Reproductive Rates and Breeding Area Occupancy in the Southern Right Whale, *Eubalaena australis*

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ABSTRACT

Since 1970 we have maintained a long-term study of a population of southern right whales at Peninsula Valdes, Argentina. Using aerial photographs of distinctive callosity patterns, we have been able to identify over 580 animals, 75% of which we have seen more than once (a few individuals have been seen up to 18 times). Of this group, 66 have had at least 2 calves and 9 of these have had at least 3. Adult males tend to visit Valdes every year, whereas females in their prime calf-bearing years are usually seen only every third year, when they are accompanied by a calf – not in the year before giving birth, when it might be expected that they would be impregnated. This means that Peninsula Valdes is used by 3 different groups of calf-bearing females. It also suggests that although mating behavior and intromission are commonly observed in the area, productive matings in this population occur either at a different time of year or elsewhere.

A Technique for Estimating Reproductive Parameters of Small Cetaceans from Vertical Aerial Photographs

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ABSTRACT

An aerial photographic survey was conducted off the west coast of Mexico to acquire length-frequency data on dolphin stocks affected by the tuna purse-seine fishery in the eastern tropical Pacific. This study was funded by the Inter-American Tropical Tuna Commission (IATTC), and the scientific party was comprised of personnel from the IATTC and the National Marine Fisheries Service (NMFS). The study was designed to develop and evaluate techniques for photographing dolphin schools, measuring lengths of dolphin images from aerial photographs, and using these data for calculating reproductive parameters. The camera systems onboard included a 230-mm-format cartographic camera, two 115-mm-format aerial reconnaissance cameras, and four Hasselblad 55-mm-format cameras. The camera systems were mounted vertically in the deck of an AT-11 aircraft. Although all of these camera systems have been used successfully to collect imagery for length determination of large cetaceans, only the 115-mm-format cameras produced photographs of adequate quality for dolphin length measurements. Of the 100 schools photographed, 29 were of suitable quality for length-measurement analysis. Due to their light grey color and unique swimming behavior, spinner dolphins (*Stenella longirostris*) were found to be more vulnerable to photographic sampling than the other species encountered. Preliminary analyses of some length data from schools of the Costa Rican race of spinner dolphins have revealed that groups of lengths of small animals can be identified which correspond to age groups approximately 6 months apart up to an age of 1½–2 years. Analyses are proposed to try to describe the data using a limited age-structured model from which estimates of reproductive rate can be obtained.

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