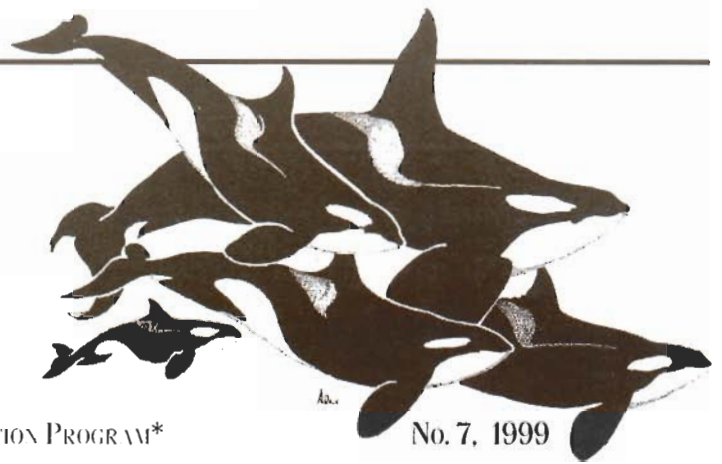


The Blackfish Sounder

THE NEWSLETTER OF THE BRITISH COLUMBIA WILD KILLER WHALE ADOPTION PROGRAM*



No. 7, 1999

Conservation concerns point to need for ongoing field research

Welcome to our seventh information-packed issue! In addition to our regular Population Update and various other news items, we highlight some of the projects that your adoption has helped support over the past few years.

Two recent developments on the orca front in B.C. will be of interest to readers. First, researcher Graeme Ellis and I finally published our long-overdue catalogue of transient

JIM BOERHMAN PHOTO



A Steller sea lion being rammed by a transient.

killer whales. Designed as a companion to our 1994 book *Killer Whales*, which contains a catalogue of all residents in B.C., *Transients* includes the latest information and stories about these fascinating mammal-hunters (see p.3).

The transient population seems to be doing very well in our region, perhaps due to healthy populations of their prey, which includes harbour seals, sea lions and porpoises. The status of residents, on the other hand, appears less promising. The southern resident population has declined for the past three years, and we're concerned this may be a long-term trend. The numbers of northern residents seem to be stable or slowly increasing, but it wouldn't take many mortalities to tip it into a similar decline. Concern about dwindling salmon stocks and human disruption of the whales' habitat has led to residents being listed as "threatened" (see adjacent story).

One potential threat to resident killer whales is growing disturbance from intense whalewatching, especially for southern residents. The Adoption Program recently co-sponsored a workshop in Victoria, which brought together commercial whalewatch operators and biologists to work toward finding solutions to minimize impacts from this rapidly expanding industry. Such conservation efforts and ongoing field research may be critical to the future well-being of killer whales on the west coast. By continuing your sponsorship of a wild killer whale, you are helping to make a difference.

Director of Marine Mammal Research,
Vancouver Aquarium Marine Science Centre

Resident killer whales listed as "threatened"

Listing all of B.C.'s resident killer whales as "threatened" is a precautionary step that will hopefully raise the profile of killer whales and their habitat needs, says Dr. John Ford, director of marine mammal research at the Vancouver Aquarium Marine Science Centre.

This April, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) added resident killer whales to the list of Canada's threatened species. The designation refers to a species (or population, in this case) that is "likely to become endangered in Canada if limiting factors are not reversed."

The committee also lists transient and offshore killer whales as "vulnerable," meaning that they're "of special concern because of characteristics that make them particularly sensitive to human activity or natural events."

COSEWIC is an independent committee made up of wildlife experts from universities, museums, conservation groups, provinces and territories, and four federal agencies. Its lists have no legislative implications and are simply meant to raise awareness of Canadian animals and plants at risk.

The "threatened" list lumps both southern and northern residents together. However, the two populations are quite distinct. Northern residents, totalling more than 200 whales in 16 pods, are found off northern Vancouver Island and the mainland coast as far north as southeastern Alaska. Southern residents, totalling 89 whales in

See "Threatened"...continued on p.2

*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



The Blackfish Sounder

"Threatened" . . . from p.1

three pods, roam the waters off southern Vancouver Island. The two populations are not known to mix.



One recent casualty among the southern residents was the 42-year-old bull K1 (above), a popular and easily identifiable whale. He had two triangular notches on the trailing edge of his dorsal fin. The notches were made during a 1973 capture by the late Dr. Michael Bigg, pioneer of killer whale research in B.C., as a way of testing the long-term permanence of fin nicks.

The northern resident population has been growing by two to three per cent a year over the last 25 years. But southern resident numbers have fluctuated and are currently in a slump – a 10 per cent drop in three years – that some observers fear is a warning sign of trouble ahead.

But it's too early to tell whether this is a trend. Long-term statistics show that south-

ern residents have actually increased in number by 25 per cent since 1973, when eight years of captures for aquaria came to an end. By that time, 48 whales had been removed from the population.

The captures left generation gaps in the population, which may partly explain the current decline, says Rich Osborne, resident scientist at the Whale Museum in Friday Harbor, Washington State. But he suspects there's more to it than that. He's studying the history of the southern residents, plotting all the major variables in their environment for which there are records.

"The southern residents have been hit the hardest by human interference," he says. They're carrying very high levels of toxins, which may make them more susceptible to disease or reproductive problems. Boat disturbance may be affecting their ability to rest and detect food. And their food of choice, salmon, is getting harder and harder to find.

"They may be in a position where they're having to shift to eating other prey species, which isn't an easy thing to do," says Osborne. "They won't have the traditions on where to find different kinds of food." It's not clear what else the whales might eat, particularly in the winter months when food is even more scarce.

Taking all these factors into account, Osborne is not very optimistic about the long-term future of the southern residents. "They may not make it, primarily because of the pollution," he says. "Obviously, that would be very sad. But perhaps it takes something like watching everyone's favourite killer whales die off before we understand the impact we're having."

The southern resident situation doesn't look good, agrees Ford. The projections for urbanization around the Georgia Basin over the next 20 years are "pretty scary," he says. "Perhaps the whales will be forced to leave the area in favour of a habitat where there is less disturbance. But hopefully, it won't come to that."

Killer whale radio heads for the Internet

ORCA FM is listening. And soon the whole world will be too.

ORCA FM – the world's first killer whale radio station – hit the airwaves last summer, and despite a few glitches, has been broadcasting virtually non-stop since. Plans are now underway to link the signal to the Internet, so that people around the world can listen live to the whines, whistles and clicks of B.C.'s wild killer whales.

Currently, radio station CJKW, at 88.5 on the FM dial, can be picked up on any radio within a 10-kilometre radius of Robson Bight (Michael Bigg) Ecological Reserve, in Johnstone Strait off northern Vancouver Island. Its signal is also relayed via high-quality land line to our lab at the Vancouver Aquarium Marine Science Centre, where it is also featured in a new whale acoustics exhibit.

The whales were heard and recorded almost every day last summer. But even if the whales

aren't around, there are plenty of other sounds to hear, such as mussels popping, fish grunting, and a lot of boats. The ORCA FM hydrophone is currently submerged opposite Robson Bight, right in the shipping lane, so there are very few moments when the broadcast is completely free of boat noise.

This summer, the hydrophone will be moved across the strait to a site near the rubbing beaches in Robson Bight. Hopefully, the whale sounds will be clearer and we'll hear them rubbing along the bight's pebbled seafloor. The solar-powered hydrophone will most likely be moved back across the strait in the fall, because there isn't enough sunlight in the bight during the winter months. In any case, the whales aren't around much at that time of year.

Be sure to tune in soon for ORCA FM on the B.C. Wild Killer Whale Adoption Program Web site at <<http://www.killerwhale.org>>.





Genetics study reveals mating patterns among resident killer whales

IF YOU'RE A MALE resident killer whale, it's unlikely you'll father any calves until you're well into your 20s. In fact, you might not get to be a dad at all.

This is one of several surprises emerging out of a study of killer whale genetics by Lance Barrett-Lennard, a PhD student at the University of British Columbia. The study is mainly funded by the adoption program.

Barrett-Lennard is analysing DNA from tiny skin and blubber samples taken from 170 killer whales in B.C. and Alaska. The study has already told us a great deal about how killer whale populations off the northeast Pacific coast are related to one another (see *Blackfish Sounder*, 1997). Further analysis — of paternity trends and genetic variations among clans — has now revealed some fascinating information about how and whom resident killer whales are choosing as their mates.

Although Barrett-Lennard can't get into specifics until he defends his thesis later this year, he's willing to tantalize us with a few



GRAEME ELLIS PHOTO

general observations. First of all, almost all of the fathers identified in his paternity analysis are older animals. Since the average life expectancy of a male killer whale is about 29, "old" means mid-20s and up, although a few bulls live into their 30s and 40s.

Another fairly clear pattern is that some males have sired multiple calves, while the majority seem to have fathered none. "This is a 'some guys have all the luck' sort of deal," he says, "and is common in animals where males are bigger than females." In such species, though, males usually fight over females. Since there's no evidence of this happening among killer whales, the logical conclusion is that female killer whales are doing the choosing. "Male killer whales are doing something else to impress females, and perhaps one of those things is living a long time," suggests Barrett-Lennard.

As for who the dads are, we'll have to wait a little while longer to find out all the details. Barrett-Lennard says the fathers of about one-third of the resident calves sampled have been identified "with a high degree of confidence." Other calves have several father candidates. For example, *Misty's* (A62) dad is probably W2, while her older brother *Echo's* (A55) dad is either *Calvert* (D5) or H2.

On a much broader scale, the genetics work is confirming early dialect studies by researcher Dr. John Ford (Vancouver Aquarium), who speculated that discrete calls — unique to certain pods and family groups — are being used by the whales to avoid inbreeding. In other words, whales are choosing partners that don't sound like themselves. We'll tell you more in the next newsletter. Stay tuned.

Hangin' with the boys

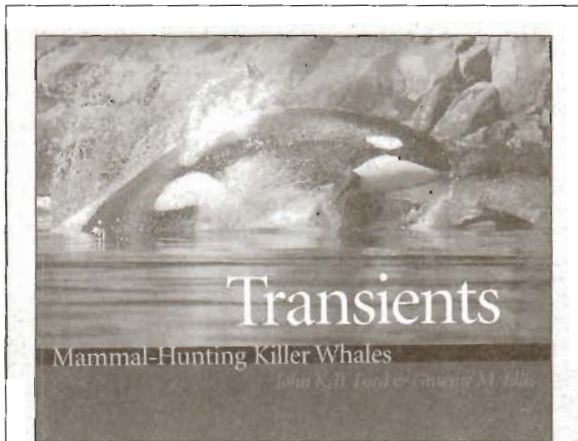
Thanks to Lance Barrett-Lennard's genetic work, researchers may have found another way to determine the sex of a wild killer whale calf.

Early in his study, Barrett-Lennard — with the help of biochemistry student Valentina Mendoza — determined the sexes of more than 30 B.C. and Alaskan killer whales whose genders weren't known, many of them calves. Besides being fun for us to know, the exercise provided some useful information for researchers looking for behavioural differences between the sexes. And it looks like they've found one.

For years, whale researcher Graeme Ellis (Pacific Biological Station) had wondered whether the calves he often saw frolicking with older males, were in fact young males. The new gender results have now strengthened that theory. "If you see a calf playing with males, the chances are it's a boy," says Barrett-Lennard. "The female calves tend to stick nearer their moms, aunts and other juveniles."

This separation of the sexes seems to start when calves are very young, but it's not known why. "Maybe it's risky for the females," he speculates. Male play groups can get quite boisterous, he says, especially when pods are mixing.

"There's often some sexual activity, and everyone is pushing and shoving and jumping on each other. It seems to be a 'male thing,' just as Graeme suspected."



New killer whale book

What's black and white and eats seals, sea lions, porpoises, dolphins, large whales, and even an occasional deer or moose? B.C.'s transient killer whales, of course. You can find out all about these bold hunters in a new book, *Transients: Mammal-Hunting Killer Whales*, by John K.B. Ford and Graeme Ellis — widely regarded as two of the world's foremost authorities on killer whales. The book describes the natural history and behaviour of transients, and includes identification photos of more than 200 individual whales. To order your copy, call 1-800-663-0562 or go online at <<http://www.clamshell.org>>. Royalties from the book support ongoing killer whale field research.



Crozet killer whales show off hunting prowess

IMAGINE YOUR REACTION if a small whale launched itself onto the beach right in front of you, quickly followed by an adult killer whale.

University of British Columbia researcher Lance Barrett-Lennard can tell you exactly how it felt. Last fall, he and Dr. Christophe Guinet, a marine mammal researcher from France, were on a beach in the Crozet Islands when that's exactly what happened. The two were on a six-week research trip to the sub-Antarctic archipelago (located about 2,500 miles south of Madagascar) to study killer whales — Barrett-Lennard to obtain genetic samples, and Guinet to follow up on earlier population studies.

One day, they spotted a group of killer whales heading at high speed for the shore. Seeing a possible chance to get genetic samples, the two sprinted down to the beach. "We knew the killer whales were chasing something," says Barrett-Lennard, "but

there was a lot of surf and we couldn't tell what it was." They found out when a 3.5-metre long minke whale calf shot out of the water in front of them, followed two or three seconds later by an adult female killer whale.

"They both hit the beach at high speed, so they were well up out of the water," he recalls, still marvelling at what happened next. The killer whale turned, grabbed the calf crosswise in her jaws, and wriggled back into the water with her prize. "We were both just stunned," says Barrett-Lennard, who had left his camera behind in the dash to rendezvous with the whales.

But the hunt wasn't quite over. The calf managed to struggle free and the chase was on again. The calf made four or five more lunges at the surface, surrounded by seven killer whales, before disappearing under a large pulse of blood. At this point, a French film crew arrived in a zodiac, and divers armed with video cameras plunged into the water at the kill site.

Barrett-Lennard later saw the film and was astonished to see that, a mere 25 minutes after the minke calf was dragged off the beach, it had been reduced to not much more than skeletal remains. The original whales involved in the attack had left, and a second group of about six had arrived and was playing with the carcass.

Beaching is a way of life for Crozet killer whales

THE REMOTE AND WINDSWEPT Crozet Islands are one of two places in the world (the other is Patagonia) where killer whales are known to routinely "beach" in pursuit of their prey.

For UBC researcher Lance Barrett-Lennard, his six-week visit to the Crozets (partly funded by the adoption program) was an extraordinary opportunity to see this daring hunting technique first-hand.

About 100 killer whales are known to roam the Crozets, based on studies by French researcher Christophe Guinet, who accompanied Barrett-Lennard. Small groups of killer whales routinely patrol

the islands' many small beaches, occasionally surging out of the surf onto the beach to grab unwary penguins and elephant seal pups.

It was hard not to sympathize with the seal pups, says Barrett-Lennard. After their mothers abandon them, the chubby youngsters spend about a month lazing around on the beach before instinct impels them into the water. "They remind me of sea turtles, having to run a gauntlet of predators," he says. "They look out to sea, and see the fins, but they don't really know what the problem is."

Barrett-Lennard also watched killer whale school in session, as adults taught juveniles how to beach. Typically, there would be one young whale parallel to the beach just in the surf line, with several other whales at right angles to it, pushing it with their noses onto the beach. "They'd push and push, and then the juvenile would wriggle away into the shallows. Five minutes later the same thing would happen again."



L. BARRETT-LENNARD PHOTO

Above: Crozet killer whale foraging in a kelp bed.



L. BARRETT-LENNARD PHOTO

Below: Crozet killer whale patrolling a beach as penguins look on.



Whales blamed for Alaskan otter decline

HUNGRY KILLER WHALES in Alaska's Aleutian Islands are gobbling up sea otters by the thousands, claims a team of scientists.

In a paper published in the journal *Science* last fall, the four scientists, led by U.S. biologist Dr. Jim Estes, say that sea otter populations have dropped "precipitously and unexpectedly" over large areas of western Alaska, and that killer whales are the most likely culprits. Otter numbers have plummeted by 25 per cent a year throughout the 1990s.

The authors eliminate all other possible factors for the decline, including disease, emigration, toxins, reproductive failure or starvation. Killer whales were first observed eating a sea otter in 1991, and nine more attacks have been witnessed since.

The small, furry otters are considered "desperation food" for killer whales because they lack the calorie-rich blubber found in typical transient food, such as seals and sea lions. One B.C. whale researcher calls sea otters "dental floss" for killer whales.

It's not known how many transient killer whales roam the Aleutian Islands. The paper's authors estimate that 40,000 sea otters must have been eaten to drive the observed decline. They calculate that a single killer whale could be consuming five otters a day, or 1,825 otters per year, and that as few as three or four

See Sea Otters...continued on p.8



Pale whale

When researchers Graeme Ellis (Pacific Biological Station) and John Ford (Vancouver Aquarium) first saw this transient calf (T60) in the Queen Charlotte Islands last summer, they nicknamed it "Casper" because of its pale colour. Ellis says he's seen this "milky" look before in a few other very young calves — such as *Tasu* (T2C). "It's not pigmentation, but seems to be a layer of opaque, dead skin that soon sloughs off," he says.

Field Notes

Dolphins for breakfast

For anyone wanting to see transient killer whales in action, Port Hardy on northern Vancouver Island was the place to be this past winter. Eugene White, who runs a crew boat for nearby fish farms, was on his way to work one morning in March when he noticed a killer whale breach in nearby Hardy Bay. White raced to his boat, camera in hand, and watched a group of killer whales harass about 100 frantic Pacific white-sided dolphins that they'd cornered near a fish plant. Several breaches later the whales headed out of the bay, followed by White, and made a beeline for a log boom where some dolphins were trying to hide. For a few minutes, whales and dolphins calmly swam back and forth in front of the boom. Then "all hell broke loose," says White. Using its tail, a killer whale flipped a dolphin out of the water (photo, right) with such force that the dolphin did three or four somersaults. Minutes later, a killer whale surfaced in a spy-hop — with a dolphin firmly held crosswise in its mouth. Photo IDs reveal that at least 10 transients were involved in the attack, one of them from our adoption program — *Pedder* (T2B), a 20-year-old female.



Transient (background) tossing dolphin.

Sea lions "heckle" at transient kill

The above incident wasn't the first time transients had paid a visit to Hardy Bay. Two months earlier, four whales had attacked a group of Steller sea lions in the bay. By the time Jim Borrowman, owner of Stubbs Island Charters in Telegraph Cove, arrived on the scene the whales were within 200 metres of the town dock, feeding on a dead Steller. Oddly enough, a group of California sea lions was swimming nearby, and when Borrowman lowered a hydrophone in the water to record whale sounds, he heard a chorus of barking. "The sea lions were barking underwater as the whales ate the Steller," he recalls. "It was as if they were heckling." Two of the four whales were from our adoption program — *Pachena* (T12) and her son *Nitinat* (T12A).

Southern resident loses calf

Last December researcher Graeme Ellis (Pacific Biological Station) witnessed an unusual incident in J-pod, one of three southern resident killer whale pods. He encountered the pod off Nanaimo and noticed that a 27-year-old female known as J11 was pushing around a small, stillborn male calf crosswise on her forehead (photo, right). "Occasionally, she would fumble it and it would sink," he says. "Then she'd go down and bring it up to the surface again." This process may have been going on for some time, speculates Ellis, who has seen similar behaviour by killer whales in Norway, and heard of cases of dolphins carrying dead calves around for long periods. While it's tempting to interpret this behaviour as grief, it may simply reflect a mother whale's strong instinctive drive to help a newborn calf to the surface for its first breaths.



J11 and stillborn calf.

Killer whale candid camera

The frustrating part about studying killer whales is that they spend more than 90 per cent of their time underwater and out of our sight. But not if they're passing a kelp bed off West Cracroft Island in Johnstone Strait. That's where researchers Paul Spong and Helena Symonds install four underwater video cameras every summer to give them a "window" into the underwater world of whales. The videocams augment a hydrophone network they operate from OrcaLab on nearby Hanson Island. Every year, they record about 200 hours of video and are intrigued and amused by the parade of sea life that swims by. Once, two salmon screeched to a halt, turned and darted out of view. A moment later the killer whale *Sharky* (A25 — now dead) zoomed by in pursuit. A library of individual whales is steadily building up, including many of the As and several H5s. One poignant record is of *Siwiti* (A48) who swam right over one of the cameras. "We could see that she looked pregnant," says Symonds. The next spring *Siwiti* turned up with a calf, and that summer passed the camera again with the calf nursing at her side. Sadly, both whales died the following winter. To see some of OrcaLab's underwater images, see their Web site at: <http://www.orcalab.org>.



Do young killer whales play?

It certainly seems that way. Most wild killer whales are covered with scratches and scars from chasing and wrestling with each other. Young whales are often seen repeatedly rolling over the backs of adults and swimming circles around the entire pod. And like most kids, they enjoy playing with their food. One young whale quietly floating at the surface surprised researchers when it opened its mouth and a salmon swam out! The salmon didn't get very far before the whale sucked it back into its mouth. This was repeated five more times before the whale abandoned the mangled fish.

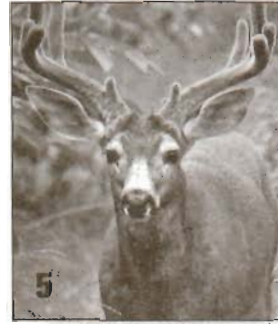
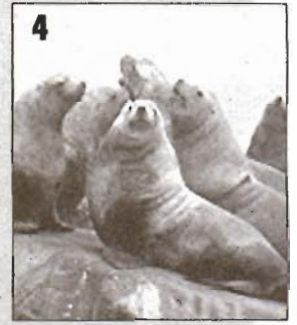
GRAEME ELLIS PHOTO



This male transient killer whale (above) made a BIG mistake. He was probably chasing a seal or porpoise and got stranded on the beach by a falling tide. This happened in 1976 near Tofino on the west coast of Vancouver Island. You can see researcher Jim Darling pouring water on the whale to try and keep it cool. Whales have so much fat, or blubber, that they can overheat if they're out of the water too long. Unfortunately, this whale died. But from it, we learned something about transient killer whale appetites. When researchers looked inside the whale's stomach, they found large pieces of two harbour porpoises, dozens of seal and sea lion whiskers, and 394 harbour seal claws!



Our star artist this year is 14-year-old Sheridan Swanson from Sydney, Australia. Thanks, Sheridan!



Transient killer whales like to eat many things. Which of the above animals IS NOT known to be transient killer whale food?

(See answer below)

Surprise! Transients have been seen eating ALL of these animals. They are: 1. gray whale 2. sea otter (particularly in western Alaska — see story on p.5) 3. harbour seal 4. Steller sea lions 5. deer (when they're caught swimming between islands) and 6. Pacific white-sided dolphin.

Answer:



Population Update

THE 1998 FIELD SEASON was a very successful one for the killer whale adoption program – researchers managed to see and photograph all of the family groups on our adoption list at least once.

Well, technically that's not quite true. There were two subpods not seen at all last year, and we were beginning to get concerned – until the missing whales reappeared early in 1999. The A23 subpod is usually a regular visitor to Johnstone Strait in the summer months. But the fishing must have been better elsewhere, because the five whales didn't make an appearance in the strait until this March.

Two other well-known whales kept us guessing. *Top Notch* (A5) and his brother *Foster* (A26) were not seen with any of their close relatives in 1998. The two motherless bulls were finally spotted on the central coast this January by DFO fishery guardians Stan Hutchings and Karen Hansen. They were travelling with two other orphans, *Sharky's* (A25) kids, *Nodales* (A51) and *Surge* (A61).

As always, we're saddened by the loss of some old friends, and excited about a few new arrivals.

Goodbyes

The A36 subpod has lost its matriarch, 50-year-old *Sophia* (A36), leaving no daughter to carry on the matriline. *Sophia's* three sons, adults *Cracroft* (A32) and *Plumper* (A37), and teenaged *Kaikash* (A46), represent the end of the line for the A36 subpod.

Another matriarch, *Harlequin* (G16), wasn't seen in 1998 either, although she may simply have missed being photographed. The 1997 sighting of the G16 subpod was incomplete, so we don't know for sure whether *Harlequin* was present then. She'll be listed as "missing" until her family is seen again.

Two whales missing in 1997 are now considered dead: *Pulteny* (A31), the 39-year-old son of *Scimitar* (A12), and 43-year-old *Ridley* (R1). Four other males were missing from their families in 1998: 45-year-old *Booker* (C3) and 34-year-old *Calvert* (D5), and two brothers, 32-year-old *Duncanby* (G6) and 27-year-old *Owikeno* (G26). If this seems like an alarmingly high number, remember that the average life span of a male killer whale is about 29 years.

Our last farewell goes to the youngest member of the A24 subpod. New baby A68, born to *Sutlej* (A45) in 1997, didn't survive its first winter. The calf's death is yet another blow for the family, which has lost an unusually high number of youngsters over the years. Fortunately, matriarch *Kelsey's* (A24) youngest calf,

three-year-old *Schooner* (A64), is doing fine.

Hellos

There are two new 1998 arrivals to report. *Koeye* (C10) gave birth to her fourth calf, C23. And new baby D19 was first spotted on July 11 – with fetal folds visible on its body, indicating a very recent birth. Researchers aren't yet sure who the mom is. The family group was only spotted once, in a relatively poor encounter, when the calf was travelling beside *Cascade* (D13), believed to be a male. Is the mom *Balaglava* (D8), *Takush* (D9), or *Winchester* (D10), or is *Cascade* (D13) in fact a female? Hopefully, we'll get our answer when the family is seen again.

New names

This year, two 1997 calves join the ranks of our adoptable whales. Looking for someone to adopt them are *Lama's* (C8) fourth calf, *Diver* (C22), named for Diver Point on B.C.'s central coast, and *Loquillilla's* (I12) second calf, *Zayas* (I64), named for Zayas Island on B.C.'s north coast. Incidentally, researchers now know the sex of one of *Zayas's* close relatives – it's uncle *Kokish* (I64).

Transients

The only change noticed among our adoptable transients was a new calf seen in late 1998 with 23-year-old *Eucott* (T22). Both were absent when presumed mom *Pandora* (T21) and brother *Kwatsi* (T20) were next seen. By April 1999, *Eucott* was back with her family, but without the calf.



GRAEME ELLIS PHOTO



GRAEME ELLIS PHOTO

Top: new adoptee *Diver* (C22). Bottom: *Cascade* (D13): a he or a she?

Adoption program a hit at boat show

The B.C. Wild Killer Whale Adoption Program took its show on the road for the first time in 1999. From Feb. 3-7, volunteers and staff used an educational display at the Vancouver International Boat Show to promote our mission of wild killer whale research and conservation.

The display included whale sounds and videos to help explain our research and conservation activities. Display exhibits and materials promoted proper whalewatching guidelines, provided information about the Robson Bight (Michael Bigg) Ecological Reserve, and offered boaters access to information about killer whale natural history and research projects such as ORCA FM. The killer whale calls grabbed the crowd's attention and set us apart from the rest of the booths at the show.

Our staff and volunteers made the most of the opportunity to hear everyone's orca tales and close encounters with B.C.'s whales. Encouraged by the response, we're already gearing up for this year's whalewatching season and are looking forward to taking the show on the road on a regular basis.



GROUP PROFILE

Science leaves its mark on transient pair

THEY'RE TWO OF the most commonly seen transient killer whales, they're easy to recognize, and they're virtually inseparable.

Meet the T13 transient group, made up of *Flores* (T13), an older adult female, and *Pender* (T14), an adult male thought to be about 30 years-old. The two have been regular travel companions since researchers first saw them in 1975, which is why it's thought that *Pender* is *Flores*'s son.

The duo is often seen chasing seals, porpoises and dolphins (and in one case, a minke whale) in the Johnstone Strait area and in the waters off southern Vancouver Island. It was in Puget Sound in 1976 that the two whales were involved in the incident that ended a decade of killer whale captures in Washington State and B.C. waters.

Flores and *Pender* were among six transients herded by boats, buzzing aircraft and seal bombs into Budd Inlet in southern Puget Sound, near Seattle. The capture, intended to supply whales to U.S. aquaria, took place in

full view of an appalled public, including state politicians, the news media, and researchers attending a nearby conference on killer whales. As the whales floated around their Budd Inlet pen, the state filed a lawsuit against the captors, and public protests demanded that the whales be set free.

By the time the court ruled, three of the whales had escaped. The judge ordered that the three remaining whales be released, but not before two of them be turned over to U.S. researchers for no longer than two months. The two selected were *Flores* and *Pender*, who were taken to the Seattle Aquarium.

The researchers wanted to field test a new radio transmitter device they had developed for monitoring the movements of killer whales. A radio pack was first attached to *Flores*, at the front base of her dorsal fin. The whales were later transferred to a small, penned bay on southern San Juan Island, just northeast of Victoria, B.C., where another radio pack was attached to *Pender*. The devices weighed about 1.5 kilograms each and were designed to fall off after about a year.

The whales were released four days later, and were tracked almost continuously by boat for the next 10 days before the signals were lost due to radio interference. The radio signals were picked up periodically over the next five months. The whales travelled an average 68 nautical miles a day, at an average speed of 2.8 knots.

At some point, the radio packs either fell off or were rubbed off. But they left their mark. Today, both whales can be easily identified by two parallel indentations in the leading edge of their dorsal fins (see photos above).

You can read more about these and other transients in the new book *Transients: Mam-mal-Hunting Killer Whales*, described on p.3 of this newsletter.

T13 (background) and T14 are fitted with radio tags.



KEN BALCOUEN PHOTO



Flores (T13), top, and *Pender* (T14).

Acknowledgements

Thank you to the following people who continue to lend their time and energy to the adoption program: **Graeme Ellis**, for organizing the ID photos; **Elwood Miles** for long hours in the dark room; **Lance Barrett-Lennard**, **Jim Borrowman**, **Randy Burke**, **Graeme Ellis**, **Brian Falconer**, **Kathy Heise**, **Alexandra Morton**, **Rod and Kechura Palm**, **Bruce Paterson**, **Jane Watson**, and the many other contributors to the photo ID study that makes this program possible; **Volker Deecke**, for maintaining our Web site; and **Kate Bearblock**, **Nora Berg**, **Bev Ford**, **Jennifer Harper**, **Paul Hughes**, **Mona Martin**, and **Candace Philpitt** for their volunteer contributions. And a very special thank you to **all whale adopters** for continuing to make this program possible.

The Blackfish Sounder

is the annual newsletter of the B.C. Wild Killer Whale Adoption Program, c/o Vancouver Aquarium Marine Science Centre, P.O. Box 3232, Vancouver, B.C., V6B 3X8.
Tel: (604) 659-3430
Fax (604) 659-3515
E-mail: adoption@vanaquaria.org
Web site: <http://www.killerwhale.org>

Program coordinator:
Dr. John Ford
Program assistant:
Meg Pocklington
Editor and writer:
Valerie Shore

Sea otters . . . from p.5

whales could theoretically be to blame.

Considering sea otters and killer whales have shared the same patch of ocean for millennia, the big question is why the whales have suddenly put otters at the top of their menu.

"The most likely explanation is a shift in the prey resource base for killer whales," say the authors, noting that Steller sea lion and harbour seal populations have inexplicably collapsed across the western North Pacific. Many fish stocks have also taken a nosedive, possibly due to overfishing, warmer ocean temperatures, or a combination of factors.

In B.C., sea otters have little to worry about from killer whales as long as seal and sea lion populations remain healthy.