

September 14, 1999

Colonel Allan B. Carroll
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Betty Gray Waring
Waterways and Ports Branch

Re: Winter Harbor Maintenance Dredging,
Mathews County, Virginia

Dear Colonel Carroll:

This document transmits the U.S. Fish and Wildlife Service's biological opinion based on our review of the above referenced, proposed maintenance dredging project located in Mathews County, Virginia, and its effects on the northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*), in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). Your September 30, 1998 request for formal consultation was received on October 2, 1998. This biological opinion is based on information provided in your letter, other written documentation, telephone conversations, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office.

I. CONSULTATION HISTORY

- 2-12-91 Service letter to the Corps stating that this project could impact the northeastern beach tiger beetle.
- 9-30-98 Service receives the Corps' request to initiate formal consultation.
- 10-29-98 Service letter to the Corps indicating that the request for formal consultation had been received and was complete.
- 1-27-99 Site visit conducted by Service and Corps representatives.
- 3-1-99 Service letter to Corps requesting additional information on the area of impact.
- 4-12-99 Corps letter to the Service providing additional information on the area of impact.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Corps of Engineers plans to conduct routine maintenance dredging of the federal navigation channel at Winter Harbor, Mathews County, Virginia. The Corps proposes to dredge the existing channel to 6 feet deep by 100 feet wide by approximately 7,600 feet long, including the dredging of the existing turning basin of 400 feet square. The entire channel is approximately 7,600 feet long. A portion of the dredged material will be placed on the beach just south of and contiguous with the beach known as Bethel Beach. Approximately 70,000 square feet of the sand spit at the Winter Harbor channel entrance will be dredged/removed. Dredging and beach placement of dredged material will likely be conducted between December 1 and March 15 of 1999-2000. The Corps anticipates that the beach placement portion of the dredging operation will take approximately 3 weeks to complete (Powell 1999).

The inner channel sediments total between 70,000 and 90,000 cubic yards and consist of 80% fines and 20% sand. This material will be placed in an 11-acre, previously-used, diked upland placement area located on land located south of the channel and near the mouth. The outer channel sediments consist of 99% clean sand and would be placed on the above-described beach and nearshore bottomland at Winter Harbor (Figure 1). Between 50,000 and 70,000 cubic yards of outer channel sediments will be dredged hydraulically and placed on the beach at Winter Harbor, to an unspecified depth. Dredged material placed on Winter Harbor Beach will be transported via pipeline located in subtidal waters from the mouth of the dredged channel to the southern end of the dredged material placement area. From this point, the pipeline will be located below the mean low water line, or on the beach face as needed for dredged material placement. During dredged material placement, the outflow pipe located on Winter Harbor Beach, will be repositioned periodically by use of light equipment such as a pick-up truck or four-wheeled, all-terrain vehicle. The Corps anticipates that much of the dredged material placed on Winter Harbor Beach will erode over time. Littoral drift on this shoreline is to the south, and it is therefore anticipated that an unknown quantity of the dredged material will eventually be redeposited on beaches to the south and within the subtidal zone at Winter Harbor Beach and areas to the south.

The "action area" is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. The Service has determined the action area for this project to be that portion of the beach on which the dredged material will be placed or is likely to move, and the area of the sand spit to be removed. This area measures approximately 7,300 feet in length by approximately 39 feet in width, and is shown in Figure 1.

STATUS OF THE SPECIES RANGEWIDE

This information on the northeastern beach tiger beetle was provided to the Corps in a biological opinion dated April 2, 1998 for permit application 97-1951-30 (copy enclosed).

ENVIRONMENTAL BASELINE

Status of the Species Within the Action Area - The proposed project is located within the Winter Harbor Beach tiger beetle site. Larval tiger beetles were documented at the project site on October 30, 1997 when Dr. Barry Knisley performed a survey of the proposed dredged material placement site (Knisley 1997). Knisley stated that the survey indicated that moderate numbers of *C. dorsalis dorsalis* larvae were found along the entire length of the survey area. Knisley found 73 larval beetles during the survey. Northeastern beach tiger beetle adult and larvae were documented on Winter Harbor Beach during 1991 through 1993 by Dr. Knisley (1997). Over 600 adult tiger beetles were surveyed on the Winter Harbor Beach in July of 1998 (Knisley and Hill 1998). This survey included the entire action area, in addition to a relatively short beach strand located north of the action area.

Factors Affecting Species Habitat Within the Action Area - The dredged material placement area is 4,500 feet in length by approximately 12 meters in width, in an area located between the upper intertidal beach face to the upper drift zone of the Winter Harbor Beach. This beach strand is undeveloped and contains no structures. Human disturbance is minor and limited to foot traffic primarily during the summer months. The area of sand spit to be dredged/removed includes approximately 70,000 square feet above the mean low water mark. The beach and sand spit are privately-owned and, according to the Corps, the landowner patrols the beach periodically to minimize recreational use of the beach by boaters. The Winter Harbor Beach is eroding, a phenomenon that is believed to be primarily due to sea level rise/land subsidence. The sand spit is accreting and encroaching on the entrance of the Winter Harbor channel.

The Winter Harbor channel was last dredged during 1979 and 1980. At that time, approximately 40,000 cubic yards of material was dredged and placed in an upland placement site described above in the section entitled, DESCRIPTION OF PROPOSED ACTION (Powell 1999). No major human activity has occurred on Winter Harbor Beach since that time. No new structures have been constructed on the beach or dune area and human activity on the beach continues to be minimal.

EFFECTS OF THE ACTION

Direct Effects - Direct impacts to larval tiger beetles will occur through crushing, dislodging, and entombment, resulting in death or injury, during placement of the dredged material. This will result from the activity of light equipment on the beach and the placement and constant relocation of the hydraulic pipeline during dredged material placement. Larval beetles will also be crushed, dislodged, and entombed as the dredge slurry exits the pipeline and contacts the beach. Some larval beetles will also be prevented from feeding during that time due to their sensitivity to vibrations, movements, and shadows, resulting in injury and, potentially, death. Existing habitat, for both larval and adult beetles, will be temporarily lost on Winter Harbor Beach as it is covered with dredged material. Due to the placement of dredged material and removal of the sand spit in these portions of the action area, the Service believes that it is highly likely that most larvae in the action area will die.

The Service also anticipates that recolonization of beetles in the action area will be delayed post-dredging, from destabilization of beach sediments. However, it is anticipated that beach sediments will stabilize sufficiently to support beetle larvae and adults, within a number of months following dredging.

Dr. Barry Knisley has estimated that this project will impact adult and larval tiger beetles on Winter Harbor Beach for up to two years after completion of dredged material placement. This is due to the time needed for recovery of the tiger beetle prey base on the beach, post-dredging. The Service agrees with Dr. Knisley's assessment. Therefore, harm to tiger beetles will occur due to a loss and reduction of their prey base for approximately two years after dredging.

Winter Harbor Beach supports 1 of 15 populations of 500 or more northeastern beach tiger beetles found on the western shore of the Chesapeake Bay in Virginia (Knisley and Hill 1998). While habitat in the action area will be impaired by this project for approximately 2 years, the habitat will recover and be available for recolonization in future years. The Service does not anticipate that this project will impair the likelihood of recovery or survival of the species.

Interrelated and Interdependent Actions - As defined in 50 CFR § 402.02, interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. It has been determined that there are no interrelated or interdependent actions associated with this project.

Indirect Effects - Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR § 402.02). Dredged material placement resulting from this project will have adverse impacts on the tiger beetle prey base on Winter Harbor Beach for approximately two years following project completion.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The action area for this project is currently held by one landowner, who allows minimal activity on the Winter Harbor beach. However, if and when the property is sold, subdivision of the land may occur. This would likely result in increased human activity on the beach, including foot traffic and other recreational use, as well as construction of shoreline stabilization structures such as groins, bulkheads, and/or rip-rap. These activities would adversely affect tiger beetles directly through death or injury and temporary and permanent habitat loss. Such activities could seriously threaten the tiger beetle population on Winter Harbor beach at some time in the future.

Future federal dredging and placement of dredged material on the beach at Winter Harbor will be

addressed by the Corps and Service pursuant to section 7 of the ESA.

CONCLUSION

After reviewing the status of the northeastern beach tiger beetle, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the placement of dredged material on Winter Harbor Beach and removal of the sand spit is not likely to jeopardize the continued existence of the northeastern beach tiger beetle. No critical habitat has been designated for this species, therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the Corps so that they become binding conditions of any federal project or permit, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require any applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to any permit, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement.

AMOUNT OR EXTENT OF TAKE

The Service anticipates that incidental take of larval northeastern beach tiger beetles will occur during dredged material placement and beach removal on Winter Harbor Beach, in the form of kill and harm.

It is anticipated that most or all larval beetles will be killed within the 4500-foot long beach where the dredged material will be placed. An unquantified number of larval beetles are anticipated to be killed or harmed in the 2800-foot section of beach to the south of the dredged material placement, due to the movement of dredged material onto beetle habitat. The Service also anticipates that most or all larval beetles will be killed during the removal of the sand spit at the tip of the beach adjacent to the Winter Harbor channel. Harm, in the form of significant habitat alteration, is expected along the entire 4500-foot long beach. This habitat alteration, which will affect both the beetle and its prey base, is anticipated to last up to two years. After this time, the beach is expected to regain its natural slope, grain size, and food base, and should be recolonized by adult and juvenile beetles.

The exact number of larval beetles taken by this project is difficult to quantify because the population density of the beetles within the dredged material placement area has not been determined and any larval beetles that are killed during project construction would be difficult to observe or locate due to their small body size and tendency to remain below the substrate surface. However, the level of take of this species can be anticipated by the areal extent of the habitat affected. This incidental take statement anticipates the taking of larval northeastern beach tiger beetles on that portion of the Winter Harbor Beach measuring approximately 6.5 acres (7,300 feet long by 39 feet wide) in the upper intertidal to high drift zone of the beach, and on the sand spit at the Winter Harbor channel entrance, measuring approximately 1.61 acres.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the northeastern beach tiger beetle:

- o Construction activities must be conducted when adult beetles are not present.
- o Human activity, materials, and equipment on the beach must be minimized to reduce the impact to larval tiger beetles.
- o The depth of dredged material placed on the Winter Harbor beach must be minimized to reduce the impact to larval tiger beetles.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following

terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. Pursuant to 50 CFR 402.14(i)(3), in order to monitor the impacts of incidental take, the federal agency or any applicant must report the impact of the action on the species to the Service. To meet this requirement, tiger beetle inventories (adult and larval) must be conducted, along with assessment of beach characteristics and the prey base, within the action area. A pre-deposition beetle survey shall be performed by a Service-approved surveyor (see attached list) to determine the exact limits of the area inhabited by larval northeastern beach tiger beetles. This survey shall be completed by October 21, 1999 if the project is to be constructed during the fall/winter of 1999-2000.

Thereafter, two inventories shall be conducted per year for each of the five years after placement of dredged material. The inventories will assess use of the project site by adults and larvae. The inventories shall be conducted by an individual or individuals proficient in the identification, research, and biology of northeastern beach tiger beetles (see attached list). Initial design of the monitoring plan must be approved by the Service and must include the parameters listed below. Adult tiger beetles will be inventoried on warm, sunny days between July 1 and July 25. The total number of adults observed on the beach will be recorded. Larval inventories shall be conducted between October 10 and 30 during low tide on cool and/or cloudy days. The number of larval burrows present within 2 m wide transects that extend from the edge of the water at the time of the survey to the back of the beach will be recorded. Transects will be separated by 50 to 100 m and the mean number of burrows per transect will be calculated. An attempt to identify instar stage of larva shall be made. The inventories shall be conducted in sufficient detail to assess the value of the beach habitat to the tiger beetle population and shall include detailed descriptions of the beach width and profile at set intervals along the entire length of shoreline. The Corps will submit to the Service a report documenting the surveyor and dates, methods, and results of the inventories and beach measurements, within 30 days following completion of the second inventory each year. Capture and/or collection of beetles is not authorized under this requirement of the incidental take statement, except as permitted by appropriate federal and state regulatory agencies.

Monitoring of the recovery of the tiger beetle's food source shall be conducted within the action area during the summer/fall of 1999 (if the project is constructed during the fall/winter of 1999-2000) and in 2000 and 2001. Monitoring must be conducted by someone proficient in the identification/classification of beach invertebrates. Initial design of the study plan must be submitted to the Service for approval prior to data collection. Monitoring within the action area, and in the control north of the action area, shall be conducted twice during the summer in July, and 4 times during the fall (September 20-October 30) each year, prior to dredging and during the 2 years following dredged material placement. The survey method shall involve a visual search and count of all prey organisms within two-meter wide transects across the beach

width during late afternoon and at dusk. These surveys will be conducted at 50-100 meter intervals within and 600 meters north and south of the dredge material deposition area. A second method will involve placement of a series of cup pitfall traps adjacent to each transect and checked after 24 hours to obtain additional data on beach organisms. The location of the transects will allow for an appropriate comparison of numbers of prey items within the action area with other adjacent locations to the north, beyond the area of impact.

2. Dredged material shall be placed on Winter Harbor Beach only during December 1 through March 15 of any year.
3. Dredged material shall be placed no deeper than 1 to 1.5 feet in the upper end of the intertidal zone to the back beach.
4. Use of heavy equipment on the beach is prohibited. Other vehicular traffic shall be allowed on the beach only when absolutely necessary.
5. Human activity on the beach during construction shall be minimized.
6. No refueling of equipment or vehicles shall occur on the beach.
7. Care must be taken in handling any dead specimens of proposed or listed species that are found in the project area to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, notify the Service at the address provided.
8. The Corps is required to notify the Service before initiation of construction and upon completion of the project at the address given below. All additional information to be sent to the Service should be sent to the following address:

Virginia Field Office
U.S. Fish and Wildlife Service

6669 Short Lane
Gloucester, VA 23061
Phone (804) 693-6694
Fax (804) 693-9032

IV. REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. Please contact William Hester of this office at (804) 693-6694, extension 134, if you require additional information.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

REFERENCES

Knisley, C.B. 1997. Habitat evaluation for dredge spoil deposition and survey for the northeastern beach tiger beetle (*Cicindela dorsalis*) at Winter Harbor, Mathews County, VA. Report to U.S. Army Corps of Engineers, Norfolk, Va.

_____ and J.M. Hill. 1998. Distribution and abundance of *Cicindela dorsalis dorsalis*, the northeastern beach tiger beetle, along the western shoreline of the Chesapeake Bay in Virginia. Report to the U.S. Fish and Wildlife Service, Gloucester, Va.

Powell, Steve. 1999. Personal communication. U.S. Army Corps of Engineers, Waterways and Ports Branch, Norfolk, Virginia.

U.S. Fish and Wildlife Service. 1994. Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis* Say) Recovery Plan. Hadley, MA.

NORTHEASTERN BEACH TIGER BEETLE
(*Cicindela dorsalis dorsalis*)
SURVEY CONTACTS

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Steve Roble
Virginia Division of Natural Heritage
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Richmond, VA 23219
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Surveys for Adult Beetles

Dr. Joella C. Killian
Department of Biological Sciences
Mary Washington College
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(540) 654-1418

Inclusion of names on this list does not constitute endorsement by the U.S Fish and Wildlife Service or any other U.S. Government agency.

March 31, 1998

bcc: GARD-South, Region 5
ARD-ES, Region 5
Endangered Species Coordinator, Region 5
Endangered Species Biologist, CBFO
Law Enforcement, Yorktown
Law Enforcement, Richmond
 (Attn: Senior Resident Agent)
DNH, Richmond, VA
 (Attn: Tom Smith)
VDACS, Richmond, VA
 (Attn: John Tate)
Barry Knisley, Randolph-Macon College, Department of Biology, Ashland, VA 23005
New Jersey Field Office, Pleasantville, NJ
New England Field Office, Concord, NH
Long Island Field Office, Islip, NY

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