

Examples of Red-headed Woodpecker Nesting Resiliency after Nest Tree Catastrophe





The Red-headed Woodpecker Recovery project (RhWR) was organized in 2007 and is a 501(c)(3) tax-exempt non-profit organization.

Investigation and research activities about Red-headed Woodpeckers (RHWOs) at Cedar Creek Ecosystem Science Reserve began in 2008 when Cedar Creek ESR gave a permit to the RhWR to initiate those activities on site. The RhWR has continued investigation and research activities since 2008 both at Cedar Creek ESR and at other locations.

Field observation efforts for included information occurred between 2012 and 2025 in all 12 months of the year, with a combined 2,563 days and 15,438 hours by Siah St. Clair and work partner Jim Howitz. All observations were made during a succession of RHWO study and research projects. Many activities required extensive experience and expertise as well as special permits and permissions.

By conducting these observation activities new natural history behaviors of RHWOs have been documented and will be used to help reduce the decline of this species and other species impacted by the presence of RHWOs.

Unless otherwise noted, the information and photographs provided herein are based solely on observations by Siah L St. Clair, a volunteer of the Red-headed Woodpecker Recovery project.

Examples of Nesting Resiliency in Red-headed Woodpeckers

Text and Photography by Siah L St. Clair

Nesting Red-headed Woodpeckers, both adults and nestlings, treat nest cavity disasters as a part of daily life at Cedar Creek Ecosystem Science Reserve

Red-headed Woodpeckers (RHWOs) nest primarily in dead trees or dead branches in living trees (91.5% of 611 nests at CCSR from 2012 to 2024—JH). But these Woodpeckers don't nest in just any dead tree. They almost always need the inside (heartwood) of the dead tree to be softened by decay before they excavate a cavity. The decay is primarily the result of heart rot fungi. It may take several years before heart-rot fungi make the heart-wood soft enough for Red-headed Woodpeckers to consider excavating a cavity in a tree.



Decaying dead trees often have a short life span once Red-headed Woodpeckers are able to excavate nests in them (<1-8 years—see [Basic Information About Red-headed Woodpeckers](#)). Red-headed Woodpeckers have developed behavioral adaptations to respond to some dead tree disaster circumstances that increase their chances of nest success. Nest success does not always result but chances are increased.



This is nest #227, initiated by this woodpecker pair on 6-15-2020, with three nestlings fledging, and then 4 months later the nest was broken open by a windstorm on November 15, 2020, with the top half of the tree falling. Tree lifespan of this nest tree after being used as a nest was less than 6 months.



Reproductive conchs of heart rot fungi are often found near Red-headed Woodpecker nest cavities, seen here in the pictures above and below. There are many different kinds of heart rot fungi.



But.....there are risks involved in placing your family home inside a cavity in a dead tree that has significant heart rot. While there is safety from many predators in a woodpecker cavity, rotting, standing dead trees have fairly short life spans, and disaster can come with any strong wind or even when there is no wind.

Following are the stories and pictures of three Red-headed Woodpecker nests, each in a dead tree, and how the family members responded to nest tree “disasters” that occurred.

Story #1—Nest #335—Spring and Summer of 2024

In the spring of 2024, a pair of RHWOs chose a dead Quaking Aspen tree as a new nest site and excavated a cavity in the tree. This pair had nested successfully in a nearby Paper Birch tree the previous year. The new nest tree was along the edge of a firebreak road with the cavity about 30 feet high on the main trunk with the cavity hole facing east. Heart rot fungus brackets were present on the left (south) side of the tree near the cavity



This series of pictures show an incubation exchange at nest 335 on May 9, 2024—one parent leaves the nest in the top pictures while the second parent arrives and enters the nest in the bottom pictures, to continue egg incubation. These incubation exchanges occur about every 20-30 minutes during the daytime. Daily life was normal and routine at this nest. Heart rot fungus brackets can be seen left of the nest entrance hole running up the side of the tree. Within a couple of weeks there were nestlings being fed by the adults.

All was normal until the night of June 9th when a strong windstorm caused the nest tree to break in half several inches below the nest hole. A search on the morning of June 10th found the adults at the nest tree seemingly undisturbed. In an encounter with a research tech near the nest he mentioned that he had not been able to see any of the four nestlings previously seen in the nest. Further looking with the long lens of my camera from the other side of the nest tree discovered the top of one nestling's head and the sound of begging. All was not lost. The adults were bringing food to the nest to at least one surviving nestling. The concern now was that the nestling would be completely exposed from above to predators and weather. Would the adults be able to protect it or even know how in this open nest situation?



On the morning of June 10, a few hours after the nest tree broke in half, one nestling is seen, and being fed.

A few days later, on June 14th my work partner Jim Howitz and I returned to see how this family was weathering this big change in their world. To our surprise we found 2 healthy older, mostly quiet nestlings in the very ragged open area where the nest had been. The adults were regularly bringing food. See pictures below. They were acting as if this big change was just an everyday thing that they had adjusted to. The nestlings looked like they might be ready to fledge in several days, and I hoped that would happen.



Two older nestlings on June 14, an adult bringing food, and a nearly ready to fledge nestling waiting for food.

Three days later, on the night of June 17-18 there was a heavy rainstorm at Cedar Creek ESR.

Jim and I went to the nest first thing in the morning on the 18th to search for possible survivors. We did not find any, nor see the adults, but we knew that if any had survived, they would be hiding for a few days in nearby leafy tree branches and very hard to see. We would have to wait for any survivors to emerge with the adults openly feeding them. The rainstorm may have forced the nestlings to leave the broken nest a few days early and it might take days before they would be out in the open.

Jim and I returned eight days later on June 26. We were rewarded by seeing both adults and two healthy fledglings in trees very close to the broken aspen nest. The adults were feeding the fledglings who were flying quite well from tree to tree but still staying quite hidden up in the leafy trees. See pictures below.



Pictures taken of the two broken aspen nest fledglings on June 26th, and an adult tending to one of them.

This Red-headed Woodpecker family seemingly had a very small chance of producing any fledglings after their nest tree broke in half at their nest cavity in the middle of the nest cycle, and then a deluge filled the remaining cavity with water. But the adults and nestlings adapted quickly to these serious challenges. By early July the adults had begun a second nest in the tree they had nested in the previous year, and the two fledglings from the broken aspen nest were seen in the area doing well in mid-August.

While there was brood reduction, two nestlings survived to fledge after their nest cavity had been destroyed and then what remained was flooded. The nestlings of the second nest by these adults were lost to a predator halfway through their nesting cycle, but they still had the two fledglings from the broken aspen nest. Red-headed Woodpeckers are resilient birds.



Story #2—Nest #324—Spring and Summer of 2025

On June 1st of 2025, an experienced pair of Red-headed Woodpeckers had five eggs (as per my pole camera) in a Black Cherry nest tree they had used the previous year that resulted in three fledglings. Sometime in the last week of June a windstorm broke the top of the cherry tree off at the top of the nest cavity. Upon visiting the now broken open nest on July 2, as in story #1, the parents were feeding the remaining two nestlings. But these nestlings were a week or two younger than those in story #1 and the parents had to reach way down into the remaining nest cavity to feed them. See pictures.



The nestlings at this damaged nest were loudly begging for food without the protection of an intact nest cavity. Within several days the nest was empty, almost certainly due to predators. In this case, resilient adaptive behavior worked for a while to keep the nestlings alive, but their young age gave predators many more days and nights to find this mostly unprotected open nest.

Resilient nesting behaviors help nesting success in Red-headed Woodpeckers, but luck and opportunity for other ecosystem partners plays a role in success as well. This pair attempted a second nest in the same tree in a lower cavity a couple of weeks later which also did not succeed.

Story 3—Nest #255—Spring and Summer of 2021

In the middle of May, 2021, a previously successful RHWO banded pair of RHWOs, named Tomek and Izza, started a nest in a dead pin oak tree. This tree was near their nest tree from the previous year. The cavity was about 9 feet high and faced north. This nest and tree were about to have some remarkable experiences that were captured by a nest camera that was attached 3 feet from the nest cavity on May 28 (eight other nests also had a similar camera set up). All the pictures for this story are still frames I created from the low-resolution videos taken by this camera. Pictures are fuzzy and use infrared aspect at night.



There were regular incubation exchanges by the adults on June 2nd, 2021, about every 20-30 minutes.



At night the male Red Head guards the nestlings (or eggs) from intruders. On the left, at 1:48 AM on June 13, a Southern Flying Squirrel tries to get in but is poked away by the Red Head's beak, just visible inside the cavity. On the right the female Red Head relieves the male of his all-night guard duty at 5:24 AM. Sometimes the male gets very little rest during the night between predators and usurpers.

In general, all was going quite normally with this nest as June progressed. Nestlings were growing fast with the adults bringing food up to or over 200 times a day to the nest.



On the night of June 16th there were nestlings in the nest and the male parent was guarding them at 1:09 AM when a Fisher discovered them and attempted to have them for dinner. But the male Red Head sits over the nestlings at the bottom of the nest and the Fisher was unable to reach them and left in a few minutes.

But heart rot fungi have been working on this tree for many years, and do not go away like the Fisher...



On June 24th, at 1:54 AM, on a night with no wind, nest tree 255 broke off at the base and simply fell to the ground, breaking into several large pieces. It fell to the left, in the direction of the arrows. From beginning to end the fall was completely over in only one second. In picture 1 the tree was already moving/falling in the video.



Many Miracles

Miraculously, the nest cavity portion of the tree survived the fall intact with the nest hole facing up. And even more miraculous, the nest camera and its frame remained intact, slightly askew, but continuing to take videos. Now, however, "up" is the left side of the video and needs to be turned as in picture 2a for "up" to be in the correct location on the picture. And a third miracle is that the male adult, Tomek, escaped unharmed. And a fourth miracle, amazingly, is that the nestlings survived the fall as well.



In the pictures above, in the pre-dawn light, Tomek, the male Red Head, who cannot find his nest tree, hears the begging calls of his nestlings on the ground in a log. In picture 1 he arrives at the log at 6:09 AM. In picture 2 he looks into the cavity hole and sees his nestlings. In picture 3, only two minutes later, he and his mate Izza begin bringing food to the nestlings in this strange location. See sides of pictures for time stamps. The low-resolution pictures have been brightened and given increased contrast for viewing purposes.

On most mornings Tomek and Izza were usually working at the nest by 5:30 AM. But on the morning of June 24 they were wondering where their nest tree was, and, more importantly, their nestlings. But, as seen above, they had found the nestlings by 6:09 AM, drawn by their loud begging calls, in a most unusual location, and immediately began feeding them. The adults continued to bring food for the nestlings, 84 times by video count, until 12:28 PM. It only took the adults two minutes to completely adapt to this new change in their nest and nestling's location. See pictures below of the adults bringing food, in picture 1 at 7:23 AM, picture 2 at 6:27 AM, picture 3 at 8:47 AM, and picture 4 at 11:05 AM



The adult parents adapted rapidly to the new nest location and focused on their work of bringing food to the nestlings. The nestlings did their share by constantly begging loudly to let the parents know where they were.

More surprises were in store for the Nest 255 family. Shortly after noon (12:28 PM) of the same day, two members of the RHWO research team, April Strelczyk Haverstock and Jim Howitz, discovered the fallen nest tree, and also discovered, to their amazement, that the nestlings were still alive, with the parents close by. After some discussion, April and Jim decided to dig a hole and “re-plant” the portion of the nest tree with the nest cavity. The nest cavity would be about 7 feet high, and the nestlings would have a much greater chance of surviving than with the tree lying flat on the ground. The nestlings were about half grown and needed another two weeks of growth before they would be ready to fledge.



April and Jim “replanted” the nest cavity tree section within a few yards of its original location and re-oriented the nest camera in 43 minutes after arriving and left the area to let the family get used to this new change.



Picture one above is Tomek at his now new nest tree location, four minutes after April and Jim had left, at 1:15 PM. The nestlings are begging for food and soon both parents are bringing food to the new nest location. Picture two shows both adults at the nest at 2:59 PM, as if nothing extraordinary had happened on this very unusual day. Four nights later Tomek was again defending the nestlings from another Southern Flying Squirrel.

Without the loud begging calls of the nestlings, it is uncertain whether the adult woodpeckers would have found the changed locations of their nest, twice within 12 hours. Working together, the adults and nestlings found each other and succeeded in continuing their nesting cycle. Nesting resilient adaptations had functioned very well in this situation.

I would very much like to end this story with “and they all lived happily ever after,” but this is real life, and real risks present themselves with every new day. On July 2nd, eight days after surviving and adapting to fairly extreme changes in their housing situation, a new deadly threat appeared. A Bull Snake had found their nest, climbed the tree, and entered the nest cavity. Red-headed Woodpeckers do not have a defense against Bull Snakes at their cavities (the largest snake in Minnesota), and the nestlings were all lost. See picture below, where most of the snake’s body is inside the cavity constricting the nestlings.



About 27% of Red-headed woodpecker nests fail (this is a 14 year average of 611 nests). But the 73% of nests that succeed do so because these woodpeckers have many behavioral adaptations that help them overcome potentially deadly situations, some almost every day. One of these adaptations is resilience to physical nest changes and challenges.

In Summary:

Red-headed Woodpeckers, it seems, are very focused on raising their young regardless of physical changes to their nest cavity. The nestlings do whatever is necessary to stay alive, including calling loudly to the parents after a disaster, or climbing out of the remains of a water filled cavity during a rainstorm. Adults and nestlings are not distracted by significant changes to the structure or even a changed location of the nest cavity. Because they nest in dead trees to such an extent (91.5% of 611 nests), Red-headed Woodpeckers may encounter the situations illustrated here often enough to have developed adaptations to stay focused on raising their young, regardless of physical changes to housing situations, and the nestlings instinctively respond to challenges to stay safe.