

Unsolved mystery: deformed-bill black-capped chickadees

by Ted Bailey



A black-capped chickadee with a deformed maxilla and mandible. Photo by USGS http://alaska.usgs.gov/science/biology/landbirds/beak_deformity/index.html.

Most of us like to believe that in “pristine” Alaska we are immune from the ecological problems of the “Lower 48.” There is increasing evidence, however, we are not exempt from such problems, as the following strange puzzle will illustrate.

In the last several years, Southcentral Alaska has seen a dramatic increase of black-capped chickadees with deformed bills. Recently such birds have been seen in the Strawberry Road and Poppy Lane areas. Biologists from the Alaska Biological Science Center in Anchorage have been collecting these reports and are trying to discover the cause of the deformities. Kenai Refuge biological technicians Todd Eskelin and Stephanie Rickabaugh are capturing, leg-banding, and collecting blood samples from black-capped chickadees on and near the refuge.

The chickadee bill deformities range from barely detectable to grotesque. Sometimes the top bill curves in a long U-shaped arc back towards the head. Such birds are unable to pick up food in a normal fashion and must twist their head sideways to pick up food with the side of the bill. Normal birds carefully preen their feathers, but deformed-bill birds often look ragged and unkempt because they can't properly groom themselves. Usually, deformed-billed birds are observed at bird-feeders. Could bird-feeders or commercial bird food be responsible for the deformities? But, if so, why are few other bird-feeder species simi-

larly affected?

We don't know why black-capped chickadees are the most affected birds. Their cousins—boreal chickadees—rarely have bill deformities, and other species such as red-breasted nuthatches are seldom affected. Nevertheless, there are some interesting patterns that may or may not be relevant. Black-capped chickadees are year-round residents; they don't migrate to spend winters in, say, California or Central America. This suggests that the deformity cause is restricted to Alaska, specifically, so far as we know, to Southcentral Alaska.

Why are only black-capped and not boreal chickadees affected? Boreal chickadees prefer spruce forests, while black-capped chickadees utilize more diverse habitats including deciduous forest. Could the deformity cause somehow be associated with their different habitats?

Black-capped chickadees store food, primarily seeds, in trees under bark, in crevices between limbs, and in other “secret” places for later retrieval. This storage includes food from birdfeeders, such as sunflower seeds and suet. Chickadees typically remove the shell from sunflower seeds before caching them. At peak activity, a chickadee will store hundreds to thousands of food items per day. In Norway, a related species stores 50,000 to 80,000 spruce seeds each autumn. Could this food-caching behavior somehow be related to the deformed bills? With the recent spruce bark beetle outbreak in Southcentral Alaska and the spraying of trees in certain areas for protection against the beetle, one might suspect that chemical spraying could be a potential factor. But again, there is no “smoking gun” in the form of solid evidence for a chemical cause; it is just another hypothesis to be evaluated.

Peninsula Clarion readers can help us address this major “unsolved mystery.” If you observe a deformed-bill chickadee or any other species, please report it to the refuge at 262-7021, and report it to Colleen Handel at cmhandel@usgs.gov of the Alaska Biological Science Center in Anchorage. A small number of chickadees were banded near Soldotna last week. Normal chickadees have an aluminum band on their foot. Po-

tential deformed-bill chickadees have a color band. If you see a leg-banded chickadee (of either type), please report it to us at 262-7021. This will show how far local chickadees travel. A leg-band number would also be helpful, but the numbers are small and difficult to read unless the bird is close by or you have a pair of binoculars or a spotting scope. We will keep Clarion readers informed as this story unfolds.

Ted Bailey is a supervisory wildlife biologist and has

been responsible for the Kenai National Wildlife Refuge's biological programs for over 20 years. He and his staff monitor and conduct studies of ecological conditions and wildlife on the refuge. Excellent photos of chickadees with deformed bills can be seen at http://alaska.usgs.gov/science/biology/landbirds/beak_deformity/ For more information about the Refuge, visit the headquarters on Ski Hill Road in Soldotna, call 262-7021 or see the website at <http://www.fws.gov/refuge/kenai/>.