

Population and Movement of Mississippi Red-eared Slider in a River in Japan

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Abstract:

Mississippi *red-eared slider*, *Trachemys scripta elegans*, is an invasive species that threatens freshwater ecosystem in many parts of the world. The slider is native to North America and was first introduced to Japan as a pet around 1950. Since late 1960s, the slider has been abandoned in wild waters. The potential impact on native ecosystem includes displacement of native turtles from their habitats by competition for basking sites and food, predation on native turtle eggs. The slider also preys on aquatic plants, insects, and fish. Previous surveys have reported that the sliders in ditches and ponds using individual marking have moved up to 750 m seasonally. However, few studies have focused on their population and movement in a river system.

We established a total of 24 survey reaches, each 100 m long, along a 2.4 km section in the Agui River, central Japan during June–October, 2025. Sliders were captured by hands, dip nets, and traps, then their carapace lengths and weights were recorded. At the same time, we drilled holes in carapace margins using an electric drill for individual identification, then released them at the capture sites. A total of 294 red-eared sliders were captured (192 females and 102 males). Of these, 27 individuals were re-captured during the period and 67% of them were females. Despite this, their mean movement distances were 120.7 m for females and 205.4 m for males, and thus the males traveled farther than females. We consider that the more extensive movement is likely for mate searching. The results obtained through this study are useful to predict the future invasion risk of the slider in river network and to protect the native aquatic community in Japan.