

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

Attn: William N. McGlaun
Regulatory Branch

Re: Anthon C. Johnson, Permit Application
No. 97-1843-51, Northumberland
County, Virginia

Dear Colonel Reardon:

The U.S. Fish and Wildlife Service has reviewed the Department of the Army permit application 97-1843-51 for Anthon Johnson, to construct two timber groins in Northumberland County, Virginia. Your January 7, 1998 request for formal consultation was received on January 8, 1998. This document represents the Service's biological opinion on the effects 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

- 01-08-98 The Service received the U.S. Army Corps of Engineers' request to initiate formal consultation.
- 02-12-98 The Service participated in a site visit with the Corps and the agent.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The applicant proposes to construct two 72-foot long, timber groins each with 10-foot long "T" on his property on the Chesapeake Bay in Northumberland County, Virginia (Figures 1 - 3). The "T" is perpendicularly located on the landward end of each groin. The groins will be 144 feet apart. Neither groin will exceed the length of 64 feet channelward of mean high water (MHW). A pile driver and a high pressure water pumping process will be used to install the structures. The groins are expected to accrete sand and reduce the rapid erosion rate. This should decrease the plane of the beach slope and increase the horizontal distance of the intertidal area. The equipment and construction activity will require an approximate width of 10 feet at each proposed groin location.

RANGEWIDE STATUS OF THE SPECIES

This information on the northeastern beach tiger beetle was provided to the Corps in a biological opinion dated April 29, 1997 for permit applications 96-1763-30 and 96-1613-30.

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, as well as 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 to be the applicant's property (approximate length 392 feet) between mean low water (MLW) and the landward edge of the beach.

Status of the Species in the Action Area - This property is south of the confluence of the Little Wicomico River and the Chesapeake Bay in a community known as Bay Pointe Subdivision in Northumberland County. This community is located off County Route 802 and has been subdivided into lots for single-family, residential-type development. No structure has been placed on this lot. The applicant's shoreline has a sandy beach that varies in width from 20 to 40 feet and is approximately 392 feet long with an east-northeast fetch on the Chesapeake Bay. The site has a high-energy, dynamic beach. Multiple low profile groins have been built up and down the shoreline. The lot north of the applicant's property has a bulkhead and groins. On three adjacent landowners south of the applicant's property, biological opinions have been issued for: 2 groins (May 1996), 3 groins, only 2 were built (November 1995), and 1 groin (December 1996).

The jetty at the entrance to the Little Wicomico River is a nodal point for sand transport, resulting in accretion on both sides of the jetty; areas above and below this nodal point are eroding. South of the channel, the accretion rate is 1 to 2 feet/year. North of the channel, accretion is occurring, but is not measurable. Sand movement north of the jetty is north to south; south of the jetty, sand movement is south to north. The Corps (Baltimore District) deposits dredge material at the northern portion of Smith Point. In the fall of 1994, the Corps began a sand pumping project from the mouth of the Little Wicomico River inlet to the north end of the beach.

The proposed project is located within the Smith Point South (SPS) tiger beetle population; north of the Little Wicomico River is the Smith Point North (SPN) tiger beetle population. During the summer of 1994, Hill and Knisley (1994) conducted a metapopulation study of the tiger beetle. They captured 3,470 adults at SPN and recaptured 42.2%. At SPS, they captured 1,981 adults and recaptured

47.0%. Overall, 35 beetles moved from SPN to SPS (distance between SPN and SPS is 1.5 km). They concluded that SPS and SPN are large, reproductively-viable sites and stated that large sites such as these seem to serve as recruitment areas as evidenced in this and other studies where large numbers of larvae have been observed. Roble (1994) conducted beetle surveys at SPS for both adult (1,820) and larval (100 total; 7 first instar; 74 second instar; 19 third instar) beetles. He concluded that protection of areas with adult beetle counts greater than 1,000 will be important to the long-term conservation of *C. d. dorsalis* in the Chesapeake Bay. He stated that "Further research on the impacts of beach stabilization structures on larval and adult tiger beetles, and correspondingly appropriate regulatory activities, are perhaps the two most important steps that can be taken to protect these sites."

Knisley (1997) also conducted research at Smith Point. He found that autumn beach widths were narrower than those recorded during the summer, but provided a better indication of the site's ability to support larvae during the autumn and through winter when erosional effects are probably greatest. At SPN, a large population of adults and larvae were documented along this 1400 m long natural shoreline: 3300 in 1994, 1150 in 1995, 3566 in 1996. High adult densities occurred along most of SPN, except for the northern 100 m and the southern 200 m. At SPN, the mean larval density per transect was 19 in 1994, 3 in 1995 and 4 in 1996. During night work in September of 1994 and 1995, many transects had over 25 larvae. Significant erosion and narrowing occurred in 1995 and 1996 at SPN.

At SPS, Knisley (1997) found that the 1,100 m of natural beach at the northern half of SPS supported over 2000 adults in 1994, but only 300 in 1996. Larval surveys at this site yielded 58 in 1994, 21 in 1995, and 12 in 1996. The southern half of SPS has a natural section of beach at the north end and groins and bulkheads in the southern portion of this site. The section of natural beach had a mean width of 5.9 m and an adult density of 46/100 m and a mean larval density of 2.8 in 1996. The groin section had an adult density of 62/100 m and a mean larval density of 8.8 per transect. Most of the larvae were found in a very wide beach section where groins were recently installed.

Effects of the Action - Direct impacts to the tiger beetle will result in the crushing of adult beetles and subsequent injury or death during construction by use/placement/stockpiling of equipment and materials on the beach and associated foot traffic. Construction will also result in a temporary 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 material on the beach and heavy foot traffic. Existing habitat, for both larval and adult beetles, will be permanently lost within the footprint of the groins between MLW and the landward edge of the beach.

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 proposed groins are designed to capture sand from longshore movement. Net sand transport is to the north. Each groin will trap sand on its south side, while starving sand to the north, alternately building/eroding beach. There will be seasonal

and yearly differences in amounts and distribution of sand between the groins. Thus, the applicant's beach will be altered in its width, profile, and distribution and amount of sand. The exact extent of impacts to the tiger beetle population following completion of the project cannot be quantified. Seasonal and yearly variation in amounts and distribution of sand between the groins will continually alter (and occasionally totally remove) the habitat and expose and displace larval tiger beetles. Because this shoreline has many existing groins that have reduced the density of larval beetles, the addition of the proposed groins is not likely to have a noticeable effect on the beach profile nor significantly alter long-term adult and larval tiger beetle densities.

Future maintenance of the shoreline stabilization structures may result in additional indirect affects. Maintenance may result in injury or death to adult and larval tiger beetles through heavy foot traffic on beach areas, use/stockpiling of heavy equipment, and stockpiling/placement of materials. Maintenance activities may also result in temporary habitat loss.

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 of shoreline stabilization structures (*e.g.*, riprap, bulkhead) 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. Any surviving larvae would likely die during winter storms and erosion because their ability to migrate landward would be restricted. Additional future activities that may affect the northeastern beach tiger beetle include construction of shoreline stabilization structures (channelward of MHW) and use of dredge material for beach nourishment. These activities will require a permit from the Corps and will be reviewed when a federal permit is applied for.

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 groin construction, 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 incidental take of the northeastern beach tiger beetle will be difficult to detect because the exact population density of the beetle within the project area has not been determined and any beetles (adult or larvae) that are killed during project construction and associated activities 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 the areal extent of the potential habitat affected. This incidental take statement anticipates the taking of adult and larval northeastern beach tiger beetles between the landward edge of the beach and MLW on the applicant's property, a total area of approximately 17,640 square feet. However, most of the impacts are expected to occur within the 520 square feet along the groin alignments resulting from construction activities, stockpiling of materials and equipment, and temporary and permanent (104 square feet within the footprint of the groins) habitat loss between the landward edge of the beach and MLW 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 extensive shoreline alteration has already occurred and the anticipated take is minimal. 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 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
P.O. Box 99
6669 Short Lane
Gloucester, Virginia 23061
Phone (804) 693-6694
Fax (804) 693-9032

7. Care must be taken in handling any dead specimens of northeastern beach tiger beetle 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.

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.

The Service recommends that the Corps conduct before and after surveys to determine the impact of groins on adult and larval tiger beetles. Because most projects the Service reviews within the range of the northeastern beach tiger beetle include a bulkhead or riprap along with groins, this project represents a unique opportunity to examine the impact of groins. The Service will be pleased to work with the Corps in designing appropriate survey methodology and reporting requirements.

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 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 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 Kim Marbain of this office at (804) 693-6694, extension 126, if you require additional information.

Sincerely,

Colonel Robert H. Reardon, Jr.

8

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

LITERATURE CITED

- Hill, J.M. and C.B. Knisley. 1994. A metapopulations study of the threatened northeastern beach tiger beetle *Cicindela dorsalis dorsalis* in Northumberland County, Virginia, 1994. Report to the Virginia Department of Conservation and Recreation, Richmond, VA.
- Hill, J.M. and C.B. Knisley. 1995. Distribution and abundance of a biological indicator species, *Cicindela dorsalis dorsalis* in relation to shoreline structures and modifications.
- Knisley, C.B. 1990. A survey of the Cape Charles (Virginia) Accawmacke Plantation for the northeastern beach tiger beetle, and possible impact of the proposed development on this beetle. Final Report for Espey, Huston and Associates, Incorporated.
- Knisley, C.B. 1997. Distribution and abundance of the northeastern beach tiger beetle, *Cicindela dorsalis dorsalis*, in relation to shoreline modifications, in Virginia. Report to the Virginia Department of Agriculture and Consumer Services, Richmond, VA.

Roble, S.M. 1994. Population surveys for the northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*) at twenty selected sites in Virginia. Natural Heritage Technical Report 94-19. Virginia Department of Conservation and Recreation, Division of Natural Heritage. Richmond, VA.