



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Ecological Services  
6669 Short Lane  
Gloucester, VA 23061

May 18, 2005

Colonel Yvonne J. Prettyman-Beck  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510-1096

Attn: Gerald D. Tracy  
Regulatory Branch

Re: Biological Opinion for S.H. Davis  
Trust #1, Permit Application #05-  
V0029, Northampton County,  
Virginia

Dear Colonel Prettyman-Beck:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the above referenced proposed breakwater project located in Northampton County, Virginia and its effects on the northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*), federally listed threatened. This biological opinion is submitted in accordance with Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Your March 15, 2005 request for formal consultation was received on March 23, 2005.

This biological opinion is based on information provided in the March 15, 2005 biological assessment, 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

- 03/23/05      The Service received the Corps' request to initiate formal consultation.
- 03/28/05      Letter from Service to the Corps stating that a biological opinion would be provided to the Corps by August 5, 2005.
- 04/19/05      The Service conducted a site visit.

## II. BIOLOGICAL OPINION

### DESCRIPTION OF PROPOSED ACTION

This project is located north of Kiptopeake State Park in an area known as Butler's Bluff in Northampton County, Virginia (Figure 1). The applicant's shoreline is an approximately 1,580-foot long sandy beach with an average width of 40 feet. The upland bank is a cliff zone approximately 45 feet high, and well covered in vegetation. The slope of this beach section is relatively flat, and indications of high water events reaching the base of the cliff are present. To the south of the proposed project site are bulkheads, groins, and natural beach areas. The applicant proposes to construct three 210 foot long "V-shaped" breakwaters having a bottom width of 31 feet and a top width of 8 feet. They will extend 6 feet above mean low water (MLW) and 3.3 feet above mean high water (MHW) (Figure 2 and 3). The breakwaters will cover 18,135 square feet of subtidal substrate. No sand nourishment has been proposed.

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 that the action area for this project is a 30 foot wide strip of the beach between MLW and 10 feet above MHW for the total length of the property (1,580 linear feet), covering 47,400 square feet. Information available from the Virginia Institute of Marine Science's webpage indicates that the footprints of the proposed breakwaters will not impact known submerged aquatic vegetation beds (VIMS 2003).

### STATUS OF THE SPECIES

Please refer to the Status of Species provided in the Service's March 31, 2004, biological opinion for Project No. 03-V1185 (Baymark Construction Corporation's Shoreline Stabilization, Northampton County, Virginia). That information remains pertinent to this biological opinion.

### ENVIRONMENTAL BASELINE

Status of the Species Within the Action Area - In 2004, Dr. Barry Knisley documented 45 adult beetles for the 4,265 foot long beach he refers to as Butler Bluff (Knisley 2004). In 2001, Knisley found 30 adult beetles, and in 1999, he found 245 (Knisley 2001, Knisley and Hill 1999). It is unclear why this site does not support a larger population, given the geomorphologic features of this beach. The shallow slope may be responsible for the low beetle numbers, but further analysis is necessary to determine a cause. Even with low numbers, this site continues to support a viable population.

Factors Affecting Species Habitat Within the Action Area - Beach erosion and modification, from natural and anthropogenic sources, affects the habitat at the project site. The beach north and south of the property is consistently the same width and condition of the project site. The project site is a natural beach area, as is the beach to the north of the site. To the south the beach is modified with groins and bulkheads. Sea level rise in the mouth of the Chesapeake Bay,

currently 0.16 inch/year and higher than the worldwide average, continues as the climate warms and the Mid-Atlantic coast subsides following the disappearance of the massive glacier from the North-Atlantic coast thousands of years ago (USGS 1998). As shoreline areas are hardened by bulkheads and revetments, there will be less beach habitat for the tiger beetle.

### EFFECTS OF THE ACTION

Direct Effects - Direct impacts to the tiger beetle will result from the crushing of adult beetles, and subsequent injury or death, during construction from use/stockpiling of equipment and materials on the beach and foot traffic within the construction area. Construction will also result in temporary loss of habitat for adults through disruption of their daily activity patterns (*i.e.*, foraging, mating, basking, egg-laying). Larval tiger beetles may be directly affected through crushing, dislodging, and entombment, resulting in death or injury, during construction by use/stockpiling of equipment, materials, and sand on the beach and heavy foot traffic within the construction area. Larval beetles may also be prevented from feeding during that time due to their sensitivity to vibrations, movements, and shadows, resulting in injury and potentially death. No habitat for adult and larval beetles will be permanently lost from the construction of the breakwaters.

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). Breakwaters of this design are used to decrease wave energy, creating a “tomboli” effect by trapping sand from sand transport, thereby stabilizing the beach. Such structures will generally cause a slow accretion of sand, allowing and larval beetles to adjust to the changes. During major storm events larger volumes of sand accretion could smother and eliminate localized individuals.

Future maintenance of the proposed shoreline stabilization structures may not require Corps’ authorization. These activities may result in injury or death to adult and larval tiger beetles through heavy foot traffic on beach areas, use/stockpiling of equipment, and stockpiling/ placement of materials. Maintenance activities may also result in temporary or permanent habitat loss. These activities may result in further impacts to the tiger beetle population at this site.

Interrelated and Interdependent Actions - An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. No activities interrelated to and interdependent with the proposed action are known at this time.

### 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 Service

believes that the subdivision development anticipated to occur subsequent to the installation of shoreline stabilization structures will cause an increase in human recreational use, which will potentially harm or harass the tiger beetle and significantly reduce the quality of the remaining habitat.

## CONCLUSION

Regulations implementing Section 7(a)(2) of the ESA (50 CFR 402) require the Service to formulate its biological opinion as to whether a Federal action that is the subject of consultation, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or the adverse modification of critical habitat. Jeopardize the continued existence of is defined by this regulation as to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Destruction or adverse modification of critical habitat is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.

The northeastern beach tiger beetle's range runs from Cape Cod, Massachusetts to the mouth of the Chesapeake Bay, Virginia. Almost all extant tiger beetle sites occur in the Chesapeake Bay. In 2003, there were 807 beetles at Martha's Vineyard, Massachusetts, but the population at Westport appears to have been extirpated (S. vonOettingen, pers. comm. 2004). The one extant site in New Jersey is a reintroduction, and numbers have dropped to 43 in 2003 (A. Scherer, pers. comm. 2004). Therefore, the tiger beetle populations in the Chesapeake Bay are critical to the survival of this species.

Since 1994, this is the 62<sup>nd</sup> non-jeopardy biological opinion anticipating take of northeastern beach tiger beetles that has been completed on the effects of shoreline stabilization activities in Virginia. This alteration of tiger beetle habitat shows no sign of slowing down. Furthermore, unpermitted activities may be contributing to the reduction of tiger beetle habitat in Virginia as there appear to be more groins and other structures than have been permitted (Knisley, pers. comm. 2004).

The 62 biological opinions have anticipated 9,801 linear feet of shoreline hardening; 150 groins (permanently covering 7,095 square feet of habitat); 12 piers; and several projects involving breakwaters, beach nourishment, concentrated human use, and unusually large piers and groins. In addition to permanent take of tiger beetle habitat, most of the projects have involved temporary take of individual beetles, sometimes at significant levels. For example, beach nourishment projects have large short-term impacts but may have small long-term impacts.

The impacts of the proposed project were evaluated within the context of the following: the large amount of remaining suitable habitat, the terms and conditions provided in the biological

opinions that reduce the amount of take, and past and current comprehensive surveys in Virginia. Time-of-year restrictions have largely been successful in reducing impacts to adults, allowing them to recolonize areas during the next breeding season. The comprehensive surveys have indicated a fairly stable population in Virginia overall, though some populations are experiencing major population fluctuations. These fluctuations may be the result of major storm events, but there may also be impacts related to habitat lost due to shoreline stabilization activities.

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 construction of the project, as proposed, 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 of 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 permit issued to the applicant, 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 the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of Section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or applicant 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 incidental take of the northeastern beach tiger beetle will be difficult to quantify and detect because any beetles (adult or larvae) that are killed during project

construction, stockpiling of equipment and materials, and habitat loss will be difficult to observe or locate due to their coloring, small body size, and tendency for larvae to remain beneath the surface. However, the level of take of this species can be anticipated by areal extent of the habitat affected. The Service believes that the project as proposed will have no permanent removal of habitat. Construction activities, including stockpiling of materials and equipment, within this area will result in habitat alteration, temporary habitat loss, and death of adult and larval tiger beetles during the construction year. Potentially the entire action area above MLW (47,400 square feet) will be temporally impacted by these disturbances.

#### 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 adult and larval tiger beetles.

#### TERMS AND CONDITIONS

To be exempt from the prohibitions of Section 9 of the ESA, the Corps and the applicant 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. Monitoring is not required for this project because the anticipated take is minimal.

1. No construction, earth-moving, or placement of sand, materials or equipment will occur on the beach between June 1 and September 15 of any year.
2. No maintenance of breakwaters between June 1 and September 15 of any year.
3. No ground disturbance or use of vehicles or heavy equipment will occur on the beach outside of the applicant's property boundaries.
4. No refueling of equipment or vehicles will occur on the beach.
5. No use of pesticides on the beach.
6. The applicant 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, Virginia 23061  
Phone (804) 693-6694  
Fax (804) 693-9032

The Service believes that individual tiger beetles within the action area (47,400 square feet) will be incidentally taken as a result of the proposed action. Due to the variability in numbers of adults and larvae from year to year, it is difficult to quantify incidental take; however, the Service anticipates a reduction in the numbers of larvae using the beach zone during the year of construction. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures. The Corps must immediately provide an explanation of the causes of the take, and review with the Service the need for possible modification of the reasonable and prudent measures and the terms and conditions.

#### IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service has no conservation recommendations for this project.

#### V. 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.

Colonel Prettyman-Beck

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The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. If you have any questions, please contact Mike Drummond of this office at (804) 693-6694, extension 114.

Sincerely,

Karen L. Mayne  
Supervisor  
Virginia Field Office

Enclosures

LITERATURE CITED

- Knisley, C.B. 2004. Personal communication. Randolph-Macon College, Ashland, VA.
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- Scherer, A. 2004. Personal communication. U.S. Fish and Wildlife Service, New Jersey Field Office, Pleasantville, NJ.
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- U.S. Geological Survey. 1998. Fact Sheet 102-98. Reston, Virginia.
- Von Oettingen, S. 2004. Personal communication. U.S. Fish and Wildlife Service, New England Field Office, Concord, NH.
- VIMS. 2005. Website information. Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA.

bcc: FWS, R5, ES, Hadley, MA (Glenn Smith)  
FWS, NJFO, Pleasantville, NJ (Annette Scherer)  
FWS, NEFO, Concord, NH (Susi von Oettingen)  
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(Michael Drummond: 5-18-05)

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