Standard Operating Procedure for the Prevention of Aquatic Nuisance Species

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Standard Operating Procedure for the Prevention of Aquatic Nuisance Species

Revision Date	Version	Description of Changes	Effective Date
First Draft	0.1		6/25/2020
Second Draft	1.01	Review of document, addition of boat decontamination procedure	January 2021

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Introduction

ANS Preventative Measures

An Aquatic Nuisance Species (ANS) taskforce[1] has been established by the federal government and should serve as the primary source of ANS procedures. The United States Geological Survey (USGS) has been established as a central repository for spatially referenced biogeographic accounts of introduced aquatic species. The Nonindigenous Aquatic Species (NAS) website[2] hosted by the USGS contains Oklahoma's ANS of concern along with scientific reports, online/real-time queries, spatial data sets, distribution maps, and general information. The Oklahoma Department of Wildlife Conservation (ODWC) is the state agency with jurisdictional authority for ANS and should be contacted for updated information regarding ANS. A table listing ANS species and locations confirmed by the ODWC is at the end of this SOP. The ODWC also hosts a webpage[3] describing Oklahoma specific activities concerning ANS. Additionally, the Oklahoma Biological Survey (OBS) maintains a compendium of Oklahoma aquatic invasive plants. Their website[4] provides detailed information to identify plant ANS in Oklahoma.

The OWRB's role in Oklahoma's early detection and response system is the recognition of potential ANS and to report the sighting. To do this, employees need be familiar with the ANS that are affecting Oklahoma waterbodies. Unfortunately, there is no official place to visit that contains a complete listing of all Oklahoma ANS and known locations. The ODWC's ANS coordinator has provided the most current information of species and location in the table in **Appendix A**. *This table should be updated yearly, or as new species and sites are identified.*

The current ANS coordinator and can be contacted at Oklahoma Department of Wildlife Conservation:
Curtis Tackett
9097 N 34th St W Porter, OK 74454
Office: 918-683-1031
Cell: 405-365-5060
curtis.tackett@odwc.ok.gov
ODWC General Information, 405-521-3851

ANS Identification

OWRB staff need to familiarize themselves with the species listed in Appendix A. It is extremely beneficial to learn the life cycles of each ANS, as each exploits an environmental niche in a unique way. In-depth knowledge allows development of innovative control and detection methods. Identification resources include:

- **Appendix B**: An informal aquatic plant chart that includes known plant ANS created by OWRB staff
- NAS-USGS website: https://nas.er.usgs.gov/default.aspx
- The center for Aquatic and Invasive plants: http://plants.ifas.ufl.edu/
- Oklahoma Biological Survey: https://biosurvey.ou.edu/developing-the-aquatic-invasive-plants-of-oklahoma/

[1] https://anstaskforce.gov/default.php
[2] https://nas.er.usgs.gov/default.aspx
[3] https://www.wildlifedepartment.com/fishing/ans
[4] https://biosurvey.ou.edu/developing-the-aquatic-invasive-plants-of-oklahoma

- ODWC: https://www.wildlifedepartment.com/fishing/ans

ANS Reporting

Several steps are needed when a tentative field ID is made, including photo documentation, specimen collection, reporting identification, and following up. These steps are performed when an ANS is identified at a site not previously known to exist.

Photo Documentation

Photographic evidence can provide experts the ability to visually identify a species of concern and should contain the entire plant, if possible. At minimum, pictures should be well lit and from multiple angles to capture leaf structure, size, root structure (if possible), and environmental conditions. Multiple pictures are encouraged. OWRB staff are encouraged to use their Agency issued mobile phone with georeferencing turned on for photo location information.

Specimen collection

Pictures are adequate but collect a sample if possible. Store the sample as best possible to minimize degradation. Short-term storage in the OWRB laboratory refrigerator is acceptable and sufficient until an expert can examine the specimen. Storage should minimize disruption of lab activities (space, smell, etc.), and should be labeled appropriately with collection location (Lat/Long if possible), date, time, and collectors initials. Specimen(s) should be disposed responsibly with assurance of no survival within a reasonable period.

Report

The identifier is required to share findings with the ODWC and OBS for confirmation. ***The OWRB does not confirm nuisance or invasive species***. The OBS has an online reporting system[5] that includes uploading pictures. To report to the ODWC, contact the ANS Coordinator.

Follow up

Both ODWC and OBS may contact the OWRB staffer regarding their report. All agencies should remain in concert with information to ensure coordination and reducing their staff time. Use email to document efforts and ask to be notified if initial ID was correct. Verification requires two items: reporting to the USGS using their NAS report tool[6] and reporting within the OWRB. Ask the confirming agency to report findings to USGS. The USGS online reporting tool asks for the same information requested by the OBS. Internally, update the table in this document and notify staff of the new sighting or species. While not a requirement, as a professional courtesy, notify the sister environmental agencies: Bureau of Mines, Corporation Commission, Oklahoma Department of Agriculture Food and Forestry, Oklahoma Conservation Commission, and Oklahoma Department of Environmental Quality. If identification came as a function of a funded project, be sure to include that in any project reports.

[5] https://biosurvey.ou.edu/developing-the-aquatic-invasive-plants-of-oklahoma
[6] https://nas.er.usgs.gov/SightingReport.aspx

Field SOP for the Prevention of ANS

✓Clean ✓Drain ✓Dry[7]

All measures given in this SOP serve the motto of "✓Clean ✓Drain ✓Dry". The safest assumption is that there is some sort of ANS is present in the waterbody and preventative measures should be implemented following every sample event. General recommended measures are *not* imperatives (must-dos) but common-sense actions to minimize spread. Adopting a mindset that these measures are simply a part of the sample effort and not something that is keeping staff from sampling is the best hedge against the OWRB becoming a vector for ANS.

Recommended general measures

- Sampling events should take ANS into account when planning the order Lakes are sampled. When possible, prioritize ANS Lakes at the end of the trip after all non-ANS lakes have been sampled.
- Rinse and flush all field equipment with tap water when leaving the waterbody and prior to entering the next waterbody.
- Abandon the use of felt or porous soled waders or materials if possible.
- Do not transport live organisms from one waterbody to another.
- Never transport live known ANS unless sample is transported for proper identification (see above).

A field rinse is not an imperative but a wise action to perform and should be performed if it does not add significant time to the day. For example, a nearby camp site may have a drinking water hydrant as do filling stations. Work diligently to leave all water from that waterbody, at the waterbody.

Measures for known ANS waterbodies

The section below has been excerpted from the national park service webpage[8].

- Remove any visible vegetation from items that were in the water, including boat, propeller, trailer, and all equipment and dispose of in an appropriate trash container. Do not leave refuse or ANS on the boat ramp or shore.
- Flush engine cooling system, live wells, and bilge with hot water. Rinse any other areas that get wet, such as water collected in trailer frames, safety light compartments, boat decking, and the lower portion of motor cooling systems. Water hotter than 110° F will kill veligers, and 140°F will kill adults. If hot water is not available, use tap water
- When possible, air dry boat and other equipment for five days before using in uninfested waters. If boat and equipment are completely dry for three days, it may be safe to use in uninfested waters.

When equipment is in known Zebra or Quagga Mussel waters for any significant time:

- ✓ **CLEAN** off visible aquatic plants, animals, and mud from watercraft, motor, trailer, and equipment before leaving water access. **Scrub** hull using a stiff brush. Any mussels scraped off should be bagged and discarded in the trash. If your gear feels gritty, young microscopic mussels may be attached. **Rinse** watercraft, trailer, and equipment with high pressure hot water when possible. **Flush** motor according to owner's manual.

[7] https://stopaquatichitchhikers.org

[8] https://www.nps.gov/isro/planyourvisit/upload/ZMBoaters.pdf

- ✓ **DRAIN** water from watercraft, motor, bilge, bladder tanks, livewell, and portable containers before leaving water access.
- ✓ **DRY** everything for five days or more, unless otherwise required by local or state laws, when moving between waters to kill small species not easily seen OR wipe with a towel before reuse.

Doing more than the minimum:

- Incorporate ANS inspections into pre-field check-out. Check hold spaces for water and surfaces for hitchhikers.
- If the boat takes on water during use, be sure to decontaminate this space with hot water or chlorinated hot water.
- Power wash equipment at car washes are available in most towns and cities in Oklahoma. If unable to pay with a p-card or vehicle fleet card, personal cash may be used and reimbursed via travel claim or Form 3.
- The OMES Motor Pool in OKC has wash stations. Call ahead. They have scheduled on short notice in the past.
- Research the ANS provided links and become an expert.

Appendix A: ODWC Aquatic Nuisance Species List

OWRB Identified Aquatic Nuisance Species		
		Updated: 12/16/2020
Zebra Mussels	**Year Confirmed**	**Eurasian Watermilfoil**
Robert S. Kerr Reservoir	1994	Spavinaw Lake
Oologah Lake	2003	Comanche City Lake
Kaw Lake	2004	Prague City Lake
Skiatook Lake	2004	Pauls Valley City Lake
Keystone Lake	2005	Sportsman Lake
Sooner Lake	2005	Jap Beaver Lake
Hudson Lake (Mayes Co.)	2009	Lawtonka Lake
Texoma Lake	2009	Sooner Lake
W.R. Hollway Lake	2009	
Carl Blackwell	2010	**Harris Mud Crab**
Lake McMurtry	2010	Texoma Lake
Eufaula Lake	2010	
Ft. Gibson Lake	2010	**Didymo**
Ponca City Lake	2010	Lower Mountain Fork River
Lake Murray	2011	
Grand Lake	2015	**Water Hyacinth**
Lake Hefner	2016	Lake Eufaula
Canton Lake	2016	Several Small OKC Lakes
Waurika Lake	2017	
Lake Overholser	2017	**Parrot's Feather**
Foss Lake	2018	Clayton Lake
Pawnee City Lake	2018	Carlton Lake
Perry CCC	2018	
Hydrilla	**Golden Algae**	**Yellow Floating Heart**
Lake Murray	Altus City Lake	Lake Carl Blackwell
Lake Arbuckle	Lake Texoma	
Sooner Lake	Salt Fork of Arkansas River	**Water Lettuce**
Lower Mountain Fork River	Red River System	Sahoma Lake
Lake Nanih Waiya	Lake Altus Lugert	
	Cimarron River	
Alligator weed		
McClellan - Kerr Navigation System		
Spring Creek (OKC)	**ANS Fish Species & Locations**	
Pine Creek Lake	**Bighead Carp**	**White Perch**
	Neosho River	Sooner Lake
	Grand Lake	Kaw Lake
	Hudson Lake (Mayes Co.)	WD Mayo
	Lower Red River and Tributaries	Webbers Falls
		Robert S. Kerr
	Silver Carp	Keystone Lake
	Lower Red River and Tributaries	Arkansas River

Appendix B: OWRB Quick Reference Boat Decontamination Guide:

Stopaquatichitchhikers.org

Recommended general measures

- Rinse and flush all field equipment with tap water when leaving the waterbody and prior to entering the next waterbody, is possible.
- Do not transport live organisms from one waterbody to another and **never** transport live known ANS.
- During trip planning, sample uninfected waterbodies first before proceeding to known ANS lakes. Lakes infected with the same species of ANS can be sampled consecutively without decontaminating the vessel. However, OWRB does not want to be vectors of contamination and always recommend properly decontaminating boats after visiting an infected lake.
- While unloading the boat after a sampling event, park on a slight incline to encourage water to collect at the rear of the boat. Remove all boat plugs and allow water to drain from all live wells, bilge, and motor areas. Drain the motor by trimming it all the way down to allow water to escape. Once the motor is done draining, properly install the transom saver.

Measures for known ANS waterbodies

- Inspect trailer and boat *before* launch to ensure no vegetation, debris, or mud is caught on the frame or body of the watercraft that could be introduced during boat launch. Remove and dispose of any vegetation, mud, or debris in an appropriate trash container. **Do not leave refuse on boat ramp or shore.**
- Prior to loading the boat, inspect the empty trailer for any vegetation, debris, or mud that may have been caught on bunks, lights, fenders etc. during launch. Promptly remove any vegetation or debris before backing into the water and dispose of in an appropriate trash container.

- Once the boat is loaded and on shore, inspect the trailer and boat *again* for any vegetation, debris, or mud that may have been captured during the loading process. Promptly remove and dispose of all vegetation and debris before leaving the boat ramp area. Clean off any mud or film as best as possible and **plan to visit a car wash**.

Decontamination Protocol

- After visiting a lake with known ANS, field staff should locate a nearby car wash to decontaminate the boat and all equipment that encountered infected water before continuing their trip.
- Special attention shall be given to:
    - Boat;
    - Trailer;
    - Rear of vehicle that may have come in contact with water or ANS;
    - Field equipment such as zooplankton nets, tow ropes, etc.;
    - Anchor and anchor rope;
    - Any additional equipment or clothing that contacted contaminated water such as boots or waders.
- Staff should make note of known car washes on trips to ensure proper decontamination can occur quickly during trip planning, especially those that accept credit cards.
- If a car wash accepts credit card payment, staff may use the boat's gas card. Proceed to the truck fuel card or FTE p-card if previous payments are not accepted. More than likely, a receipt will not be available. Document the total charge(s) and record in the vehicle records book and notify administrators of charges at the end of the trip.
    - If personal cash is used, record on the travel claim as it is a reimbursable expense. In the absence of a travel claim, complete a Form 3. (O:\Purchasing\OMES FORM 3)
- **EXTERIOR**: Select high pressure soap and begin systematically washing the boat, trailer, equipment, and rear of vehicle that contacted infected water. Pay attention to bunks, wheel wells, trailer frame, lights, transom straps, motor, and any location that may harbor ANS. Disconnect transom straps, unfurl, and soak. Trim the motor down to allow water to escape. Allow soap several minutes to soak while moving to the interior of the boat.
- **INTERIOR**: climb onboard and begin interior decontamination, continuing to use high pressure soap to wash away any contaminated water, debris, or sediment. Ensure all surfaces that contacted infected water are sprayed. Lay out any anchor lines, anchor, nets (**do not use high-pressure soap on zooplankton nets**), and tow ropes until clean and allow soapy water to soak as best as possible.
- **RINSE**: after all contaminated surfaces on the exterior, interior, and equipment have been thoroughly sprayed and soaked, begin rinsing in a systematic manner. With the motor still trimmed down, carefully rinse the motor, propeller, and water intake ports. Thoroughly rinse all ropes and nets (again, **do not** use high-pressure rinse on zooplankton nets). Rinse ropes and other material that tend to hold water until there are no visible suds. Carefully direct water up the boat plugs to dislodge any remaining debris. Rinsing of boat and equipment may cease after all water runs clear. Properly secure the motor and ensure transom straps are snug.

Return from field

- Allow boat and equipment to thoroughly dry before the next deployment.