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Alaska Whale Foundation studies whales from many angles

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Reinforcing the argument that Petersburg is a great place from which to launch a study of whales, a team of researchers from the Alaska Whale Foundation has been studying humpbacks from a number of different angles for the last 10 years and should be using the city as home base for several more.

The team, led by researchers Fred Sharpe and Vicki Beaver, combines field study of the local humpbacks with laboratory work at the Bamfield Marine Station on Vancouver Island and at Simon Fraser University in Vancouver, B.C.

Team members have been gathering a wide range of data on communication and feeding habits, genetic and social organization, prey manipulation and also general whale identification. The data generated is still "base-line" data, without precedent and most useful after subsequent generation data is gathered.

The Alaska Whale Foundation, headquartered in Seattle, is a non-profit organization dedicated to research of mammals, with a focus on the Alaska humpbacks. One novel approach to the research has been to create an "artificial whale" in a laboratory to simulate feeding patterns.

According to Sharpe, the AWF team works in Frederick Sound and Chatham Strait and has compiled a computer database

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Researcher Fred Sharpe

of the telltale fluke markings of the Southeast Alaska humpbacks . He said the local population is surprising because of their unpredictable behavior.

"This population is very unusual; it's probably the most unusual humpback whale population in the world," said Sharpe.

One of the unusual features of the Alaska group, which he estimates to number around 400-500 whales, is its feeding technique known as bubble-net feeding. However, more curious, is the social interaction of the whale group which has spawned long-lasting partnerships between the mammals.

"Baleen whales normally don't form bonds," said Sharpe, noting one pair of Alaska whales which was sighted in 1981 and is still together.

Beyond the traditional mother-and-calf bond following birth, Sharpe explained, local humpbacks have teamed up to trap herring in their bubble nets. Sharpe and his crew are trying to determine just what kind of relationships are formed.

"Are they kin groups, or relatives or pals?" asked Sharpe. "There's a lot of cooperation."

Research to break down the social questions surrounding the whales includes taking blubber samples and studying the genetic background of the Alaska whales. This research has resulted in findings showing a low genetic diversity here.

"This population appears to be inbred," he said.

One of the results of the small gene pool for this population might be the traditions that have been followed and the bonds that have formed. For instance, some of the Alaska whales remain here during the winter feeding continually on herring.

Sharpe also explained that the whales here are very loyal to a feeding site and form sub-populations that are mixed during the herring feeding.

The AWF team is studying the raucous feeding calls that recently attracted a film crew for a joint BBC/PBS television special on the unusual feeding habits. The AWF crew is taking audio recordings of the whale calls as well as sonar soundings of the bubble nets that are apparently set out along the surface like so many well-planned seine nets.

Sharpe said there are currently four schools of thought about the purpose of the loud screaming sounds the whales make while feeding. The sound may be an assembly call (like a dinner bell), it may be used to coordinate the group, it may assert dominance of one animal over another and it may be used for prey manipulation.

Sharpe and Beaver have been pursuing the theory of prey manipulation for several reasons - the hearing of the herring is typically acute and the screams seem to emanate at the maximum frequency range for that sound.

"It appears the whales dive down below the herring schools and use the sounds to disorient their prey," said Sharpe.

The tactic drives the schools of herring into the bubble nets which sit near the surface at which point the whales lunge up, breaking the surface of the water with a mouth full of fish. Research has also included studying the behavior of herring and krill in bubble nets.

Work with audio recording has also focused on whether there is an effect on the audio world of the mammals in the area of heavy logging. However, neither the sound of logging equipment nor the actual removal of the trees seems to have an effect on the feeding of the whales Sharpe said "We not finding any avoidance," he said.

The team has used Petersburg as a launching point for its research because of the "pristine, ecosystem" of Southeast Alaska and the marine orientation of the town.

"Where else can you get groceries delivered down to the dock?" said Sharpe.

He also noted the fishermen of the area have been both helpful and appreciative of the whale research which in some cases, as with research designed to avoid fishing net entanglements, can directly benefit the fishermen.

"We find the fishermen are the most appreciative bunch; they enjoy the whales," he said.