

Nature Map Clark's Nutcrackers to further vital research for their protection.

Taza Schaming is a PhD. candidate at Cornell University. Please help Taza document nutcracker occupancy in Jackson Hole throughout the year and breeding in the spring! Taza could really use data on (1) when nutcrackers are coming in to feeders and (2) whether the birds are breeding in the area.

Read below Taza's article on the importance of Clark's nutcracker to the ecology of the Yellowstone ecosystem and how you can help.

### **Nutcracker Project**

Whitebark pine (*Pinus albicaulis*) is an obligate mutualist of Clark's Nutcrackers (*Nucifraga columbiana*) because whitebark pine trees sprout almost exclusively from nutcracker seed caches. This dependency has led to considerable concern for both species because whitebark pine ecosystems are rapidly disappearing in the western United States. This disappearance, largely due to mountain pine beetles and invasive blister rust, has caused concern for the entire ecosystem. Anecdotal evidence suggests that declining whitebark pine communities are leading to reduced local Clark's Nutcracker populations in several parts of their range, including northern Montana and Washington. While whitebark pine restoration efforts are underway, these efforts will not be effective if Clark's Nutcracker populations decline or their habitat selection changes to a degree that they are not available to disperse seeds.

This problem is more urgent than it first seems: these high altitude pines are essential to protect because they play a critical role in the ecosystem, including helping to retain snow (and thus drinking water) on the upper slopes of the Rockies, and providing high fat, high-energy nuts on which many animal species depend. Only by understanding the magnitude of the impact of the decline of whitebark pine on Clark's Nutcrackers' behavior and populations, can we design management interventions that will successfully restore these communities to maintain a healthy ecosystem.

Taza Schaming is a Ph.D. student at Cornell University, who has been studying nutcracker movement, habitat selection, and social behavior since 2009, with the ultimate goal of determining which management actions will increase the persistence of nutcrackers in the Greater Yellowstone Ecosystem, a region where the birds are still relatively abundant, but on the cusp of a potentially drastic decline. In the process, she will determine the social system of this little known bird.

**Taza won't be in the field in spring 2014 and therefore needs your help to determine if nutcrackers are breeding! She's hoping local birdwatchers will help look for evidence of nutcracker breeding, specifically fledglings and juveniles, while she's gone. Even a few accounts of juveniles in the area will be good evidence of nutcrackers breeding.**

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#### Identifying Nutcracker Courtship and Breeding Behavior:

\*It's basically impossible to tell male and female nutcrackers apart (even when you're holding them in the hand). Males are a bit bigger, so if you see two in a pair, the bigger one is likely, but not definitely, the male.

#### *Courtship behavior:*

\*Courtship displays are most intense during the breeding season, but sometimes occur at other times of the year.

\*Wild, rapid flights in which one follows the other then the birds return to the same or nearby tree, or both dive and swoop together.

\*One bird may hold a twig in its beak while courting.

\*Males will often feed the female (so if you see one nutcracker feeding another, it may be a male feeding a female, or an adult feeding its chick). Both begging females and begging young crouch, flutter their wings, and call persistently.

\*When courting, nutcrackers sometimes make a lovely “musical call”, unlike the normal, loud squawking. It’s hard to hear unless you’re quite close to the birds.

#### *Nesting behavior:*

\*Nutcrackers may be seen carrying twigs and building a nest.

\*If you see nutcrackers regularly flying to the exact same tree, look for a nest! (Nests are really tough to see, so be patient.)

\*The earliest building activity I’ve seen near Jackson is March 5, and the latest I’ve seen young in the nest is on June 15. However, most of the nesting activity has been in April.

#### Identifying Adult vs. Juvenile Nutcrackers:

\*We’ve seen juveniles off the nest from April through August.

\*Nutcrackers are pale grey birds with black wings. The tail is white on the bottom. On the top, the tail is black in the center with white on the sides. When flying one can see white patches on the wings.

\*Not all of these traits will necessarily be noticeable.

#### *Adults:*

\*Black bills, legs and feet (one of the easiest ways to id an adult!)

\*Long beak

\*Long tail

\*Typically white on face, around bill & eyes

\*Sleeker body and feathers

#### *Juveniles:*

\*Grey legs (one of the easiest ways to id a juvenile!)

\*Shorter beak

\*Shorter tail

\*No white on face

\*Pink dots below eyes & red mouth for short period after leaving the nest

\*Duller body, wings & tail, more brownish – grey plumage

\*Bodies are often fluffier and less compact (but beware – adults often fluff up their feathers when they’re cold)

\*Much clumsier than adults when flying, perching, eating, etc.

\*Often heard loudly and insistently begging for food



ADULT

Photo Credit: Joanne Clayton (permission to use photo granted on 12/10/13)



ADULT: Overhead

Photo Credit: Lyn Topinka (permission to use photo grand 12/11/13)



JUVENILE

Photo Credit: Bruce Clayton (permission to use photo granted on 12/10/13)

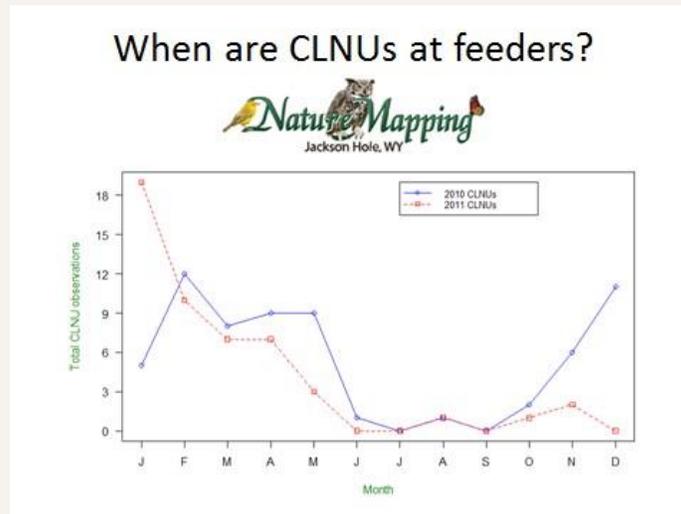
## FLEDGLING



## FLEDGLING

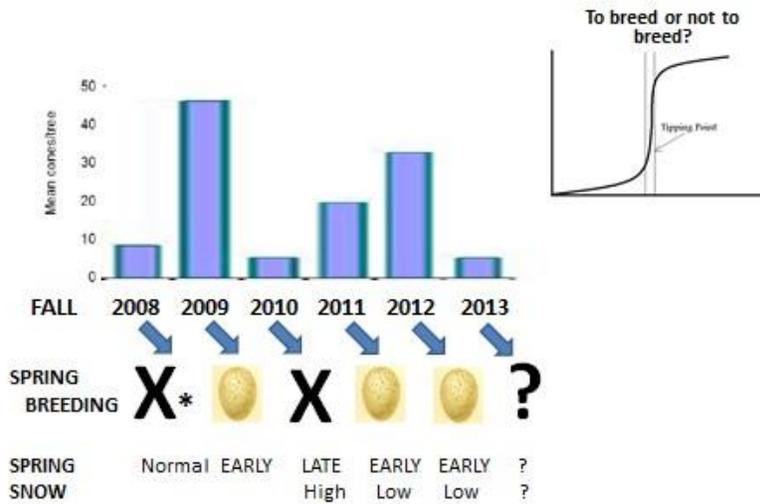
Photo Credit: Lyn Topinka (permission to use photo grand 12/11/13)

Data from 2010 & 2011 Nature Mapping data. In the fall of 2010 when there was a low whitebark pine cone crop, there were lots of nutcrackers at feeders in town. When there was a medium-high cone crop in 2011, there were few nutcrackers at feeders. To see if this correlation continues to hold, Taza will be adding recent data soon!



In the springs following high and medium-high cone crops (following fall 2009, 2011 and 2012) there were lots of nutcrackers breeding in the Jackson area. In the spring following the low cone crop of 2010, no evidence of breeding was seen: no nests were built by radioed nutcrackers and no fledglings were seen anywhere in the area. (And, Taza and her interns were in the field almost every day January-September.) *\*In the spring following the low cone crop of 2008, no evidence of breeding was seen, but it was Taza's first year in the field, and since she was first learning that year, it's possible that she missed some evidence of breeding that year.* Cone crop data is from the Interagency Grizzly Bear Study Team.

## Cone Crop and Nutcracker Breeding



Please document your nutcracker observations on the Nature Mapping website. Or feel free to contact Taza Schaming directly by email at [tds55@cornell.edu](mailto:tds55@cornell.edu) or [tazashaming@gmail.com](mailto:tazashaming@gmail.com) and by phone (508)-277-5084. Thank you!

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