

Colonel Robert H. Reardon, Jr.  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510-1096

Attn: Gerry Tracy  
Regulatory Branch

Re: Barry and Joyce Marke, Permit  
Application No. 97-1966-30,  
Northampton County, Virginia

Dear Colonel Reardon:

The U.S. Fish and Wildlife Service has reviewed the Department of the Army permit application, 97-1966-30, submitted by Barry and Joyce Marke, to construct shoreline stabilization structures in Northampton County, Virginia. Your May 18, 1998 request for formal consultation on this permit application was received on May 22, 1998. This document represents the Service's biological opinion on the effect of that action 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.). A complete administrative record of this consultation is on file in this office.

### I. CONSULTATION HISTORY

- 01-09-98      The Service received a facsimile from the U.S. Army Corps of Engineers indicating that the proposed project would not require a Corps' permit.
- 02-27-98      The Service sent a letter to the applicant indicating that the northeastern beach tiger beetle had been documented at the proposed project site and no work should occur on the beach prior to coordination with the Service.
- 03-20-98      The Service visited the proposed project site with the Corps and the applicant. During the site visit the applicant revised the project to install groins.
- 05-22-98      The Service received the Corps' requests to initiate formal consultation.

### II. BIOLOGICAL OPINION

#### DESCRIPTION OF PROPOSED ACTION

The proposed project is located along the Chesapeake Bay in the Peaceful Beach Estates subdivision, lot 2 (Figure 1). The applicant proposes to construct 200 linear feet of bulkhead with backfill landward

of mean high water (MHW). The applicant also proposes to construct three 40-foot long low profile timber groins 100 feet apart, which will extend 40 feet channelward of the bulkhead and approximately 32 feet channelward of MHW (Figure 2). The stated purpose is shoreline protection, beach stabilization, and beach preservation. The bulkhead does not require a Corps' permit since it is located landward of MHW.

### RANGEWIDE STATUS OF THE SPECIES

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.

### ENVIRONMENTAL BASELINE

As defined in 50 CFR 402.02 "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas. 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 direct and indirect effects of the actions and activities resulting from the federal action must be considered in conjunction with the effects of other past and present federal, state, or private activities, and the cumulative effects of reasonably certain future state or private activities within the action area. The Service has determined that the action area for this project is the beach on lot 2 and 80 feet to the south from mean low water (MLW) to the toe of the eroding bank.

Description of the Action Area - Peaceful Beach Estates is one of several subdivisions in the Battle Point area. On August 25, 1994 the Corps issued a permit (93-9596-30) to the Peaceful Beach Estates Property Owners Association c/o William O'Leary. This site is to the north of Marke (lot 2) and includes lots 7 through 14. The previously constructed bulkhead and groins have resulted in approximately 60 feet of erosion of the natural shoreline to the south. No work is proposed for lots 3 through 6. To the south of Marke is lot 1, with a natural shoreline. The proposed project site consists of 200 linear feet of beach, a 5 to 6 foot high upland bank, an 8-foot wide beach between the toe of the upland bank and MHW, and a 25-foot wide intertidal zone.

Status of the Species in the Action Area - The proposed project site is located at the Peaceful Shores tiger beetle site, which has not been determined by the Service to be necessary for the recovery/survival and delisting of the tiger beetle. In 1989, adult northeastern beach tiger beetles were documented at this site (Buhlmann and Pague 1992). In 1993, the Peaceful Shores site had larval beetle densities of over 20 per transect which "is considered high for this species and thus indicate very favorable habitat" (Knisley 1993). In 1994, the beetle survey results indicated that the proposed project area "is an excellent *C. dorsalis* larval and apparently adult habitat" (Knisley 1994). In 1995, a few larvae and slightly more than 100 adult beetles were present at the proposed project site (Knisley 1995). Knisley (1995) found that the numbers of adults and larvae in 1995 were considerably lower than in 1994, he

attributed that mainly to the “significant erosion and deterioration of habitat on the beach south of the bulkhead/groins” (Knisley 1995). In 1996, larval and adult numbers were approximately the same as in 1995, with a continuation of beach erosion (Knisley 1996). In 1997, adults and larvae were documented at the proposed project site, “this section [of beach] has experienced serious erosion since the groins and bulkhead were put in place and the shoreline is now recessed about 15 meters back from the shoreline level at the bulkhead” (Knisley 1997).

Northeastern Beach Tiger Beetle Data for Peaceful Shores Lot 2

Year	No. Adult Beetles	No. Larval Beetles	Beach Width (m)
1993	-- <sup>1</sup>	0	3.5
1994	--	9	1.0
1995	--	4	0.2
1996	--	0	2.5
1997	13	7	2.5

<sup>1</sup>Adult beetles were documented; however, they were counted in  $\geq 20$  m stretches of beach, so an exact number is not available for the proposed project site.

## 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/placement/stockpiling of equipment and materials on the beach and foot traffic within the construction area. Construction will result in loss of habitat for adults through disruption of their daily activity patterns (*i.e.*, foraging, mating, basking, egg-laying). Larval tiger beetles will be directly affected through crushing, dislodging, and entombment, resulting in death or injury, during construction by use/placement/stockpiling of equipment and materials on the beach and heavy foot traffic within the construction area. 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 permanently lost within the footprint of the bulkhead/backfill and the groins (between MLW and the bulkhead).

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). The construction of the bulkhead immediately landward of MHW will cut off the existing sand supply to the beach now occurring from erosion of the upland bank. This will cause an increase in reflected wave energy off of the bulkhead and could cause accelerated erosion of the beach. The groins are designed to capture sand from longshore movement. Net sand transport is to the south. Each groin will trap sand on its north side, while starving sand on its south side, alternately building/eroding beach. There will be

seasonal and yearly differences in amounts and distribution of sand between the groins. The southernmost groin will result in loss of sand affecting approximately 80 feet (two times the length of the groin) to the south. Because erosion is likely to occur to the south of the proposed project, it is reasonable to assume that at some point in the future the landowners to the south will want shoreline stabilization structures. It is also likely that due to the previous and on-going erosion at lots 3 - 6, shoreline stabilization structures will be proposed for these sites in the future. This will result in further degradation of tiger beetle habitat and a subsequent population decline.

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. The Service is not aware of any interrelated or interdependent actions.

Cumulative Effects - Cumulative effects include the effects of future state, 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. Construction/maintenance of shoreline stabilization structures (*e.g.*, riprap) landward of MHW may occur within the action area in the future and such activities would not require Corps' authorization. This type of activity would adversely affect tiger beetles directly through death or injury during pre-construction and construction activities and temporary and permanent habitat loss.

## CONCLUSION

After reviewing the current status of northeastern beach tiger beetle throughout its range and in the action area, the environmental baseline for the action area, the effects of the proposed bulkhead and groins, and the cumulative effects, it is the Service's biological opinion that the issuance of a DOA permit for this 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

Sections 4(d) and 9 of the ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined 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 as 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 any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise

lawful activity conducted by the federal agency or applicant. 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 a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

#### AMOUNT OR EXTENT OF TAKE

The Service anticipates that 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. This incidental take statement anticipates the taking of northeastern beach tiger beetles between the landward edge of the beach and MLW on the applicant's property and 80 feet to the south, a total area of approximately 9,240 square feet. However, most of the impacts are expected to occur between MHW and MLW where there will be a loss of habitat within 990 square feet along the groin alignments resulting from construction activities, stockpiling of materials and equipment, and temporary and permanent (198 square feet within the footprint of the groins) habitat loss within a 10-foot wide construction area for each groin.

#### REASONABLE AND PRUDENT MEASURES

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any permit issued to the applicant in order 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 require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. The Service considers the following reasonable and prudent measures to be 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

In order 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. Monitoring is not required for this project because only a small number of northeastern beach tiger beetles are likely to be affected and this area is not considered necessary for recovery/survival and delisting of the species. These terms and conditions are nondiscretionary.

1. No construction, earth-moving, placement of materials or equipment, or maintenance of structures will occur on the beach between June 1 and September 15 of any year.
2. Materials will be transported to the beach only on an as-needed basis.
3. No ground disturbance or use of vehicles or heavy equipment will occur on the beach outside of lot 2.
4. No refueling of equipment or vehicles will occur on the beach.
5. No use of pesticides on the beach.
6. 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.
7. 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  
P.O. Box 99  
6669 Short Lane  
Gloucester, VA 23061  
Phone (804) 693-6694  
Fax (804) 693-9032

#### 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 and other recovery activities, or to develop information to benefit the species.

Due to the amount of shoreline stabilization/alteration taking place along the shoreline of the Chesapeake Bay, the Service recommends that mitigation for adverse impacts to and loss of northeastern beach tiger beetle habitat be undertaken. Since its listing in 1990, the Service has written biological opinions for 30 projects adversely impacting 13 tiger beetle sites in Virginia. As the Corps continues to issue permits for shoreline alteration, the amount of habitat available for the continued existence of this species is decreasing. For recovery and delisting of the tiger beetle within the Chesapeake Bay of Maryland and Virginia, at least 26 populations must be permanently protected at extant sites (U.S. Fish and Wildlife Service 1994). In Virginia, 4 large (> 500 adults) populations and 4 other populations must be protected on the Eastern Shore; 3 large populations and 3 others must be protected on the western shore of the Chesapeake Bay north of the Rappahannock River; and 3 large populations and 3 others must be protected on the western shore of the Bay south of the Rappahannock River. Presently, there 6 large and 6 other (100 to 499 adults) populations on the Eastern Shore; 7 large and 2 others on the western shore north of the Rappahannock; and 4 large and 5 others on the western shore south of the Rappahannock.

The Service is concerned that in the near future, projects proposed in areas critical to the continued existence of the tiger beetle will result in jeopardy to the species. Therefore, the Service recommends that the Corps require mitigation for this project. Alteration of tiger beetle sites necessary for recovery/survival and delisting that support more than 500 adult beetles should be mitigated at a ratio of 3:1. Areas necessary for recovery/survival and delisting that support less than 500 adult beetles should be mitigated at a ratio of 2:1. Areas not necessary for recovery/survival and delisting, should be mitigated at a ratio of 1:1. As the Service receives additional information on the location and status of tiger beetles, the relative importance of a given tiger beetle site may change.

Because the proposed project is located in an area not deemed necessary for recovery by the Service, compensation of 1:1 is recommended. That is, 200 linear feet of shoreline with an appropriate upland buffer should be permanently protected via a permanent conservation easement. The Service will be glad to work with the Corps and the applicant to locate and preserve such an area.

In order for the Service to be kept informed of actions that minimize or avoid adverse effects or benefit listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations by the Corps.

#### V. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the Corps' 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 and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the 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

Colonel Robert H. Reardon, Jr.

8

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.

If this opinion does not contain national security or confidential business information, the Service will provide copies to the appropriate state natural resource agencies ten business days after the date of this opinion.

The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. Please contact Cindy Schulz of this office at (804) 693-6694, extension 127, if you require additional information.

Sincerely,

Karen L. Mayne  
Supervisor  
Virginia Field Office

Enclosures

## LITERATURE CITED

- Buhlmann, K.A. and C.A. Pague. 1992. Natural heritage inventory of *Cicindela dorsalis dorsalis* (northeastern beach tiger beetle). Natural Heritage Technical Report #92-16. Department of Conservation and Recreation, Division of Natural Heritage. Richmond, VA. 41 pp.
- Knisley, C.B. 1993. Survey for the northeastern beach tiger beetle, *Cicindela dorsalis*, at Peaceful Beach Estates, W. O'Leary property. Report to U.S. Fish and Wildlife Service, White Marsh, VA.
- Knisley, C.B. 1994. Adult and larval inventory and habitat study of the northeastern beach tiger beetle, *Cicindela dorsalis*, at Peaceful Beach Estates, Northampton County, Virginia. Report to U.S. Fish and Wildlife Service, White Marsh, VA.
- Knisley, C.B. 1995. Adult and larval inventory and habitat study of the northeastern beach tiger beetle, *Cicindela d. dorsalis*, at Peaceful Beach Estates (O'Leary site) Northampton County, Virginia. Report to U.S. Fish and Wildlife Service, White Marsh, VA.
- Knisley, C.B. 1996. Adult and larval inventory and habitat study of the northeastern beach tiger beetle, *Cicindela d. dorsalis*, at Peaceful Beach Estates (O'Leary site) Northampton County, Virginia. Report to U.S. Fish and Wildlife Service, White Marsh, VA.
- Knisley, C.B. 1997. Monitoring of the northeastern beach tiger beetle, *Cicindela d. dorsalis*, at Peaceful Beach Estates (O'Leary site) Northampton County, Virginia. Report to U.S. Fish and Wildlife Service, Gloucester, VA.
- 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

Dr. Barry Knisley  
Department of Biology  
Randolph-Macon College  
Ashland, VA 23005  
(804) 798-8372 ext. 254

Jim Hill  
Rt. 1, Box 2746-A  
Reedville, VA 22539  
(804) 453-3315

Surveys for Adult Beetles

Steve Roble  
Virginia Division of Natural Heritage  
217 Governor Street, 3rd Floor  
Richmond, VA 23219  
(804) 786-7951

Dr. Joella C. Killian  
Department of Biological Sciences  
Mary Washington College  
1301 College Avenue  
Fredericksburg, VA 22401-5358  
(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

