The Prothonotary Warbler, Golden Beauty of Mississippi’s Wetland Forests

The Jackson Audubon Society has adopted the prothonotary warbler as our primary conservation project. Since 2000, our chapter has been maintaining nest boxes for this lovely species at LeFleur’s Bluff State Park. In 2019 and 2020, we decided to document how productive our nest boxes actually are by instituting weekly checks to record nest building, eggs, chicks and fledgings. Our team of Reese and Louise Partridge, Billy Mitchell, BB Watson and Wes Shoop have demonstrated that the nest boxes are very productive and that the park is an important breeding site for this species. Our nestbox project and prothonotary warblers in general was the topic of the Mississippi Public Radio program “Creature Comforts” on July 9.  https://www.youtube.com/watch?v=a0-lmMPSvDI&t=17s

Many Mississippians will know this bird as the “swamp canary” because of their yellow plumage. They are also like the canary in another way. They act as the “canary in the coal mine” for the well being of wetland forest habitats. A healthy environment usually means higher prothonotary numbers. About five inches long and weighing less than half of an ounce, they make up for their small size with charisma and exquisite lemon color. Their name comes from the yellow clothing worn by clerks in the Roman Catholic church. These clerks were known as prothonotaries.

This bird is a habitat specialist and is strongly associated with swampy or wetland forests. Since this habitat is always at risk, the prothonotaries are listed as a bird of “conservation concern”. They number something like 1.6 million birds but have had a troubling population trend of minus 40% since 1966. We live in a world where some endangered species exist in the hundreds or less and the fewer individuals there are of a species, the harder it is to recover them. Now is the time to time to work with the prothonotary warblers while they occur in good numbers in order to keep them off of the endangered species list.

This warbler is a secondary cavity nester. This means that they use already existing tree cavities, often excavated by woodpeckers, for their nests. Their small size and beaks are completely inadequate to the task of excavating their own. Prothonotaries are the only wood warbler east of the Mississippi River that nests in tree cavities and the only other warbler that does this at all is the Lucy’s warbler in the west. This means that they have no problem with using nest boxes provided for them. The typical prothonotary nest box is 5”X5” at the base and 6 inches tall. The most critical feature is the 1.25 nest hole entrance. This is large enough to allow the warblers to enter but small enough to exclude cowbirds. The brown-headed cowbird is a nest parasite that lays its eggs in the nests of other species and then leaves them to be raised by the unsuspecting hosts. The chicks crowd out and out compete the chicks of the host.

The warblers can lay anywhere from three to six speckled eggs and are incubated by only the females for from twelve to fourteen days. The males defend the nest and do assist in feeding the chicks the mostly insect and spider diet that the adults themselves eat. The chicks spend ten to eleven days after hatching in the nest before leaving.

Our nest boxes in the park feature predator guards, which in our case is an inverted bucket at the top of the pole. This deters nest predators such as raccoons and snakes who will eat eggs, chicks and even adults if they can. The poles that support the nest box and predator guards are placed in the water but not too far out so we can check the nesting activities through a side door. Recently, we have been experimenting with a fiberoptic camera that allows inspection of the nest without opening the door. We have determined a high percentage of box usage during the spring and summer breeding season (April to July). The prothonotaries often raise two separate clutches of young in the same breeding season.

The prothonotary warbler is very much an international species. Research by Audubon Louisiana (Erik Johnson, Katie Percy) and others in the Prothonotary Warbler Working Group has shown their migration route and wintering destination and this is extremely important and relevant to their conservation. Almost all of them breed in the US except for a few in Canada. Most of those are in the
south with Mississippi hosting 10% of the population. Tiny tracking devices (nanotags and geolocators) have been attached to the warblers. The birds have to be recaptured to access the information in geolocators. The birds with nanotags just have to pass a detection site to be located and recorded. We know that they make an amazing night time crossing of the Gulf of Mexico as part of their epic migration that is incredible for such a tiny bird. They then proceed along different routes through Mexico, Central America or the Caribbean depending on the individual bird and what part of the US they start from. This mean that the birds have to be protected and have suitable habitat along their entire breeding, migration and wintering life cycle. It is a true challenge for those of us who care about the future of this bird. We can see that we have to do more than protect them only in their US spring and summer range.

This takes us to Colombia. Eighty eight percent of the prothonotary warbler population winters in this South American country and it features the ultra important wintering site for this species, the Magdalena River Valley. There was a guerilla insurgency in Colombia until a peace treaty was signed in 2016. Until then, war kept loggers and developers out of many of these forests. Now they are in grave danger. Mississippians can be proud to have this gorgeous bird as part of the natural beauty of our state but saving this beautiful bird will take an international effort that everyone should support.