

# National Priorities of the Invasive Species Advisory Committee, 2022-2024

Federal response to topics for consideration on early detection and rapid response

October 18, 2024

In November 2023, the Invasive Species Advisory Committee (ISAC) provided recommendations to the National Invasive Species Council (NISC) on national priorities. The Department of the Interior (DOI) prepared responses to each of the 11 topics for consideration on early detection and rapid response (EDRR), particularly through the lens of work being advanced as part of the National EDRR Framework (table 1). DOI shared these responses with the NISC federal EDRR work group, DOI Invasive Species Task Force, and EDRR Framework project leaders for their review and additional input prior to finalizing them.

**For Reference: Excerpt from the *National Priorities of the Invasive Species Advisory Committee, 2022-2024, November 14, 2023 (Early Detection and Rapid Response)*<sup>1</sup>**

*Early Detection and Rapid Response (EDRR) is a coordinated set of actions to find and eradicate new and emerging invasive species in a specific location before they can spread and cause further harm. An emphasis on timely reactions and responses are critical to EDRR, and, when considering known, exotic and invasive pests, it is one of the most cost-effective and ecologically viable methods for controlling invasive species, particularly when prevention efforts fail (Blaalid et al. 2021<sup>2</sup>). Early interventions are more likely to be successful, whereas later detections and subsequent interventions are more costly and less likely to succeed. EDRR efforts help protect native plant and animal biodiversity, improve water quality, safeguard agriculture and food production systems, reduce wildfire risk, maintain forest and rangeland health and productivity, and protect critical infrastructure for water supply (potable, agricultural, and industrial), transportation, communications, and energy.*

*EDRR efforts are undertaken across a range of various state and federal agencies. Due to successful outreach and education efforts, some domestic invasive species are often detected early enough to prevent establishment. Further, engaging people in observing, reporting, and assisting in invasive species monitoring improves the management of invasive species. Multiple key reports on invasive species for first detections in the United States were made by community members, including dreissenid mussel-contaminated moss balls, northern giant hornet (*Vespa mandarinia*), and Asian longhorned beetle (*Anoplophora glabripennis*). NISC agencies should continue to support coordinated community science efforts and first detector campaigns.*

*ISAC believes that EDRR efforts can be amplified with the coordination of funding priorities amongst agencies and stakeholders. Shared priorities will allow for the consolidation of smaller goals and*

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<sup>1</sup> <https://www.doi.gov/sites/default/files/documents/2024-02/isac-national-priorities-white-paper-november-2023.pdf>

<sup>2</sup> Blaalid, Raket, Kristin Magnussen, Nina Buvik Westberg, and Ståle Navrud. 2021. A benefit-cost analysis framework for prioritization of control programs for well-established invasive alien species. *NeoBiotia* (68): 31-52. doi: 10.3897/neobiota.68.62122

*resources to collectively undertake EDRR. A multi-agency, cross functional EDRR program, if established, would rectify this issue, and ensure a nimble complementary approach to EDRR for the United States.*

The Invasive Species Advisory Committee identified 11 topics for consideration pertaining to a nationally coordinated EDRR program that is sustainable for long-term implementation. Examples of NISC member agency efforts that address those topics, especially in the context of advancing a National EDRR Framework, are described below.

**1. Continued national leadership and coordination where federal agencies work in tandem with state programs and are inclusive of stakeholders.**

Agencies advancing the National EDRR Framework are coordinating with numerous entities to inform and implement EDRR activities in support of the Framework. Examples include interagency fora, (such as the Aquatic Nuisance Species Task Force (ANSTF) and National Invasive Species Council (NISC)); non-federal groups (such as the Invasive Species Advisory Committee (ISAC), Association for Fish and Wildlife Agencies, and Native American Fish and Wildlife Society); individual states, tribes, territories, and other federal agencies; and other partners. Those interactions promote overall coordination, collaboration, and communication. Many individual projects advanced under the EDRR Framework also engage with states, tribes, territories, and other partners. Recommendations for formal or informal coordination structures to maintain routine coordination with states and other partners on EDRR are being sought from the joint ISAC/ANSTF Subcommittee advising the EDRR Framework. Continued coordination, including as advised by ISAC and ANSTF, will remain a priority.

**2. Determination of notification processes of new detections between federal and non-federal organizations that clearly communicate with all agencies and stakeholders in a timely fashion.**

Individual agencies may have already established notification processes with lead management authorities that are working well and those should be supported. For example, the Bureau of Reclamation (with the U.S. Army Corps of Engineers) has agreed upon surveillance and communication protocols with western states for zebra and quagga mussels. As part of the EDRR Framework, an inter-bureau working group at DOI is drafting a template data sharing agreement for use by projects using molecular surveillance in support of the Framework. This template is intended to promote consistency and clarify roles, responsibilities, and processes for data sharing and communication between federal and non-federal entities. Additional materials will be developed to accompany the data sharing agreement template, including a glossary of terms, Frequently Asked Questions overview, and a scope of work template. The data sharing agreement template will be discussed this fall and winter with key partners, such as states, tribal partners, regional entities, and hotspot pilot partners, for their feedback prior to it being finalized.

**3. Review of external, regulatory impacts and acquisition of local, state, or federal operational permits that impede response times or allow target invasive species movement to continue longer than necessary while EDRR tactics are on hold.**

Promoting efficient EDRR actions is the mission of the EDRR Framework. It is also a guiding principle. Pilot programs that are core components of the Framework, such as the Rapid Response

Fund for Aquatic Invasive Species and the DOI Interjurisdictional Invasive Species Rapid Response Team, are intended to facilitate rapid action. The Rapid Response Fund pilot program identified issues with environmental compliance and funding disbursement timelines. These and other opportunities to overcome impediments to response times are actively being explored by program leaders.

- 4. Development of regional “invasive species response teams” where teams are trained in rapid response and invasive species management for multiple taxa, including Incident Command System trainings and table-top exercises. These teams would be available to assist with any new priority invasive species response.**

The EDRR Framework includes a pilot program to initiate a DOI Interjurisdictional Invasive Species Rapid Response Team (IInSRRT). The team is intended to support or lead responses to new priority invasive species, when requested by the lead management authority, that are within DOI’s mission and authorities. Capacity building for response, training (including the Incident Command System), and table-top exercises are envisioned as part of this program.

- 5. Full implementation of a pilot Rapid Response fund to address high priority invasive species projects to initiate rapid response activities for non-agricultural, non-injurious species and continue to support the development of EDRR methods/mechanisms for species that fall outside of agricultural priorities.**

The EDRR Framework initiated a Rapid Response Fund for Aquatic Invasive Species in 2023. This program is funded through 2026. Lessons learned from this pilot program will be used to explore expanding the scope to terrestrial invasive species in non-agricultural areas.

With respect to supporting the development of EDRR methods/mechanisms for species that fall outside of agricultural priorities, the EDRR Framework includes extensive resources for molecular detection methods, including environmental detection tools, sampling design, and sample processing, among other tools and services. Research and development of methods/mechanisms for control are also a core component of federal research agencies that support invasive species management.

- 6. Development and maintenance of a national list of vetted experts and contacts database, as well as the protocols for who to contact and the responsibilities of each party based on species groups.**

The EDRR Framework includes support for Siren, the National EDRR Information System. Siren is an online web application that centralizes EDRR information ([www.invasivespecies.gov/siren](http://www.invasivespecies.gov/siren)). Siren collaborated with the ANSTF to modernize and expand its existing Experts Database for integration into Siren. The database will include both aquatic and terrestrial species experts. It will include a national list of vetted experts and contacts and protocols for who to contact based on various criteria, such as geography, habitat, discipline, and species.

**7. Development and utilization of consistent taxonomy that is required for data sharing. The Integrated Taxonomic Information System could be used as the basis for this but should be expanded to include all invasive species of concern.**

The federal government supports the Integrated Taxonomic Information System (ITIS.gov) as the authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world. ITIS is a partner of the Global Biodiversity Information Facility (GBIF). Other authoritative databases exist (e.g., The USDA Plants Database, the Flora of North America, and the Biota of North America) and are widely used in the federal government. The Siren team leading the National EDRR Information System is aware of the challenges with taxonomy when dealing with an extensive species list. The team looked at both ITIS and GBIF (and other authorities) and determined that GBIF would serve as the most appropriate source. They found GBIF to be a larger, more comprehensive dataset, especially for species that are not yet known to be in North America. The team is able to cross-reference ITIS Taxonomic Serial Numbers and GBIF keys in both directions (ITIS to GBIF, and GBIF to ITIS), so Siren can easily integrate and/or utilize data with/from other databases that use ITIS instead of GBIF.

**8. Development and utilization of unified reporting platforms including continued support of National Agricultural Pest Information System, National Plant Diagnostic Network and their National Data Repository, EDDMapS, U.S. Geological Survey Nonindigenous Aquatic Species Database, and iMapInvasives, as well as state databases.**

National reporting platforms such as the Nonindigenous Aquatic Species Database, EDDMapS, and iMapInvasives are collaborating to promote data-sharing among these platforms and with others. As a result, Siren, the National EDRR Information System, is working with these program leaders to aggregate information occurrence records so that information from these records can be readily viewed in a central web application, yet retain the focus of reporting to these and other primary databases as determined by the lead management authorities.

**9. Continued development of automated data scanning, notification, and verification tools to utilize data in public platforms by leveraging emerging technologies such as machine learning.**

Artificial Intelligence (AI) tools offer an opportunity to increase the effectiveness and efficiency of the federal government. It is the federal government's goal to responsibly and securely utilize AI. Adoption of AI will, as appropriate and consistent with applicable laws, adhere to the guiding principles set forth in the Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (EO 14110) as well as guidance issued by the Office of Management and Budget (OMB) to strengthen the effective and appropriate use of AI, advance AI innovation, and manage risks from AI.

With respect to notification systems, the Nonindigenous Aquatic Species Database and Wild Spotter programs use automated notifications to alert users to new species occurrence for specific areas. These notifications do not use AI.

There are many potential uses for AI that have not been fully explored. We agree, this area needs additional attention.

**10. Development of publicly accessible recognition systems that use artificial intelligence to identify priority invasive species.**

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**11. Consideration of a robust bio-surveillance network which includes regional programs that deploy trained specialists to strategically monitor for new introductions/infestations.**

One of the foundational components of the EDRR Framework is strategic bio-surveillance (i.e., targeting the right species, at the right time, in the right place, with the right detection tool). The EDRR Framework uses global and regional horizon scanning to develop priority species lists (watch lists). Hotspot analyses then determine where to focus bio-surveillance on those priority species. This national level analysis combined with existing regional, state, and local networks and efforts can help further strengthen a robust bio-surveillance network. As part of the EDRR Framework, six cooperative, regional pilot projects across the nation are working with lead management authorities in those areas to test integrating various EDRR Framework tools, services, and other resources. This includes prioritizing species and sample locations, testing detection methods, processing samples, sharing data, and responding to any new detections. Each of these efforts relies upon strong partnerships with states, tribes, territories, other federal agencies, and other partners and targeted outreach to generate interest and support of bio-surveillance activities.