Ellis and requested initial consultation under the Endangered Species Act. Staff from your office responded in a letter dated, November 23, 2010, that two species of Federally endangered fish, the shortnose sturgeon (*Acipenser brevirostrom*) and the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon (*Salmo salar*), occur in Maine. However, it was determined by your office that critical habitat for the GOM DPS of Atlantic salmon is outside the proposed project area in Saco, Maine and only the shortnose sturgeon has been documented in the Saco River and may be present in the Saco Bay estuary. Since that time, the GOM DPS for Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) was listed as threatened under the ESA on February 6, 2012.

Alternative 6 as detailed below was recently selected as the Federally recommended plan to prevent further shoreline losses north of the existing Saco River jetty. The specific improvements recommended to reduce shoreline losses include construction of a spur jetty and placement of beach fill along Camp Ellis Beach. See Figure 1. These improvements are described in more detail below:

- The 750-foot long spur jetty would be attached to the existing north jetty about 1,475 feet from the shoreline and placed in perpendicular position. The top of the structure would be about 15 feet wide at an elevation of 14.5 feet MLLW. The seaward and landward side slopes of the spur jetty would be 1 vertical on 2 horizontal (1V:2H). The seaward side and head section of the structure would include a layer of toe stone about six feet thick and 10 feet wide to prevent scour. Cross sections of the spur jetty are shown below in Figure 2.

- Due to increased turbulence at the spur and jetty junction, about 400 feet of the existing north jetty seaward of the spur jetty would require reinforcement. Modifications to the first 200 feet of the north jetty include raising the top elevation to reduce overtopping, flattening the slope to 1 vertical on 2 horizontal, adding armor stone, and reinforcing the toe to prevent scour. An additional 200 feet of the north jetty would receive toe reinforcement only. Cross sections of the north jetty reinforcements are also shown below.
- Approximately 365,000 cubic yards of sand would be placed on Camp Ellis Beach. The fill would extend from the north jetty north about 3,250 feet. The proposed beach berm elevation would be about 17 feet above MLLW, which is roughly equivalent to the elevation of the natural beach berm to the north. The berm width would vary based on topography, but the minimum beach berm width required in the southern section is 60 feet and the minimum width required in the north section is 70 feet. Sand placed on the beach will have a 1:10 beach slope.
- It is anticipated that placement of beach fill would begin at the north end of the project area and continue to the south. Beach fill placement would occur between September 1 and March 31 to avoid potential piping plover nesting activity. Sand fill would be transported from an upland site by trucks; therefore no dredging is required.
- Placement of the rock for the spur jetty and reinforcement of the north jetty is expected to occur from seaborne barges. No time of year restriction is currently being placed on stone placement for jetty construction.

As mentioned above, the two listed anadromous fish species that are under jurisdiction of the National Marine Fisheries Service, and could occur in the project area, are the endangered shortnose sturgeon and the threatened GOM DPS Atlantic sturgeon. The life history of the two species and any potential effects on them from the proposed project are described below.

Shortnose Sturgeon

The shortnose sturgeon is among the most primitive of the bony fishes. It grows to a length of about 48 inches and weight of about 15 pounds; it is much smaller than the Atlantic sturgeon that reaches nine feet or longer. Female shortnose sturgeon may live to be 67 years old, while males seldom live beyond 30 years of age (ME Dept. of Inland Fisheries and Wildlife website).

Shortnose sturgeon occur in most major river systems along the eastern seaboard of the United States. In the northern portion of the range, shortnose sturgeon are found in the Chesapeake Bay system, Delaware River; the Hudson River in New York; the Connecticut River; the lower Merrimack River in Massachusetts and the Piscataqua River in New Hampshire. In Maine, they can also be found in the Kennebec River system (which also includes the Androscoggin and Sheepscot Rivers), and the Penobscot River. They have also been documented occasionally in some of the other rivers along the Maine coastline; including the Saco, St. George, Damariscotta, Medomak, and Passasagasawakeag Rivers; which may be a result of increased coastal movements between the larger rivers in Maine and Massachusetts (http://www.nmfs.noaa.gov/pr/species/fish/shortnosesturgeon.htm). In Canada, they can be found in the St. John River.

These fish, as well as the Atlantic sturgeon are anadromous, spending a portion of their lives in salt water, but returning to fresh water to spawn. However, in some northern populations (e.g., in the Kennebec River), a portion of the shortnose sturgeon population forages in the saline estuary while others forage in fresh water (ME Dept. of Inland Fisheries and Wildlife website).

The shortnose sturgeon exhibit delayed sexual maturity, high reproductive capacity, and long life expectancy. Males and females mature at the same length (about 18 inches), but age at maturity varies with latitude. Sturgeons in the northern part of their range grow slower and mature later than those in the southern part of the range. Males reach sexual maturity in the north at 10-11 years and females at 12-18 years. Females usually breed every three years, and males may breed every year. The normal habit is to migrate to fresh water to spawn, usually from April to May.

Spawning occurs in the spring at or above the head of tide. The female broadcasts her eggs in fresh water over a rubble bottom, and the male fertilizes them. Females lay 40,000-200,000 eggs, which hatch in about 13 days. After hatching, the larvae drift downstream and inhabit the deeper sections of river channels. Young of the year remain in fresh water. Juveniles (3-10 years old) move to the freshwater/saltwater interface. Adults are found in freshwater or tidal areas of rivers in summer and winter. They concentrate in small sections of the river, usually in areas of decreased river flow.

These "concentration areas" may be associated with conditions suitable for the shortnose sturgeon's primary prey, freshwater mussels and crayfish. Adult shortnose sturgeon primarily eats mollusks and large crustaceans. Juveniles feed primarily on insects and small crustaceans. Both adults and juveniles feed on the river bottom day and night. Feeding and overwintering activities may occur in both fresh and saline habitats. Adult sturgeon in Merrymeeting Bay feed over submerged tidal flats and can tolerate rapid changes in salinity with the fluctuating tide. Other individuals feed in shallow and deep tidal channels.

The presence of the Cataract Dam on the Saco River separates the tidally-influenced estuary from the upstream portion of the river and presents an impassable boundary for sturgeon. Shortnose sturgeon have been observed utilizing all of the Saco River from the mouth of the river up to the dam (Little, *et al.,* 2013). Shortnose sturgeon tagged in the Saco River were observed moving in and out of Saco River, generally between March and November (Little, *et al.,* 2013). Shortnose sturgeon tagged in the Merrimack River in Massachusetts were then observed in the Saco River, and then later observed travelling north to the Kennebec River (Little, *et al.,* 2013).

Five of the six shortnose sturgeon tagged in the Merrimack River, and later detected in the Saco River, were females with late-stage eggs that should have been approaching spawning conditions as described in Kieffer and Kynard ([2012] *in* Little, *et al.,* 2013). No spawning in the Saco River is expected as none of these fish were observed in the freshwater reaches of the Saco River (Little, *et al.,* 2013). However, the time window of absence from the Saco River or entry in the Kennebec River is consistent with the known period of spawning in the Kennebec/ Androscoggin system ([Squires, *et al.,* 1982] *in* Little, *et al.,* 2013). Extended summer residence in the Saco River/Bay estuary is likely more consistent with the use of the system for foraging (Little, *et al.,* 2013).

Atlantic sturgeon

Generally, the life history pattern of Atlantic sturgeon is that of a long lived, (approximately 60 years; Mangin, 1964; Stevenson and Secor, 1999), late maturing, estuarine dependent, anadromous species (in ASSRT, 2007). It can reach lengths of up to 14 feet (4.26 m) and weigh over 800 pounds (364 kg) (FR, October 6, 2010 [2010]).

Atlantic sturgeon can also be found along the eastern seaboard from Cape Canaveral, FL to Labrador, Canada. Within the U.S. Gulf of Maine, Atlantic sturgeons have been documented from the following rivers: Penobscot, Kennebec, Androscoggin, Sheepscot, Saco, Piscataqua, Presumpscott, and Merrimack. Table 1 below provides a list of the historic and current spawning rivers in the Gulf of Maine as well as their current use by Atlantic sturgeon.

Table 1. Historic and Current Spawning Status of Atlantic Sturgeon in the U.S. Gulf of Maine and its Current Uses in the Riverine Habitat (ASSRT, 2007 and FR 2012).

State	River	Historical Spawning Status	Current Spawning Status	Use of River by Atlantic Sturgeon
NB/ME	Saint Croix	Yes	Possibly	Nursery
ME	Penobscot	Yes	Possibly	Nursery
ME	Kennebec	Yes	Yes	Spawning, Nursery
ME	Androscoggin	Yes	Possibly	Nursery
ME	Sheepscot	Yes	Possibly	Nursery
ME	Saco[1]	Unknown	Unknown	Unknown
ME/NH	Piscataqua	Unknown	No	Unknown
NH/MA	Merrimack River	Yes	No	Nursery

Atlantic sturgeon are omnivorous benthic feeders and filter quantities of mud along with their food. The diets of adult sturgeon include mollusks, gastropods, amphipods, isopods and fish. Juvenile sturgeon feed on aquatic insects and other invertebrates (ASSRT, 2007). Sand lance make-up a large portion of the diet for Atlantic sturgeon caught in the Saco Bay estuary (Sulikowski, pers. comm.).

Atlantic sturgeon spawn in freshwater, but spend most of their adult life in the marine environment. Generally, spawning adults migrate upriver in the spring/early summer; February-March in southern systems, April-May in mid-Atlantic systems, and May-July in Canadian systems (Murawski and Pacheco, 1977; Smith, 1985; Bain, 1997; Smith and Clugston, 1997; and Caron, *et al,.* 2002; *in* ASSRT, 2007). Atlantic sturgeons likely do not spawn every year, and multiple studies have indicated spawning intervals ranging from 1-5 years for males (Smith, 1985; Collins, *et al.*, 2000; Caron *et al.*, 2002) and 2-5 years for females (Vladykov and Greeley, 1963; Van Eenennaam *et al.*, 1996; and Stevenson and Secor, 1999; *in* FR, 2010). Fecundity of female Atlantic sturgeon is correlated with age and body size and ranges from 400,000 to 8 million eggs.

[1] Atlantic sturgeons are using the Saco River for significant portions of the year. Studies are underway to determine how the fish are using the river (e.g., just a foraging area or attempting to reestablish a spawning population). Email from NMFS dated May 1, 2012.

Spawning is believed to occur between the salt front of estuaries and the fall line of large rivers in flowing waters with optimal flows ranging from 46-76 cm/s and depths from 11-27 meters (Borodin, 1925; Leland, 1968; Scott and Crossman, 1973; Crance, 1987; and Bain *et al.*, 2000; *in* FR, 2010). Their highly adhesive eggs are deposited on the bottom substrate usually on hard surfaces such as cobble (Gilbert, 1989 and Smith and Clugston, 1997, *in* FR, 2010). It is likely that cold, clean water is important for proper larval development.

Following spawning, males may remain in the river or lower estuary until the fall; females typically exit the rivers within four to six weeks (www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon).

Juveniles (subadults)[2] move downstream and inhabit brackish waters for a few months. When they reach a size of about 30 to 36 inches (76-92 cm) they move into nearshore coastal waters. Tagging data indicate that these immature Atlantic sturgeons travel widely once they emigrate from their natal (birth) rivers. Subadults and adults live in coastal waters and estuaries when not spawning, generally in shallow (10-50 meter depth) nearshore areas dominated by gravel and sand substrates (www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon). When at sea, the adults mix with populations from other rivers, but return to their natal rivers to spawn as indicated from tagging records (Collins, *et al.*, 2000a, K. Hattala, NYSDEC, pers. comm. 1998; *in* ASSRT, 2007) and from population genetic studies showing relatively low rates of gene flow (King, *et al.*, 2001 and Waldman, *et al.* 2002; *in* ASSRT, 2007).

Dunton, K.J., *et al.* (2010) discusses the results from five fish surveys of captured juvenile Atlantic sturgeon from Maine to North Carolina. Essential habitat for juvenile marine migrant Atlantic sturgeon can be broadly defined as coastal waters <20 meters in depth, and concentrated in areas adjacent to estuaries such as the Hudson River-NY Bight, Delaware Bay, Chesapeake Bay, Cape Hatteras, and the Kennebec River, Maine. This narrow band of shallow water appears to represent an important habitat corridor and potential migration path. Other authors reported by Dunton, K.J., *et al.* (2010) have reported concentrations of Atlantic sturgeon in Long Island Sound, North Carolina, and bycatch data indicated concentrations in Massachusetts Bay, Rhode Island, New Jersey, and Delaware.

In addition, catches reported by Dunton, K.J., *et. al.* (2010) were greatest during the fall and spring months. Winter appears to be the next highest season of captured juvenile Atlantic sturgeon, with the summer months showing very low capture rates. However, the bycatch mortality estimates by Stein, *et al.* (2004) and ASMFC (2007) do not include the bycatch that occurs in estuaries and rivers, which are not covered by the observer programs. Many juveniles and adults stay in marine foraging areas from fall through spring and then migrate into the estuaries and rivers in the summer seeking thermal refuges (Stein, *et al*,. 2004). While bycatch decreases in the ocean during the summer relative to fall through spring due to the migration to estuaries and rivers, bycatch likely increases in estuaries and rivers during that time.

Tagging and tracking of the captured fish has shown that Atlantic sturgeon are making use of the lower four river kilometers of Saco River from the mouth up to Cataract Dam. They

[2] Juveniles and subadults are used interchangeably in the ASSRT, 2007 report (and therefore in this report), and are defined as any sturgeon that is not considered a young-of-year (Age 0) or mature adult.

have been observed in the river between December and April with the highest concentrations in June and July (Sulikowski, pers. comm.). Atlantic sturgeon have been observed moving between Saco River and Scarborough River to the north within hours (Sulikowski, pers. comm.).

Shortnose Sturgeon and Atlantic Sturgeon in Saco Bay

The first consideration in evaluating the effect of the proposed project on either species of sturgeon is whether or not the species may be in the project area, or at a minimum, during the time of construction, and which life stages may potentially be affected by either direct or indirect impacts. As noted above, both species of sturgeon are anadromous and swim upriver to spawn. The larvae and young of year are generally confined to the freshwater or brackish waters of the river. However, there is no documentation of sturgeon spawning in the Saco River (Sulikowski, pers. comm.). Therefore, the river and estuary would likely not be a nursery area for larvae either. Also, the Saco River/Bay would not be considered an appropriate spawning or nursery habitat due to its estuarine/marine conditions. This is consistent with research in Saco River/Bay. Only adult shortnose sturgeon, and adult and juvenile Atlantic sturgeon, have been observed in Saco Bay (Sulikowski, pers. comm.).

Both species of sturgeon transit to and from Saco River and estuary to other rivers and bays. Juvenile and adult Atlantic sturgeon travel north to Scarborough River and some travel south to Plymouth Bay (Sulikowski, pers. comm.). Historically, it was thought that shortnose sturgeon do not typically make coastal migrations ([Dadswell, *et al.,* 1984] *in* Little, *et al.,* 2013). However, Fernandes, *et al.,* ([2010] *in* Little, *et al.,* 2013) and Zydlewski, *et al.,* ([2011] *in* Little, *et al.,* 2013) found that shortnose sturgeon undertakes regular, seasonal migrations between the Kennebec River complex and the Penobscot River, with short ventures into smaller coastal rivers in Maine.

Both sturgeon species can be found in waters as shallow as eight feet deep (Sulikowski, pers. comm.). As the area is not a known spawning/nursery area, the Saco estuary is more likely consistent with use as a forage area (Little, *et al*., 2013). Benthic samples collected off of Camp Ellis Beach indicate that the area has low to moderate number of benthic species and individuals. Sand lance is the preferred prey item for Atlantic sturgeon (Sulikowski, pers. comm.). Eelgrass maps downloaded from the Maine Office of GIS indicate that while surveys for eelgrass in the 1990's showed distribution of eelgrass adjacent to the Saco River jetties, surveys from the last decade (2001 to 2010) show no distribution of eelgrass in the immediate project area.

Conclusions

Based upon the information presented above, it is possible that adult shortnose sturgeon and Atlantic sturgeon juveniles and adults could be present in Saco Bay to transit to other locations or to use the bay as a forage area. However, the proposed project would create minimal disturbance, if any, to either species. Sand will be placed on the beach as fill above the high water line and then graded to the lower levels during low tide. Rocks will be removed from a barge and placed on the seafloor with care. No direct impacts to the subject species from either disturbance are expected. A permanent displacement of a soft bottom with rock will occur possibly resulting in a very minor reduction in food source. Sand placement will temporarily reduce a potential food source for these species as the sand moves out to the shallow subtidal

habitat. As the beach erodes, it is expected that subtidal areas will become repopulated with benthic organisms and continue to serve as a potential forage area. However, the overall area of impact is relatively small when compared to the remaining Saco Bay. Consequently, no direct impacts to either sturgeon species are expected. Therefore, although it is possible that shortnose sturgeon and Atlantic sturgeon may be present in the vicinity of the Camp Ellis Beach Shore Damage Mitigation Project, it is concluded that these activities are not likely to adversely affect Atlantic sturgeon or its critical habitat.

Based on our analysis of effects on listed species, and the distribution and low probability of Atlantic sturgeon or shortnose sturgeon occurring in the immediate construction area, we believe that construction of the Camp Ellis Shore Damage Mitigation Project is not likely to adversely affect listed species. We request your concurrence with our determination that the proposed project is not likely to adversely affect listed species. Any questions or comments can be addressed to Ms. Catherine Rogers at (978) 318-8231.

Sincerely,

John R. Kennelly
Chief of Planning Branch

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

MAR 12 2013

John R. Kennelly, Chief
Planning Division
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Re: Camp Ellis Beach Shore Damage Mitigation Project

Dear Mr. Kennelly,

We have reviewed your February 25, 2013, letter regarding the proposed Camp Ellis Beach Shore Damage Mitigation Project. The project is located near the mouth of the Saco River and involves construction of a spur jetty and placement of beach fill along Camp Ellis Beach. The spur jetty will be attached to an existing jetty and will involve placement of large rocks from a barge. Also, approximately 365,000 cubic yards of sand will be placed on the beach between September 1 and March 1. Sand will be transported to the site from an upland source by truck and will be placed on the beach above the high water line. Sand will be graded along the beach during low tide. You have requested our concurrence that the proposed action is not likely to adversely affect any species listed as threatened or endangered under the ESA.

We have reviewed the proposed action, the project location and the proposed mitigation/minimization measures and have determined that no species listed under our jurisdiction will be exposed to any direct or indirect effects of the proposed project. Based on this, we do not believe a consultation in accordance with section 7 of the ESA is necessary. As such, NMFS Protected Resources Division does not intend to offer additional comments on this proposal. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact Julie Crocker of my staff (978-282-8480 or Julie.Crocker@noaa.gov).

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resource

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

April 16, 2013

Engineering/Planning Division
Evaluation Branch

Mr. Lou Chiarella, Acting Assistant Regional Administrator
Habitat Conservation Division
NOAA Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

Dear Mr. Chiarella:

The purpose of this letter is to request Essential Fish Habitat (EFH) Conservation Recommendations, if any, under the Magnuson-Stevens Fishery Conservation and Management Act for the Camp Ellis Beach Shoreline Damage Mitigation Project located in Saco, Maine. The proposed project would mitigate for shoreline losses attributed to construction of the Saco River Federal navigation project. Please find enclosed a copy of the Draft Environmental Assessment for your review.

The Federally recommended plan would place approximately 365,000 cubic yards of beach fill from the north jetty of the Saco River along 3,250 feet of Camp Ellis Beach. Beach fill would occur between September 1 and March 31 to avoid potential piping plover nesting activity. Sand fill would be transported by truck from an upland site. In addition, a 750-foot long spur jetty would be attached to the north jetty to reduce reflected wave energy along Camp Ellis Beach.

Please provide any EFH conservation recommendations within 30 days from the date of this letter. Any questions or comments can be addressed to Ms. Catherine Rogers at the following email address: catherine.j.rogers@usace.army.mil or by calling her at (978) 318-8231. Questions or concerns can also be directed to Mr. Richard Heidebrecht, the project manager, at the following email address: richard.w.heidebrecht@usace.army.mil, or by calling him at (978) 318-8513.

Sincerely,

John R. Kennelly
Chief, Planning Branch

Enclosure

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

April 16, 2013

Engineering/Planning Division
Evaluation Branch

Mr. John Warner, Assistant Supervisor Federal Activities
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

Dear Mr. Warner:

This letter is written to request a Final Coordination Act Report (FCAR) under the Fish and Wildlife Coordination Act for the Camp Ellis Beach Shoreline Damage Mitigation Project located in Saco, Maine. The proposed project would mitigate for shoreline losses attributed to construction of the Saco River Federal Navigation Project. Please find enclosed a copy of the Draft Environmental Assessment for your review.

The Federally recommended plan would place approximately 365,000 cubic yards of beach fill from the north jetty of the Saco River along 3,250 feet of Camp Ellis Beach. Beach fill would occur between September 1 and March 31 to avoid potential piping plover nesting activity. Sand fill would be transported by truck from an upland site. In addition, a 750-foot long spur jetty would be attached to the north jetty to reduce reflected wave energy along Camp Ellis Beach.

Please provide an FCAR within 30 days from the date of this letter. If funding is needed to prepare this FCAR, please contact the project manager, Mr. Richard Heidebrecht, at (978) 318-8513. Any other questions or concerns can be directed to Ms. Catherine Rogers at (978) 318-8231.

Sincerely,

John R. Kennelly
Chief, Planning Branch

Enclosure