

Three New Records of Cetacean Species for Venezuelan Waters

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The Caribbean Sea supports a diverse cetacean fauna, comprised of at least 26 species with a tropical, subtropical or broader distribution in the Atlantic Ocean. Surveys, reviews of the literature, stranding reports, and museum specimens have confirmed the presence of at least 23 species in Venezuelan waters. Recent interest in cetacean conservation in Venezuela has produced an increased research effort, which includes field studies and documentation of stranding events. As a result, the number of cetacean specimens in some Venezuelan zoological collections has doubled or tripled during the past eight years. Some of these specimens represent the first confirmed records of the occurrence of several cetaceans along the Venezuelan coast. This paper adds three new records to the list of species known in Venezuelan waters; we believe that the records reflect increased research effort rather than actual range extensions. Current and future surveys will help to confirm the extent of the distribution and occurrence of these and other species in Venezuelan waters.

Preliminary data about the strandings involving these specimens were presented by Villarroel et al. (1998, 2001), Bolaños et al. (2001), and García et al. (2001). External and cranial measurements were made according to Perrin (1975) and were used to confirm field identifications. The specimens reported herein are in the collection of the Museo de la Estación Biológica Rancho Grande (EBRG), Dirección General de Fauna/Oficina Nacional de Diversidad Biológica of the Ministerio del Ambiente y

de los Recursos Naturales (DGF-ONDB-MARN).

Pygmy killer whale (*Feresa attenuata* Gray, 1875)

EBRG 22461.—On 17 February 1998, three pygmy killer whales live-stranded on Playa Tucacas, State of Falcón (approx. 10° 48'N, 68° 19'W), near Morrocoy National Park, on the central coast of Venezuela. Park rangers and by-standers tried to push the animals into deeper water, but the following day an adult female (2.34 m in total length) was found dead on a nearby beach. It is not known if this individual was one of the live-stranded animals. The animal had no obvious injuries and the cause of death was not determined. The lack of a beak, the rounded head with the melon projecting beyond the tip of the mandibles, flippers with rounded tips and no bump in the leading edge, 9-13 teeth per row, relative size of teeth, and the distance between the antorbital notch and the end of the toothrow (Ross and Leatherwood, 1994) indicate that it is a pygmy killer whale. Cranial measurements are given in Table 1.

EBRG 22458.—A recently dead small cetacean was found on Playa Sur, Chichiriviche, State of Falcón (approx. 68° 15'W, 10° 55'N), on 15 July 1996. The animal was buried immediately and no causes of stranding were determined. We examined this skull in April 1998 while documenting the stranding of specimen 22461. Cranial features, 10-13 teeth per row, and a comparison with specimen 22461 indicate that this individual is also a pygmy killer whale.

Pygmy killer whales were first reported for Venezuela by Romero et al. (1991) on the basis of a sighting at sea. Romero et al. (2001) re-evaluated the record because it is very difficult to identify this species by visual observation. Villarroel et al. (2001) found only three previous records of this species for the Caribbean. Descriptions provided by residents during and after rescue attempts of specimen 22461 suggest the presence of a population of this species off the central coast of Venezuela.

TABLE 1. Cranial measurements (mm) and alveolar counts of *Feresa attenuata* (Fa), *Lagenodelphis hosei* (Lh) and *Peponocephala electra* (Pe) from Venezuela.

Measurement	Specimen			
	Fa 22458	Fa 22461	Lh 22586	Pe 22762
Condylobasal length	361	351	472	419
Rostrum length	172	159	223	200
Rostrum width at base	106.1	99.2	120.1	135
Rostrum width at 60 mm from base	86.8	82.6	81.9	115.5
Rostrum width at ½ length	82.6	79.7	70.0	100.0
Rostrum width at ¾ length	60.5	64.9	56.8	82.1
Maximum width of premaxillae	95.6	90.9	72.4	94.5
Preorbital width	215	180	214	–
Postorbital width	226	208	229	–
Zygomatic width	229	217	226	–
Parietal width	165	153	175	–
Length of temporal fossa (left side)	89.8	92.2	82.5	–
Height of temporal fossa (left side)	62.2	87.1	51.4	–
Length of left ramus	286	265	356	–
Length, upper left tooththrow	121	111	190	157.8
Length, upper right tooththrow	120	111	196	159.5
Length, lower left tooththrow	139	129	191	–
Length, lower right tooththrow	143	126	191	–
Number of alveoli, upper right series	9	10	42	–
Number of alveoli, upper left series	9	10	42	–
Number of alveoli, lower right series	13	13	40	–
Number of alveoli, lower left series	13	13	38	–

Dashes indicate measurements not taken due to specimen deterioration.

Fraser's dolphin (*Lagenodelphis hosei*
Fraser, 1956)

EBRG 22586.—Two dolphins live-stranded on El Palito Beach, state of Carabobo (approx. 68° 07'W, 10° 29'N), on the morning of 6 June 1999. After several attempts to push the dolphins back into the water, one male stranded several times and died during transportation to the J. V. Seijas Aquarium in the city of Valencia (García, pers. com.). The animal measured 2.5 m in total length; body size, the fusion of maxillae and premaxillae along the dorsal surface of the rostrum, and the close mesial contact of premaxillae at midlength (Perrin et al., 1994) indicated that the animal was an adult. The cause of stranding was not determined. Color pattern, short but well-defined beak, deep palatal grooves, small temporal fossae, and tooth counts (Perrin et al., 1994) indicated that the specimen was a Fraser's dolphin.

Because of its preference for high seas, Romero et al. (2001) found no basis for con-

sidering the presence of Fraser's dolphin in Venezuelan waters. Lailson-Brito et al. (1998) related recent strandings and the presence of groups of this species in coastal waters to oceanographic conditions. This is the first record of this species for Venezuela and the southern Caribbean. Cranial measurements are given in Table 1.

Melon-headed whale (*Peponocephala electra*
Gray, 1846)

EBRG 22762.—A dead dolphin was found stranded on a beach 800 m west of the main docks of the La Guaira Port, on the central coast of Venezuela (approx. 10° 36'N, 66° 56'W). Deterioration of the skull prevented determination of some measurements, but the specimen was identified as a melon-headed whale based on cranial features including deep antorbital notch, premaxillae that do not converge at midlength of rostrum and partial counts of over 20 teeth per series (Perryman et al., 1994). A comparison was made with skulls

of *Feresa* and *Lagenodelphis* of the EBRG. Cranial measurements are given in Table 1.

The presence of this whale in Venezuelan waters is not surprising because it has been sighted off Klein Bonaire and it has stranded in Curaçao (Debrot et al., 1998).

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LITERATURE CITED

- Bolaños, J., A. Quijada and A. J. Villarroel. 2001. First record of the melon-headed whale (*Peponocephala electra* Gray, 1846) for Venezuela and a review of its distribution in the Caribbean Sea. *In: Abstracts book, 14th Biennial Conference on the Biology of Marine Mammals, Vancouver.*
- Debrot, A. O., J. A. de Meyer, and P. J. E. Dezentjé. 1998. Additional records and a review of the cetacean fauna of the Leeward Dutch Antilles. *Carib. J. Sci.*, 34:204-210.
- García, L., J. Bolaños, and M. González-Fernández. 2001. A live stranding of the Fraser's dolphin (*Lagenodelphis hosei* Fraser, 1956) in the central coast of Venezuela: first record for the southern Caribbean Sea. *In: Abstracts book, 14th Biennial Conference on the Biology of Marine Mammals, Vancouver.*
- Lailson-Brito, J. Jr., A. F. Azevedo, A. B. L. Frago, H. A. Cunha and S. Siciliano. 1998. O golfinho de Fraser, *Lagenodelphis hosei* (Fraser, 1956) no estado do Rio de Janeiro, Brasil. *In: Resumos, 8th Reuniao de Trabalho de Especialistas em Mamíferos Aquáticos da America do Sul. Olinda, Pernambuco, Brasil, 25-29 Outubro.*
- Perrin, W. F. 1975. Variation of spotted and spinner porpoise (Genus *Stenella*) in the Eastern Tropical Pacific. *Bull. Scripps Inst. Oceanogr.* 21:1-206
- Perrin, W. F., S. Leatherwood, and A. Collet. 1994. Fraser's Dolphin *Lagenodelphis hosei* Fraser, 1956. *In: Ridgway, S. and R. Harrison (Eds.). Handbook of Marine Mammals. Vol. 5: The First Book of Dolphins, pp. 225-362. Academic Press, San Diego, CA.*
- Perryman, L., D. W. K. Au, S. Leatherwood and T. A. Jefferson. 1994. Melon-headed whale *Peponocephala electra* Gray, 1846. *In: Ridgway, S. and R. Harrison (Eds.). Handbook of Marine Mammals. Vol. 5: The First Book of Dolphins, pp. 363-386. Academic Press, San Diego.*
- Romero, A., A. Mayayo and A. I. Agudo. 1991. Los cetáceos recientes de Venezuela. *Mem. Soc. Cs. Nat. la Salle*, 51(135-136):169-180.
- Romero, A., A. I. Agudo, S. Green and G. Notarbartolo di Sciarra. 2001. Cetaceans of Venezuela: their distribution and conservation status. NOAA Tech. Rep. NMFS 151, 60 pp.
- Ross, G. J. B. and S. Leatherwood. 1994. Pygmy Killer Whale *Feresa attenuata* Gray, 1874. *In: S. H. Ridgway and R. Harrison (Eds.). Handbook of Marine Mammals, volume 5: The first book of dolphins, pp. 387-404. Academic Press, San Diego.*
- Villarroel, A. J., J. Bolaños and A. Ferrer. 1998. Primer registro de la orca pigmea (*Feresa attenuata*) en aguas venezolanas y notas sobre su varamiento. *In: Libro Resúmenes 8^o Reunión de Trabajo de Especialistas en Mamíferos Acuáticos de Sudamérica, Olinda, PE, Brasil, Octubre de 1998.*
- Villarroel, A. J., J. Bolaños, A. Ferrer, and S. Narciso. 2001. On two strandings of the pygmy killer whale (*Feresa attenuata* Gray, 1874) in the central coast of Venezuela: first records for the southern Caribbean Sea. *In: Abstracts Book, 14th Biennial Conference on the Biology of Marine Mammals, Vancouver.*