Image of Buff-breasted Sandpiper.
Wikipedia Commons 2010.

Buff-Breasted Sandpiper

Tryngites subruficollis

Kabrina Orchard

Conservation Biology 485 Spring
Professor David Stokes
March 20, 2014

Buff-Breasted Sandpiper

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Description of Species


Buff-breasted Sandpiper
Wikipedia Commons 2010.

Buff-breasted Sandpipers, *Tryngites subruficollis*, are 7 inches tall. They have mottled brown feathers on their wings and backs. Their dovelike heads are capped in brown feathers too. The undersides of the birds are a buff color. The undersides of the wings are lined in silvery and white feathers.

Behaviors

- Feeding Habits

Buff-breasted Sandpipers are short-grass ground foragers (Lanctot et al., 2002). They tend to avoid tall grasses, tall emergent areas of marshes, and forests (Lanctot et al., 2002). Outside of their Nearctic breeding grounds, they feed almost exclusively in

pasturelands that have been heavily grazed by cattle (Lanctot et al., 2002). Flocks tend to gather in areas that have large quantities of prey (Isacch et al., 2005). They use visual pecking to forage for food in short grasses (Isacch, Darrieu & Martinez, 2005). Fecal analysis shows that their diet consists mostly of adult beetles and earthworms (Isacch et al., 2005). However, they are opportunistic feeders that will also eat beetle larvae, flies, zooplankton, and caterpillars (Isacch et al., 2005). Their dietary flexibility is highly advantageous during migration because they can feed from a variety of habitats (Isacch et al., 2005). They display dietary variability depending on items that are most abundant where they are feeding, but tend to avoid eating too many noxious foods, such as spiders and ants (Isacch et al., 2005). Fecal analyses shows that plant fragments are also part of their diets even though they provide little caloric value (Isacch et al., 2005). It is possible the plants get unintentionally digested while the birds forage for prey (Isacch et al., 2005).

Buff-breasted Sandpiper peforming a double wing-wave at a tundra lek site to attract females. Photo by Kevin Karlson.

- Mating behaviors

The males gather on patches of ground used for a communal display during the breeding season (Sutton, 1967). The courtship areas are not near the nesting zones (Sutton, 1967). Courtship behaviors include wing spreading and flashing as the males defend small territories in order to attract females (Sutton, 1967). The males will stand in a stiff, vertical position on the tips of their claws as they make a ticking sounds so forcibly that their whole bodies jerk in the process (Sutton, 1967). They will also perform aerial sparring to impress the females (Sutton, 1967).

- Offspring Rearing

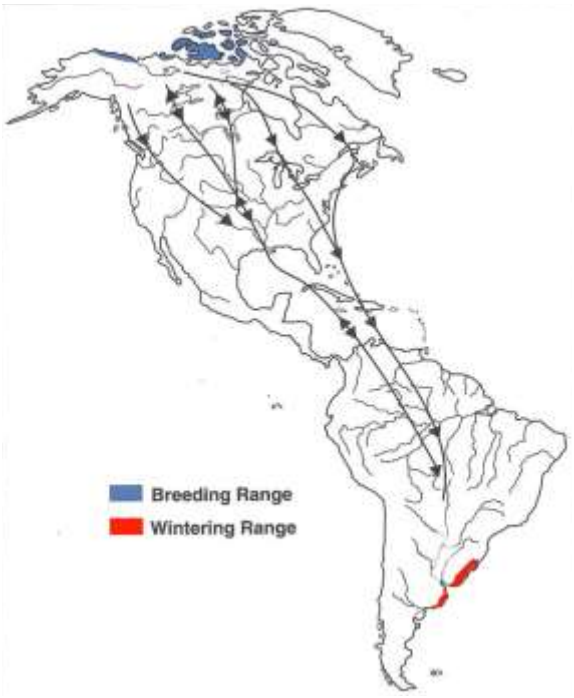
Buff-breasted Sandpipers are polygamous and the males will desert the females once the eggs have been laid (Sutton, 1967). Females feed in low-lying, somewhat marshy areas near ponds (Sutton, 1967). Any flocks that feed near nesting areas are likely composed of males (Sutton, 1967). The females are solely responsible for incubating the eggs and rearing the young (Sutton, 1967). The females find independent nesting habitats that are well drained inside the grassy tundra (Sutton, 1967). When females feel

their nests are threatened they try to thwart the intruder by circling and calling out (Sutton, 1967). The females will also descend from flight, settle, and present a busy feeding behavior to thwart intruders (Sutton, 1967).

Range

- Breeding Grounds

Buff-breasted Sandpipers are migratory long-distance Nearctic shorebirds (Isacch, Darrieu & Martinez, 2005). They spend the breeding season along the Arctic coasts of Russia, Alaska, and Canada (Lanctot et al., 2002 & Lounsberry et al., 2013). Migratory birds that nest in the north take advantage increasing resources such as increasing food supply and nesting locations during spring and summer.



Buff-breasted Sandpiper migratory route, breeding range, and wintering range. (Lanctot, 2006)

- Migratory Path

After the juveniles are mature enough to fly south in autumn, they use the Central Flyway as their primary migratory route to reach the wintering grounds (Lounsberry et al., 2013). The Central Flyway generally follows the Great Plains through the US and Canada. Traditionally, good sources of food and water covered the entire length. The migration pattern goes

continues in the central portions of South America until they reach their destinations (Lanctot et al., 2002).

- Wintering Grounds

Buff-breasted Sandpipers spend their nonbreeding season in South America on the Pampas of Argentina, Uruguay, and Brazil. (Lanctot et al., 2002). As the austral summer ends, they will return once again to the North via the Central Flyway (Isacch et al., 2005).

The Pampas is an extensive treeless plain in South America. Image from Wikipedia Commons Image 2007.

Population Trends

- Historical Populations

Genetic research shows the species was likely confined to a single refugium between 8,400 to 45,000 years ago (Lounsberry et al., 2013). This time period coincides with the Wisonsinan glaciation (Lounsberry et al., 2013). As the glaciers retreated, the Buff-breasted Sandpiper extended its range throughout much of the Arctic region (Lounsberry et al., 2013). Their numbers grew in size and most likely numbered in the hundreds of thousands prior to the arrival of Europeans in the Western Hemisphere (Lanctot et al., 2002). The initial population decline is blamed on overexploitation in

North America (Lanctot 2002 & Lounsberry 2013) although it occurred in South America too (Lanctot et al., 2002). In the mid-1800s, the species was commonly found in meat markets of Louisiana, Texas, and Massachusetts (Lanctot et al., 2002).

- Contemporary Populations

Today, it is rare to find Buff-breasted Sandpipers in any of those locations because of a massive reduction in their population size (Lanctot et al., 2002). Their current population is estimated to be 56,000 individuals (Lounsberry et al., 2013). The global population is difficult to estimate because they are difficult to track during breeding season and spring and fall migrations (Lanctot et al., 2002). The wintering ground in South America is the easiest place to track them, but even this is difficult because many areas are inaccessible (Lanctot et al., 2002). The widespread conversion of short-grassed prairies to taller agricultural crops is believed to have far-reaching negative effects on the population size (Lanctot et al., 2002). Multiple lines of evidence have shown that the species has continued to decline in recent decades even though they are no longer hunted for meat markets (Lanctot et al., 2002).

- IUCN Status

Buff-breasted Sandpipers have been listed as a Near-threatened species by the IUCN (IUCN, 2014). This species underwent rapid historical declines (IUCN, 2014) since the 1890s (Lanctot et al., 2002). The moderately small remaining population has continued to decline in recent years (IUCN, 2014).

Threats to the Species

- Loss of Suitable Habitat

The widespread conversion from short-grassed prairies to agriculture has lead to a major decline in Buff-breasted Sandpipers (Lanctot et al., 2002). Land management practices of unprotected inland areas tend to change based on economic constraints (Lanctot et al., 2002). Large swings in the proportion of land devoted agriculture versus ranches is directly related to the price of grain and beef (Lanctot et al., 2002). Other land management practices such as mines and pine plantations, construction of roads and buildings, and the subdivision of ranches, also may have a negative effect on the species (Lanctot et al., 2002).

- Global Warming

Many coastal wintering sites occur on private property where cattle graze and lack legal protection (Lanctot et al., 2002). These sites unlikely to be converted to agriculture

because they are in saline environments and cannot support crops (Lanctot et al., 2002). However, the rising sea levels associated with global warming are likely to cause flooding in the Pampas region (Lanctot et al., 2002).

Conservation

- Evolutionary Significant Unit

Buff-breasted Sandpipers can be thought of as a single evolutionary unit (Lounsberry et al., 2013). Despite its rapid decrease since the 1890s, it has shown no evidence of recent genetic bottleneck (Lounsberry et al., 2013). There is no clear estimation on the effective population size (Lounsberry et al., 2013). Mating is random throughout the Arctic regions and genetic structure does not vary by location (Lounsberry et al., 2013). It is crucial to avoid habitat fragmentation because the species breeds on a global scale (Lounsberry et al., 2013).

- Current Efforts

The most recent development for protecting this species has been a $3.5 million grant by the Neotropical Migratory Bird Conservation Act in 2013. This collaborative effort is funding for 27 projects in Argentina, Bolivia, Canada, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, and the United States. These projects will conserve over 250,000 acres of habitat for

Neotropical bird species, which include the Buff-breasted Sandpiper (Fish and Wildlife Service, 2013).

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