2025
AIS Early Detection and Rapid Response Summary

MARCH 2026

Manitoba

AIS Early Detection and Rapid Response Program Structure

The goals of the Early Detection and Rapid Response (EDRR) program are to:

1. Detect new AIS invasions
2. Respond to these species before they become established.

Early detection and rapid response plans are initiated by a positive AIS detection identified by the surveillance monitoring program, or through a verified report.

The goal of EDRR is elimination of further risks associated with the presence of an AIS. Whenever feasible, this is achieved through eradication (i.e., complete removal of every potentially reproducing individual). When eradication is not possible, EDRR is still useful to identify and demark invasions at and early stage and contain these population to prevent future spread within and between water bodies. Eradication success is greatly influenced by how early the species is detected and becomes less likely in later-stage invasions. Eradication may only be feasible under very limited circumstances depending on the species detected and where the detection occurred. Thus, the EDRR program encompass a range of responses, including eradication, containment, suppression, among others.

Zebra Mussel Responses

Suspect Zebra Mussel Detections

When an AIS is detected but a viable population cannot be confirmed, waterbodies enter the validation stage of response where they undergo frequent sampling to determine if a detected AIS is truly present and/or the extent to which it is established. Currently five waterbodies fall under the validation monitoring protocol for Zebra Mussels. These water bodies are:

- The Assiniboine River upstream of Portage la Prairie
- Assean Lake
- Lake of the Woods
- Shoal Lake (Manitoba-Ontario Border).

Validation monitoring will continue for these water bodies until the detection can be confirmed or refuted. Future response efforts related to eradication and/or suppression (if feasible) are dependent upon results from validation monitoring. However, all these detections already have dedicated containment plans through the use of *Restricted Access* with a decontamination requirement or fall within a Control Zone established for a different AIS, such as Spiny Waterflea (i.e., Lake of the Woods, Shoal Lake).

St Malo Reservoir

Live zebra mussel veligers were found within the St Malo Reservoir in 2024, with samples indicative of an early-stage invasion. Monitoring efforts throughout 2025 demonstrated a growing population, with veliger counts increasing substantially, including downstream movement of veligers from the reservoir into the lower Rat River. No Zebra Mussel positive samples were detected upstream of the reservoir in the Rat River, indicating the introduction is to the reservoir and not from upstream sources.

To assess the feasibility of eradicating Zebra Mussels within the reservoir, Manitoba conducted a partial drawdown of the St Malo reservoir to assess reservoir bank stability, as well as to understand how biota in this reservoir respond to receding water levels. Beginning in September, water levels were lowered approximately 2.1 metres over a 12-day period (an approximate removal of 45 per cent of the reservoir's water volume). The south basin of the reservoir near the Rat River inflow had the largest de-watering effect (e.g., **Plate 1**). Banks throughout the reservoir remained stable, although some localized slumping was observed.

During this project, adult Zebra Mussels were found to be nearly continuously distributed along the shoreline (**Figure 1**). Zebra Mussels were primarily found on boats, docks and other infrastructure, but also on natural substrates such as rocks and native vegetation. Zebra Mussels spanned a wide range of size classes (**Plate 2**), with largest individuals being found on natural substrates (e.g., **Plate 3**).

The partial drawdown project also aided in identifying water security issues, particularly shallow water wells, that will be a central consideration as response planning continues into 2026.

Plate 1: *South portion of St Malo Reservoir at maximum drawdown.*

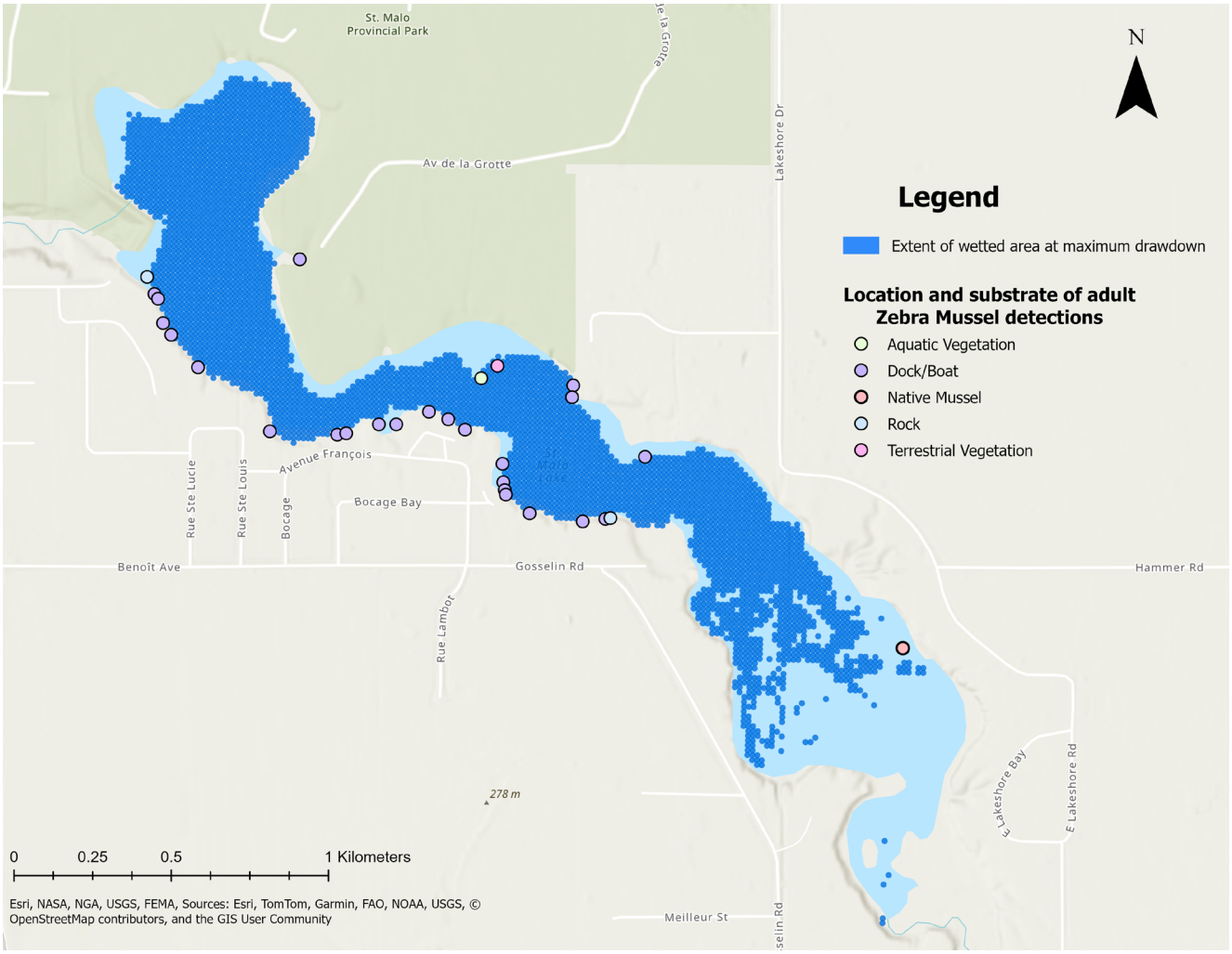

Figure 1: *Adult Zebra Mussel detections and the associated substrate.*

Plate 2: *Size distribution of suspect ≤1 year old zebra mussels found on a single watercraft moored in St Malo Reservoir relative to a Canadian dime.*

Plate 3: *Large Zebra Mussel (>1 year old) recovered from natural substrate in St Malo Reservoir.*

Aquatic Invasive Plant Responses

Flowering Rush

Flowering rush (*Butomus imbellatus*) is a Eurasian invasive plant species intentionally introduced to North America as part of the ornamental plant trade. It was first identified in North America in the late 1890s along the St. Lawrence River near Montreal and has since spread rapidly across many Canadian provinces and northern United States by natural dispersal, anthropogenic vectors and intentional introductions. Flowering Rush is most easily identified by its light pink flowers that occur in umbels that resemble an upside-down umbrella (**Plate 4**).

Plate 4: *Flower umbel characteristic of Flowering Rush.*

Flowering Rush primarily spreads vegetatively through fragmentation of growing tips, rhizomes and/or roots. Fragmentation occurs naturally, however anthropogenic factors such as use of motorized watercraft, can rapidly accelerate the rate of fragmentation. These plant fragments can flow freely through current, wave action and/or from boat wake that can lead to dispersal and settling of fragments, eventually forming new or expanded stands of Flowering Rush within a waterbody. Fragments may also be moved overland by anthropogenic means that can lead to infestations in new waterbodies.

Flowering rush can cause several negative impacts, including forming dense stands that can displace native vegetation and restrict waterbody access, reduce biodiversity through alterations to fish and wildlife habitat, impact water supply if established in irrigation canals, reservoirs or stormwater ponds and restrict recreational activities such as swimming, boating and fishing (**Plate 5**).

Once Flowering Rush stands reach a certain size, herbicide treatments are the only feasible control option available. Habitat Aqua®, a restricted herbicide registered with Health Canada, is advantageous in that it is a systematic herbicide, capable of entering the plant's vasculature, killing root and rhizome biomass where reproduction occurs. Other eradication methods such as raking, cutting or rototilling, have limited effectiveness and have been demonstrated to increase Flowering Rush populations by creating plant fragments. Other methods can be resource intensive (e.g., placing benthic barriers, applying non-systematic herbicide) or are only suitable to eradicate small, satellite populations, such as hand-pulls.

In 2025, the Manitoba AIS Unit completed three spray programs: (1) Poplar Bay in Lake Lac du Bonnet, (2) Auglen (Kulikowski) Channel of the Lee River and (3) St Malo Reservoir. At all three of these locations, Flowering Rush density was high, with near continuous occurrences along the shorelines that interfered with watercraft movement and/or posed a high-risk of fragmentation and spread (e.g., **Plate 5**). Initial treatments proved to be effective, with widespread die-back of Flowering Rush observed approximately 3-weeks post treatment (**Plate 6**). These areas will be monitored in 2026 and will under-go further treatment as required.

In a collaborative effort, the Selkirk Weed Control District treated Flowering Rush found in a ditch along Whiskey Ditch Road. These populations will also undergo follow-up monitoring to assess future control efforts.

The Manitoba AIS Unit also performed a hand-pull eradication of a small satellite population of Flowering Rush in Bunn's Creek (Winnipeg) near the confluence with the Red River. Four isolated stands were carefully removed to ensure no fragments were left in the sediment.

Plate 5: *Flowering Rush surrounding a watercraft in Poplar Bay, Lake Lac du Bonnet, Manitoba.*

Plate 6: *Flowering Rush die-back observed three-weeks post treatment in Poplar Bay.*

Himalayan Balsam

Himalayan Balsam (*Impatiens gladulifera*) is an invasive plant introduced into North America as part of the ornamental plant trade. This plant creates dense stands, capable of growing up to three metres tall, preventing native plant growth and thereby reducing local biodiversity. The loss of local perennial plants along shorelines caused by Himalayan Balsam's aggressive growth, coupled with its shallow roots, can lead to soil erosion over time. One Himalayan Balsam plant can produce up to 800 seeds. Once matured and dried, seed heads "explode," shooting up to five meters away, which allows the plant to spread rapidly. Himalayan Balsam is most easily identified by its pink flowers that have a hooded shape that looks like a policeman's helmet (e.g., **Plate 7**).

Plate 7: *Himalayan Balsam flowering along Bunn's Creek, Winnipeg, Manitoba.*

Himalayan Balsam infestations can be controlled by hand-pulling given its shallow roots. However, hand-pull efforts should only take place if there are no visible seeds as disturbing seeds can lead to further spread and infestation. Seeds last about 18 months, therefore, effective control of Himalayan Balsam infestations can be achieved in two years as long as all plants are removed. Within Canada, there are currently no chemical options available for Himalayan Balsam treatment.

The Manitoba AIS Unit initiated two Himalayan Balsam Control programs in 2025; one at Trappist Monastery Provincial Heritage Park and one along Bunn's Creek from Bunn's Creek Centennial Park to Parkway. The infestation within Trappist Monastery Provincial Heritage Park was dense, with approximately three stands 10 by 10 metres with hundreds of individuals, approximately 50 metres from the La Salle River (e.g., **Plate 8**). Hand-pulls were completed bi-weekly, on four occasions, until no additional plants were found.

Plate 8: *Himalayan Balsam removed from Trappist Monastery Provincial Heritage Park.*

The distribution of Himalayan Balsam along Bunn's Creek was patchier, without the large dense stands observed at Trappist Monastery Provincial Heritage Park. While less dense, plants were observed over a larger spatial area along Bunn's Creek, which may have facilitated movement of seeds downstream. Three hand-pull efforts were staged throughout 2025, however efforts were stopped once plants reached the seeding stage.

For both detections, follow-up monitoring and hand-pull efforts will resume in 2026.