



Guiding Mottled Duck Habitat Conservation in the 21st Century

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Photo by Ron Bielefeld

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The coastal prairies and wetlands of the western Gulf Coast are valuable habitats for millions of migrating and wintering waterfowl. One species that we have been working on for several years is the Mottled Duck, which is a year-round resident to this region, relying on habitats along the western Gulf Coast for all of its life-cycle requirements.

In fact, the Mottled Duck is the only dabbling duck in the continental U.S. that does not migrate south for the winter. It is an important game species, both in Louisiana

and Texas, and it is considered a trophy due to its wariness and large size.

The Mottled Duck has been a species of concern among management agencies since the population has declined significantly over the last four decades. Habitat loss and degradation due to urban expansion and other human activities are the primary culprits that have negatively impacted nesting and brood-rearing success of Mottled Ducks.

Consequently, we have worked with state and federal management agencies to better

understand ways to improve nesting and breeding success of this unique species. Most recently we have been leading a collaborative effort to identify areas throughout the western Gulf Coast where suitable nesting and brood-rearing habitat for Mottled Ducks are currently in appropriate spatial configurations in the landscape.

To enable this, we recently initiated a project to develop a Decision Support Tool to identify and prioritize nesting and brood-rearing habitat for breeding Mottled Ducks throughout their range in Texas and

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Louisiana. Our main goal is to enable wildlife managers to focus the limited conservation dollars on habitats that will yield the largest returns on invested dollars in the form of increased Mottled Duck densities.

First, we had to provide a spatial database where patches of nesting and brood-rearing habitats that currently met biological requirements for Mottled Ducks (appropriate cover type, size of habitat patch, etc.) were identified across the landscape. A recent assessment of the accuracy of the output from this project shows a more than 90 percent agreement with what is actually on the ground. This provides conservation agencies with a great resource on where exactly in the western Gulf Coast to preserve landscapes that already function well for Mottled Ducks.

Another very useful product of the decision support tool that we produced was a second spatial analysis that identifies patches of habitat in the landscape that require minimal management input to make them suitable for Mottled Duck nesting or brood rearing. Managers now have a go-to source for identifying areas to focus management activities where they will have the largest impact on the Mottled Duck population — the impact of more Mottled Ducks being produced.

The Mottled Duck Decision Support Tool can become a valuable tool in the management toolbox. This product is meant to guide future conservation of wetlands and grasslands in a strategic manner based on biological parameters to increase Mottled Duck nest success and brood survival through optimization of landscape matrices. It is science based and will result in efficient biological planning and pointed conservation design delivery.

Additionally, this tool has the ability to standardize Mottled Duck conservation in the western Gulf Coast to ensure that communication and management goals are approached from coherent and complementary initiatives. Finally, this tool is an iterative and adaptable model which will become refined based on results from the model performance analysis and as habitat patches become enhanced or lost. 🦆



Photo by Anastasia Krainyk

Matrix of brood-rearing habitat in the coastal prairies of Texas.



Photo by Anastasia Krainyk

Optimal nesting habitat is characterized by high grasses and some dense patches, with little or no woody vegetation.

