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Observations of Piping Plovers (*Charadrius melodus*) Color Banded in Nebraska and Re-sighted on the United States Gulf Coast

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INTRODUCTION

Threatened and endangered migratory birds present a challenge to conservation efforts because they use different habitats during different times of the year. As a result, successful efforts in one part of their range may be nullified by negative events taking place in other parts of their range. In many cases, information that links individual birds or populations to specific breeding, non-breeding and migratory areas across the species' range is not available. Without these links, it can be difficult to coordinate conservation efforts across the species' range and species recovery efforts may be less effective. The observation of uniquely marked individuals can be useful in linking different regions and habitats used throughout a species' annual cycle. As part of our efforts to monitor and protect Piping Plovers (*Charadrius melodus*) in Nebraska, we initiated a research and banding program in 2008. Here we describe the color banding scheme we are using along the lower Platte River and report re-sightings of color banded plovers from non-breeding areas along the United States Gulf Coast.

Piping Plovers are small (17 - 18 cm long) migratory shorebirds that nest along the North American Atlantic Coast and in the Great Lakes and Great Plains regions; they over-winter along the Atlantic, Gulf and Mexican coasts and in the Caribbean (Haig and Oring 1988, Elliott-Smith and Haig 2004, <http://www.natureserve.org>). There are two putative subspecies based on genetic differentiation and geographic location. *C.m. melodus* is found along the Atlantic Coast and *C.m. circumcinctus* is found in the Great Plains and Great Lakes. The two differ in appearance based on the completeness of the black neckband; the neckband may not be complete in *C. m. melodus*, while in *C. m. circumcinctus* the neckband usually is complete (Moser 1942, AOU 1945, 1957, Wilcox 1959, Haig and Oring 1988, Elliott-Smith and Haig 2004, Miller et al. 2010).

In the United States, the Great Plains population of Piping Plovers is federally listed as threatened. In Nebraska, the Piping Plover is listed as a state threatened species. The authority for this listing status is provided by the Nebraska Nongame and Endangered Species Conservation Act (Nebraska Revised Statutes §§ 37: 801 - 811). Historically, Piping Plover numbers declined as a result of unregulated hunting (Bent 1927), but the principal reason for the current decline is the continuing loss of breeding habitat due to human activity (USFWS 1988, 2009, Elliott-Smith and Haig 2004, <http://www.natureserve.org>). In addition to the loss of breeding habitat, Piping Plovers in the Great Plains are threatened by wild, feral

and pet animal predation, water pollution, hydro-peaking, shoreline stabilization and bank armoring, loss of river sandbars, and the consequences of water management decisions (Elliott-Smith and Haig 2004, <http://www.natureserve.org>, <http://www.iucnredlist.org>). Efforts by state and federal agencies and NGOs are underway to help plover populations recover across their range.

METHODS

In 2008 and 2009, 37 adult and 32 hatch year Piping Plovers were individually color-banded near the lower Platte River in Nebraska. We define the lower Platte River as the 103 river miles (166 kilometers) between the Loup River confluence (near Columbus, Platte County; river mile 103) and the Missouri River confluence (near Plattsmouth, Cass County; river mile 0). Adults were captured using a simple box trap placed over their nests during incubation. Hatch year plovers were captured by picking them up off the sand before they were capable of flight (for details see Brown and Jorgensen 2008, 2009). All plovers re-sighted as part of this study were originally captured and color banded at human-created, off-river nesting sites: sand and gravel mines or lakeshore housing developments (Brown and Jorgensen 2008, 2009).

Each plover was given a light blue colored leg flag, indicating its Platte River origin, on its upper leg (upper right in 2008, upper left in 2009 and in the future), a metal USGS individually numbered metal band on the opposite upper leg and various color band combinations on its lower legs for individual identification (orange, yellow, red, green, gray, and black). See Figures 1 and 2 for details. Leg flag and color band combinations are coordinated by the Piping Plover band coordinator (G. Pavelka, USACE) and the United States Bird Banding Laboratory at the Patuxent Wildlife Research Center (<http://www.pwrc.usgs.gov/bbl>). Color banded plovers were re-sighted as part of ongoing monitoring and research programs. Re-sightings in Nebraska were made by the authors; re-sightings along the United States Gulf Coast were made by various observers and reported to the plover band coordinator and the programs that originally color banded the plovers (G. Pavelka, pers. comm.).

RESULTS AND DISCUSSION

To date, eight light blue flagged plovers have been re-sighted along the United States Gulf Coast during the non-breeding period. All birds were observed while they were foraging near the water's edge on open sandy beaches. Five of these birds were color banded in 2008 and re-sighted during the winter of 2008 - 2009; three were color banded in 2009 and re-sighted during the winter of 2009 - 2010. Three of these birds were color banded near Ashland, two near North Bend, one near Waterloo, one near Fremont and one near Schuyler. All eight birds were originally captured and color banded as adults. One of the 2008 - 2009 birds was seen on a beach sandbar complex near New Orleans, Louisiana (Raccoon Island). The remaining four 2008 - 2009 birds were seen on a series of beach sandbar complexes located between Corpus Christi and Aransas, Texas (North Pass/Redfish Bay, Mollie Beattie, Mustang Island/Bayside Flats, and South Padre Island/Bayside). One of the plovers color banded in 2009 was seen at St. Joseph State Park, Florida, one was

seen on Matagorda Island, Texas, and one was seen on Galveston Island, Texas. See Figure 3 for details of these re-sightings.

A previous color banding study of Piping Plovers on the Platte River did not report sightings of plovers during the non-breeding season (Lingle 1993); ours is the first study that has identified non-breeding season locations of Nebraska's Platte River plovers.

While the observations presented here are limited, they do provide an anecdotal basis for understanding the issues that might affect plovers during the non-breeding season. For instance, the 2010 oil spill off the

Figure 1. Schematic diagram illustrating the color banding scheme used with Piping Plovers found along the lower Platte River in Nebraska. The light blue flag may be on either the upper right or left leg; the metal numbered USGS band is placed on the opposite upper leg. The combination of color bands on the lower legs are unique to each plover and are used to identify individuals.

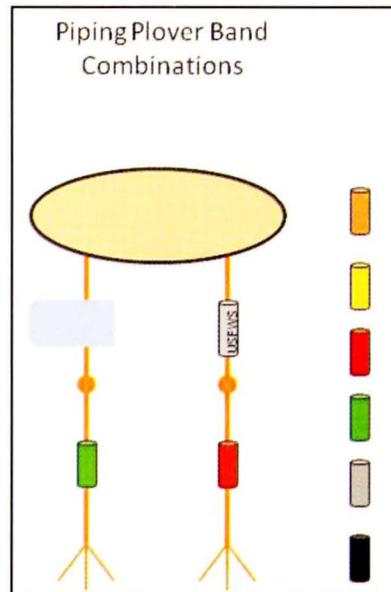


Figure 2. Piping Plover wearing colored leg bands. Photo courtesy of Joel Sartore/ joelsartore.com.

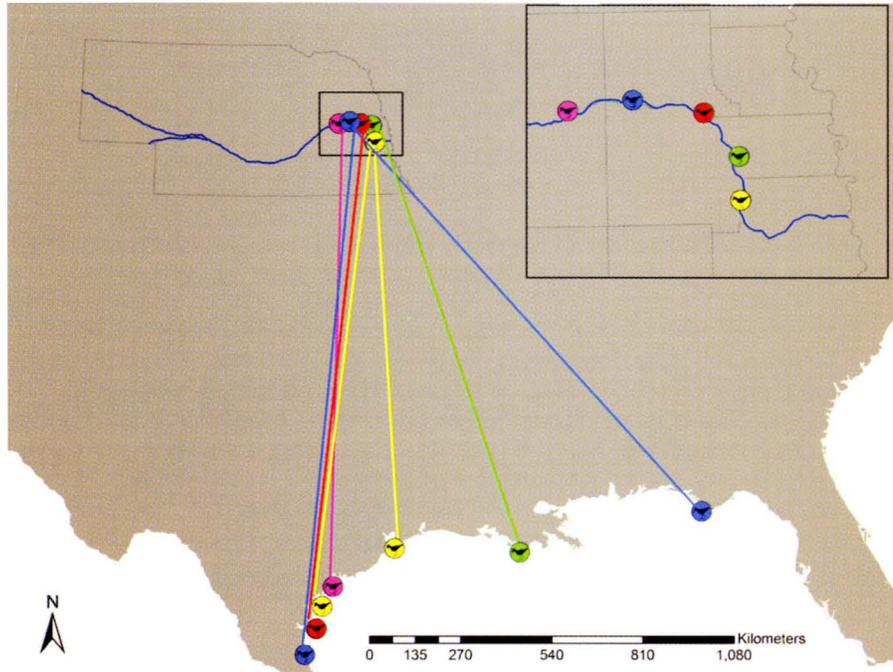


Figure 3. Locations where eight Piping Plovers were originally color banded on the lower Platte River in Nebraska (the southernmost yellow symbol represents two individual birds) and where they were re-sighted along the United States Gulf Coast.

Louisiana coast may negatively impact Piping Plovers that spend the non-breeding season on beaches in the area. Continued monitoring of Piping Plovers in their non-breeding habitat is crucial for the long-term conservation and recovery of the species. We encourage anyone who sees a Piping Plover with colored leg bands to make note of the color combination and the exact location of the bird and pass the information on to us or United States Bird Banding Laboratory at the Patuxent Wildlife Research Center (<http://www.pwrc.usgs.gov/bbl>).

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