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HORNED PUFFIN SIGHTINGS IN THE EASTERN PACIFIC

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On 3 July 1979, while conducting a survey of marine bird colonies of coastal Oregon for the U.S. Fish and Wildlife Service, we saw a single Horned Puffin (*Fratercula corniculata*) roosting on Island Rock, approximately 8 km south of Port Orford, Oregon. The bird (Figure 1) was an adult in summer plumage. It roosted on a rocky outcropping 40 m above the sea surface on the east side of the island, near the south end. During the next 2 hours, while we censused nesting birds on the island from a boat, it disappeared into a crevice for up to 30 minutes at a time. Twice while we watched, it flew from its roost and circled widely around the colony several times before returning to its original site. We climbed up and inspected the crevice but were unable to determine if it was being used for nesting. As Campbell et al. (1979) pointed out, the behaviors we observed are also the activities of scouting pre-breeders and we have not inferred that this was an actual breeding attempt. At the time of our sighting, Island Rock had a population of approximately 350 Tufted Puffins (*F. cirrhata*).

On 4 August 1984, while conducting research on Hunters Island, Oregon, Graybill observed a single Horned Puffin in summer plumage circling above the island with 13 Tufted Puffins. Presumably it had been flushed from the island with the other puffins when Graybill went ashore. During the next 20 minutes it made repeated passes at the island at an altitude of less than 3 m but was never seen to land. Hunters Island is approximately 20 km south of Gold Beach, Oregon; an estimated 10 pairs of Tufted Puffins were nesting on the island at the time of the sighting.

Campbell et al. (1979) recently found Horned Puffins breeding in southern British Columbia. Their report was the first record of nesting for this species south of Alaska. Though they found only a few pairs, making it possible that the puffins were only overlooked in the past, Campbell et al. (loc. cit.) cautiously implied that some real range expansion may have been taking place. Thoresen (1981) reported a single Horned Puffin with a group of Tufted Puffins near a potential nesting colony in Rosario Strait, Washington, in July 1977, but the bird was never actually seen to land on the colony.

Since around 1970, Horned Puffins have been regularly seen off Oregon in small numbers during the summer months (e.g. Crowell and Nehls 1970, 1975, 1977; Hunn and Mattocks 1977). The only previous record of Horned Puffin roosting at a potential nesting site in the western United States outside of Alaska was from Yaquina Head, Oregon, 260 km north of Island Rock, where a single individual was seen on two consecutive days in June 1973 (Hoffman et al. 1975). Ramsey (1975), noting the change in the number and seasonal occurrence of Horned Puffins in Oregon, asked "Could it be that this species actually nests on the Oregon coast?"

Hoffman et al. (1975) reviewed the status of Horned Puffin in the eastern Pacific following 1973, when an inordinate number were recorded off the western United States. They reported that around the mid-1950s this species changed from a predominately wintering bird to a spring and early summer visitor. They suggested that possibly a long term change in the oceanic environment was causing a shift in seasonal occurrence as well as an increase in abundance of Horned Puffins in the eastern Pacific.

This suggestion of a change in seasonality and increased occurrence was given some support by the extensive seabird surveys conducted off California by the Univer-

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sity of California for the Bureau of Land Management and Minerals Management Service. During regular, year-round ship and aerial surveys from 1975 to 1977, Briggs et al. (1978) recorded 108 Horned Puffins off southern California, all in the months of April, May and June. Hoffman et al. (1975) found records of only five Horned Puffins from southern California prior to 1974.

During 1980-83, Briggs et al. (1983) conducted regular aerial surveys of marine birds off northern California (Point Conception to the California/Oregon border). They found low numbers of Horned Puffins (up to seven in February 1980) from February through May; most of these were "well offshore." Single birds were sighted over the continental slope in August 1980 and November 1982, but none were seen during other months. Briggs et al. (loc. cit.) identified only 24 Horned Puffins during the northern California study but alcids are difficult to distinguish from the air. Also, their aerial surveys normally ranged only out to 200 km from shore during most of the study (and occasionally out to 350-400 km during 1982); this distance may not have been far enough offshore to sample this species adequately (see below).

On 17 February 1984, Pitman was surveying seabirds en route from San Francisco, California, to Honolulu, Hawaii, aboard the NOAA ship Discoverer using 25 power mounted spotting binoculars. During 6.5 hours of observation in Beaufort 4 sea conditions he saw 54 Horned Puffins. These birds were observed only during the last 3.5 hours of survey as the ship traveled from 185 to 260 km (100-140 nm) due W of San Francisco. Puffins became increasingly common until dusk when the survey was terminated, with 20 seen during the last half hour. During the last 2 hours of that survey, Horned Puffin was the second most abundant species, out-numbered only by Red Phalarope (*Phalaropus fulicarius*). At that time puffins were mostly seen either sitting on the water or flying away from the ship. None were seen the next morning when the ship was 726 km (392 nautical miles) from San Francisco, nor were any seen the rest of the way to Hawaii.

On the return trip from Hawaii to Seattle, Washington, in May 1984, Horned Puffins were once again abundant in the offshore zone. On 7 May during 7 hours of observation in Beaufort 5 sea conditions, Pitman counted 165 puffins. It was the most abundant species present as the ship traveled NE from 815 to 630 km (440-340 nm) off Cape Blanco, Oregon. Almost every bird seen was flying WNW, apparently heading to breeding grounds farther north.

On the following day, 8 May, the ship continued NE, traveling from 315 to 31 km (170-17 nm) off Cape Flattery, Washington. During 8 hours of observation only four puffins were seen though sighting conditions were improved (Beaufort 3-4). None of these puffins were within 185 km (100 nm) of the coast. Interestingly, no Horned Puffin records were included in the regional reports of *American Birds* from the western United States for the winter, spring or summer of 1984 (G. McCaskie and R. LeValley pers. comm.), though puffins were apparently abundant offshore.

Table 1. Records of Horned Puffins (*Fratercula corniculata*) off the western United States, south of Canada, from the regional reports of *American Birds*, 1974-1984 (n = 369; not included below are 5 puffins from months other than those listed and 3 described as long dead).

	summer: May-Aug.	winter: Dec.-Mar.
alive	324	6
dead	4	27
100		

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Since 1974, when Hoffmann et al. (1975) last summarized available records, 369 Horned Puffins have been reported off the western United States, south of Canada, in the regional reports of *American Birds* (Table 1). Winter records are sparse and usually involve dead birds on the beach. Three of the six live winter birds were 130-140 km off the coast of Washington. In contrast, summer records were almost all of live, healthy birds, often near islands or inshore areas, and usually seen during the months of May or June.

From the evidence above we suspect that Horned Puffin may be a regular and, at least sometimes, abundant visitor to the offshore waters of western North America, ranging as far south as central or southern California during the winter (see also Ainley 1976, McCaskie 1976). In May and June 1975, when an unprecedented number of Horned Puffins were reported off California, they were found as far south as northern Baja California (Punta Banda), Mexico (McCaskie 1975).

Under normal conditions, Horned Puffins probably only rarely stray onto the waters of the continental shelf during winter. In late spring/early summer, with the onset of northwesterly winds, upwelled, nutrient-rich water causes an annual peak in plankton production in the California Current (Bolin and Abbott 1963). This period of increased productivity coincides with a peak in observations of Horned Puffins off the west coast. During normal years, most wintering puffins presumably depart offshore waters and head north to summering grounds without being noticed. In other years, however, some Horned Puffins appear to move in closer to the coast just prior to their northward migration, accounting for the preponderance of May/June records.

There appears to be an increased occurrence of Horned Puffins remaining behind to spend the summer and occasionally visit roosting sites in the southern extent of their eastern range. Whether this is indicative of annual oceanographic anomalies, a longer



Figure 1. Horned Puffin roosting at a crevice entrance on Island Rock, Oregon, 3 July 1979.

Photo by Michael R. Graybill

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term cycle that may ultimately affect their breeding range, or some other factors (e.g. a burgeoning population), is unknown. What is known is that the apparent change in status for this species closely parallels the development of increased public interest in recreational seabird watching and the advent of detailed seabird resource assessments (e.g. at-sea surveys, colony inventories, beached-bird salvaging programs). So it may also be that most of the records discussed above, including our own, are only the result of closer scrutiny by field investigators.

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