



Northern Rockies Coordinating Group

Federal, State, and Local Government Agencies Working Together In Emergency Response Management

March 29, 2018

To: Northern Rockies Interagency Wildland Fire Community

From: Chair, Northern Rockies Coordinating Group

Subject: AIS Decontamination/Prevention Methods for Air and Ground Wildland Fire Water Delivery Resources

The NWCG Guide to Preventing Aquatic Invasive Species Transport by Wildland Fire Operations (PMS 444) is available and addresses Best Management Practices (BMP's) in Chapter 3, Ground Operations in Chapter 4, and Aviation Operations in Chapter 5.

The NRCG Aviation and Equipment Committees have been tasked with recommending supplemental information for prevention/decontamination of wildland aviation & fire apparatus with regard to the spread of Aquatic Invasive Species (AIS). The Columbia River Basin in the western portion of the Geographic Area is, at this time, not infested with the Zebra or Quagga mussels. States within the Columbia River Basin are actively managing the threat of these invaders and others. Even though these mussels are the main topic of the decontamination and prevention, the transportation of all AIS is a huge concern. In addition, the NRCG recommends additional Best Management Practices (BMP's) for limiting risk for transporting AIS:

AVIATION

Prevention

- Obtain local unit information on known aquatic invasive species locations, whenever possible.
- Avoid using bodies of water with known aquatic invasive species infestations.
- Avoid dipping or scooping water from multiple water sources within the same operational period to minimize cross-contamination of water sources.
- Use deeper (blue) water whenever possible. Avoid areas that will intake mud or plants.
- Switch out a contaminated helicopter bucket with a clean bucket before moving to a new water source.
- Avoid transferring water between drainages or between unconnected waters within the same drainage. Do not dump water directly from one stream or lake into another. Avoid spraying suppression water into local waterbodies (ponds, lakes, rivers, streams, wetlands, seeps, or springs).
- When cross contamination is suspected and hot water or ample drying time is not in the perceivable future the alternate bucket should be utilized until appropriate decontamination procedures can take place.
- If cross-contamination occurs or anyone believes it may have occurred report the incident to the on- site aviation manager (e.g. helicopter manager, helicopter





Northern Rockies Coordinating Group

Federal, State, and Local Government Agencies Working Together In Emergency Response Management

crewmember, etc.) who will forward to their supervisor, incident management, or an agency administrator.

Inspection and Cleaning

- Daily, or when possible during maintenance and operations, visually inspect water handling equipment (snorkel hoses, pumps, foot valves/screens, buckets, intakes & tanks) to remove any plant, animal, or dirt/mud material.
- When contamination is suspected or contact with untreated water has occurred, clean and sanitize accessible, exposed surfaces with hot (> 140°F) water for 5-10 seconds before moving to new, unconnected water sources or new incidents.
- Clean and sanitize accessible, exposed surfaces with hot (> 140°F) water for 5 – 10 seconds as part of scheduled maintenance when possible.
- When hot water (> 140°F) is not available or practical, use municipal treated water to thoroughly flush invasive species from the system.
- Alternatively, completely dry equipment in the sun when quick fire suppression turnaround is not required. Thorough drying alone is an easy and effective sanitizing method, but required drying times vary considerably with the type equipment, e.g., metal, rubber, fabric and may not be practical for a quick turnaround.
- Documentation of inspection and cleaning by an agency representative/aviation manager in daily diaries and/or on flight invoices is recommended.
- Use hot water (140 F) to decontaminate aviation equipment (not QUAT or BLEACH CHEMICALS) products, as they can corrode equipment.
 - If a helicopter bucket has a butyl (rubber) valve seal, avoid prolonged application of hot water spray to seal to prevent softening of material. Power washing greatly reduces the likelihood that any target aquatic invasive species are present.

GROUND BASED EQUIPMENT

Resources, crossing the continental divide from the eastside, must be decontaminated prior to going into service on an assignment and again before returning to work on the home unit. All resources need to be decontaminated and inspected for AIS before going into service in the Northern Rockies Geographic Area. Decontamination sites to be available at inspection sites, incident base, or local unit.

Prevention

- The area of emphasis to prevent the spread of AIS is ensuring the foot valves are in working order and do not allow backflow from the apparatus into the water source. By focusing on drafting techniques rather than the difficult decontamination of internal tanks, which may or may not contain AIS) we can abolish the use of large volumes of chemicals disinfectants and instead rely on prevention measures.
- To minimize potential for engine water leakage through the foot valve, **ALWAYS prime with water from the drafting source rather than using water from the engine tank**. Additionally, don't leave draft hose full with foot valve engaged and submerged in water source when not





Northern Rockies Coordinating Group

Federal, State, and Local Government Agencies Working Together In Emergency Response Management

- pumping.
- Any apparatus with a tank must have a foot valve for drafting
- Avoid drafting from untreated (raw) water. Use municipal water sources when available. When possible use port-a-tanks or dedicated filler pump for apparatus.
- If possible, carry extra foot valve and draft hose in the event water source is changed. Ensure both the draft hose and foot valve are completely dried before being used in a new or different water source. Testing of the foot valves can be found in *Appendix B of PMS 444*.

Inspection and Cleaning at Check in; Demobilization, or During an Incident, or at a GACC inspection

Site for local hosted resources

- In order of preference, the following decontamination measures are to be followed for foot valves and draft hoses:
 - 1. Preferred method: chlorine bleach (see supplemental HOW TO Guide)
 - Chemicals can be used to treat foot valves (see PMS 444 for chemicals recommended, as well as supplemental HOW TO guide) and draft hose, if the chemical can be disposed of properly.
 - Chemical can be applied by spray or bath (preferred)
 - DO NOT mix decontamination methods as that will create a hazardous situation.
 - OR
 - 2. Power wash with hot water (140 F, allow spray to contact surfaces for 2 minutes) using a hot pressure washer (e.g. a 'hotsy'); OR Hot 140 F water bath for 10 minute contact time.

Inspection and Cleaning between Incidents (back at home unit)

- Do not drain tank within 300 ft. of any stream or body of water or storm drains that could become infested with AIS.
- Upon return to home unit, If possible, use compressed air to blow water out of the lines, leaving valves and tank fill open to dry out the tank as much as possible.
- The cache equipment needs to be decontaminated as residual water may harbor invasive mussel larvae (in summer, 5 days survival time in internal tanks; in cooler months, 28 days).
 - This can be done utilizing either a hot water bath (140 F) or chlorine treatment depending on the equipment being cleaned.
- DO NOT use hot water or chemicals in internal tanks.

A copy of PMS 444 can be found on the NWCG website: <https://www.nwcg.gov/publications/444>

Mike Granger
Chair, Northern Rockies Coordinating Group (NRCG)

