

Trail cams keep tabs on researchers' fisher denning boxes

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by Javier Serna



Above: A few moose checked out the boxes. At left: Pine martens were one of the more common visitors.

Will the boxes help fishers?

Assistant Editor

The idea of using denning boxes (similar to wood duck nesting boxes) for fishers isn't new.

But a research study underway at the University of Minnesota Duluth's Natural Resources Research Institute is trying to figure out how to most effectively use the boxes in Minnesota for a species that, despite expanding its footprint in the state in recent years, has been in decline for the past few decades.

"We know they are willing to use them," Michael Joyce, a wildlife ecologist at the NRRRI, said of the fisher boxes. "What we don't know is what influences whether they are going to use them. Is there some relationship to habitat at the site or the larger landscape? We don't want to spend time putting up boxes if they're unlikely to get used."



About 1.6 million photos were taken during the first year of a study analyzing fisher denning boxes. It's an attempt to find out how placement may affect their effectiveness. Photos courtesy of Michael Joyce



About 40 different species showed up and were photographed at the fisher denning boxes. Three-quarters of them were birds.

The researchers are working with a grant from the state's Environment and Natural Resources Trust Fund. The project is in the second and final year of its funding, but Joyce said it's his hope to keep things going for at least five, maybe 10, years.

"We are going to be looking for funding to continue with monitoring," he said.

Joyce said similar projects have focused on denning boxes in the United Kingdom and British Columbia.

"We have a different situation here," he said. "In Europe, the trees they favor don't have cavities. There is a high usage of the boxes, and 25% of them are used for raising litters."

Thus far, there are about 80 boxes that have been set up in the northern part of Minnesota, each with a trail camera set up facing them. There also are temperature monitors in the boxes. A number of other government units have partnered with the project, including the Carlton County Land Department and the Leech Lake Band of Ojibwe.

"We had four boxes in Carlton County, but a porcupine destroyed one," Joyce noted.

He said about 1.6 million photos have been taken by the trail cameras, and researchers have had time to observe about 20% of them.

Fishers haven't denned in a single box thus far, which also was the case in the British Columbia study. There, the boxes were used for denning in every subsequent year.

But researchers in Minnesota say even so, much has been learned.

In all, about 40 different wildlife species have visited the boxes, Joyce said, including 30 different birds.

"It is always exciting to look through the pictures," he said.

Five creatures in particular have frequented the boxes the most, including fishers, pine martens, flying squirrels, red squirrels, and wasps.

The researchers have been able to estimate the amount of time it takes for fishers to detect a box.

"On average, we're looking at about 170 days – about six months," he said, noting that about 28% of the boxes have been visited or used by fishers. "The interesting thing is, in a third of the boxes that have been found, fishers found them within two months. They find them right away or it might take a year."

Boxes have been used inside red pine stands, which researchers say is encouraging because red pine isn't considered high-quality fisher habitat.

"They seem at least willing to find them and use them," Joyce said.

Although none have been used to den a litter, some females appear to be using them for rest or to stash a squirrel killed for food.

The openings are designed to keep male fishers out, which is what female fishers prefer in the wild. Fishers give birth in early to mid-March.

In one image, there is a female fisher inside a box, with a male fisher outside the box.

"She's bearing her teeth," Joyce points out.



Squirrels were frequent visitors, but not always willing visitors. Fishers sometimes killed squirrels and used the denning boxes to stash their prey.

It was shown in the British Columbia study that if a male fisher can get to the kits, and they aren't his offspring, he will kill them.

"The theory is if you mate with her, and the kits she has now aren't yours, you want them out of the way so yours have a better chance of survival, which most people find to be appalling," Joyce said. "Carnivores work differently than humans."

Joyce noted that the cameras do tell a lot about what is happening outside of the boxes, but not necessarily inside them. They don't always capture when a box is being used, but that's where the temperature-takers fill in the blanks.

"They are very sensitive in telling us when (an animal is) in the box, and how long they stay," he said.

The Minnesota Trappers Association started a den box initiative about a decade ago that included placing about 700 boxes in the woods. Joyce's project, and what is learned, could breathe new life into such an effort.

A number of partners have been involved in setting up boxes, including the aforementioned Leech Lake Band and Carlton County, as well as Hubachek Wilderness Research Center in Ely, the 1854 Treaty Authority, and the Cloquet Forestry Center.

Leech Lake wildlife biologist Tanya Roerick said a dozen boxes have been placed on the reservation. Fishers have been on the band's list of threatened and endangered species for about a decade.

At those boxes, there have been six fishers and a marten documented, but no denning as of yet, Roerick said.

"We're really excited to see if any fishers will den in them," she said. "Hopefully, we can do something worthwhile to help the fisher population in our area."

Greg Bernu and Mark Westphal, of the Carlton County Land Department, both mentioned placing one of their four boxes in a stand of Norway pines, not considered prime fisher habitat.

"We don't have them dropping kits yet," Bernu said. "But the potential is there."

Bernu said he's eager to see if the boxes will get used in younger forest sets – stands with trees under 40 years old.

"We can't prove it with our boxes yet because we don't have any kits, but we do have evidence of them using it on a regular basis," he said.

Joyce said his team will be working during the next few months to review camera images and write up a report that is due to the Legislative-Citizen Commission on Minnesota Resources, which recommends ENRTF grants. With any luck, this project will go on for a decade, he said.

That's where working with the partners could be key, because some of that work can be counted as an "in-kind" match for the grant.

"We're talking about different sources of funding that could leverage the partnerships," Joyce said.

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