



GLDIATR Phase III: Executive Summary

Coordinating Information and Action to Prevent Online Sales of Aquatic Invasive Species

Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR) Phase III advanced the Great Lakes Commission's (GLC) effort to reduce the risk of aquatic invasive species (AIS) risks from entering the Great Lakes region via online commerce. The project identified regional priority AIS offered for sale online, verified listings, conducted seller outreach, and engaged with major online marketplaces to encourage site-wide changes.

The project initially utilized web scraping across independent websites and marketplace platforms, including eBay, Amazon, Etsy, Kijiji, and Bing results to collect data on where and how many GLDIATR priority species are for sale online. After marketplace terms of use were reviewed, the team shifted to collecting AIS sales data via eBay's Application Programming Interface (API) and developed a Python-based monthly search process using species terms and product-category filters.

All sales listings were screened to remove duplicates, ranked via keywords on their likeliness of being a live plant or animal, and then prioritized for manual review. Listings that were verified to be selling a priority GLDIATR species were added to a case management system where seller contacts and eventual behavior change could be tracked over time.

Key Findings

- Search methods returned 78,538 potential sales listings. Of the 30,588 listings prioritized for manual review, 2,383 were verified as live AIS sales listings.
- Most verified listings collected via web scraping were found on eBay (70%), making it the primary platform for continued monitoring through the API approach.
- Live plants accounted for the majority (75.8%) of verified listings, followed by invertebrates (27%) and a smaller share of fish (2.5%; totals add to more than 100% due to multiple taxa per listing).
- The most commonly detected species included water lettuce (n = 530 listings), Malaysian trumpet snails (n = 296), water hyacinth (n=274), and Brazilian waterweed (n = 237).
- Eight federally restricted species were identified. The species most commonly found were Indian hygrophylla (n = 34) and swamp morning-glory (n = 32).
- GLC staff identified 849 unique sellers from 16 countries, with most located in the United States; California, Florida, and Texas had the largest numbers of U.S. sellers.

Outreach and Marketplace Engagement

GLC staff were able to contact 445 sellers who were still active and available for outreach. Outreach included an initial message, a second follow-up when listings remained active, and a behavior-change assessment at least 12 weeks after first contact. Messages informed sellers of relevant Great Lakes restrictions and recommended adding scientific names, accurate shipping restrictions, and proper disposal guidance in listings.

Seller outreach faced significant barriers, including marketplace message limits, changing seller usernames, and delays between data collection and outreach resulting in listings being removed or sold before outreach could take place. Only 25% of sellers responded to GLC outreach. The behavior change assessment found that among contacted sellers, 57.3% were no longer selling, 24.9% showed no observable behavior change, 9.2% showed partial behavior change, and 4.9% were newly in compliance.

Direct marketplace engagement showed greater promise. GLC worked with Amazon's compliance team to review shipping filters and provided feedback to improve restriction accuracy. GLC also collaborated with eBay on a pilot that blocks checkout for ten selected priority species when a buyer's shipping address is in a restricted jurisdiction.

Recommendations

- Prioritize engagement with major online marketplaces, which can implement platform-level policies, listing checks, and shipping blocks more efficiently than individual seller outreach alone. Encourage marketplaces to strengthen policies for live plants and animals, provide clear seller guidance, support flagging of invasive species listings, and link to reliable resources such as [AquaSale](#) and GLDIATR materials.
- Use marketplace APIs where available to support legally compliant, repeatable, and customizable monitoring of priority AIS.
- Coordinate seller outreach with enforcement partners when regulated species are involved, especially for repeat sellers or high-risk species.