

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

Attn: Mac McGlaun  
Regulatory Branch

Re: Luther E. Lambert, Permit Application  
No. 99-v1221, Northumberland  
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 permit application located in Northumberland 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 August 2, 1999 request for formal consultation was received on August 6, 1999. This biological opinion is based on information provided in the permit application, 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

- 07-13-99 The Service received the Corps' request to review the proposed project for impacts to federally proposed and listed species.
- 07-20-99 The Service sent the Corps a letter indicating that the northeastern beach tiger beetle had been documented at the project site.
- 08-06-99 The Service received the Corps' requests to initiate formal consultation.
- 08-20-99 The Service sent a letter to the Corps indicating that the request for formal consultation had been received and was complete.

### II. BIOLOGICAL OPINION

#### DESCRIPTION OF PROPOSED ACTION

The applicant owns shoreline property on the Chesapeake Bay in Northumberland County, Virginia (Figure 1). The applicant proposes to construct one 80-foot long low-profile timber groin extending 20

feet from the landward edge of the beach to mean high water (MHW) and 60 feet channelward of MHW. The project is proposed for lot 5 at the Tides on the Chesapeake development. As proposed, the groin will be placed 150 feet from the closest groin to the north and the closest groin to the south. The lot is 225 feet wide.

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 from mean low water (MLW) to the landward edge of the sandy beach on lot 5. No beach alteration is expected to result from this project since the adjacent lots are already stabilized.

### 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.

### ENVIRONMENTAL BASELINE

Status of the Species Within the Action Area - The proposed project site is located at the Smith Point South (SPS) tiger beetle site which has been determined by the Service to be necessary for the recovery/survival and delisting of the tiger beetle. 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 at SPS and SPN. They concluded that SPS and SPN are large, reproductively-viable tiger beetle 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. In 1994, the northern portion of SPS (includes the action area) supported a large adult beetle population (2,130), but larval numbers were low (58 larvae total; of 3.6 larvae/transect) (Knisley and Hill 1994). In 1996, the northern portion of SPS supported 300 adult beetles and 12 larval beetles ( of 0.75 larvae/transect) (Knisley 1997). In 1996, lots 6 through 9 had 9 larval and 110 adult beetles (Knisley 1997). REVIEW AND UPDATE BASED ON KNISLEY'S 1998 WESTERN SHORE SURVEY AND SURVEYS CONDUCTED BY ADJACENT LANDOWNERS (SEE RENZI FILE)

Factors Affecting Species Habitat Within the Action Area - This property is south of the confluence of the Little Wicomico River and the Chesapeake Bay. The area has been subdivided into lots approximately 1.5 acres in size for single-family, residential-type development. The width of the intertidal zone varies, but averages approximately 15 feet, as measured from MHW to MLW. The area has a high-energy, dynamic beach that has an easterly fetch to the Chesapeake Bay with an erosion rate of 6.1 feet per year. In 1996, the beach width in this section varied from approximately 26 feet to 49 feet wide (Knisley 1997). Due to several storms in early 1998, the beach has experienced rapid shoreline changes resulting in erosion of the existing beach and/or deposition of new sand,

resulting in beaches that are 0 to 40 feet wide.

North of lot 5, lots 6 through 9 have been stabilized with groins. On April 23, 1998 a biological opinion was issued to the Corps for impacts to the tiger beetle on lots 6 through 9 (John Strang permit number 98-0018, Jeffrey Gaffney permit number 97-2076, Robert Cruise permit number 97-2100, and Edward Kazenske permit number 97-2077, respectively). To the south of lot 5, the lots have shoreline stabilization structures including bulkheads, riprap, and groins. On July 9, 1996 a biological opinion was issued to the Corps for impacts to the tiger beetle on lots 2 through 4 (McEwan [a.k.a. T.N. Enterprises] permit number 95-1474, O'Connor permit number 95-1475, and Renzi permit number 95-1343, respectively).

### 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 groin (between MLW and the landward edge of the beach).

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.

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). Groins are designed to capture sand from longshore movement. Net sand transport is to the north. The groin will trap sand on its south side, while starving sand on its north side, alternately building/eroding beach. There will be seasonal and yearly differences in amounts and distribution of sand between the groins. Thus, a secondary impact of the groins will likely be a significant decrease in the number of tiger beetle larvae due to the smothering activities of (captured) sand transport and exposing activities of erosion. Knisley (1990) noted "my observation on the distribution of *C. dorsalis* larvae indicate they are most abundant in slowly accreting areas of beach, suggesting that the pattern of particle size distribution and layering of sand on beach is important. Consequently, significant disruptions of the beach could have a negative impact."

The natural beach will be altered in its width, profile, and distribution and amount of sand. Again, because the shoreline to the north and south of the action area has already been altered, it is likely that the action area has already been altered from its natural state. Seasonal and yearly variation in amount and distribution of sand to the north and south of the groin will continually displace adult tiger beetles and expose and displace larval tiger beetles. Because the groin will trap sand, some beach will exist with the action area, providing habitat for adult beetles during migration; thereby allowing genetic exchange to continue among the beetle population at SPS. Because net sand transport is to the south at SPN, the groins are not expected to affect the tiger beetle population at SPN.

This project will contribute to the extensive shoreline alteration that has already been permitted by the Corps at SPS and will add to the habitat degradation and decline the tiger beetle at SPS. The extent to which subsequent shoreline stabilization will occur (due to the proposed and recently permitted projects) is difficult to project without extensive studies and modeling because SPS is a dynamic beach with extensive on- and off-shore sandbars that contribute to sand accretion. However, if shoreline stabilization activities continue, SPS could be eliminated as a potential "large population" in the Geographic Recovery Area north of the Rappahannock River (U.S. Fish and Wildlife Service 1994), hampering recovery of the species.

Future maintenance of the proposed groin 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 heavy 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.

### 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. Construction of shoreline stabilization structures (*e.g.*, riprap) landward of mean high water 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. However, due to the existing beach stabilization structures, long-term impacts are expected to be minor.

### 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 shoreline stabilization activity, 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 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 grant or permit issued to the applicant, as appropriate, for the exemption in action 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

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, a total area of approximately xxx square feet. Between the landward edge of the beach and MLW there will be a loss of habitat within xxx square feet along the groin alignment resulting from construction activities, stockpiling of materials and equipment, and temporary and permanent (xxx square feet within the footprint of the groin) habitat loss within a 10-foot wide construction area for the groin. In 1996, 110 adult beetles and 1.5 larval beetles/transect were documented in the action area. Based on the research conducted by Knisley (1997), the Service anticipates a 38%?? reduction in adult beetles and a 79%?? reduction in larval beetles as a result of construction activity and habitat loss and alteration.

### 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 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, placement of materials or equipment, or maintenance of the groin 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 the applicant's property boundaries.
4. No refueling of equipment or vehicles will occur on the beach.
5. Pursuant to 50 CFR 402.14(i)(3), 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 on lot 5. One inventory must be conducted during the first fall after construction, with two inventories conducted per year for each of the four subsequent years. The inventories will assess use of the project site by adults and larvae. The inventories must 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. Inventories will be conducted on lots 6 through 9. The total number of adults observed on the beach will be recorded. Larval inventories will be conducted between October 10 through October 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 should be made. The inventories will be conducted in sufficient detail to assess the value of the beach habitat to the tiger beetle population and will include detailed descriptions of the beach width and profile at set intervals along the entire length of shoreline. For each of the five years, the permittee will submit a report to the Service documenting the surveyor and dates, methods, and results of the inventories and beach measurements, within 30 days following completion of the larval inventory. 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.

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  
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, 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 mitigation 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 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 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 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 that support more than 500 adult beetles should be mitigated at a ratio of 3:1. Areas that support less than 500 adult beetles should be mitigated at a ratio of 2:1. All other areas 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 deemed necessary for recovery by the Service, and has a large adult beetle population MAKE SURE THIS IS TRUE, mitigation of 3:1 is recommended. That is, 675 linear feet of shoreline with an appropriate upland buffer should be acquired and 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.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### 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

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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 Kim Marbain of this office at (804) 693-6694, extension 126.

Sincerely,

Karen L. Mayne  
Supervisor  
Virginia Field Office

Enclosures

LITERATURE CITED

(CSchulz:8/16/99)

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bcc: GARD-South, Region 5  
ARD-ES, Region 5  
Endangered Species Coordinator, Region 5  
Endangered Species Biologist, CBFO  
Law Enforcement, CITY NAME  
(Attn: )  
Law Enforcement, Richmond  
(Attn: Senior Resident Agent)  
FWS species coordinator (may not be in Region 5)  
Other FOs that write opinions on the species  
VDGIF, Richmond  
(Attn: Environmental Services)  
VDGIF, Non-Game Biologist for that Region of Virginia  
DNH, Richmond  
(Attn: Tom Smith)  
VDACS, Richmond  
(Attn: John Tate)