United States Department of the Interior

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

August 31, 2006

Colonel Dionysios Anninos
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Adrian Jennings
Regulatory Branch

Re: Biological Opinion for John E. Burton, Permit Application #05-V2882, Northumberland County, Virginia

Dear Colonel Anninos:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the above referenced rip rap groins and revetment project located in Northumberland 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 April 11, 2006 fax with final project drawings and request for formal consultation was received on April 12, 2006.

The U.S. Army Corps of Engineers (Corps) is considering issuing a permit to John E. Burton (Applicant) for the construction of 16 low profile rip rap groins and 1,300 feet of rip rap revetment. This biological opinion is based on information provided in the Corps' January 12, 2006 letter, the January 10, 2006 site visit, the February 2, 2006 site meeting, emails, telephone conversations, and other sources of information. A complete administrative record of this consultation is on file in this office.

I. CONSULTATION HISTORY

01/10/06 The Service conducted a site visit.

1/12/06 The Service received the Corps' request to initiate formal consultation.

02/02/06 Second site visit to meet with the owner, all involved governmental representatives, and the contractor.

03/08/06 Letter from the Service to the Corps stating that a biological opinion would be provided to the Corps in 135 days from the receipt of the final design drawings.

04/12/06 The Service received final design drawings.

04/12/06 The Service notified the Corps by phone of the August 25, 2006 due date for completion of this biological opinion.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

This project is located on the Potomac River at Condit Pond in an area known as Mob Neck in Northumberland County, Virginia (Figure 1). The applicant's shoreline is an approximately 1,540-foot long sandy beach and varies in width. The upland bank is an eroded bank area, approximately 8 feet high with vegetation to the edge of the eroding bank. The slope of this beach section is relatively flat and maintains areas of exposed beach at high water events. To the north of the proposed project site are low profile rip rap groins and revetment fronted by what appears to be a relatively stable beach zone. The applicant proposes to construct 16 low profile rip rap groins (approximately 75 feet apart) connected to approximately 1,300 linear feet of rip rap revetment (Figures 2-9). At the eastern end of the project site is a stable dune system approximately 200 feet long), this area will not have a rip rap revetment placed but will be protected by two angled spurs of rip rap that are intended to protect this natural dune area from wave energy (Figure 4-5).

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 approximately a 25 foot wide strip of the beach between MLW and 5 feet above MHW for the total length of the property (1,540 linear feet), covering 38,500 square feet.

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 2005, 381 adult beetles were documented for the 1,800 foot long beach referred to as Condit Pond (Drummond 2005). In 2004, 410 adults

were documented (Knisley 2004a), and in 2001, 2,070 adults were observed (Knisley 2001). Even with the documented declined in adult numbers as a direct result of Hurricane Isabel in 2003, the 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 east of the property appears to be more stable and wider due to existing low profile rip rap groins. To the west the beach is in similar condition to the project site. 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/placement/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/placement/stockpiling of equipment, materials, 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. This project may result in the take of all larval beetles within the action area (38,500 square feet), due to the method of construction of the rip rap revetment, which will require that the beach be excavated to "toe in" the revetment to a depth of 3-feet below the MLW elevation. Even in the event of future colonization of this site by dispersing adults from the adjacent Vir-Mar beach, there still will be approximately 3,840 square feet of larval habitat lost permanently to the foot-print of the groins, and 960 square feet of adult habitat.

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). In addition to dissipating wave action, stone revetments reduce sand supply. Depending on sand input and transport, revetments may result in the loss of beach channelward of the structure. The groins are designed to capture sand from alongshore movement and will help maintain a beach at this site. It is the opinion of the Service that it is ultimately impossible to prevent stochastic impacts to this beach such as those that resulted from Hurricane Isabel in 2003.

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. In addition to natural forces, human use of the beach will have direct impact on the species through crushed larvae, compaction of sand, and interruption of feeding and breeding by the adult beetles. This project will result in increased shoreline hardening within an area that historically had high to moderate beetle numbers (Knisley and Hill 1998, Knisley 2001, Knisley 2004a, Drummond 2005). Each section of shoreline modified through these actions slowly decreases the available habitat for this species.

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, USFWS, pers. comm. 2004). The one extant site in New Jersey is a reintroduction, and numbers dropped to 43 in 2003 (A. Scherer, USFWS, pers. comm. 2004) and down to 6 in 2004 (Knisley, pers. Comm.. 2006). Therefore, the tiger beetle populations in the Chesapeake Bay are critical to the survival of this species.

Since 1994, this is the 64th 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. 2004b).

The 64 biological opinions have anticipated 11,141 linear feet of shoreline hardening; 166 groins (permanently covering 10,935 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 possibly result in the take of all larval beetles within the action area (38,500 square feet). The footprint of the structures will result in the permanent removal of 3,840 square feet of larval habitat, and 960 square feet of adult habitat due to the construction of the wide low profile groins. 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.

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:

- Construction activities must be conducted when adult beetles are not present.

- 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.

1. No construction, earth-moving, or placement of materials or equipment will occur on the beach between June 1 and September 15 of any year.

2. No placement and operation of heavy equipment on the beach area for the purpose of maintenance of the breakwaters or sand replenishment between June 1 and September 15 of any year

3. No refueling of equipment or vehicles will occur on the beach.3

4. No use of pesticides on the beach.

5. 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

6. Pursuant to 50 CFR 402.14(i)(3), in order to monitor the impacts of incidental take, the federal agency or the applicant must report the impact of the action on the species to the Service. To meet this requirement, adult tiger beetle inventories must be conducted along with assessments of beach characteristics. The impacts from the groins and revetment are restricted to the property covered by the application, thus the survey area shall cover the 1,540 feet of shoreline. Surveys shall be performed by a Service-approved surveyor. A list of pre-approved tiger beetle surveyors is enclosed. The applicant is not required to select someone from this list, but if someone else is selected, the proposed surveyor's qualifications must be sent to the Service for review at least 60 days prior to the survey. Surveys shall be conducted the first, third, fifth, and seventh years after completion of the project.

Adult tiger beetles shall be inventoried on warm, sunny days between July 1 and July 25. The total number of adults observed on the applicant's beach will be recorded. 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 the entire length of shoreline. The Corps or the applicant shall 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 adult 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.

As part of the monitoring, photographs shall be taken to document changes to the beach over time. Photographs, at least 4 x 6 inches in size, shall be taken from five different

fixed points in the action area. These photographs shall be included in the monitoring reports.

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 above.

The Service believes that it is possible for all tiger beetles within the action area (38,500 square feet) to 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.

Due to the amount of shoreline stabilization/alteration taking place along the shoreline of the Chesapeake Bay, the Service recommends that compensation for adverse impacts to and loss of northeastern beach tiger beetle habitat be undertaken. 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 area 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 (100 to 499 adults) 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 are 6 large (2 protected) and 6 other (3 protected) populations on the Eastern Shore; 9 large (2 protected) and 12 (1 protected)

others on the western shore north of the Rappahannock; and 6 large (2 protected) and 6 (1 protected) others on the western shore south of the Rappahannock. The Service will be glad to work with the Corps and the Applicant to locate and preserve an appropriate compensation site.

The Service requests notification of the implementation of any conservation recommendations to minimize or avoid adverse effects, or that benefit listed species or their habitat.

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.

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

Drummond, M.. 2005. Unpublished data. U.S. Fish and Wildlife Service, Virginia Field Office, Gloucester, VA.

Knisley, C.B. 2001. A survey of the northeastern beach tiger beetle (*Cicindela dorsalis dorsalis)* along the western shoreline of the Chesapeake Bay, 2001. Report to the U.S. Fish and Wildlife Service, Gloucester, VA.

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Knisley, C.B. 2004b. 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.

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.

bcc: FWS, R5, ES, Hadley, MA (Glenn Smith, Mike Thabault)
FWS, NJFO, Pleasantville, NJ (Annette Scherer)
FWS, NEFO, Concord, NH (Susi von Oettingen)
FWS, CBFO, Annapolis, MD (Mary Ratnaswamy)
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(Michael Drummond: 8-31-06)
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