White Beach Tiger Beetle

Cicindela dorsalis media

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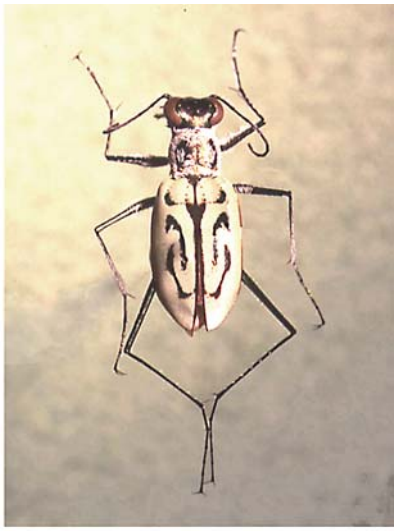

Cicindela dorsalis media
Photo by Jan Ciegler

DESCRIPTION

Taxonomy and Basic Description

For many years, tiger beetles were considered to be in a family by themselves, the Cicindelidae. Recent research has shown, however, that they are more correctly placed in the subfamily Cicindelinae in the Carabidae, the ground beetles. *Cicindela* is the largest genus in the subfamily, having more than one thousand species worldwide.

Cicindela dorsalis was named by Thomas Say in 1817 and *Cicindela media* by John LeConte in 1857; currently, these two are considered subspecies of the same species. *C. dorsalis media* occurs along the southeast coast of the United States, including South Carolina and *C. dorsalis dorsalis* occurs along the northeast coast. Two other subspecies, *C. dorsalis saulcyi* and *C. dorsalis venusta*, are found along the coasts of Florida, the Gulf of Mexico and Mexico (Boyd 1982).

The white beach tiger beetle ranges from 10.5 to 13.5 mm (0.41 to 0.53 inches) in length. Like all tiger beetles, its legs and antennae are long and slender and its jaws are large. The elytra (wing coverings) are white with narrow sinuous bronze markings; the head and pronotum are bronze. The pronotum and sides of the under surface are densely covered with white hairs. The sides of the elytra of males are nearly parallel whereas females are somewhat more broadly rounded. The pale coloration renders the beetle well camouflaged on the light sand where it lives.

Status

The northern white beach tiger beetle, *C. dorsalis dorsalis*, is on the federally threatened list because of extensive destruction of its habitat. This subspecies historically ranged from Massachusetts to the Chesapeake Bay and is now found only in the Chesapeake Bay area. Even there, the narrow beaches, 3 to 10 meters (9.8 to 32.8 feet) in width, are barely wide enough to support this beetle. The related subspecies in South Carolina, the southern white beach tiger beetle (*C. dorsalis media),* is being extirpated in parts of its range as well; however, there is no federal or state ranking for this species.

POPULATION DISTRIBUTION AND SIZE

This beetle historically ranged from southern New Jersey to Miami, but its range has been diminished at both extremes. In South Carolina, it once occurred on all wide sandy beaches, but no longer is present where human development or severe erosion have destroyed appropriate habitat, such as in the city of Myrtle Beach (Knisley and Schultz 1997). It still may be found on

those beaches that are relatively undisturbed, including Waites Island, Cherry Grove Beach, Huntington Beach, Isle of Palms, Folly Island, Seabrook Island and Edisto Beach; the largest population is at Seabrook Island where the dunes are most extensive. It occurred on Hunting Island as recently as 2002 but the beach has undergone severe erosion so its current status is in doubt.

Population size for the white beach tiger beetle has not been determined in South Carolina.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The adult white beach tiger beetle is a predator; the adults run actively on the sand to catch prey that includes small insects. Larvae are also predators, hiding in burrows with only their jaws protruding to catch unwary insects or a variety of small animals of suitable size that come within their reach. Therefore, larvae need a safe place for development above the high tide line; both stages require a large enough expanse of naturally shifting ocean beach so that sufficient prey is available.

CHALLENGES

Loss of habitat represents the most significant challenge to South Carolina's white beach tiger beetle. Building and road construction, deposition of dredge spoil, extensive driving on the beach and heavy foot traffic can destroy the natural qualities of a beach so as to make it uninhabitable by beach tiger beetles. Erosion can narrow or eliminate the sandy beach and severely impact the beetles. Construction of groins and bulkheads reduces natural movement of the sand and suitability for these tiger beetles (Knisley and Schultz 1997).

Water quality offshore needs to be moderately clean and free from toxic substances (such as oil spills) so that aquatic and semi-aquatic animals are available as prey for tiger beetles and so that larvae are not poisoned in their burrows (Knisley and Schultz 1997).

CONSERVATION ACCOMPLISHMENTS

Efforts to save the endangered least terns on our public beaches also contribute to an environment suitable for tiger beetles. This effort is largely fencing off tern nesting areas and informing the public about the necessity to protect the terns. Actions to protect the dunes themselves, such as keeping people off the dunes, preventing sea oats collection and prohibiting structures such as groins and bulkheads all contribute to a good habitat for these beetles.

CONSERVATION RECOMMENDATIONS

- Conduct surveys for the white beach tiger beetle to track its continued decline and/or return to available habitat.
- Work with appropriate state, local and non-governmental agencies and coastal municipalities and communities to reduce current and future impacts of development on beach environments.

- Educate the public about the importance of beach dune habitat and initiate participative projects such as dune vegetation plantings.
- Encourage planned development projects in coastal zones, particularly on barrier islands to reduce associated impacts of development on the long-term health of sandy beach habitats in South Carolina.
- Discourage building or repair of seas walls and groins on South Carolina's beaches to allow more natural movement of sand and, ultimately, more natural beach renourishment.
- When feasible, remove dams and reservoirs that block flow of sand and sediment from upland areas to allow for more natural beach renourishment.

MEASURES OF SUCCESS

As research and management needs are identified, projects will be initiated to address those needs. If the white beach tiger beetle makes a comeback in areas that were previously void of the species, we will consider this a success.

LITERATURE CITED

Boyd, H.P. 1982. Checklist of Cicindelidae: The tiger beetles. Plexus Publishing, Inc. New Jersey. 31 pp.

Knisley, C.B. and T.D. Schultz. 1997. Tiger beetles and a guide to the species of the South Atlantic states. Virginia Museum of Natural History, Martinsville. 209 pp.