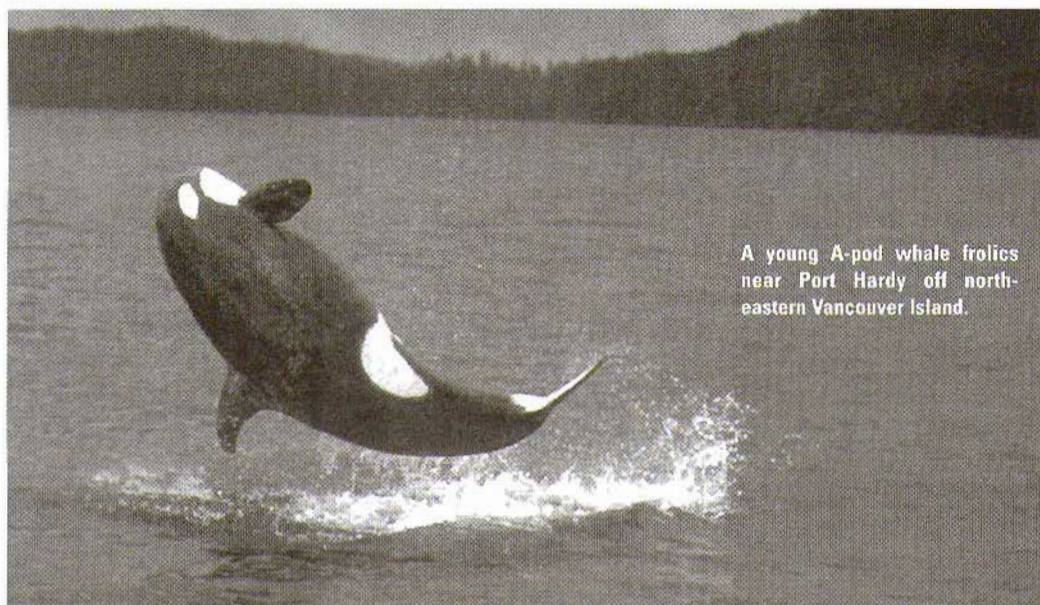


THE Blackfish Sounder

NEWSLETTER OF THE BRITISH COLUMBIA WILD KILLER WHALE ADOPTION PROGRAM



A young A-pod whale frolics near Port Hardy off north-eastern Vancouver Island.

GEOFF DUNN

Plenty of surprises still to discover

After more than 25 years of studying B.C. killer whales, you'd think we'd have a pretty full picture by now of how, when and where they use the coast. Far from it, because the whales keep surprising us. In January 2000, about 50 southern resident whales showed up off Monterey, California — 1,600 km away from their core range off southern Vancouver Island. Then, last summer, about 60 northern residents spent more than three weeks in Georgia Strait, eventually heading down into the core area of southern residents. You can read more about that on page 7.

Both incidents are a reminder of how much we still have to learn about the natural history of B.C.'s killer whales. What drives their movements along the coast? Where do they go in winter? And what are the dynamics between the two resident communities? Was it just a coincidence that the southern residents were off the west coast of Vancouver Island when the northern residents came charging into Georgia and Haro Straits? We think the southerns may have tried to come back in at least once. Did they turn around and skedaddle because they heard the northern residents?

It's questions like these that keep our research effort going year after year.

Tracking killer whale movements along B.C.'s vast coastline is our biggest challenge. The options for tagging whales are limited. The problem is how to attach the tag without injuring the whale or affecting its behaviour. Suction cups soon slide off. Embedded tags shot from a crossbow may risk the animal's health. And surgical attachment means capturing the whale. Our preferred tool is acoustic tracking, using the whales' own sounds to locate them. We're looking at several techniques, including towed hydrophone arrays, a seafloor monitoring station, and more hydrophone listening stations at key sites along the coast. With your continued support, we're hoping to discover a lot more killer whale surprises in the coming years!

John Ford

Senior Marine Mammal Scientist
Vancouver Aquarium Marine Science Centre

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The B.C. Wild Killer Whale Adoption Program, hosted by the Vancouver Aquarium Marine Science Centre, is an ongoing research and conservation effort for the protection of wild killer whales and their habitat.



VANCOUVER AQUARIUM
MARINE SCIENCE CENTRE

B.C. Research Continues on Many Fronts



OLUHA BOJINOVIC

Researchers at the Vancouver Aquarium Marine Science Centre tackled a number of killer whale-related projects this past winter, thanks to funding from the Habitat Stewardship Program (HSP), an Environment Canada initiative designed to assist the recovery of species at risk.

B.C.'s resident killer whales are currently classified as "threatened" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), a designation that refers to a species (or population, in this case) that is "likely to become endangered in Canada if limiting factors are not reversed."

The HSP funding allowed Dr. John Ford, Senior Marine Mammal Scientist at the Aquarium, and research assistant Nic Dedeluk to address a range of issues related to the conservation of resident killer whales and their habitats off the B.C. coast. Among their tasks:

- organize, review and streamline the existing 30-year database on the year-round distribution of killer whales, incorporating historical sighting data from sources such as lighthouse log books and old whaling records.
- analyze killer whale distribution patterns to help identify critical habitats.
- identify, in cooperation with the Department of Fisheries and Oceans (DFO), existing or potential interactions between resident killer whales and fisheries through analysis of scale samples collected from predation events, and correlation of killer whale movements with salmon stocks and migrations.

- test and evaluate systems for remote monitoring of killer whale habitats.
- work with DFO and the whale-watch industry to develop effective guidelines for minimizing disturbance to killer whales and their habitats.

One special focus of the program, says Ford, was to develop and test new ways of tracking the seasonal movements and habitat use of resident killer whales.

Ford plans to expand the fixed network of hydrophones he conceived several years ago (known as WhaleLink), with listening stations at remote strategic sites along the coast. Researchers can recognize killer whale groups by their dialects and track their movements along the coast. Four of these stations are now in place, several more are planned.

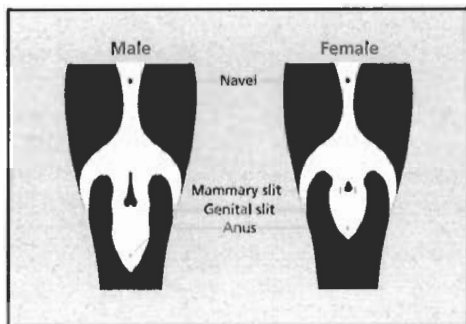
To detect killer whales in the open ocean, Ford and Graeme Ellis at DFO's Pacific Biological Station are testing a new hydrophone array that would be towed behind DFO research ships. The hydrophones can detect killer whales in a 10-kilometre swath and are fitted with special filters to mask out ship and turbulence noise.

Meanwhile, back at the lab, Dedeluk has helped set up the B.C. Cetacean Sightings Network, a system for mariners such as light-keepers, the Coast Guard, fishermen, eco-tour operators and private boaters to send in sighting information on killer whales and other species from all along the coast.

"We're designing and distributing a logbook to people who are on the water in fall and winter and in the more remote areas," says Dedeluk. The sighting form can also be downloaded from a new Web site, which offers a wealth of information on killer whales and other cetaceans of the B.C. coast. Check it out at www.wildwhales.org.

Tracking from Above

Tracking killer whales by satellite is hard, expensive work. Just ask researcher Tiu Similä, who attached tags to two Norwegian killer whales late last year to study interactions between the whales and the country's spring-spawning herring stock. The whales were caught, hoisted onto a ship, and fitted with satellite tags and VHF transmitters on the trailing edge of their dorsal fin. Since then, the two whales have been zigzagging their way along the northern Norway coastline. You can check out the project for yourself, and plot the whales' travels, on the Web at www.imr.no/killer_whales/index.html. In the next newsletter we hope to tell you about Similä's preliminary findings.



Killer whale underbellies.
Illustration: G. Yarikunas

Boy or Girl? How Do We Tell the Difference?

It's easy when they're all grown up, because the male is larger and his dorsal fin is much straighter and taller, up to 1.8 metres high. Adult males also have very large, paddle-shaped flippers and the tips of their tail flukes curl downward. But if the whale is younger than 15-years-old, you can't tell the boys from the girls without getting a clear view of its underbelly. Wild killer whales aren't

in the habit of presenting their bellies for our inspection, so we have to hope that a whale rolls upside down near the surface or breaches facing the right way while we

have a camera in hand. Once we have a clear photo, sexing them is easy (see graphic). In the region under the tail, there's a long slit called the genital opening. On a female, there are two smaller slits on either side of the genital opening. These are her mammary grooves, from which she feeds milk to her calf. There are also coloration differences. The genital slit of males is darker and surrounded by a more elongated white patch. Despite these obvious differences, occasional mis-identifications are made, usually due to poor photos. Fortunately, genetic studies are eliminating all doubt by giving us definitive gender identifications for many young whales (see page 6).

Keiko Project Boosts Icelandic Research

Thanks to the world's biggest movie star, we may soon know a lot more about Icelandic killer whales.

Iceland is the birthplace of the world-famous killer whale Keiko, known to millions as the star of the 1993 hit film *Free Willy*. After a worldwide fundraising campaign, he was freed from the unhealthy confines of a Mexican amusement park and in 1998 became the first captive killer whale ever to be returned to its native waters.

While Keiko's gradual re-introduction to the wild continues (see sidebar), researchers are working hard to find out as much as they can about his wild Icelandic brethren. "We want to contribute whatever we can to the general knowledge about killer whales in this area, and to use the information we get to help with Keiko's re-introduction," says Jen Schorr, field research coordinator for Ocean Futures, the organization managing the Keiko project.

Although killer whales are frequently seen off the Icelandic coast, very little is known about their natural history and abundance. Early records come from Norwegian whalers, who between 1948 and 1971 took several hundred killer whales in Icelandic waters and the neighbouring Norwegian Sea.

Other sources are Icelandic fishermen, who often see killer whales in the fall and winter when herring gather to overwinter along the country's south and east coasts. In 1956, following complaints from fishermen that killer whales were eating too many herring and damaging nets, the U.S. Navy was asked to cull them along Iceland's coastline. Some reports say none were killed, others say hundreds were eliminated.

By 1976, Iceland realized its killer whales were more valuable alive than dead. That's when the captive fishery began, and in the following years more than 50 whales were shipped off to oceanariums around the world. One of these was a small calf we now know as Keiko.

In 1985, pressure to find out more about killer whale numbers led Iceland's Marine Research

Institute (MRI) to begin a long-term field study to assess population size and structure, social organization, movements and acoustic behaviour. To date about 350 individual killer

whales have been photo-identified and catalogued.

In cooperation with the MRI, Ocean Futures is concentrating its research efforts in the rugged Vestmannaeyjar region of southern Iceland, where Keiko now lives. With the help of scientists from the U.S., Canada, Britain, Norway and New Zealand, the study involves photo-identification, behavioural observations, aerial surveys, genetic sampling, diving behaviour and acoustic analysis.

Vestmannaeyjar is one of the major herring spawning grounds in the summer, so that's also the prime field season for killer whale research. Fortunately, says Schorr, the whales are far more predictable than the capricious North Atlantic. "Large swells and chop sometimes create waves up to 15 feet high," she says. "Long, cold days on rough seas are often the reality."

The study began in 1999, so it's much too early for definitive results. Schorr can say that in the first field season, 30 new whales were identified, along with six previously catalogued by the MRI. Schorr suspects that many of the same whales were re-photographed in 2000. "I'm sitting here as I speak with killer whale photos spread out all over my floor and desk," she laughs. "We're still doing a lot of the analysis."

Will this work help find Keiko's natal pod? That would be great, says Schorr, but it's not essential. "Our goal is to integrate him into a group of animals, whether it's his family or not. To do that, we need to learn everything we can about whales in the area."

Keiko shows his unique chin spots.

A Walk on the Wild Side

Keiko has come a long way since his days in a cramped, tepid tank in a Mexico City theme park.

He now lives in a bay the size of 20 soccer fields, he's catching and eating live fish, and he's completed 500 miles of chaperoned "walks" in the open North Atlantic. And, oh yes, he's introduced himself to some of the locals... killer whales, that is.

Home base for Keiko is an enclosed portion of Kletttsvik Bay in the Vestmannaeyjar region of southern Iceland. There, his Ocean Futures caregivers and visiting scientists are devoting themselves to one goal — to teach him how to be a wild killer whale.

Already, he's gone from being completely dependent on hand-fed dead fish to retrieving up to 50 per cent of his own food. And last summer he was taken on 40 ocean walks — supervised field trips into the open ocean designed to increase his stamina and stimulate interest in his environment.

Walks lasted up to three days, allowing Keiko — whose drooping dorsal fin is fitted with VHF and satellite tags — plenty of time to explore. Staff kept a watchful eye on him, especially on the dozen or so occasions when wild killer whales were nearby.

What happened? There were a lot of back and forth vocalizations. In some cases, the wild whales went one way and Keiko went the other. Or the wild whales showed interest in Keiko but he seemed indifferent. And a few times, Keiko swam over to check them out. No aggression was observed during the encounters, says Ocean Futures staffer Jen Schorr. "They seemed curious more than anything," she says. "It was pretty amazing to see."

More and longer walks are planned for this summer. No one knows whether the re-introduction will succeed in the end. "Ultimately, Keiko will decide whether he wants to stay under human care or be integrated into a group of wild whales," says Schorr. "But in the meantime, he's teaching us a lot."

You can keep track of Keiko's progress at www.oceanfutures.org.



Keiko takes a "walk".

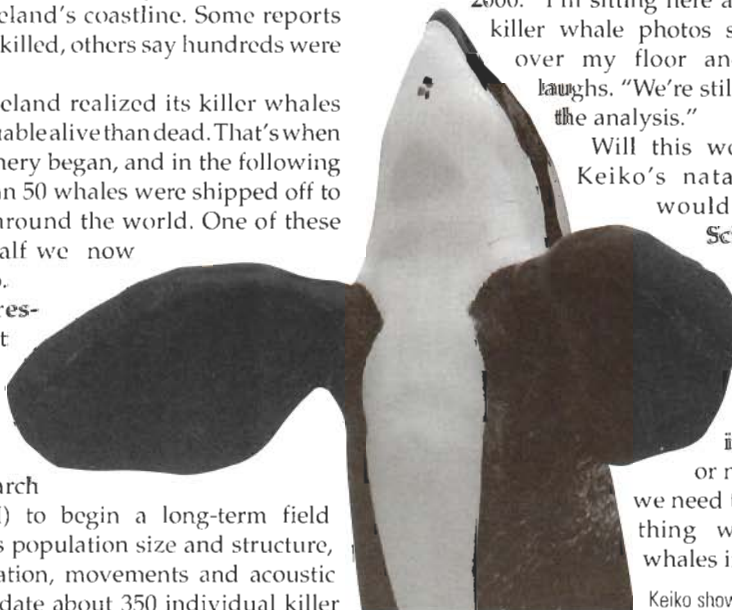


PHOTO COURTESY OF BLAIR MOIST / OCEAN FUTURES

It's All in the Genes



Dr. Lance Barrett-Lennard.

Landmark genetic study reveals some surprises

How do female killer whales choose their mates? How different are transients from residents? And who are the fathers of killer whale calves?

The answers may surprise you.

They certainly surprised Dr. Lance Barrett-Lennard, who late last year completed a long-term study on killer whale genetics. His work, which was largely funded by the adoption program, represents a milestone in the study of killer whales on this coast.

"This study is the biggest leap forward we've had in years because it pulls so many bits and pieces of the killer whale jigsaw puzzle together," says Dr. John Ford, Senior Marine Mammal Scientist at the Vancouver Aquarium Marine Science Centre.

Barrett-Lennard analyzed DNA from tiny skin samples taken from more than 300 killer whales in B.C. and Alaska. Because we already know so much about mother killer whales and their offspring, he was able to do two types of DNA analysis: one to determine paternities, and another to sort out how communities of killer whales in the northeast Pacific are related to one another.

Here's what he found out...

Killer whales use their calls to avoid inbreeding

Hey, there's something sexy about that guy with the foreign accent.

At least, that seems to be what female resident killer whales are thinking when they select their mating partners. Perhaps the most astonishing discovery in this study is the clear link between the calls killer whales make and mate preference. Put simply, they're deliberately choosing partners that don't sound like themselves.

For years, researchers have wondered how resident killer whales

avoid inbreeding. After all, they live in fixed populations of up to a few hundred individuals and both males and females stay with their mothers for life.

Equally as baffling were their calls. Every pod has its own dialect, a repertoire of distinct calls that are passed on from generation to generation. "If this isn't unique among mammals, it's pretty darn close," says Ford, who 20 years ago was the first to identify the dialects. "To have group-based dialects, as different as they can be, among groups that often travel together, is quite bizarre."

We now know that the more similar the dialects of two groups, the more related they are. By grouping pods with similar calls, B.C.'s resident killer whales can be organized into four language groups, or clans. There's no sharing of call types across clans. They're so different from one another that anyone can tell them apart.

And so, apparently, can female killer whales. When mating patterns were analyzed within matriline (mothers and their offspring), pods and clans, the pattern was startling. They never mate within matriline, very rarely mate within pods, and overwhelmingly mate outside their clan.

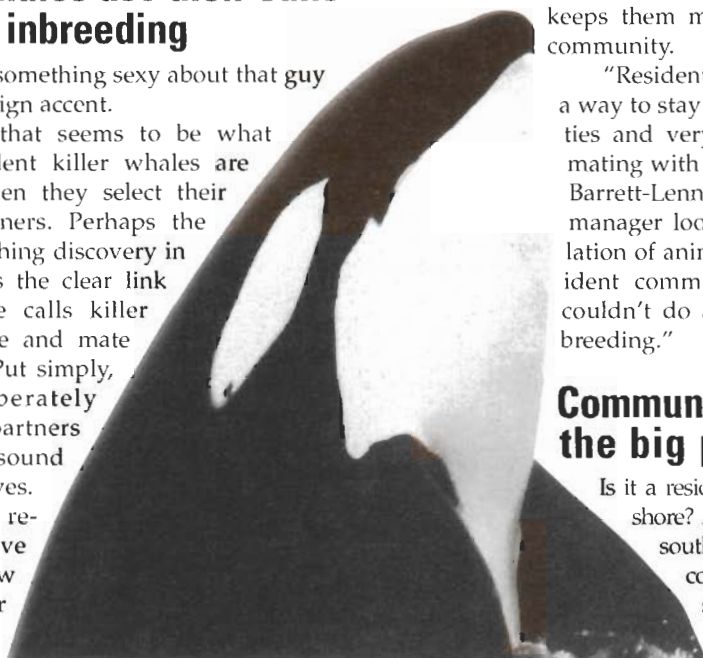
"The simplest way to explain this is that mate choice is based on dialect similarity," says Barrett-Lennard. Females seem to be following two rules: don't mate with somebody who uses your call repertoire; and avoid males that sound completely unfamiliar. The first rule avoids inbreeding and the second keeps them mating within their community.

"Residents have figured out a way to stay in small communities and very effectively avoid mating with their kin," marvels Barrett-Lennard. "If I was a zoo manager looking after a population of animals the size of resident communities I probably couldn't do a better job of outbreeding."

Community relations: the big picture

Is it a resident, transient or offshore? Alaskan, northern or southern resident? West coast or Alaskan transient?

Whew! So many



GRAEME ELLIS PHOTO

PODPOURRI

Want to watch or listen to wild killer whales without leaving home? Just head for your computer. In addition to the Vancouver Aquarium Marine Science Centre's **Orca FM** (www.whalelink.org), launched in 1999, you can log on to:

Orca-Live (www.orca-live.net) Features live underwater video and audio feed from Johnstone Strait. Runs from July through the fall. Developed by researchers Dr. Paul Spong and Helena Symonds of OrcaLab on nearby Hanson Island.

Race Rocks (www.racerocks.com) Experience life above and below water at Canada's first Marine Protected Area on the southern tip of Vancouver Island near Victoria — an occasional pitstop for killer whales. Features live audio and video.

SeaSound (www.seasound.org) Nearly live video and sound from Haro Strait, the core area for southern resident killer whales. Run by The Whale Museum on Washington's San Juan Island.

OrcaCam (www.orcacam.com) Offers live video feed from Haro Strait. Includes updates on whale movements in the area. Links to Center for Whale Research on San Juan Island. Site is run by the island's Chiron Press.

possibilities. In almost 30 years of research we've learned there are several distinct sub-populations, or communities, of killer whales all along the Pacific coast from California to Alaska. They're generally defined by their core range, although there is some overlap in many cases.

The three resident communities — B.C. northern (about 215 whales), B.C. southern (84 whales) and Alaskan (at least 360 whales) — are all more closely related to each other than any other group. Still, they haven't interbred for at least hundreds of generations. Of the three, the B.C. southern residents are the most genetically isolated (see next section).

The 400 or so transients identified on the coast to date are not one big assemblage, as once thought. Genetic analysis reveals three distinct communities with a major "boundary" in the western Gulf of Alaska. Whales north and west of this point are Gulf of Alaska transients. Whales east and south at least as far as Monterey, California are "west coast" transients. The two don't mix, although their genetic separation may have been relatively recent.

A small group of 11 whales in Alaska's Prince William Sound, known as the ATIs, is the third community of transients. They appear to be genetically isolated from other transients in the area.

Offshore killer whales, about which little is known, are a distinct population. "They don't have a close genetic affinity to either residents or transients, so they're a bonafide third type of killer whale," concludes Barrett-Lennard.

The southern residents: all by themselves

Wanted: New blood immediately.

If B.C.'s southern resident killer whales could place an ad, that's what it should read. They have the lowest genetic diversity of any group of killer whales on the coast. And considering the other problems they're dealing with — pollution, reduced food resources, and boat disturbance — that's not good news.

Genetic diversity is a measure of how many different genes are present within a breeding population. High diversity indicates a healthy population. Low diversity leaves a population vulnerable to disease, mutation and reproductive failure, and less adaptable to environmental change.

Of all the killer whales sampled in Barrett-Lennard's study, Gulf of Alaska transients showed the highest genetic diversity, followed by west coast transients, Alaskan residents, off-shores, B.C. northern residents, the Alaskan transient ATIs, and . . . B.C. southern residents.

Usually, the larger the population, the greater the genetic diversity. It's not known why the 84 southern residents trail the pack, even behind the 11 whales of the transient AT1 group. But it is clear that the southern residents are in a bind:



JOHN F. ORO PHOTO

they don't seem to breed outside their community, there are few mature males, and they have only one clan, although there are several acoustic groups within it.

"If they're following the rule of mating between the most acoustically dissimilar groups [see p.4] that leaves few choices for females," says

Barrett-Lennard. And cultural boundaries are so strong, he adds, it's unlikely they'll choose mates from outside their community.

The evidence for this comes from the transient AT1 group, which has breeding age females but hasn't produced a calf in more than 15 years. The most likely explanation is that there are no suitable AT1 males around, says Barrett-Lennard. "They could mate with males from other transient groups in the area, but they don't seem to. So they're probably going to die off. It's really frustrating."

Barrett-Lennard plans to get more samples of southern resident DNA to get a better idea of what's going on. "They're not necessarily on their way out because of low genetic variance," he says, "but there are definite conservation concerns."

Residents and transients parted ways long ago

You take the mammals, we'll take the fish.

The late researcher Dr. Mike Bigg used to joke that this was the pact made between resident and transient killer whales in the northeast Pacific sometime in the distant past. How else to explain two types of killer whale living in the same waters but following two very different lifestyles and never mingling?

We'll never know how that strange dichotomy happened, but Barrett-Lennard can tell us that the genetic parting of the ways was thousands of years ago, probably more.

Does that make them separate species? That

The Adoption Program on the Move

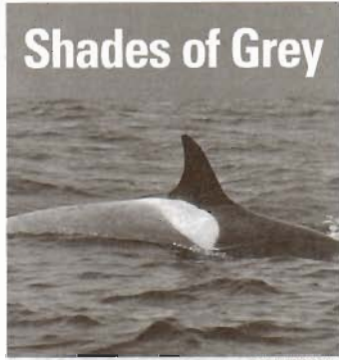
The B.C. Wild Killer Whale Adoption Program did some travelling this past year.

We journeyed up to Port McNeill on the northeast coast of Vancouver Island last August for the first annual OrcaFest. Using our educational display, staff and volunteers informed tourists and locals about wild killer whale research and conservation. The same display was set up the next day at Stubbs Island Whale Watching in Telegraph Cove.

Excited whalewatchers reported an encounter that afternoon with members of the R2 matriline made up of Bonilla (R2) and her offspring, Nigei (R3) and Kitlope (R12). Other wildlife sighted that day included a minke whale, Dall's porpoises and a number of bald eagles.

OrcaFest 2001 takes place in Port McNeill on Aug. 11.

In February the adoption program attended the 2001 Vancouver International Boat Show. We promoted killer whale and humpback whale stewardship, featuring the B.C. Cetacean Sightings Network, (see page 2) and how to properly identify the various types of whales found on the B.C. coast. We distributed sighting forms to boaters interested in participating in this new program, and listened to their exciting stories about various encounters with West Coast whales.



Shades of Grey

INGRID VISSER PHOTO

What's black and white, with a lot of grey? Some New Zealand killer whales, apparently. This whale was among a group of 45 grey-pigmented whales photographed by researcher Ingrid Visser off New Zealand in January. "Some of them were very grey, with not much black on them," says Visser. "It's a pigmentation pattern normally only seen in Antarctica." These Antarctic-type killer whales have been documented in New Zealand only twice before — in a 1955 stranding and in a 1997 sighting by Visser. All three encounters have revealed a remarkable variation in pigmentation patterns. The 1955 whales had very tiny eye patches and not much saddle patch. The 1997 whales had huge eye patches and were very grey. These 2001 whales had very narrow eye patches that angled upwards and most had large cape-like saddle patches. "An encounter like this raises more questions than it answers," says Visser, "and shows that we still have a lot to learn about New Zealand orcas."

It's All in the Genes...

Continued from page 5

depends on your definition of a species. It used to refer to groups that can't interbreed. But residents and transients have mated successfully in captivity. A newer definition — groups that don't interbreed naturally — might fit here.

But it's more complicated than that. The genetic separation between all killer whales on this coast — residents and transients alike — is consistent but small. "There are human populations that are just as diverged from each other as residents and transients, but you wouldn't call them species. There's no rule that a given amount of genetic difference defines a species."

If the two groups continue to remain genetically separated, a gradual process of speciation will occur. But that could take millennia. For now, we'll keep calling them two separate populations, or races.

Some guys have all the luck

It's an unfair world out there in the killer whale singles' bars.

By analyzing the DNA of 105 calves whose mothers are known, Barrett-Lennard was able to identify probable paternities for 17 resident whales (see partial list below). Others had more than one father candidate, and almost 50 per cent couldn't be matched to any male in

his sample set.

In the process, he also discovered two surprising trends — that few males get to breed and that the older guys tend to get the girls. "As far as I can see, puberty for a male killer whale doesn't mean anything except frustration," he jokes. Most killer whale fathers are in their late 20s and up. And some of these old-timers, such as 44-year-old *Nigei* (R3), seem to be especially popular with the ladies.



Nigei (R3)

Maybe female killer whales prefer older guys. But it could also be that the older males have learned the right moves. After all, some finesse must be required to maneuver so delicately in a three-dimensional world in tandem with a smaller, more agile partner armed with big teeth.

"For killer whales, mating effectively is probably a skill that takes time to learn like any other," muses Barrett-Lennard, adding with a wink: "It seems safe to predict that male killer whales are the most polite and obsequious of suitors."

Here's Daddy!

*dead

Calf

- Misty (A62)**
- Nahwitti(A56)**
- Sutlej (A45)**
- Foster (A26)**
- Fife (A60)**
- Surge (A61)**
- Lama (C8)**
- Hunter (C14)**
- Goletas (I13)**
- Skuna (I42)**
- Quatsino (I47)**

Mother

- Simoom (A34)**
- Yakat (A11)**
- Kelsey (A24)**
- Scar (A9)***
- Stripe (A23)***
- Sharky (A25)***
- Ivory (C6)**
- Ivory (C6)**
- Egeria (I11)**
- Egeria (I11)**
- Loquillilla (I12)**

Father

- W2**
- Nigei (R3)**
- Strider (A6)***
- Nigei (R3)**
- Nigei (R3)**
- Kitlope (R12)**
- Caamaño (R6)**
- I32**
- Booker (C3)***
- Cracraft (A32)**
- Baronet (B2)***



Population Update:

Can you imagine what it's like being on a boat surrounded by about 150 excited killer whales?

Some lucky whalewatchers in Johnstone Strait found out first-hand last August when one of the largest congregations of killer whales seen in a decade gathered there to socialize, frolic and feed. It was a highlight of one of the best seasons in years for seeing and photographing northern residents.

It was also one of several unusual killer whale events off Vancouver Island late last summer. Many whales from the Johnstone Strait "jam-boree" headed down the strait to Campbell River. Some turned back, but about 60 whales kept going into the Strait of Georgia, where they spent several weeks foraging off Nanaimo, the mouth of the Fraser River near Vancouver, and eventually, Haro and Juan de Fuca Straits off Victoria.

This is the furthest south northern residents have ever been documented. Normally, it's the summer core area for southern residents, but those whales had been gone for weeks on the west coast of Vancouver Island. So, with the straits to themselves, the northern visitors

played tourist for two days before heading out the Strait of Juan de Fuca, presumably returning up Island. About two weeks later, another group of northern residents — this time the A30s — also made a brief appearance in Victoria area waters.

So what does this all mean? Are the northern/southern boundaries breaking down? Is it killer whale chaos out there? Not really. Those so-called boundaries were set by us, not the whales. And large, late-summer gatherings of killer whales in Johnstone Strait were commonplace in the 1970s and '80s. It also used to be fairly normal for the southern residents to spend some time in late summer off the west coast of Vancouver Island.

In other words, 2000 looked more like it used to be years ago, except for the northerners coming so far south. "It was a bit cheeky of them to spend so long in southern resident turf but it really does show how dynamic these animals are," says researcher Dr. John Ford. "Just when we think we understand what drives the movements of these animals, they go and change the rules on us."

Here's the latest news on our adoption whales...

Simoom (A34) has a new baby (A74), her fourth. That's a brother or sister for *Echo* (A55), *Misty* (A62) and *Eclipse* (A67). *Suttlej's* (A45) new baby is A73. It's her second; her first calf, born in 1997, didn't survive its first year. And *Hakai* (D12) became a first-time mom in 1999 with the birth of D20, although we didn't see it for the first time until 2000.

Fifteen year-old *Fifer* (C13) surprised everyone in 2000 by giving birth to C24. Researchers had mistakenly thought *Fifer* was a male! Similarly, we now know for sure that the mom of 1998 baby D19 is *Cascade* (D13), also previously thought to be a male. (Sexing killer whales in the field can be tricky — see page 2). D19 is now adoptable under the name *Gypsy*.

A new arrival we missed in our last newsletter is transient *Langara's* (T10) 1999 baby, T10C. It's now adoptable under the name *Bones*.

Among the missing are two very recognizable males. *Top Notch* (A5) — named for the small nick at the top of his tall dorsal — vanished sometime in late fall. *Top Notch* was seen with his brother and constant companion *Foster* (A26) in the summer, but *Foster* was travelling alone by mid-November. That's not

a good sign, but we haven't written *Top Notch* off completely yet. Same goes for 29-year-old *Weynton* (C9), who wasn't seen in 2000.



Gypsy (D19)

Also missing is 13-year-old *Kitasu* (D14). That leaves only two whales in the D11 matriline — *Christie* (D11) and her 10-year-old daughter *Fisher* (D17). Among R-pod whales, the old loner male *Caamaio* wasn't seen in 2000. Neither were *Lalakata* (R9) and *Laredo* (R15), but sightings of their family group were poor so we can't be sure yet.

A lingering mystery is the fate of *Harlequin* (G16). When her family was last seen in 1998 she wasn't there. It's likely the group is travelling on a remote part of the coast, so we won't give up on *Harlequin* yet.

And we bid a fond farewell to *Stripe* (A23), the 53-year-old granny of the A23 matriline. Well-known to researchers and whalewatchers alike, she was named for the curved scar clearly visible on her saddle patch, caused by some unknown injury years ago. *Stripe* leaves behind two sons, a daughter and a granddaughter, and was believed to be the mother of the captive whale known as *Corky*, now living at Sea World in San Diego.



Bones (T10C)

THANKS

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New Genders



It's a girl!

- Hakai (D12)**
- Eclipse (A67)**
- Sunny (A70)**
- Schooner (A64)**
- Midsummer (A69)**

It's a boy!

- Cosmos (C17)**
- Gikumi (C20)**
- Surf (A66)**

