



Can you identify all of these Graptemys? Answer key on p. 63 PHOTO BY CRIS HAGEN

Turtles in Dixie: Map Turtles and Sawbacks

WILL SELMAN, PH.D.¹ AND CRIS HAGEN

The genus *Graptemys*, commonly referred to as map or sawback turtles, contains the most turtle species of any North American turtle genus. With such an incredible taxonomic diversity, as well as their intricate patterns, shapes, and colors, map turtles as a group have been a favorite of hobbyists for a very long time. Of the 14 species, eight are endemic to single river drainages of the southeastern United States, with two endemic species occurring together in three of the Gulf of Mexico river systems: the Mobile River system (*G. pulchra*, Alabama Map Turtle; *G. nigrinoda*, Black-knobbed Sawback), the Pascagoula River system (*G. gibbonsi*, Pascagoula Map Turtle; *G. flavimaculata*, Yellow-blotched Sawback), and the Pearl River system (*G. pearlensis*, Pearl River Map Turtle; *G. oculifera*, Ringed Sawback; Buhlmann et al. 2008).

Three species of *Graptemys* occur within the Cahaba River system of Alabama (Alabama Map Turtle, Black-knobbed Sawback, and the Common Map Turtle, *G. geographica*), but researchers have only found localities where two of the three species occur. The epicenter for *Graptemys* diversity is in the state of Mississippi, which boasts

nine species, while Alabama and Louisiana host six and five species, respectively. Most map and sawback turtle species are primarily found in rivers, streams, bayous, or oxbow lakes that drain into the Gulf of Mexico (Ernst and Lovich, 2009).

Even though the genus *Graptemys* has a large number of species, researchers still know little about their basic life history and ecology. Their taxonomy has been equally challenging, with six *Graptemys* species described between 1950 and 2000 (*G. ouachitensis*, Ouachita Map Turtle 1953; *G. flavimaculata* 1954; *G. nigrinoda* 1954; *G. caglei*, Cagle's Map Turtle 1974; *G. ernsti*, Escambia Map Turtle 1992; *G. gibbonsi* 1992). The last species to be formally described

was the Pearl River Map Turtle, *G. pearlensis* (Ennen et al. 2010), further underscoring the relative little we know about the genus. It is possible that additional "cryptic species" may occur and may be described in the future.

Unfortunately, many of these attractive turtle species are considered species of concern or are considered state threatened/endangered. Population declines in the 1980's and 1990's of the Ringed Sawback and Yellow-blotched Sawback led to these species being listed as federally threatened under the Endangered Species Act (USFWS 1986, 1991).

There are many threats to the genus and most are associated with loss of riverine habitat and habitat alteration, which includes the snagging of river systems (removal of fallen trees which provide basking and prey species habitats), construction of reservoirs, river channelization, excessive water withdrawal, and water quality degradation. Additional threats include shooting of turtles as target practice, collisions with boats, collection for the pet trade, fisherman by-catch, and the destruction of nests on sandbars by recreational ATV riding (Buhlmann et al., 2008; Lindeman, *in press*).

All 16 currently recognized species and subspecies of map turtles are being maintained and bred in captivity. Several species of narrow-headed map turtles are reproducing regularly in many captive collections and large scale turtle farms in the Southeastern United States have been mass-producing a few species, including the Mississippi Map Turtle and Ouachita Map turtle for decades. As a result, these two species have been commonplace in pet stores and reptile trade shows across the U.S. for a many years, as well as available in international pet markets. In addition to private keepers, public institutions such as the Tennessee Aquarium continue to safeguard species like the federally threatened Yellow-blotched Map Turtle through successful captive breeding programs.

REFERENCES

- Buhlmann, K., T. Tuberville, and W. Gibbons. 2008. Turtles of the southeast. University of Georgia Press, Athens and London.
- Ennen, J. R., J.E. Lovich, B.R. Kreiser, W. Selman, and C.P. Qualls. 2010. Genetic and morphological variation between populations of the Pascagoula map turtle (*Graptemys gibbonsi*) in the Pearl and Pascagoula rivers with description of a new species. *Chelonian Conservation and Biology* 9:98-113.
- Ernst, C.H., and J.E. Lovich. 2009. Turtles of the United States and Canada. 2nd ed. Smithsonian Institution Press, Washington D.C., USA.
- Lindeman, P.V. *In press*. The Map Turtle and Sawback Atlas: Ecology, Evolution, Distribution, and Conservation of the Genus *Graptemys*. Norman, OK: University of Oklahoma Press.
- U.S. Fish and Wildlife Service. 1986. Determination for threatened status for the ringed sawback turtle. *Federal Register* 51(246):45907-45910.
- U.S. Fish and Wildlife Service. 1991. Determination for threatened status for the yellow-blotched map turtle. *Federal Register* 56(9):1459-1463.
- Will Selman, Ph.D., Research Coordinator and Wildlife Biologist, Rockefeller Wildlife Refuge, Louisiana Department of Wildlife and Fisheries, Grand Chenier, LA 70643, USA, wselman@wfla.gov



1. Cagle's Map Turtle, *Graptemys caglei*, PHOTO CREDIT: BILL HUGHES
2. Sabine Map Turtle, *Graptemys sabinensis*, PHOTO CREDIT: PAUL VANDER SCHOUW
3. Ouachita Map Turtle, *Graptemys ouachitensis*, PHOTO CREDIT: PAUL VANDER SCHOUW
4. False Map Turtle, *Graptemys pseudogeographica*, PHOTO CREDIT: PAUL VANDER SCHOUW
5. Northern Map Turtle, *Graptemys geographica*, PHOTO CREDIT: PAUL VANDER SCHOUW
6. Barbour's Map Turtle, *Graptemys barbouri*, PHOTO CREDIT: CRIS HAGEN
7. Escambia Map Turtle, *Graptemys ernsti*, PHOTO CREDIT: JIM GODWIN
8. Northern Black-knobbed Map Turtle, *Graptemys nigrinoda nigrinoda*, PHOTO CREDIT: JIM GODWIN
9. Southern Black-knobbed Map Turtle, *Graptemys nigrinoda delticola*, PHOTO CREDIT: CRIS HAGEN
10. Alabama Map Turtle, *Graptemys pulchra*, PHOTO CREDIT: TIM MIEDEMA
11. Yellow-blotched Map Turtle, *Graptemys flavimaculata*, PHOTO CREDIT: PAUL VANDER SCHOUW
12. Pascagoula Map Turtle, *Graptemys gibbonsi*, PHOTO CREDIT: TIM MIEDEMA
13. Ringed Map Turtle, *Graptemys oculifera*, PHOTO CREDIT: BOB JONES
14. Pearl River Map Turtle, *Graptemys pearlensis*, PHOTO CREDIT: PAUL VANDER SCHOUW
15. Mississippi Map Turtle, *Graptemys pseudogeographica kohni*, PHOTO CREDIT: CRIS HAGEN
16. Texas Map Turtle, *Graptemys versa*, PHOTO CREDIT: PAUL VANDER SCHOUW

