

# BIRD OF THE MONTH

By Mary Nelesen

## Species at Risk: Clark's Nutcracker

The Clark's nutcracker, named after the famed Lewis and Clark explorer, Captain William Clark, was mistaken for a woodpecker when first sighted by The Corps of Discovery while they camped with the Shoshone Indians near Idaho's Lemhi River, on August 22, 1805. This jay-sized gray bird with glossy black wings with a large white patch and a black tail with white edges is often heard before it is seen. Its throaty squawk announces its presence while perched on treetops.

Clark's nutcrackers inhabit the high montane regions of the western United States and Canada, preferring coniferous forest dominated by one or more species of large-seeded pines. Its year-round diet consists primarily of fresh and stored pine seeds.

This past summer I participated in a High Country Citizen Science project in Glacier National Park that monitored mountain goats, pikas and Clark's nutcrackers. The project is headed by Jami Belt, a wildlife biologist, who works in the Crown of the Continent Research Learning Center in West Glacier.

The Clark's nutcracker is of particular concern because of its dependence on the high-energy seeds of the Whitebark pine. At one time, Whitebark pine stands covered 15-20% of Glacier National Park. Today, over 50% of the trees are dead or dying due to white pine blister rust.

A hoarder of Whitebark pine seeds, the nutcracker can locate as many as 2,000 different caches up to eight months after it buried them. Luckily, it misses some, which germinate and grow.

The nutcrackers – members of the genus *Nucifraga* – have a sublingual pouch, an opening in the floor of the bird's mouth beneath its tongue. This pouch can hold about 100 Whitebark pine seeds. According to Ronald M. Lanner, who taught in the Department of Forest Resource at Utah State University,



the nutcracker brings up the pouched seeds in its bill, one by one, and thrusts them into the soil, about an inch below the surface. Seeds may be cached within a hundred yards of the tree they came from or up to 20 miles away. Seeds are often buried in open areas, such as treeless slopes and ridges, and in recently burned-over forests. Many caches are made where wind keeps the snow swept clear and winter access is assured, but nutcrackers will retrieve seeds from beneath the snow if they must.

So how does the Clark's nutcracker find its numerous caches? Experiments have shown that nutcrackers find their caches by relying on memory – they actually *remember* where most seeds are buried, by angles between their caches and certain nearby landmarks, like boulders, trees, stumps, and logs. In other words, they triangulate.

Professor Lanner estimated that 48,000 Whitebark pine seeds would be needed by a nutcracker wintering in the high country of Wyoming or Montana, and that each bird would have to memorize the whereabouts of about 12,000 separate caches. At least two angles would have to be remembered to locate each cache. A bird raising a brood would also have to unearth many additional seeds to feed its young, because they are fed a diet of almost nothing but pine seeds, for many weeks after fledging.

Can the Clark's nutcracker survive without the Whitebark pine? The bird does eat other wingless seeds, such as limber pine seed, but this food source does not contain the high-fat content of the Whitebark pine, the nutcracker's primary food source. In addition, the limber pine is also susceptible to blister rust.

What does the future hold in store for Captain Clark's namesake? There is no easy answer...much research remains to be done. I do know, however, that I take great joy whenever I catch a glimpse of this *smart* bird as I wander through Glacier National Park.