

## Catch Records of the Twenty North Pacific Right Whales from Two Alaska Whaling Stations, 1917-39

J.J. BRUEGGEMAN,<sup>1</sup> T. NEWBY<sup>2</sup> and R.A. GROTEFENDT<sup>3</sup>

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**ABSTRACT.** The North Pacific right whale population was hunted commercially between 1835 and 1935, at which time the species received protection. Commercial whalers harvested over 15 000 North Pacific right whales during this period, so reducing the population that today there are an estimated 100-200 right whales in the North Pacific. The American Pacific Whaling Company operated in the Gulf of Alaska and eastern Bering Sea during 1917-39. We report the distribution, sexes, and lengths of 20 right whales recorded in the company logbooks and ledgers. These records identify that right whale catches were widely distributed on the whaling grounds and tended to decrease over the May-October whaling season. Of the 17 whales for which sex and length data were documented, 11 were females. Their average length exceeded that of males. Lengths of the whales indicated that 41% of the catch were sexually mature; two females carried fetuses. Although the sample size is small, these results suggest that the North Pacific right whale population was inhabiting its historic summering grounds after the period of heavy exploitation in the 1800s, reproducing as late as 1926, and supporting a subadult cohort at least until the species was protected.

**Key words:** right whale, North Pacific Ocean, Alaska, distribution

**RÉSUMÉ.** La population de baleines noires dans le nord du Pacifique fut sujète à la chasse commerciale entre 1835 et 1935, date à laquelle elle fut protégée. Les baleiniers commerciaux tuèrent plus de 15 000 baleines noires durant cette période, réduisant leurs nombres à un tel point qu'il n'existe aujourd'hui qu'entre 100 et 200 baleines noires dans le nord du Pacifique. La American Pacific Whaling Company poursuivit ses opérations dans le golfe de l'Alaska et le mer de Béring de 1917 à 1939. Le présent article signale la distribution, le sexe et la longueur de 20 baleines noires inscrites dans les grands livres et les journaux de bord de la compagnie. Les dossiers indiquent que les prises de baleines noires étaient distribuées sur une vaste région dans les eaux de chasse à la baleine et semblaient diminuer progressivement durant la saison de chasse à la baleine qui durait de mai à octobre. Des 17 baleines dont le sexe et la longueur étaient documentés, 11 étaient des femelles. Leur longueur moyenne excédait celle des mâles. La longueur des baleines indiquait que 41% des prises avaient atteint la maturité sexuelle; deux femelles portaient des foetus. Bien que la taille de l'échantillonnage est restreint, ces résultats suggèrent que la population de baleines noires habitait à ce moment-là ses eaux estivales historiques après la période d'exploitation intensive des années 1800, que le cycle de reproduction se répétait au moins jusqu'en 1926 et qu'une suite de subadultes était assurée au moins jusqu'au passage des lois protectrices.

**Mots clés:** baleine noire, nord de l'océan Pacifique, Alaska, distribution

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### INTRODUCTION

Right whales (*Balaena glacialis*) (Fig. 1) were historically distributed in the North Pacific Ocean and Bering Sea from the Asian to North American coasts (Berzin and Rovnin, 1966). In the eastern Pacific, right whales summered primarily north of

Berzin and Rovnin, 1966; Rice, 1974). In the western Pacific, right whales summered off Japan, the Kuril and Commander islands, Kamchatka, and in the Okhotsk Sea (Townsend, 1935; Omura, 1958; Omura *et al.*, 1969). Some whales also occurred in the Bering Sea, chiefly in the southeastern corner from Atka to St. Matthew and Nunivak islands (Townsend, 1935; Berzin and Rovnin, 1966; Berzin and Doroshenko, 1982). The winter breeding grounds of the North Pacific right whale have always been poorly known.

During the 19th century, commercial whalers almost completely exterminated the North Pacific right whale population (Rice, 1974). An estimated 15 551 right whales were taken in the North Pacific between 1835 and 1969 (Dupasquier, in press). The intensity of the hunt was so great that between 1846 and 1851 an estimated 300-400 ships were taking right whales on the Kodiak Grounds (Gilmore, 1978). An indication of how close the whalers came to exterminating the population is that only 24 right whales are known to have been killed in Alaska and British Columbia between 1905, when modern whaling methods were introduced on the west coast, and 1935, when the species was protected (Rice, 1974). Although scattered sightings of right whales have been recorded since 1937 (Nasu, 1960, 1963; Omura *et al.*, 1969; Pike and MacAskie, 1969; Brueggeman *et al.*, 1984; Scarff, in press), the North Pacific population has never recovered from exploitation and is presently estimated to number 100-200 animals (Tillman, 1975; Gambell, 1976; Wada, 1979).

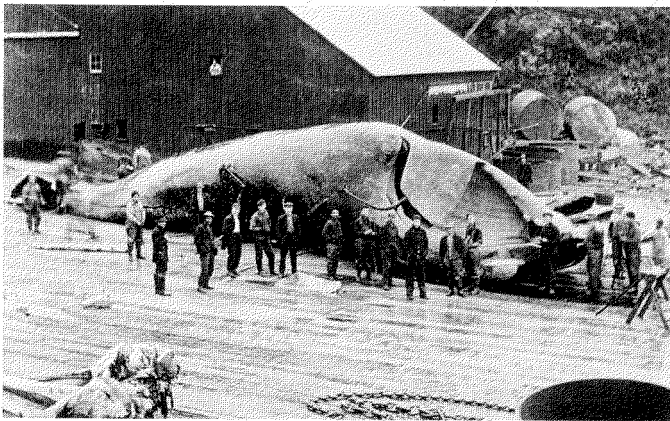


FIG. 1. Right whale taken at Akutan whaling station, early 1900s (courtesy of W. Lagen).

50° N but were particularly abundant in the "Kodiak Grounds," which encompassed the Gulf of Alaska from Vancouver Island to the eastern Aleutians (Scammon, 1874; Townsend, 1935;

<sup>1</sup>Envirosphere Company, 10900 N.E. 8th Street, Bellevue, Washington 98004, U.S.A.

<sup>2</sup>Washington Department of Game, 600 N. Capitol Way, Olympia, Washington 98504, U.S.A.

<sup>3</sup>Securities Building, 1904 Third Avenue, Seattle, Washington 98101, U.S.A.

In 1983, committee members of a right whale workshop sanctioned by the International Whaling Commission (IWC) encouraged that historical catch data for the North Pacific be examined to expand the information base on the right whale. Furthermore, the members stated that very little data are presently available on the size, age, or sex characteristics for this population. This paper presents data on the distribution, size, sex, and reproductive status of 20 of the 22 right whales reportedly caught (U.S. Commission of Fisheries, unpublished data from files of National Marine Mammal Laboratory, 7600 Sand Point Way N.E., Seattle, Washington 98115) in the Kodiak Grounds by U.S. whaling operations between 1917 and 1939, in order to address the major data gaps recognized by the IWC for the North Pacific right whale. The data and sources of the other 2 right whales reportedly caught in southeast Alaska are unknown to us. Three of the right whales we reported are incorrectly identified as bowhead whales in the U.S. Commission of Fisheries report.

#### METHODS

The source of the data for this paper is the logbooks and ledgers of the American Pacific Whaling Company that have been donated to the University of Washington, Seattle. Nine of the 20 animals were documented in the catch records for the Akutan Island whaling station, which the American Pacific Whaling Company operated from 1917 through 1939. An additional 11 whales were documented in catch records for the Port Hobron whaling station which was operated by the American Pacific Whaling Company from Sitkalidak Island near Kodiak Island from 1926 through 1937. The Akutan station was temporarily closed in 1921 because of a depressed economy. Both stations were closed in 1931, and the Akutan station remained closed through 1932 and 1933 because of a glut of whale oil in the marketplace. While the stations were in operation, generally 6-7 catcher boats, distributed between the stations, hunted whales from May to September or October (Brueggeman *et al.*, 1985); the whaling season terminated in the fall, because equipment, such as ropes for towing whales, could not withstand the severe winter weather. Hunting was confined to a radius approximately 241 km from each station, since whales had to be processed at the stations within about 24 h to ensure a high grade of oil. We have no catch data for the Akutan station between 1911 and 1917, when it was operated by the Alaska Whaling Company (1911-14) and the North Pacific Sea Products Company (1914-17) (Birkeland, 1926; Tonnessen and Johnsen, 1983).

#### RESULTS

The distribution of the 17 right whales for which locations were documented was scattered around each whaling station (Fig. 2). The 11 whales taken off the Port Hobron station were located south and east of Kodiak Island. Locations of 9 of these whales were oriented in a southeasterly direction from the station. Although the right whales were caught up to 111 km from shore, most of the catches were within about 56 km. The 6 whales taken off the Akutan Island station were located in Unimak Pass and in the Pacific Ocean, generally close to shore. These catch locations fall within the historic distribution of right whale catches plotted by Townsend (1935), including an absence of catches in the Shelikof Straits bordering Kodiak Island. The

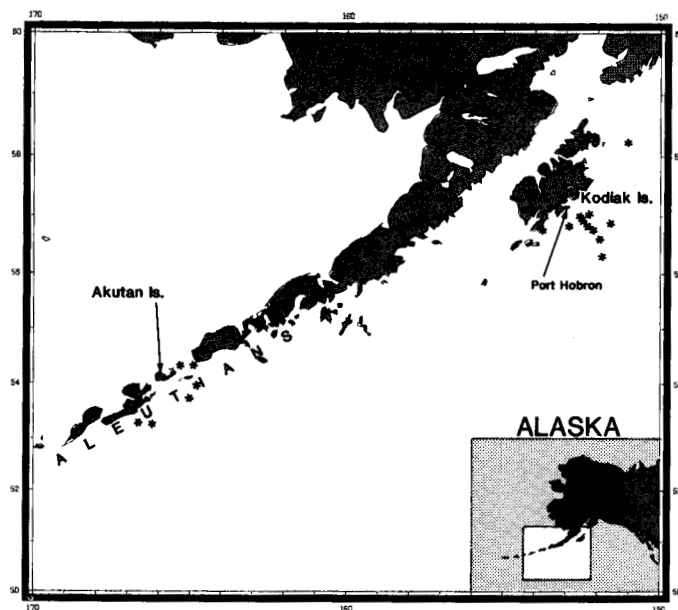


FIG. 2. Catch distribution (\*) of right whales off the Port Hobron and Akutan whaling stations 1917-39.

locations of 3 of the 20 right whales reported in this paper were not given in the logbooks (Table 1).

Catch records show an uneven distribution by month during the May-October season (Fig. 3): half of the whales were taken in June, with sequentially fewer in the succeeding months. This trend was similar for both males and females. No whales were taken in May or October, but these two months marked the start and end of the season, and effort was generally low as hunting occurred during only part of each month. Omura *et al.* (1969) indicated that catches and sightings of right whales in the Gulf of Alaska by Japanese and Russian whalers decreased between June and September.

The sex composition of the catch for those individuals sexed was unequal although not significantly different ( $\chi^2 = 0.9$ ,  $p = 0.36$ ) from a 50:50 sex ratio (Table 1). Of the 17 whales sexed, 65% were females, with lengths ranging from 10.1-18.9 m and averaging 14.8 m. The largest female previously reported in the literature for the North Pacific was 18.3 m (Klumov, 1962). The lengths of the 6 males averaged 13.2 m in a range of 11.0-15.8 m. Males were smaller than females, which is generally the case for right and other baleen whales (Omura, 1958). Although the American Pacific Whaling Company documents do not describe the methods used to measure whale lengths, the lengths given in the ledgers are recorded to the nearest foot.

Assuming the lengths are accurate to the nearest foot, it was possible to estimate the reproductive status of the right whales. Of the 11 females, 5 were judged to be sexually mature on the basis of the 15-16 m range for average length at sexual maturity reported by Omura *et al.* (1969). Two of these females (40%) carried fetuses less than the 6 m length estimated for a newborn (Omura *et al.*, 1969). The smaller fetus (1.7 m) was from a whale caught in June, and the larger fetus (5.5 m) was from one caught in August, which suggests a 7.3 cm fetal growth rate per day, assuming growth is linear during the summer feeding period and the conception dates were identical. The catch records contained no data on lactation. The length of males at sexual maturity averages 14.5-15.5 m (Omura *et al.*, 1969); 2 (33%) of

TABLE 1. Catch records of 20 right whales taken in Alaskan waters by the American Pacific Whaling Company 1917-39

Date			Female length m(ft) <sup>1</sup>	Male length m(ft) <sup>1</sup>	Fetus length m(ft) <sup>1</sup>	Location		Whaling station
mo	d	yr				Latitude	Longitude	
7	14	17		Not given				Akutan
6	9	23		Not given				Akutan
8	13	23		Not given				Akutan
6	30	24	17.4(57)	—	—	53°17'N	166°12'W	Akutan
6	28	25	16.8(55)	—	1.7(5.5)	53°18'N	166°39'W	Akutan
7	2	26	12.5(41)	—	—	53°44'N	165°01'W	Akutan
9	18	26	18.9(62)	—	5.5(18.0) <sup>2</sup>	56°51'N	152°53'W	Port Hobron
7	6	27	—	11.0(36)	—	54°20'N	164°50'W	Akutan
6	4	28	—	11.0(36)	—	56°52'N	151°37'W	Port Hobron
6	6	28	10.1(33)	—	—	56°56'N	152°30'W	Port Hobron
6	8	28	14.0(46)	—	—	56°51'N	152°21'W	Port Hobron
6	8	28	—	13.1(43)	—	56°55'N	152°27'W	Port Hobron
7	3	28	15.2(50)	—	—	58°13'N	151°03'W	Port Hobron
7	5	28	—	15.2(50)	—	57°01'N	152°19'W	Port Hobron
6	4	29	18.0(59)	—	—	54°19'N	165°19'W	Akutan
6	14	32	—	15.8(52)	—	56°48'N	152°14'W	Port Hobron
8	2	32	—	13.4(44)	—	56°46'N	153°47'W	Port Hobron
8	1	33	13.7(45)	—	—	56°37'N	151°55'W	Port Hobron
6	3	35 <sup>3</sup>	14.3(47)	—	—	54°02'N	164°40'W	Akutan
8	20	35	11.9(39)	—	—	56°19'N	151°52'W	Port Hobron
Average			14.8(48.5)	13.2(43.5)				

<sup>1</sup>Lengths were originally given in feet and then converted to metric values.

<sup>2</sup>Recorded in company ledger as a male fetus.

<sup>3</sup>Recorded as humpback whale in company ledger but right whale in pilot log.

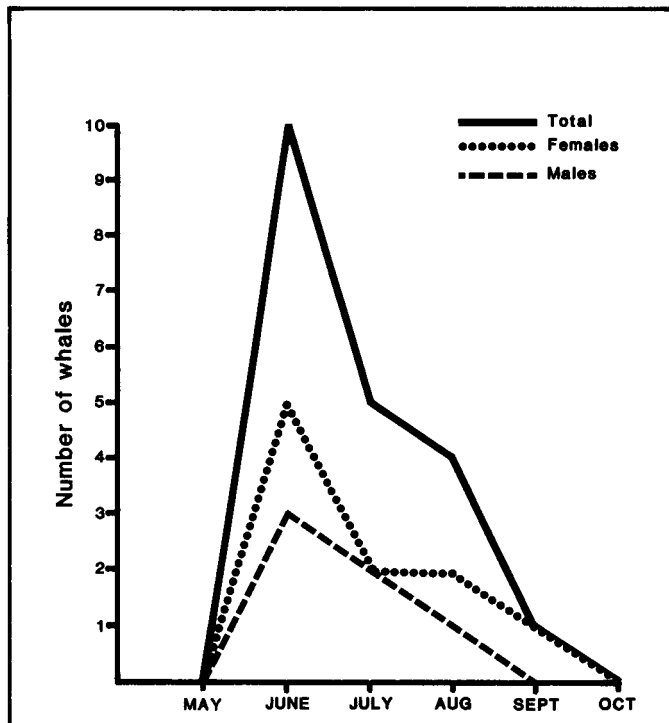


FIG. 3. Number of right whales caught per month during May-October whaling season, 1917-39.

the 6 males fell in this range. These length relationships suggest that 41% (7 animals) of the catch consisted of sexually mature animals.

The right whale catch data presented here add substantially to the still incomplete database on the small North Pacific right

whale population. This paper provides physical, reproductive, or distribution information on 20 right whales recorded by the U.S. Commission of Fisheries, and it expands upon Reeves *et al.* (1985) analysis of the American Pacific Whaling Company catch records. The catch data show that the population was within its historical summering grounds after the period of heavy exploitation during the 19th century, was reproducing as late as 1926, and was supporting a subadult component at least until the species received protection.

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