

## Legacy herbicides in lake sediments are not preventing the growth of submersed aquatic plants in Lake Istokpoga

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Stakeholders concerned about the lack of submersed aquatic vegetation (SAV, primarily hydrilla [*Hydrilla verticillata* (L. F.) Royale] in Lake Istokpoga, FL, have hypothesized that legacy herbicides in sediments were the possible cause of reduced SAV growth for the past 3 yr. Bioassay experiments were conducted from sediments collected from nine stations located around Lake Istokpoga in areas identified by stakeholders in which hydrilla had previously grown. These were compared with sediments collected from three stations in similar Lake Tohopekaliga, FL, where hydrilla was currently growing. Tomato (*Solanum lycopersicum* L.) seeds were germinated in sediments from all stations in both lakes and control soils. Bare-root tomato transplants (3.8 cm [1.5 in] tall) planted in sediments from both lakes continued to grow and, when harvested, plant dry weights were similar to transplants planted in two control soils (pure sand and 1:1 ratio potting soil:sand). Hydrilla tubers were also planted in sediments collected from three stations in both lakes and control soils. Tubers germinated in sediments from both lakes and control soils, and the percentage of germination was not significantly different between lake sediments and control soils. Sediment samples from all nine stations in Lake Istokpoga were sent to laboratories for chemical analyses of the nine aquatic herbicides used in Lake Istokpoga during the past 10 yr, and all results were “nondetect.” Sixty cores were collected from areas with a history of hydrilla growth in Lake Istokpoga, and no hydrilla tubers were collected, suggesting little or no propagules are present for resumed growth of this SAV. Bioassays and sediment analyses indicate that legacy herbicides are not the cause of the decreased abundance of SAV in Lake Istokpoga.