

Aquatic Invasive Species Status Guidance

Wisconsin Department of Natural Resources

BACKGROUND

The Wisconsin Department of Natural Resources (hereafter department) in collaboration with numerous statewide partners is monitoring inland waters for the presence of aquatic and wetland invasive species (AIS) using standard sampling methodologies including visual observation as well as substrate, benthic, and plankton sampling. The department is exploring environmental DNA (eDNA) as a monitoring tool. Following initial reporting of AIS to the department, a formal determination is needed on whether there is an established, reproducing AIS population. Occasionally results from a waterbody will detect low numbers of AIS. In these cases, an AIS introduction has likely occurred, but these data do not substantiate that a reproducing population exists in that waterbody.

This guidance document provides criteria for assigning a waterbody to “Watch” or “Established” status based on the AIS status in that waterbody. It also presents criteria for changing the status of a waterbody in the event the AIS are no longer detected. A review team consisting of two regional certified AIS verifiers will make the final determination for the appropriate status of a waterbody based on the criteria outlined below. If the two do not agree, a third verifier and the Statewide AIS Monitoring Lead will be consulted. The Statewide AIS Monitoring Lead will be consulted if a lower status is proposed or if questionable records exist.

STATUS GUIDANCE

AIS records are either characterized as “Watch” or “Established” based on meeting one or more of the criteria summarized in Table 1. In general, records in “Established” status have been verified by a taxonomic expert whereas records in “Watch” status have not been verified or have been removed from “Established” status because a reproducing population hasn’t been shown to exist.

Established Status

The department characterizes a waterbody as established for AIS when the AIS has been verified and/or vouchered and data indicates there is an established, reproducing population. Examples of establishment include rooted plant beds, abundant populations of floating leaf plants, or multiple age classes of animals. These criteria are somewhat subjective so staff should consult other certified verifiers and the AIS Monitoring Lead on appropriate statuses of uncertain occurrences. Table 1 summarizes AIS status criteria used to classify a reproducing population.

There will be two statuses on the Established Status:

“Verified” is when multiple age classes of specimens have been observed in a waterbody or specimens have been observed at multiple locations in a waterbody; and specimens photographed and then verified by a taxonomic expert or genetics lab.

“Verified and vouchered” is when specimens are verified, as described above, and a specimen is stored at a certified herbarium or zoological museum and assigned an accession number or the DNA record is stored in a genetics lab.

Watch Status

When AIS records are first observed, the record will be entered in the Surface Water Data Viewer and the status of the populations within that waterbody will be identified as “observed” and placed in “Watch” status until a live specimen is verified and a reproducing population is confirmed by the regional biologist according to the criteria outlined in Table 1. The biologist will to conduct a survey at the earliest opportunity or work with external partners, such as citizen volunteers, to implement reconnaissance, especially with species listed as prohibited in s. NR 40.02(44), Wis. Adm. Code. Manual Code 9183.1. Surveys on lakes may involve completing a point-intercept survey using plant rakes and D-nets and also searching shores, piers, rocks, and other available substrate near where the AIS was observed and in targeted areas of suitable habitat (see the Early Detection protocols for guidance). Surveys on streams involve completing transect surveys with plant rakes and D-nets and shoreline reconnaissance along stations (see the Early Detection Stream Protocols for guidance). Surveys in wetlands involved a targeted search through appropriate habitats (see the Wetland Early Detection Protocol for guidance). If the AIS are only found in one location in a waterbody and if AIS animals are all from the same year class (i.e. about the same size, or in the same growth stage), then the waterbody will remain in "Watch" status and targeted for additional follow-up work by department staff and partners. If no species are detected, the waterbody will remain as “Observed” in “Watch” status. The biologist and AIS Monitoring Lead will be consulted to determine whether a status should be changed to “No longer observed”. Waterbodies in “Watch” status are targets for additional AIS monitoring. Depending on the species discovered, increased public information and educational outreach are promoted. Refer to the Department Response Framework for Invasive Species for further actions to take after the discovery of a new population.

Unfortunately, once AIS become established in a waterbody it is unlikely that they will be eradicated. However, recent success stories show that some AIS such as Japanese knotweed and in few cases, Eurasian watermilfoil are “no longer observed” and believed to be eradicated. In the event that a waterbody status is established for AIS, but subsequent information indicate that they are no longer present, a waterbody may be changed from the “Established” to “Watch” status by designating as “no longer observed”. There is not currently guidance on when to downgrade a status as the dormancy of most species has not been evaluated yet. The Monitoring Lead will work with staff to develop criteria for changing a status. To allow progress in the meantime, the AIS Monitoring Lead and regional resource manager will determine the appropriate reconnaissance effort for a given occurrence. In general, thorough searches should be conducted in the known species location and throughout a waterbody or wetland during the peak growing season for the target species for a minimum of two consecutive years. Two years is an arbitrary timeframe and may not apply to all species so the regional department resource managers and the AIS Monitoring Lead must agree on an adequate level of effort for a status to change to “no longer observed”. All monitoring efforts must be tracked in SWIMS to track the monitoring effort.

Any waterbody that is changed from “Established” to “Watch” status will remain on the “Watch” status indefinitely. AIS may remain in other habitats nearby, propagules may remain within the waterbody, and the pathway for invasion may still exist. Hence, no field surveillance criteria are recommended for changing Watch waterbodies to a lower status, unless an AIS record is found to be the result of a data entry error or misidentification.

There are two statuses on the “Watch” status:

“Observed” is a record that has been observed in the field, but a specimen has not been verified by a taxonomic expert or an established population has not been found within the waterbody. Only dead AIS or few individuals of one age class have been observed, not an established breeding population. This will include dead individuals observed outside their growing season

that will need to be revisited during target times to verify. This also includes historic monitoring data that has not been verified by a taxonomic expert.

“No longer observed” is a previously verified or unverified occurrence that is no longer observed in the field and meets the criteria for changing a status from “Established” to “Watch” status. These include records where a reproducing population was not sustained.

In cases where an AIS record was an incorrect data entry or a taxonomic expert verified an incorrect identification, records will be changed to “removed due to insufficient evidence” and will be removed from the Watch status.

“Removed due to insufficient evidence” is a record that was an error in initial data entry or when a taxonomic expert has verified that it was not the species.

Table 1. AIS status criteria.

Established	Watch
Live*, verified results received, and AIS of differing ages (different sizes) present in waterbody.	Unverified AIS records or only dead and not live specimens were verified. It is possible that some records might have been vouchered, but verification results were not received.
Live*, verified results received, AIS are found in more than one location of a waterbody, though established plants may sometimes be in only one location.	Only dead [†] AIS detected. Dead AIS will be observed records whether they have been verified or not.
Live*, verified results received, and AIS found more than one year.	Only one age of live, verified AIS found in one location of waterbody.
	AIS eDNA detected and no live* specimens.

*Live animals will contain flesh. If animals are gastropods or mollusks, then their shells will be closed and/or siphons retracted. Live plants will be rooted in sediments, unless growth form does not naturally root.

[†]Dead AIS include floating plant fragments (excludes plants that do not root), empty shells, etc..