The First Record of Red-footed Booby (*Sula sula*) in British Columbia.


**Introduction and Distribution**

The Red-footed Booby (*Sula sula*) is a charismatic seabird species that is found in the world’s tropical oceans (Harrison 1983b, Harrison 1987). There are 3 recognized subspecies of the Red-footed Booby (Clements *et al.* 2017).

The nominate subspecies of Red-footed Booby is (*Sula sula sula*) which is found breeding in the Caribbean, with the largest colonies found on Little Cayman and Los Rocas off Venezuela (Nelson 1978c, Diamond 1980, Evans 1990). This subspecies also breeds on islands off Puerto Rico, in the United States and British Virgin Islands, the Lesser Antilles (Redonda, St. Vincent, and the Grenadines), Grenada, Tobago, Half Moon Key off Belize, islands off the Yucatán Peninsula, and in the Bahamas with 1 nest reported in 1995 after being extirpated for many years (Norton 1995). In the western Atlantic Ocean, the Red-footed Booby breeds on South Trinidade, and possibly still on Fernando de Noronha (off Brazil) and Boatswain Bird Island off Ascension Island (Bent 1922, Verner 1961, Russell 1964, Watson 1965a, Peterson and Chalif 1973, Diamond 1980, Olson 1981a, American Ornithologists' Union 1983, van Halewyn and Norton 1984, Tunnell and Chapman 1988, Antas 1991, Gochfeld *et al.* 1994).


The Red-footed Booby formerly bred in Desecheo, Puerto Rico; Gloriosa, Mauritius, and Rodriguez in the Indian Ocean (Mayr and Cottrell 1979); Assumption, Cargados Carajos, Indian Ocean (Nelson 1978c, Feare 1984b); Tikopia, Anuta, near the Solomon Islands (Steadman et al. 1990); Henderson, Marquesas, and Society Island (Steadman 1989). The Red-footed Booby is probably extirpated on more islands throughout its range due to the introduction of predators and human predation (Schreiber et al. 1996). Use of seabirds for food is commonly reported in all areas with nearby human populations (Schreiber et al. 1996).

The third subspecies of the Red-footed Booby is (*Sula sula websteri*) breeds on Islands in the eastern Pacific Ocean such as: Revillagigedo, Clarion, Clipperton, San Benedicto, Soccorro, Cocos, Malpelo, Isla Isabella near Baja, and the Galapagos Archipelago (Howell and Webb 2010).

The Red-footed Booby breeds mainly on coral atolls or volcanic islands, and is pantropical in range Schreiber et al. 1996). This species nests primarily in shrubs or trees, such as Beach Magnolia (*Scaevola sericea*), Beach Heliotrope (*Tournefortia argentea*), but will use almost any plant, and on occasion, deserted man-made structures (Nelson 1978c, Schreiber et al. 1996). The Red-footed Booby prefers to nest at heights of over 1 m, but readily nests on clumps of grass where no bushes are present (Schreiber et al. 1996). On large islands, it has been found nesting up to 5–8 km inland and in general does not nest in shade (Schreiber et al. 1996).

The overwintering range is poorly known because of limited at-sea and banding data and because birds may not go to land (Schreiber et al. 1996). Fledglings and immatures may go to different areas than adults and may be more nomadic than adults (Harrison 1990a). Adults may remain close to colonies (Palmer 1962, Harrison 1990a).

After the breeding season the Red-footed Booby disperses out to sea from its colonies, with some individuals returning to colonies at night to roost (Schreiber et al. 1996). Immatures may roost in and around colonies on islands other than their natal island, and none are found at some breeding islands (Schreiber and Ashmole 1970, Schreiber et al. 1996) suggesting they may disperse separately from adults (Schreiber et al. 1996). Birds that travel further afield will freely approach and land on ships, often travelling aboard for long distances (Harrison 1983b).
A serious threat to the Red-footed Booby and other seabird populations in central Pacific and Indian Oceans comes from El Niño-Southern Oscillation events that cause extensive mortality of chicks and sometimes of adults during severe events (Schreiber and Schreiber 1989, Schreiber 1994). El Niño events occur every 2–7 years and normally last 16–20 months (Schreiber et al. 1996). Their effects, while global in extent (Rasmusson and Wallace 1983, Glynn 1990), are most intense through equatorial Pacific Ocean region (Wyrtki et al. 1976). During an El Niño event, changes in air pressure systems and prevailing winds eventually push warm western Pacific Ocean waters across the ocean towards the Americas (Schreiber et al. 1996). Sea surface temperatures and sea levels rise in central and eastern Pacific Ocean regions (Wyrtki 1975, Cane 1983, Rasmusson and Wallace 1983). As a result, productive feeding grounds for seabirds at cool, nutrient-rich upwelling areas (such as Humboldt Current along coast of South America) disappear as they are overlaid with warm, nutrient-poor water (Barber and Chavez 1983, Halpern 1986). Fish die or go elsewhere in search of food; birds do the same (Schreiber et al. 1996). Each event differs in severity and length (Schreiber et al. 1996). Birds throughout the world are affected by such strong events (Boersma 1978b, Duffy et al. 1984a, Graybill and Hodder 1985, Ainley et al. 1988a, Schreiber and Schreiber 1989).

Along the East Coast of North America, the Red-footed Booby is a casually occurring species from April to September in southern Florida and is accidental from Texas, Louisiana, and South Carolina (Schreiber et al. 1996). This species is accidental off the Maritimes of Eastern Canada with an immature bird photographed from the deck of a ship well offshore of Lunenburg County, Nova Scotia on September 22, 2014 (Abbott and Gjerdrum 2014).

Along the West Coast of North America, the Red-footed Booby is a casually occurring species that has increased off the Coast of California in recent years with 32 accepted records by the California Bird Records Committee (Hamilton et al. 2007, Tietz and McCaskie 2018). Most records have occurred from late summer and fall and birds have reached as far north as San Francisco with no interior state records (Hamilton et al. 2007, Tietz and McCaskie 2018).

There are no accepted records for Oregon (OFO 2016) or from Washington State (Wahl et al. 2005, WBRC 2018).

The Red-footed Booby is a recent addition to the avifauna of British Columbia with a bird found and photographed at sea well off Haida Gwaii in September 2018 (Toochin et al. 2018).

The Red-footed Booby is an accidental m vagrant in Alaska. There is a well photographed record for Alaska of a bird observed aboard the ship R/V Tiglax at about 10 miles southeast of East Chugach Island off the tip of the Kenai Peninsula on September 10, 2015 (DeCicco 2015). There
is also a recent record of a well photographed dark morph bird found by the captain of a NOAA ground fish survey charter vessel off Agattu Island towards the western end of the Aleutian Island chain on July 28, 2018 (ABA Rare Bird Alert 2018). There is also an older ship-assisted record of a bird that sat on a boat that travelled from Hawaii to Alaska in August 1999, but this record is disregarded by most Alaskan authorities because it was ship assisted (DeCicco 2015).

Identification and Similar Species
The identification of the Red-footed Booby is covered in all standard North American field guides. This is the smallest occurring Booby in North America measuring 71 cm in length, with a wingspan of 152 cm, and weighing 1000 grams (Harrison 1983b, Sibley 2000). In all ages shows bright coral red feet, and a blue and pink base to the bill (Dunn and Alderfer 2011). Overall is similar looking to other booby species with a pointed head, tail, and wings; differs in looking smaller and having a proportionally longer tail. A slightly convex culmen abuts a bulging forehead and a somewhat high rounded crown and gentle looking face (Stokes 2010, Dunn and Alderfer 2011). The Red-footed Booby is polymorphic having 4 principal morphs: brown morph, white-tailed brown morph, white morph and black-tailed white morph, but can have several intermediate coloured birds (Harrison 1983b, Sibley 2000). It should be noted that there is no consistent difference in tail colour between Pacific and Atlantic Ocean populations.

White morphs have an all-white body; the tail can be white, gray or brown; the primaries and secondaries are black and the tertials are white (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). The secondary coverts are white; the primary coverts on the upperwing are black (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). The underside of the wing is white with a dark central patch formed by the medium coverts (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). The white-tailed brown morph is all brown except for having a white tail and a variable white rump and rear belly (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). Brown morphs are all dark brown except for variable paler head and underbody (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011).

Juveniles are mostly dark to a lighter brown colour overall and usually show a dark breast band in any morph (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). The underwings are all dark; the legs and feet are dull orangish-yellow (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011). The bill is all dark and the head bill shape is distinctive as on adult birds (Harrison 1983b, Sibley 2000, Stokes 2010, Dunn and Alderfer 2011).

Immature birds are more similar to adults of their respective morphs, but some white morphs may have a brown back and wings, with a variable breast band (Harrison 1983b, Sibley 2000,

The flight style of the Red-footed Booby is to fly low over the water with alternate flaps and glides (Stokes 2010).

The adult white morph Red-footed Booby is similar in flight to the larger adult Masked Booby (*Sula dactylatra*), but has pure white scapulars (Stokes 2010, Dunn and Alderfer 2011). These feathers are black on the Masked Booby (Stokes 2010, Dunn and Alderfer 2011). The primary coverts on an adult white morph Red-footed Booby are black; these feathers are all white on an adult Masked Booby (Stokes 2010, Dunn and Alderfer 2011). Immature Red-footed Booby is similar to an immature Brown Booby (*Sula leucogaster*) and is best identified by its smaller size and the presence of pinkish colour at the base of the bill (Stokes 2010, Dunn and Alderfer 2011).

Any Booby species found in British Columbia should be photographed at length for documentation purposes and in some cases to ensure proper identification.

**Occurrence and Documentation**
The Red-footed Booby is an accidental vagrant in British Columbia. The first record involved a well photographed adult dark morph bird found by commercial fisherman Kyle Brynjolfson when it landed on his commercial fishing vessel "La Porsche " in waters well offshore of Haida Gwaii in international waters on September 22, 2018 (K. Brynjolfson Pers. Comm.). He was fishing for Albacore Tuna (*Thunnus alalunga*) in international waters at the time. After an absence of several days the bird reappeared and landed on the fishing vessel and would not leave for long periods, other than for flying around and fishing, and would come back to sit on the ship (K. Brynjolfson Pers. Comm.). As the vessel entered Canadian and British Columbian waters over 120 miles off the west side of Cape St. James, off Haida Gwaii, so did the bird on September 27, 2018 (K. Brynjolfson Pers. Comm.). The Red-footed Booby rode the commercial fishing vessel south to well off Cape Scott, Vancouver Island, and the bird left the boat on September 28, 2018 (K. Brynjolfson Pers. Comm.). It did not return on September 29, 2018 (K. Brynjolfson Pers. Comm.). Photographs of the bird can be viewed on the BC Bird Alert Blog at http://bcbirdalert.blogspot.com/2018/09/rba-red-footed-booby-off-haida-gwaii.html. The occurrence of this bird fits perfectly with a large El Nino event that had pushed from the equatorial Pacific Ocean northward into vast areas of the north Pacific Ocean in the summer and fall of 2018 (M. Meredith Pers. Comm.).

The date of the British Columbia Red-footed Booby observation is timed perfectly with the post-breeding-season dispersal records of this species from coastal California (Hamilton *et al.*
The dates of the 32 accepted California records range from April 16 – December 13, with the highest number of records coming from the months of September with 10, followed by October with 8 (Hamilton et al. 2007, Tietz and McCaskie 2018). Interestingly enough most of the state’s records involve dark morph birds which put their area of origin in the eastern Pacific Ocean (Hamilton et al. 2007).

As more observers go offshore to watch pelagic birds, it is likely this species could reoccur in the waters of British Columbia in the future, especially during large El Niño events.

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References


