



NATIONAL WILDLIFE FEDERATION[®]

People and Nature: Our Future Is in the Balance[™]

Alaska Office

July 18, 2002

Attn: Stock Assessments
Chief, Marine Mammal Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

VIA FACSIMILE

Dear Chief:

National Wildlife Federation, Alaska Center for the Environment, Alaska Community Action on Toxics, Center for Biological Diversity, Coastal Coalition, Defenders of Wildlife, and the Eyak Preservation Council urge the National Marine Fisheries Service to modify its draft Stock Assessment Report (SAR) for the Eastern North Pacific transient stock by designating the AT1 pod of transient killer whales as a separate stock under the Marine Mammal Protection Act (MMPA).

NMFS defines the Eastern North Pacific transient stock to include transient killer whales ranging from California to western Alaska, including whales in British Columbia and Southeast Alaska, the Gulf of Alaska, and the AT1 group of Prince William Sound and Kenai Fjords. Recent studies demonstrate that the AT1 group is a genetically separate stock from other transient killer whales grouped in the Eastern North Pacific Transient stock. The AT1 stock is also morphologically different from other transients in the eastern north Pacific, and it has undergone a dramatic drop in population over the past fifteen years that distinguishes it from other transients and threatens to leave the Prince William Sound/Kenai Fjords area without a significant and functioning transient killer whale population. It is therefore appropriate and timely to recognize the AT1 group as a separate stock.

BACKGROUND

Species Description

Killer whales, *Orcinus orca*, are the only living members of the genus *Orcinus*.¹ One of the top predators of the ocean, they have no predators themselves except for humans. They have been observed in all oceans and seas of the world, but are most common in the northern latitudes. Along the west coast of North America, killer whales occur throughout the entire Alaskan coast,

¹ The taxonomic classification of killer whales: Kingdom Animalia; Phylum Chordata (vertebrates); Class Mammalia; Order Cetacea; Suborder Odontoceti (toothed whales); Family Delphinidae (oceanic dolphins); Genus *Orcinus*; Species *orca*.

in the British Columbia and Washington inland waterways, and along the outer coasts of Washington, Oregon and California.

Roughly the size of a small bus, a twenty-foot adult can weigh anywhere from eight to thirteen thousand pounds. Perhaps the most distinguishing physical characteristic of killer whales is their dramatic black and white coloration. Their jet-black bodies have white patches above the eyes, under the jaw, and on the belly, extending up onto their sides. Behind and below the dorsal fin is a gray "saddle patch" that is often scratched and marked. Like human fingerprints, each whale's unique saddle patch markings, coupled with the shape of its dorsal fin, allow positive identification of the individual.

The spectacular dorsal fin of an adult male killer whale may rise six feet above its back, while females and immature males have much smaller, often falcate (curved) fins. Cosmopolitan in their distribution, killer whales may feed on a variety of fish, cephalopods and marine mammals. In the eastern North Pacific, where they perhaps have been best studied, culturally and genetically defined populations with distinctive feeding habits have been well described. (Barrett-Lennard, 2001; Saulitis et al., 2000).

Gestation in killer whales is approximately seventeen months and, once born, a whale takes over a decade to reach sexual maturity. Killer whales are long-lived and may reach 50 years of age or more.

Behaviorally, killer whales are complex social predators, with life history parameters and a pattern of cognitive development similar to humans (Olesiuk et al., 1990; Osborne, 1990; Heimlich-Boran and Heimlich-Boran, 1999; Osborne, 1999). They have an advanced central nervous and sensory system, an extended juvenile developmental period, and a complex learned communication system. In the eastern North Pacific they have developed distinct cultures and unique populations. (Osborne, 1990; Morton, 1990; Heimlich-Boran and Heimlich-Boran, 1999; Ford, 1990; Whitehead, 1998).

Killer whales of the Pacific Northwest coast of North America are referred to as "residents," "transients," and "offshores." The building block of the resident killer whale social structure is the matrilineal group, or matriline. A matrilineal group, which may be as small as two animals, consists of a female and all her offspring of both sexes. Permanent associations of matrilines are termed "pods". Resident pods usually contain 7-36 individuals; emigration or immigration occurs only by birth or death. (Saulitis, 2000; Matkin and Saulitis, 1994; Matkin et al., 1999).

Breeding apparently does not occur within pods, but between whales from distantly related pods. (Barrett-Lennard, 2001). A number of associating and potentially interbreeding pods may form a "population," the largest social division. A population can number in the hundreds and can be separated from other populations on the basis of genetic or acoustic analysis and association patterns.

Transient killer whale social structure is more fluid and not as well understood as that of residents. There is some movement of individuals between groups within a population and thus a

lack of clearly defined pods. However, at the population level the same separations based on genetic and acoustic analysis and association patterns can be made for transients as for residents.

The normal annual mortality rate for killer whale populations is approximately two percent. (Matkin et al., 1999b). Adult females with juveniles normally have annual mortality rates below 1%. Id.

Classification of Killer Whales

Scientists classify Pacific Northwest killer whales into three distinct forms: "residents," "transients," and "offshores." Two of these sympatric (geographically overlapping but non-associating) forms of killer whales occur in the eastern North Pacific, including Prince William Sound and the Kenai Fjords—"transients" and "residents." (Ford et al., 2000; Matkin et al., 2000; Saulitis et al., 2000). The resident and transient populations are each divided into at least three non-associating subpopulations.

a) Off-Shore Killer Whales

Offshore killer whales are recently discovered and have not yet been as extensively photo-identified as the two other forms of killer whales. They have been observed in groups of fifty and more, ranging from southern California to southeastern Alaska. (Matkin et al., 1999b). These whales are distinct from, and not known to mix with, any resident or transient populations. (NMFS, 2000 Killer Whale: Eastern North Pacific Offshore Stock Assessment). Genetic analysis indicates that they are reproductively isolated, but are most closely related to the resident type killer whales. Id. citing Hoelzel et al., 1998.

b) Resident Killer Whales

Resident killer whales are piscivorous—they prey on fish. (Matkin et al., 1997) Resident killer whales remain in their natal pod for life. Id. A pod is made up of multigenerational matrilineal groups, often consisting of a grand mother, her mature offspring, and her offspring's calves. (Matkin et al., 1999b).

While resident killer whale pods each have their own repertoire of calls, shared calls between pods suggest a common lineage along matrilineal, and historic relationships may be reflected in the degree of call sharing. (Matkin et al., 1997).

There are thirteen resident pods in Prince William Sound. (Matkin et al., 1997). During certain parts of the year, resident pods in Prince William Sound feed primarily on coho salmon (*Oncorhynchus kisutch*). Id. Many resident pods occasionally aggregate in Prince William Sound, with temporary mixing of pods. Researchers believe that mating may occur during this social aggregation. Id.

c) Transient Killer Whales

A definitive characteristic of transient killer whales is that they prey on other marine mammals, unlike resident killer whales which subsist on fish. In fact, Dall's porpoise, a known prey item of transient killer whales, are occasionally found in the company of resident killer whales. The porpoise appear able to readily distinguish between the two forms of killer whales, perhaps on the basis of their distinct vocalizations.

Other documented differences between transients and residents include measurable differences in morphology, group size (transient groups tend to have fewer whales), social organization, and acoustic dialects. Transients and residents avoid one another and do not interbreed, although rare interactions between the transients and residents have been observed. Thus, a very small transient group may exist amongst a much larger resident population and be, in every sense, isolated.

Many factors potentially explain the wide cultural gulf between residents and transients. The specialized hunting techniques required for feeding on salmon--including the refinement of echolocation ability and the learning of prey avoidance responses--are clearly different from the techniques required for hunting marine mammals. And the same factors that promote successful hunting of fish may actually decrease the successful hunting of marine mammal prey. For instance, the large group sizes of resident killer whales may enhance hunting success for salmon, through the sharing of echolocation information over wide areas to locate patchily distributed salmon schools. At the same time, small group sizes may enhance the hunting success of transients, which depend upon stealth to capture marine mammal prey. Unlike the noisy, social pods of residents, transient killer whales stalk their prey silently, in small groups. Passive listening, rather than echolocation, may be employed in the prey detection (Saulitis 1993).

Three transient killer whale groups are present in the eastern North Pacific: the West Coast transients, the Gulf of Alaska transients and the AT1 transients. These three groups are parapatric with respect to each other, i.e. they have separated genetically without geographic isolation. (Barrett-Lennard, 2000). The West Coast transients of southeast Alaska, British Columbia, and Washington number about 219 members. (Ford and Ellis, 1999). The Gulf of Alaska transient population is thought to have at least 60 individuals. (*Id.*) There are only nine whales in the AT1 group. (Matkin et al., 2000). No association has been observed between any of these subpopulations. (Barrett-Lennard, 2000).

The Gulf of Alaska transient group and the AT1 transient group inhabit Alaskan waters exclusively. Gulf of Alaska transients are found in the waters west of Glacier Bay (as far as Kodiak), and occasionally enter Prince William Sound, while the AT1 group lives exclusively in Prince William Sound and the Kenai Fjords. There have been no observations of interactions between members of these three groups, and genetic evidence indicates they have been separate for thousands of years. (Barrett-Lennard, 2000).

The AT1 Transient Group

In the 1980s, the AT1 transient group was one of the most frequently encountered killer whale groups in Prince William Sound. (Matkin et al., 1999). This is exceptional among transients,

because most transients are observed only infrequently, which makes it difficult for researchers to collect information about changes in their groups over time. However, researchers have been able to account for most of the members of the AT1 group each year since 1984. (Matkin et al., 1999).

The AT1 transient group has been sighted year-round in Prince William Sound, as well as in Resurrection and Aialik Bays of adjacent Kenai Fjords. (Saulitis, 2000). They specifically favor the southwestern part of Prince William Sound for hunting. While the group is known to have once had as many as twenty-two members, the number of AT1 transients has been reduced by more than half since the 1989 *Exxon Valdez* oil spill. (Matkin et al., 1999).

Nine AT1 whales haven't been photographed since 1990, and two more haven't been photographed since 1992. (Matkin et al., 1999) Three now-deceased members of the AT1 group were last seen swimming around the leaking *Exxon Valdez* oil tanker. Two males, AT1 and possibly AT10, died in the last two summers. AT1 was found dead in 2000. The body of another killer whale, found in the summer of 2001 near Johnstone Point, was too decomposed at the time to be positively identified, but has since been tentatively verified as a member of AT1 (final genetics tests are still in process due to difficulties in DNA extractions). The deaths of these two whales reduce the known AT1 group population to nine.

Of the remaining nine members, only four are female, and two of those are too old to reproduce. (Matkin et al., 1999). No new calves have been observed since 1984. (*Id.*).

In Prince William Sound, AT1 transients feed primarily on Dall's porpoise and harbor seals. When hunting seals, the whales separate and slide along shorelines or through tight, rock-strewn channels. The whales also forage near tidewater glaciers in search of harbor seals that haul out on the ice floes in late spring. In open water, where Dall's porpoise are found, the AT1 group may spread out across a passage, breathing quietly, milling at the surface, silently awaiting prey. The AT1 group members do not eat fish and they do not interact with the resident pods of Prince William Sound or the Gulf of Alaska transient group.

THE AT1 GROUP IS A SEPARATE STOCK

According to the MMPA, "the term 'population stock' or 'stock' means a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature." 16 USC 1362(11). NMFS recognizes the difficulty of choosing a universal definition of a biological stock that will be meaningful for all species and populations, but specifically notes that a stock is often "defined as a unit that will preserve genetic diversity." Guidelines for Assessing Marine Mammal Stocks (GAMMS) Workshop Report, p. 8. Under any approach, NMFS must ensure that marine mammals are not "permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part." 16 USC 1361(2).

The AT1 group is genetically distinct from other transients within the currently defined Eastern North Pacific transient stock. A recent peer-reviewed study by Lance Barrett-Lennard

demonstrates that the AT1 group of transients is significantly different from the other transients within the stock, and in fact, is much more distinct from the neighboring Gulf of Alaska population than the Gulf of Alaska population is from the SE Alaska/BC population. Other studies have identified clear morphological and behavioral differences between the AT1 group and other whales in the Eastern North Pacific transient stock. See Attachment A, Bibliography. Finally, the AT1 group has also undergone a dramatic population reduction over the course of the past fifteen years that threatens to leave Prince William Sound and Kenai Fjords without transient killer whales as a significant functioning element of the ecosystem. The scientific advisory groups to NMFS, the Alaska Regional Scientific Review, has recommended that the AT1 group be recognized as a unique stock.

The AT1 Group Is Genetically Distinct from Other Transients within the Eastern North Pacific Transient Stock

Both nuclear and mitochondrial DNA analysis indicate that the AT1 group is genetically isolated from the other transients (Barrett-Lennard, 2000; Matkin et al., 1999), and exclusive in their membership and breeding habits.

a) Mitochondrial DNA

Mitochondrial DNA is passed from mother to offspring. The mitochondrial DNA haplotype of the AT1 whales has not been found in killer whales from other populations. (Barrett-Lennard, 2000), indicating that females do not emigrate from or immigrate to the AT1 group from other transient or resident groups. (Barrett-Lennard, 2000).

Interestingly, the AT1 group is more removed genetically from the sympatric Gulf of Alaska transients than the Gulf of Alaska transients are from the West Coast transients of southeast Alaska, British Columbia, and Washington. (Matkin et al., 1999).

b) Nuclear DNA

Nuclear microsatellite DNA is inherited from both parents. The great distance between the AT1 transients and all other transients in Attachment B, figure 3.3 from Barrett-Lennard, 2000, indicates the lack of male or female mediated gene flow between the AT1 transients and other populations. The microsatellite-based pairwise F_{st} estimate for the West Coast and Gulf of Alaska transient subpopulations is relatively low--evidence that their separation is either incomplete or has occurred recently. The larger microsatellite differences between the small AT1 population and both the Gulf of Alaska transients and west coast transients indicates that separation of the AT1 population from these groups is older and more complete.

AT1s Are Behaviorally and Geographically Distinct from other Transients within the Eastern North Pacific Transient Stock

Three factors indicate the AT1 group's geographical distinctness from other transient killer whales. First, AT1 transients are not known to associate with other transients in their range.

Despite fairly intense study since 1984, and many encounters, AT1 transients have never been seen with other transient whales. (Scheel et al., 2001).

Second, the AT1 group has been sighted only in the waters in and near Prince William Sound and the Kenai Fjords. In contrast, the closest other transient group, the Gulf of Alaska transients, inhabits the waters west of southeastern Alaska and only occasionally enters the waters of Prince William Sound. During a 12-year study researchers observed the AT1 group 160 times and the Gulf of Alaska group only 24 times in the Prince William Sound/Kenai Fjords area. (Scheel et al., 2001).

Third, within their individual ranges, Gulf of Alaska transients are less frequently seen near the shore, while AT1 transients are most frequently seen foraging near the shore, in inlets and bays. Therefore, even while its geographic range may overlap with Gulf of Alaska transient killer whales, the AT1 group in general maintains a geographical separation.

Behaviorally, the AT1 group is readily distinguishable from the Gulf of Alaska transients both in hunting and communication patterns. The Gulf of Alaska transients, which have been occasionally observed in Prince William Sound, include Steller sea lions as part of their diet and some may specialize in hunting these pinnepeds. (Matkin et al., 1999). Several Gulf of Alaska transients were repeatedly sighted in and near Valdez Arm in the summer of 1994 killing sea lions. Others have been observed hunting sea lions at the Needle, a sea lion haulout in Prince William Sound, and at Chiswell Island, a sea lion rookery in Kenai Fjords.

The AT1 group, in contrast, preys primarily on harbor seals and Dall's porpoise, and has never been observed attacking or consuming Steller sea lions. (Saulitis et al., 2000). AT1 transients frequent the intricate coastlines and tidewater glaciers of PWS and Kenai Fjords, where harbor seals haul out and pup. (Matkin et al., 1999). Stomach contents from AT1 transients have contained primarily harbor seal and some Dall's porpoise remains. (Heise et al., in prep.).

Current acoustic analysis in Alaska provides further support for the discreteness of the AT1 group. Like many species of the family Delphinidea, killer whales have developed and depend on a complex system of communication and echolocation. Scientists have been able to distinguish different populations of killer whales by their vocal repertoire, and dialects of some groups have remained constant for more than 25 years. (Ford et al., 2000).

The AT1 group has a vocal dialect distinct from that of any resident pod or transient group in the eastern North Pacific. (Saulitis et al., 1993; Matkin et al., 1999) Researchers have identified fourteen discrete pulsed calls for the AT1 group in addition to echolocation clicks, whistles and aberrant pulsed calls. (Saulitis, 1993). Only one call produced by the AT1 group is similar to any other call used by transient groups between southeast Alaska and California. (Id.)

The large number of discrete pulsed calls found for the AT1 group is larger than the known discrete pulsed calls of other transients. It is more similar to the number of discrete pulsed calls found in resident killer whale dialects. This may demonstrate stronger social bonds within the AT1 group as a result of its small size and smaller range. (Saulitis, 1993).

The AT1 Group Should Be Managed Separately

The above demonstrates that, from a biological perspective, the AT1 group is distinct from all other groups of killer whales and should, at a minimum, be managed as a separate stock. NMFS has recognized that the term "stock" is a human construct that, at some point, must refer to management practices. GAMMS Workshop Report, p.14. From a practical point of view, the AT1 group should be managed separately from other EPT transients simply because the AT1 group faces a population crisis that no other transient killer whales face. Over the course of the past twenty years, the AT1 group's population has been reduced from at least 22 members to 9. There is no indication that other transient populations are facing the same reductions.

If the AT1 group dies out it will result in a 200-mile gap in the range of transient killer whales by eliminating their presence in Prince William Sound and the adjacent Kenai Fjords. As noted earlier, AT1 whales are sighted in Prince William Sound/Kenai Fjords year-round. It is significant that AT1 transients have not been photographed outside their identified range of Prince William Sound/Kenai Fjords, indicating their close association with this habitat. Despite the fact that the AT1 transients have sharply declined over the past decade, there is no evidence of their ecological replacement by other transient killer whale (i.e. the Gulf of Alaska transients). The AT1 transient group's markedly different genetic and behavioral structure are uniquely adapted to the Prince William Sound/Kenai Fjords habitat, and with their extinction transient killer whales will cease to be a significant, functioning element of the Sound/Kenai Fjords ecosystem.

The GAMMS workshop report recognizes that the danger in lumping populations together when defining stocks is that one geographically distinct portion of a population may be eliminated while overall numbers do not significantly decline. It notes that, "[i]n situations where managers must decide between lumping and splitting adjacent areas, the most important information to know is the number of animals moving between areas in each year. Unfortunately, this is very difficult information to collect. Monitoring the movement of individual animals is often difficult and impractical. Identifying genetic or morphological differences between areas will usually be strong evidence that animals do not move between areas in sufficient numbers to prevent the extirpation of one of these populations." GAMMS Workshop Report, p. 11. In this case, there is strong genetic and observational evidence indicating that the AT1 group is a distinct population of transients.

Further, the GAMMS Workshop Report notes that "It was concluded that splitting was to be preferred in situations where incorrectly lumping could lead to the depletion of a stock." GAMMS Workshop Report, p. 14. Here again, the AT1 group's population is in precipitous decline. While splitting the current stock will not guarantee the AT1 group's survival, it is clear that the status quo is likely to result in the AT1 group's extirpation.

Scientific Support

Chief, Marine Mammal Conservation Division
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In order to ensure that NMFS had access to the best scientific information and reasoning when making decisions about stocks, the MMPA required the formation of independent regional scientific review groups. These groups were formed by NMFS after consultation with the Department of Interior, the Marine Mammal Commission, Governors of affected coastal states, regional fishery and wildlife management authorities, Alaska Native organizations, Indian tribes, and fishing industry and environmental groups. Members of the groups must have expertise in marine mammal biology and ecology, population dynamics and modeling, commercial fishing technology and practices, or marine mammal stocks. GAMMS Workshop Report, p. 4. In 2000, the Alaska Regional Scientific Review Group, which was created to make recommendations on Alaska stocks, recommended that NMFS recognize the AT1 group as a separate stock. The Group has continued to urge the split since then. See Attachment C.

Currently there is no mechanism for NMFS to address the decline of whales that are considered part of a larger stock. Designating the AT1 group as a stock will allow NMFS to make management decisions based on the specific needs of this small, genetically and behaviorally distinct group of whales.

Thank you for the opportunity to comment.

Sincerely,



Jim Adams
Counsel
National Wildlife Federation, Alaska Office

cc: Valerie Brown, Trustees for Alaska

Attachment A

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Attachment B

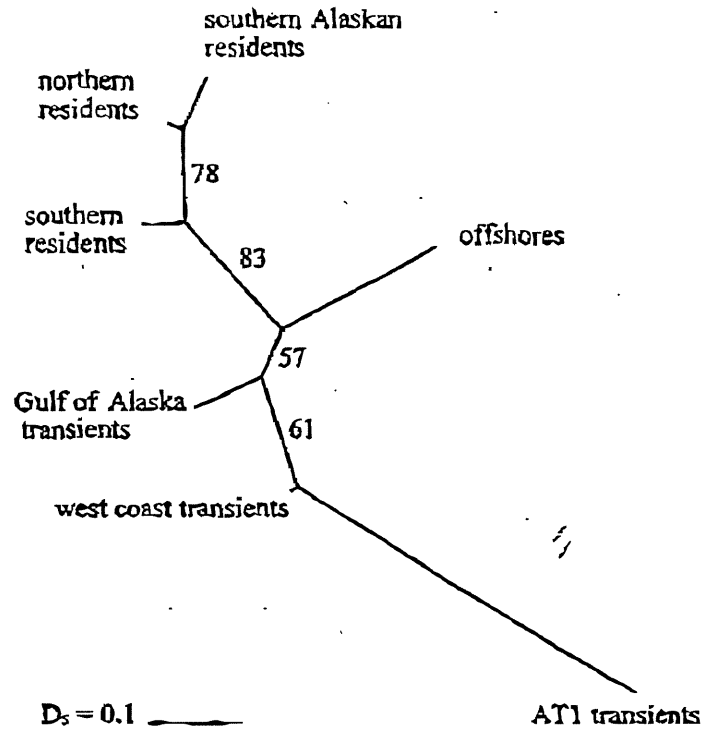


Figure 3.3. Unrooted neighbour-joining phylogram for Alaskan and British Columbian killer whales based on 11 microsatellite loci, using Nei's standard genetic distances. The numbers give percentage bootstrap support. When the offshore population was removed, support for the resident/transient separation was 97%. Atlantic killer whales were not included in this analysis because of their small sample size.

Discussion

This study builds on the findings of earlier genetic analyses of killer whales in the northeastern Pacific (Stevens et al. 1989, Hoelzel 1991, Hoelzel et al. 1998) but differs from them in the following ways: the number of samples analysed was several times greater than in any earlier study; all Pacific killer whales included in the study were positively identified; four of the six subpopulations analysed here had not been compared previously; at least one whale was biopsied from as many matrilineages as possible (previous studies used multiple samples from a small set of matrilineages); and the length of mitochondrial DNA sequenced and

Attachment C

DRAFT Minutes: Fourteenth Meeting of the Alaska Scientific Review Group 4-5 March 2002

1. Introductory Business¹

1.1 Nominating replacements for SRG members

B. Kelly reminded the SRG members that, at the November 2001 meeting, the SRG had decided that it might be appropriate to nominate new SRG members. At the November meeting, SRG members had indicated that the group would benefit significantly by adding a population geneticist to the team and another individual with expertise in subsistence hunting.

R. Angliss had circulated a list of geneticists and their recent publications to the group a few days prior to the SRG meeting. Of the names on that list, a few could be eliminated because they are very likely to be overcommitted and presumably uninterested in participating (e.g., Allendorf, Avise). Of the remaining names, the SRG selected a "short list" of possible nominees² who appear to have a strong publication record in population and/or conservation genetics; most of these individuals were also known, at least by reputation, by at least one SRG member or NMFS staff. Angliss agreed to contact the potential new SRG members to assess their interest.

SRG members discussed whether it would be useful to add another participant who can provide the SRG with a better understanding of the Alaska Native subsistence harvest. C. Johnson and L. Lowry both indicated that it might be very helpful to add someone to the SRG who has experience with the subsistence harvest in the Gulf of Alaska. Some names were discussed (Huntington, Riedel), but no final decisions were made. Kelly agreed to circulate suggestions to all SRG members to solicit their opinions.

A few SRG members observed that, although NMFS seems to be quite adept at developing estimates of abundance, new, rigorous estimates of mortality were not forthcoming for many stocks. Members questioned whether it would be useful to add a member to the team who has expertise in observer programs or in estimating mortality. There was general recognition that K. Wynne fills the role of the former; the role of the latter can be filled by Adkison.

M. Riedel questioned whether there were representatives from commercial fisheries on the SRG. Kelly indicated that I. Gauvin and Wynne both provide important information on commercial fisheries, but that there was no real effort to include equal representation since the purpose of the

¹ This document is intended to summarize the main points of discussion at the 14th meeting of the Alaska Scientific Review Group. The document does not attempt to repeat everything that was said during the meeting.

² Honeycutt, Scribner, Haig, Hare, Waits, Utter

Lowry questioned whether the publication of a FR notice is necessary if NMFS and the ANHSC can come to an agreement on stock structure. Payne responded that the ANHSC is not the only portion of the public that is interested in the results of the genetics. Publishing a FR notice makes the results available to a much broader audience, and alerts the public that NMFS is moving forward on identifying new stocks for harbor seals.

Bengtson reiterated that, as part of the comanagement committee, the message that the SRG should know is that NMFS/ANHSC agreed to a three-step process. The first step is to inform constituents about the new information on genetics, the second step involves meeting to have a dialog to discuss the new information, and the third step is for NMFS and the ANHSC to make stock recommendations to NMFS.

Riedel indicated that a lot of this will depend on how the ANHSC's scientific peer review comes out. However, she can't tell the SRG what the timetable is for the review. Riedel hopes to discuss the data and the scientific peer review with the board of the ANHSC at the Dillingham meeting at the end of April.

4.3 Reporting units for fishery mortality, subsistence takes

Angliss indicated that, once new boundaries are identified between groups of harbor seals in Alaska, the fishery mortality information and subsistence take information will also have to be separated to correspond with these new areas.

5.0 New information on stocks to be updated in 2003

5.1 Killer whale abundance and stock structure

The SRG acknowledged the receipt of the Matkin et al paper on killer whale abundance and population dynamics.

Adkison questioned whether NMFS would be separating the AT1 killer whale pod from the other transient groups based on Lance Barrett-Lennard's genetics analysis. Angliss indicated that NMFS is not proposing to separate the AT1 pod into a separate stock. Although the genetics information does indicate that the group is genetically separate from other killer whale groups, the GAMMS workshop indicates that stocks should be management units, and it's not clear what management would be applied to this group of killer whales even if it was identified as a separate stock. Kelly and Lowry responded that, when there is a group of animals which is clearly genetically and demographically isolated, the group should be managed separately. Kelly further stated that the consequences of designating a stock should be clearly separated from the scientific information used to support a stock designation. Lowry clarified that considering the management implications of designating a stock is appropriate, but not for this group of killer whales because of the size of the pod and because the biology is clear.

Adkison indicated frustration that there seem to be some inconsistent decisions being made regarding stock structure; he asked when the NMFS meeting on stock structure designations will be held. Payne reiterated that the meeting will be held in the spring and that he would ascertain whether SRG members could attend.

Lowry questioned whether NMFS is concerned about potential impacts on commercial fisheries if the ST1 group is identified as a separate stock. Angliss responded that this has not yet been analyzed fully, but is not anticipated to be a major issue since the incidental take of killer whales in commercial fisheries is low (< 0.5 animal per year) and the fisheries which do incur incidental takes of killer whales are already classified as Category II in the List of Fisheries. Angliss indicated that, in addition, there would be no way to determine whether animals from the AT1 pod were being disproportionately impacted since identification of which killer whale was injured/killed in a commercial fishery is unlikely. Mathews responded that researchers could identify mortalities for AT1 because each animal is known and because Matkin knows when there's an animal missing from AT1 pod. Lowry indicated that, by putting all transient killer whales in one big stock, it means that any takes are "watered down" by the fact that they're pooled into a larger area.

Angliss asked the SRG what the management benefits would be of separating out AT1 pod. SRG members indicated that it would provide a better focus for scientific research and would improve the likelihood that killer whales taken in commercial fisheries would be sampled and identified genetically. Kelly questioned whether there was funding to study AT1 pod. Mathews indicated that information on the pod is collected incidental to other studies, and that there was no funding available specifically for AT1. Payne added that there is a lot of new funds for killer whale research available due to the funds appropriated to study the cause of the Steller sea lion decline; he indicated that he was uncertain whether any of these funds were going to be used to focus specifically on AT1.

Angliss pointed out that there will be a great deal of new information on killer whale genetics available in the immediate future and that it might be very useful to consider the SRGs recommendation to designate AT1 as a separate stock in the context of these new papers. Specifically, a manuscript by Rus Hoelzel has been accepted and will be published very soon. In addition, as a result of the petition to list the Southern Resident killer whale group under the ESA, the SWFSC is in the process of finishing some additional analyses on worldwide killer whale genetics. Lowry added that, to complicate the AT1 picture, the SWFSC recently analyzed a sample from a stranded animal found on the Yukon Delta (well beyond the known range of the AT1 pod) which was genetically an AT1 animal; this does raise the possibility that the AT1 group may be larger than currently thought.

Lowry stated that the SRG has already indicated that the appropriate way to deal with the AT1 pod is to designate it as its own stock and that the SRG does not need to make another formal recommendation to do so.