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Rare Sighting of a North Pacific Right Whale (*Eubalaena glacialis*) in Hawai'i[1]

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ABSTRACT: On 2 April 1996, a North Pacific right whale (*Eubalaena glacialis*) was sighted in the company of three humpback whales (*Megaptera novaeangliae*) off the western coast of Maui, Hawai'i (20° 56′ N, 156° 46′ W). The right whale appeared to initiate social interactions with the humpback whales. The right whale was estimated to be 13 m in length. Its sex was undetermined. This represents the first confirmed sighting of a right whale in Hawaiian waters since 1979. The 1996 sighting was similar to those in 1979 in that a solitary right whale was observed interacting with humpback whales during a 17-day period in late March and early April. In all but one instance, there were three or more humpbacks present.

SIGHTINGS OF THE rare northern right whale (*Eubalaena glacialis*) need to be documented, especially when they occur in tropical or subtropical waters. Current population estimates for the North Pacific right whale are crude, but the best evidence suggests approximately 100–200 animals (International Whaling Commission 1973). Herman et al. (1980:271) concluded that "no species of whale in the North Pacific has been brought closer to the edge of biological extinction." Elsewhere, the population in the Northwest Atlantic has increased slowly to about 300 whales (Knowlton et al. 1994). This increase, however, is roughly a third of that reported for the South Atlantic right whale (*Eubalaena australis*), which has reported annual growth rates of 6.8% in the eastern South Atlantic (Best 1990) and 7.6% in the western South Atlantic (Payne et al. 1990). This difference has been attributed to a number of factors, including a high first-4-yr mortality rate, primarily from anthropogenic sources, in the North (Kraus 1990), degradations of habitat, and a smaller proportion of breeding females in the North Atlantic (Brown et al. 1994). Even with these increases, the northern right whale has been designated as one of the rarest of all cetaceans.

This note documents the sighting of an eastern North Pacific right whale off Maui, Hawai'i, on 2 April 1996. The last Hawaiian sightings were recorded in 1979, when Herman et al. (1980) reported two encounters (one between the islands of Maui and Kaho'olawe on 25 March 1979 and the other southwest of Moloka'i on the Penguin Bank on 11 April 1979) and Rowntree et al. (1980) reported an additional right whale sighting in the 'Au'au Channel off West Maui on 25 March 1979. The right whales in these sightings were believed to be adults. The two encounters on 25 March 1979 involved a whale with a "white blaze" on its back, suggesting that at least two of the three encounters involved a single whale. Rowntree et al. (1980) also reported in a "note added in proof" that another right whale might have been observed north of O'ahu, Hawai'i, in 1975 (the determination was based on the absence of a dorsal fin, the whale's coloring pattern, and size).

Northern right whales habituate temperate and subpolar waters (Gilmore 1978,

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Leatherwood et al. 1982, National Marine Fisheries Service 1991). They are also known to migrate seasonally to more temperate waters (Omura et al. 1969, Best 1970), where they congregate at nearshore locations for calving. Gilmore (1969, cited in Herman et al. 1980) and Payne (1976) reported such calving grounds off Patagonia, Argentina, for the South Atlantic right whale, and Brooks (1995) reported mother-calf pair sightings in the vicinity of the Georgia-Florida border. Comparable calving grounds have been suspected in the North Pacific, but no one has discovered them (Rice 1974, Gilmore 1978). Nevertheless, although there have been sporadic reports of right whales in the North Pacific below 50° N latitude, the rarity of these events is evidenced by the fact that from 1937 to 1967, only 10 right whale sightings were reported (Rice and Fiscus 1968). This condition continues to prevail. Surface and aerial abundance surveys off California (30° to 42° N) in 1991 and 1992 sighted only one right whale, which was observed in the extreme southeastern sector (30° 30′ to 34° 30′ N) surveyed (Barlow 1995, Forney et al. 1995).

On 2 April 1996 at 1130 hours, we encountered what we believed to be a group of four humpback whales (*Megaptera novaeangliae*). Using a Magellan Meridian Global Positioning System, the position of the encounter was 20° 56′ N by 156° 46′ W. Water depth at the point of the encounter was 77 m. Initially, we suspected that the whales were a competitive group of humpback whales. Competitive groups feature sexually mature males competing with one another for access to females. These groups are common on the winter calving-breeding grounds (Baker and Herman 1984). Our research protocol called for us to approach to within 50 m of the group and photograph the ventral surface of each animal's flukes for identification purposes (Katona et al. 1979). We also attempt to photograph dorsal and pectoral fins as well as any other distinguishing physical characteristics for supplementary documentation about the respective whale.

When we were within 50 m of the whales, it became clear that there were four whales in a diagonal formation (left front lead). The right rear whale in the formation disaffiliated within minutes of our arrival. The two left front humpbacks had all-white pectoral fins, making it easy to track them from the surface so long as they did not dive deep. The trailing whale (on the right) was thought to be a challenging male by virtue of its position and its movements toward the other two. The lead whales did not appear to direct any behaviors toward the trailing animal, but the latter appeared to be following the others. On one occasion, the trailing whale accelerated toward the lead animals, which we initially interpreted as an attempt to displace the primary escort. This is a typical behavioral activity within competitive groups.

We maneuvered the boat to a position left of the trailing whale and behind the lead animals. At that point, the whales sounded. Neither of the leading pair of humpbacks "fluked up" (i.e., raised their flukes above water so that the ventral side is visible) when they sounded. A photograph of the back and dorsal fin of the trailing whale indicated that there was no dorsal fin (Figure 1*A*). On the next surfacing, we photographed the head and blowhole areas (Figure 1*B*). The absence of a prominent splash guard anterior to the blowhole and the presence of dark gray callosities were primary features used in identifying the animal as a right whale. Subsequent photographs documenting a V-shaped blow (Figure 1*C*) and a triangular fluke with a smooth trailing or posterior edge (Figure 1*D*) constituted corroborating evidence for identifying this as a right whale. The length of the whale was estimated at 13 m.

We prepared to reposition the boat to have a diver videotape the suspected right whale underwater. The whales sounded and remained underwater for an extended period. After 15 min, blows were seen approximately 350 m from our location. Not seeing any other blows in the area, we believed that this might be our target group and proceeded in the direction of the blows. Unfortunately, this was a new competitive group of at least six humpbacks. After trying for 1 h to reestablish contact with the pod containing the right whale, we aborted the search.

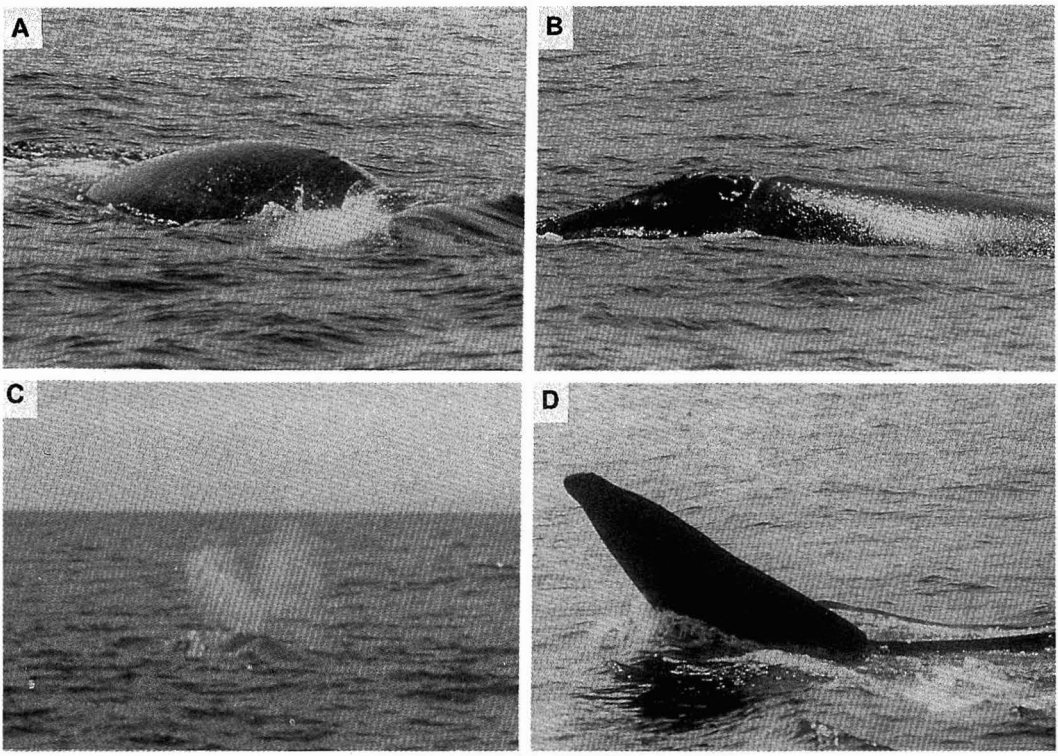

FIGURE 1. Right whale photographed off Maui, Hawai'i (20° 56′ N, 156° 46′ W) on 2 April 1996. (*A*) Photograph of the whale's back indicating the absence of a dorsal fin. (*B*) Photograph of the head and blowhole area, showing callosities in front of the blow hole, the absence of a splash guard anterior to the blowhole, and part of the whale's lip line. (*C*) The characteristic V-shaped blow of the right whale. (*D*) The fluke of the whale, showing a smooth posterior edge. (All photographs by Dan R. Salden)

Photographs of the suspected right whale were distributed for species confirmation to seven scientists at the National Marine Mammal Laboratory and to the principal authors of the previous Hawai'i sightings. The identification of the animal as a right whale was confirmed unanimously.

Comparisons with the 1979 sightings result in several striking similarities. Although the humpback winter season in Hawai'i ranges from late November to the end of May, all right whale sightings occurred within a 17-day period. In all instances, the right whales were in the company of humpbacks. For three of the four encounters, there were three or more humpbacks present. Behavioral interactions between the two species were also evident in the sightings reported by Herman et al. (1980). We have no data on the length of time that any of these right whales remained in Hawaiian waters. V. Rowntree (pers. comm.) reviewed the 1996 photograph of the callosities pattern and concluded that this was not the same whale she had observed on 25 March 1979.

The question remains as to what these right whales were doing in Hawai'i. On the basis of evidence provided by Townsend (1935) of right whale captures, Gilmore (1978) speculated that Hawai'i was a possible location for the right whale's North Pacific wintering grounds. Herman et al. (1980) and Rowntree et al. (1980) indicated that their respective sightings might support this hypothesis. But the facts that it has been 17 yr since the last confirmed sighting in Hawai'i and that multiple sightings (two or more right whales in a given group) have not been

reported are inconsistent with this suggestion. Besides, if the North Pacific right whale behaves in a manner consistent with its North Atlantic and Southern Hemisphere stocks, the calving grounds should be located in shallow bays or lagoons near large land masses.

Nor do there appear to be any compelling physical or biological reasons for the animals to venture into warmer waters. Watts et al. (1993) concluded that the right whale's large size and thick blubber precluded any energetic benefits from ventures into warm waters. Humpbacks migrate to warmer waters for calving and presumably mating (Clapham et al. 1992), but this is not true of right whales. Despite the fact that calving occurs in more temperate waters, sexual behavior in right whales occurs year-round (Leatherwood and Reeves 1983, Kenney et al. 1995). In regard to calving, however, the March/April sightings would be consistent. Based on our knowledge of the Southern Hemisphere right whale stock, we can extrapolate and assume that northern right whale cows would appear on their calving grounds between January and May (Leatherwood and Reeves 1983). Unfortunately, there is no confirmation of gender for any of the right whales sighted in Hawaiian waters.

Kenney et al. (1995) also observed, however, that the right whale's social system serves to promote social aggregations to "exploit similarly aggregated prey patches." Leatherwood and Reeves (1983) commented on the existence of a "herd integrity within the population." With the decline of the North Pacific right whale population, it may be that some right whales are unable to locate conspecifics in northern waters. Although these right whales could migrate south alone, they may occasionally join humpbacks (and possibly other species as well) that are migrating south. If the migration to Hawai'i takes approximately 6 weeks, as it does in humpbacks (Gabriele et al. 1996), it means that this interspecific association occurs sometime in mid to late February. This scenario accounts for the fact that all sightings in subtropical waters have been of solitary right whales. Similar sightings of such "stragglers" have been recorded in the western North Pacific (Omura 1958), but there is no recent indication of similar sightings off Mexico. It is also unclear as to why these appearances do not occur earlier in the year; they would not occur later because humpbacks do not appear to arrive on the Hawaiian winter grounds after April.

The rarity of these right whale sightings suggests that they are probably chance occurrences and do not serve any major functions for the animals involved.

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