



Plum Sweet Plum

NREM studies show sand plum thickets provide homes for North American bobwhite quail

By Darrin Schultz
Pond Creek, Okla.

MOST PEOPLE'S MEMORIES OF wild plums are the jellies their grandmothers used to make.

Although an Internet search on sand plum is more likely to result in jelly and wine recipes than wildlife, during the last 50 years, the value of the sand plum as a source of food and medicine for humans has diminished.

Today, the real value in sand plum is the cover and structure they provide for wildlife and livestock.

Fred Guthery, professor for Oklahoma State University's natural resource ecology and management department, began his research on a study of the importance of the sand plum.

"We did a radio telemetry study on bobwhites and found that the birds

spent much of their lives in or near sand plum," Guthery said.

The sand plum is a shrub species native to Oklahoma, Texas and Kansas. The species is better known as the Chickasaw plum, since it was believed to have been introduced east of the Mississippi river by the Chickasaw Indians through trade. The shrub's current distribution stretches from the western edge of the southern Great Plains east to the Atlantic coast. Individual plants grow up to 15 feet tall.

Sand plum is drought tolerant and prefers well-drained, acidic sandy soils. In the spring, it produces snowy white flowers and is one of the few shrubs that flower before leaves are produced in the spring. In late summer, it produces a red or yellowish fruit that is quickly consumed by wildlife as well as humans.

Guthery works with graduate stu-

dents researching the management of Chickasaw plum on rangelands to meet wildlife and livestock objectives.

Guthery has worked with many colleagues and graduate students during his time at OSU.

"I got the project organized," Guthery said. "However, it's a team effort. There was no research on sand plum. We knew how to kill it but didn't know the importance sand plum had on other animals."

Historically, ranchers have sprayed woody cover like Chickasaw plum to make room for grass, Guthery said.

Management decisions and knowledge of the surrounding environment helps guide researchers.

"Understanding the natural history of plants and wildlife can aid in making informed management decisions," Guthery said. "I view natural history as

the arithmetic of natural resource science because it consists of the purest facts with which we deal. Facts of natural history are, in an ecological sense, tantamount to the axioms of mathematicians and the molecules of chemists.”

Guthery and Stacy Dunkin, NREM research assistant, directed a recent study on private properties in three Oklahoma counties: Payne, Harper and Ellis.

In 2006, Dunkin surveyed the history of the Chickasaw plum and the plant’s relation to wildlife.

One of the objectives of this project was to gather descriptive natural story observations on the use of Chickasaw plum by mammals, reptiles, birds, invertebrates and plants.

Chickasaw plum is an important food source for a variety of wildlife, including turkeys, black bears, wolves, coyotes, white-tailed deer and fox.

“I had observed 30 species utilizing or associated with Chickasaw plum,” Dunkin said. “These included five species of mammals, 17 birds, one reptile and four insects.”

Chickasaw plum fulfills the role of trees by providing shade for wildlife and livestock where trees are absent or restricted. The major benefit to domestic livestock is shade that dense patches provide, and shade has been shown to be an

The real value in sand plum is the structure it provides for wildlife.

— Stacy Dunkin

important factor in summer weight gain in livestock, Guthery said.

Shade provided by the Chickasaw plum may be as effective as water and supplemental feeding as a tool to promote uniform grazing of pastures. Heat stress due to the lack of shade also affects breeding performance in cattle.

“A landowner might have a negative outlook on sand plum because the plum competes with livestock forage,” Guthery said.

Shade provided by sand plum is beneficial to cattle and other livestock, Dunkin said.

Cattle could be found resting during midday in large sand plum patches, he said. During calving season, calves were found resting in patches while the herd grazed nearby.

Dunkin’s research study was the first to specifically look at Chickasaw plum growth and wildlife use. However, two additional studies followed from NREM research assistants Brett Cooper and Adam West.

“So far, our studies are the only ones ever done,” Dunkin said.

Dunkin’s research found birds were the most frequent users of Chickasaw plum. Quail regularly were flushed from plum patches.

“When bobwhites were encountered in patches, they tended to run to the far end and hold,” Dunkin said. “If they were pressed further, they would run a short distance from the edge of the patch and flush toward an adjacent [sand plum] patch.”

According to OSU’s research, quail have a variety of uses for sand plum.

“These birds were found calling from within patches usually just after sunrise,” Dunkin said. “It appears patches were used as roost sites.”

The NREM graduate students are promoting the Chickasaw sand plum as an important woody cover to benefit a variety of wildlife.

“Sand plums are not just for jelly anymore,” Dunkin said. “The real value in sand plum is the structure it provides for wildlife.”



Opposite page: Ripening fruit catches the eye in a sand plum thicket in Payne County. Left: OSU’s sand plum research has focused on habitat for North American bobwhite quail. Right: NREM research assistant Brett Cooper measures sand plum in a thicket in Ellis County.

Photos by Stacy Dunkin