Study Shifts Scientists' Understanding of Northern Fur Seals

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Lauren Rosenthal/KUCB

The Northern fur seals that breed on the Pribilof islands have been on the decline for decades, a smaller colony just 200 miles away is thriving. As KUCB’s Lauren Rosenthal reports, a new study of these colonies is challenging scientists’ assumptions about what marine animals need from their environment -- and how they get it.

The National Marine Mammal Laboratory sends a team to the Pribilofs every two years to count new Northern fur seal pups. Since 1998, the overall production of pups has dropped by 45%, but according to the latest count, the Pribilof fur seals bucked the downward trend for the first time in 15 years.

Rod Towell, a statistician from the mammal lab, says pup production increased a tiny amount in 2012 – just 0.5%. While it’s not statistically significant, Towell says that the data is promising.

[[24 fur seal – 1, 4s, “decline again”In my estimation, it’s a good sign in the sense that it didn’t decline again.]]

Meanwhile, on Bogoslof Island, it’s a different story. Pup populations have increased every year since the first pup was spotted there in 1980. A group of researchers has been studying why this island’s on the rise, while the Pribilofs are in decline.

Andrew Trites is a fisheries professor at the University of British Columbia.
Trites was on the team to study the animals’ diets for clues.

[24 fur seals - 2, 12s, “to
decline”<<It was to really understand how top predators, [like] seabirds, and fur seals interact with the environment. How do they find their prey? What drives their numbers to increase? What causes them to decline?>>]]

One of the biggest issues is how they eat. The Northern fur seals, black-legged kittiwakes and thick-billed murres that the group studied all have to make tradeoffs between the energy they spend to reach their prey, and the energy they get from that food source.

Until recently, scientists weren’t sure how the animals judged that tradeoff. Contrary to what they expected, Trites and his fellow researchers found that the seabirds and fur seals don’t go to areas with the highest biomass of prey, or even the highest number of prey. That information is what fish management decisions are based on.

But the fur seals and seabirds don’t behave like resource managers. Instead, they behave more like fishermen. Just like trawlers searching for schools of fish, the fur seals and birds go to patches – areas where there’s a dense school of fish or krill – and eat there.

Those patches change often, depending on a slew of conditions that affect the prey’s behavior, and the researchers don’t yet understand why the animals use them.

In a presentation at the Marine Science Symposium in Anchorage, Trites went over his piece of the research, which compared Pribilof foragers to Bogoslof foragers.

[24 fur seal – 3, 21 s, “in
diet”<<Primarily, the murres and the fur seals in the Pribilofs where they’re declining -- they really eat a lot of pollock. And we discovered down at Bogoslof, they’re not eating pollock. They’re eating mostly squid and Northern smoothtongue, or these deepwater fishes that are high in energy. So a big difference in diet.>>]

Trites thinks that the Pribilof seals are declining because they’re eating juvenile pollock, which he says don’t have enough energy. He says the group’s research shows that in order for the seabirds and fur seals to recover, the ecosystem around the islands would have to shift.

[24 fur seal – 4, 13s, “to the pribilofs”<<You can see that under the right feeding conditions, if you’ve got high-energy prey near these islands, they can rebound. And hopefully we’ll see that return one day too to the Pribilofs.>>]

The results of the Bering Sea study were published in January in the journal PLOS ONE [ploss one].

In Unalaska, I’m LR.