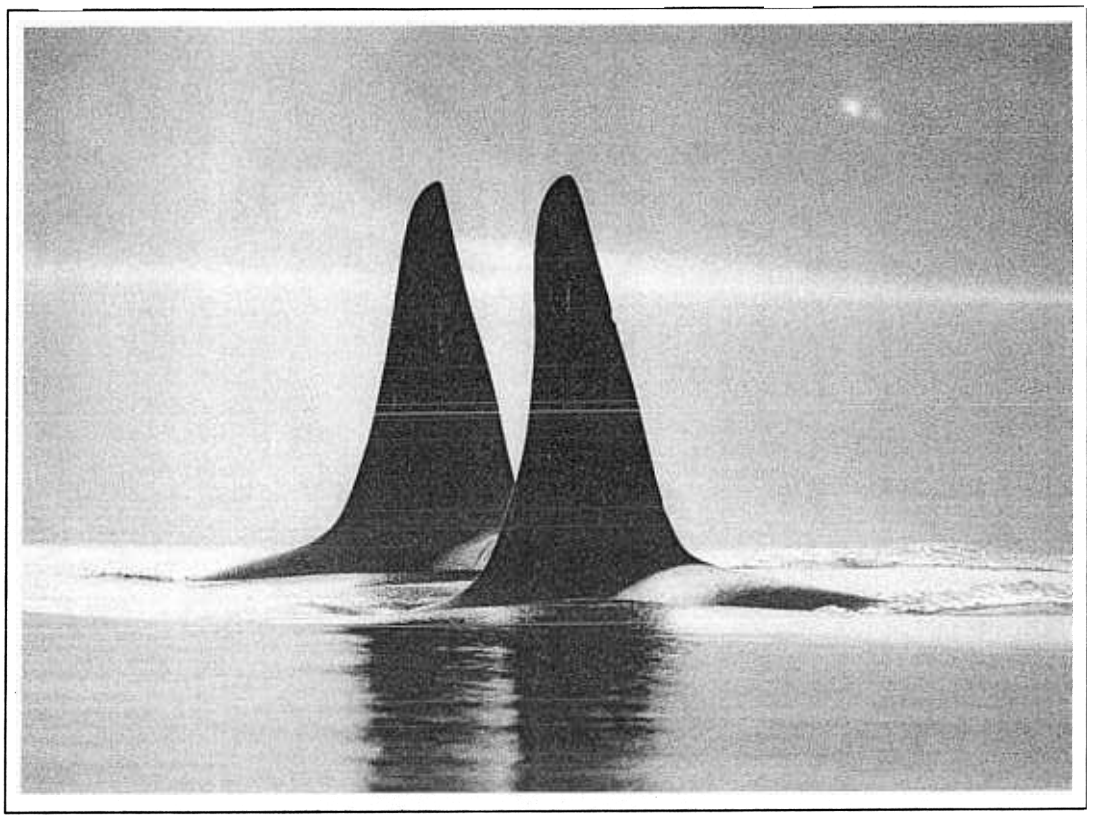

KILLER WHALES

of Southeast Alaska

A CATALOGUE OF PHOTO-IDENTIFIED INDIVIDUALS

1997

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INTRODUCTION

In the early 1970s, Dr. Michael Bigg (Department of Fisheries, Nanaimo Biological Station, B.C., Canada) determined that killer whales could be individually identified based on the characteristic shape and nicks of the dorsal fin and from the differences in the pigmentation and scarring of the saddle patch (Bigg et al., 1987, 1990). His pioneering effort on the use of photo-identification in the study of killer whales launched many research programs directed at killer whales in various parts of the world.

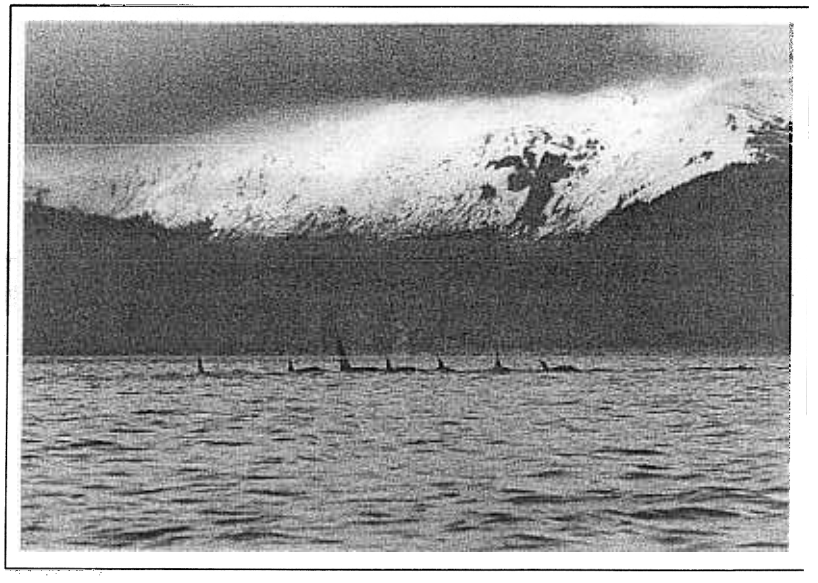
The first dedicated study of killer whales in Southeast Alaska began in 1984 and was supported by Sea World, Inc. (Leatherwood et al., 1984). Results of photo-identification studies yielded 79 individually identified whales within the inside waters of Southeast Alaska (Ellis, 1984, 1987). Limited funding precluded dedicated surveys between the years 1985 and 1988, however opportunistic photographs were collected. Beginning in 1989, the National Marine Mammal Laboratory (NMML), through an interagency agreement with the National Park Service and with several independent researchers, initiated studies to collect photographs of killer whales throughout the waterways of Southeast Alaska (Figure 1). In addition, staff personnel and customers aboard whale watching vessels, the Alaska State Ferry System, private boat owners, and personnel owning or operating fishing lodges, were also contacted and encouraged to submit killer whale sightings and, and whenever possible, to send photographs to NMML. Concurrent with these studies, NMML staff and contractors also conducted dedicated surveys on the overall abundance, distribution, stock structure, and feeding habits of killer whales throughout Southeast Alaska (Dahlheim, 1994; Dahlheim and Waite, 1993). The majority of the killer whale photographs in this catalogue were collected during NMML's dedicated research efforts in Southeast Alaska.

Photographs of identified individual killer whales documented in Southeast Alaska between the years 1984 and 1995 are presented here. Results of our investigations yielded 250 identified killer whales. The production of this catalogue fills an important gap between geographical areas where killer whales have been extensively studied (i.e., British Columbia, Canada, and Prince William Sound, Alaska).

RESIDENT AND TRANSIENT KILLER WHALES

Pods of killer whales along British Columbia and Washington State have been labeled as "resident" or "transient" (Bigg, 1982; Bigg et al., 1990). While many researchers currently recognize that the terms resident and transient are somewhat misleading in their descriptions, the terms are so entrenched in the popular and scientific literature that they continue to be used. The two sympatric forms are believed to differ in several aspects of morphology, ecology, and behavior. However, much of what we know about the resident and transient forms and behaviors of killer whales are derived from research conducted in British Columbia and Washington State waters and extrapolated to other areas. It is possible that killer whales occupying other geographical regions or habitats may behave or segregate differently.

In British Columbia and Washington State waters, resident whales eat fish but rarely consume marine mammals. Conversely, transient whales feed primarily on marine mammals. In Alaska, however, there are cases of transient whales eating both fish and marine mammals. Resident whales have shorter dive times, follow more predictable travel routes, and are usually easier to approach than are the transient type of whales (Bigg et al., 1987). Based on observational data, resident and transient whales have not been seen to intermingle socially (Baird and Dill, 1995). Genetic differentiation has also been documented between the resident and transient forms (Hoelzel and Dover, 1991). Resident pods ranging from Canada throughout Alaskan waters were shown to be made up of closely related individuals (Hoelzel et al., in press). This is not surprising given the amount of intermixing documented among these various pods during photo-identification efforts. A third form has been recently described as the "offshore" type (Ford et al., 1995). Offshore whales appear to differ from residents and transients in morphology and behavior. Offshore whales have not been seen to intermix with resident pods or transient groups. However, recent genetic studies have shown that the offshore type is closely related to the southern community of resident whales inhabiting the waters of Washington State (Hoelzel et al., in press).



CATALOGUE FORMAT

As in other photo-identification catalogues, whales are arranged by pod (= social grouping). Each pod is labeled by an alphabetical designation (e.g., AF). The A indicates Alaska and the F is the pod designation. Each individual is then given a number (numbered sequentially). Thus AF5 means the pod was first seen in Alaska, the group of whales were identified to be members of pod F, and the number of the individual whale is 5. If group social structure was poorly understood (e.g., AP group), or was constantly changing (e.g, AL group), we used the term assemblage versus pod.

The AP assemblage of whales have only been seen once in Southeast Alaska. Preliminary observations identified these whales as the offshore type. However, based on recent genetic investigations, we choose to combine the AP assemblage of whales (AP1 through AP28) with the resident whales.

For transient whales, the naming system requires a brief explanation. Unlike the cohesive social structure that occurs in resident whales, transient group structure has a high rate of dispersal and is dynamic. The particular designation given to a transient group does not imply that individual whales of that group were seen together. For example, it is not uncommon that AM whales, or for that fact any transient individual, could be routinely seen with other transient whale groups or even sighted as a lone individual. Conversely, it appears that some transient matrilineal lines do have long-term stability.

Southeast Alaska resident whales (AF, AG, AP, and AZ) are listed first followed by resident whales seen in Southeast Alaska but first identified in British Columbia, Canada (A4, A5, B, I11, R, and W). Transient whales complete the catalogue (AA, AH, AL, AM, AO, AQ, F1, and S3). Each section is organized alphabetically.

The highest quality photograph for each individual whale was selected for inclusion in this catalogue. In the case of resident whales, with the exception of I11 pod, if an individual whale was not seen for four consecutive years of encounters with a particular pod, we did not include that individual. All transient whales documented during our investigations are included regardless of the last time that particular whale was seen.

An Appendix provides information on each whale contained in this catalogue which includes: the page on which it can be found, the year of the photograph, the year the whale was last seen, the sex (if known), the mother and year of birth (if known), and any other designation given to this particular whale (if the whale was seen in another geographical area and given a different identification code).

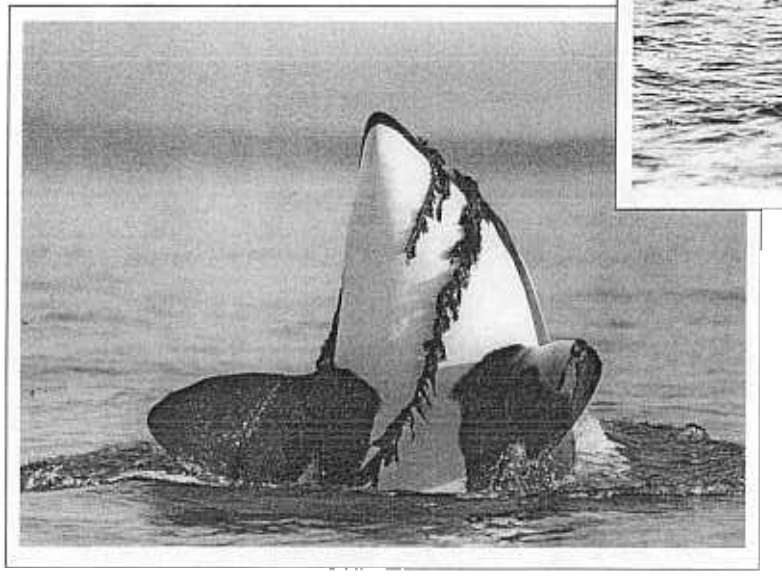
PHOTOGRAPHING KILLER WHALES

When conducting photo-identification studies on killer whales, a photograph, depicting the complete dorsal fin and saddle patch, is required for proper individual identification. Because saddle markings vary from one side of the whale to another a photograph of the whale's left side is preferred. This facilitates the comparison of photographs along the entire North American Pacific coast.

During NMML's investigations, Nikon Autofocus 8008 cameras[1] equipped with 300mm fixed lenses were used. However, any good camera with a telephoto lens can be used. We selected Fuji 1600 black and white film. Shutter speed should be no less than 1/1000 of a second.

Because scarring patterns can change from year to year, it is important that whales be photographed annually to document any changes. Care must be taken to minimize disturbance to the whales during the course of collecting photographs. Within the United States, permits are required to pursue marine mammals during research activities.

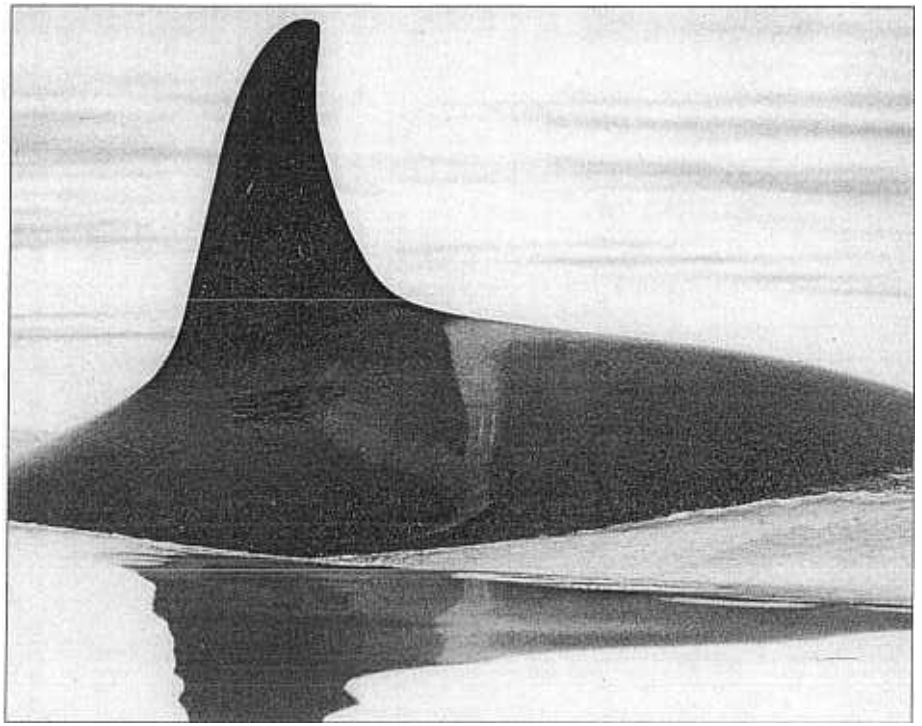
Research is continuing in Southeast Alaska; therefore, we are interested in seeing any photographs of killer whales from that area. Include information on the number of whales seen, date, and location. Please send photographs to: National Marine Mammal Laboratory, AFSC, NMFS, NOAA, 7600 Sand Point Way NE., Seattle, Washington 98115. Attn: Marilyn E. Dahlheim (206-526-4020).



[1]Reference to trade names does not imply endorsement by NMFS.

AF POD

AF pod is the largest resident group of killer whales in Southeast Alaska, containing 42 whales. The pod frequently travels as two separate subpods. In Southeast Alaska, AF pod is commonly observed intermixing with AG pod and on one occasion was seen with AZ assemblage. AF pod has also been seen travelling in close association with members of R and B pods which are well known resident pods from British Columbia. AF pod occurs throughout the inland waterways of northern Southeast Alaska as far south as Frederick Sound. They have been seen every month of the year, except December (possibly due to limited observer effort). AF pod's home range extends from Southeast Alaska to Prince William Sound. While inhabiting Prince William Sound (typically during the month of August) members of AF pod have been seen in association with most of the Prince William Sound resident pods. AF pod has been observed interacting with longline fishery operations in Southeast Alaska.



AF4

AF5