

# Disinfection protocol heavy machinery



## Background

This document provides simple, but effective measures in order to minimize the spill over of infectious amphibian pathogens to disease free areas. The advice listed below is meant for heavy machinery that is used for work in- and around water bodies like ponds, canals and streams that are home to amphibians. This includes (for example) tractors, excavators, loaders, mowers, harvesters, dredgers, etc. For ecological fieldwork we refer to our disinfection protocol fieldwork.



## What kind of work?

This advice applies to activities with heavy machinery in areas where amphibians can occur.

### Example

A tracked excavator that has been used to excavate a pond often has large amounts of substrate sticking to its tires. This machinery is often immediately needed at another location. Contaminated substrate can unintentionally be introduced to another area. Therefore, it is very important that prior to driving to another location to first clean (hose down) the equipment.

This is not only necessary when the equipment is moved from a contaminated to a clean site but should be a routine procedure.

## Human role

Emerging infectious diseases such as chytridiomycosis and ranaviriosis pose a significant threat to amphibians in Europe. The spread of the infectious agents causing these diseases can be facilitated by humans.

Humans can spread fomites over very long distances and in large amounts in comparison to potential natural vectors such as amphibians or wading birds.

## Dispose of disinfectant solution

Dispose of the disinfectant solution via the prescribed means. Preferably take it with you. Never dispose of it in nature.

## Avoid direct contact

The disinfection solutions described in this document may be harmful for humans but also for amphibians, fish and other organisms. Use carefully.



Ideally equipment is cleaned with a disinfectant. If such a cleaning procedure is not possible, the minimum effort should include removing as much substrate as possible with clean water. By doing so the amount of pathogens that can be transported is significantly reduced.

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## Cleansing and disinfection

1. Remove plant residues and muddy soil with a shovel, broom, brush or high pressure water spray. Rinse the materials or part of the machine with clean water and make sure the surface is as clean as possible
2. Always disinfect materials as follows: from a long distance of any water bodies (ponds, streams, etc.) and try not to contaminate the environment with the residue.
3. Virkon S (1% solution) is the preferred disinfectant. Other effective disinfectants are bleach (at least 1.6% sodium hypochlorite), Nolvasan (0.75% solution) and 70% ethanol or spirit (85% alcohol content). Always use "fresh" solutions as their disinfectant properties may be lost over time.
4. Place the materials in the solution or spray the solution on the materials. Let materials soak for at least five minutes.
5. Rinse the materials after disinfection with clean (tap) water.
6. At some locations it may not be preferable or allowed to use certain disinfectants. Then clean and disinfect in the workshop or storage depot, or clean without the use of these solutions as thorough as possible.
7. Don't forget to disinfect smaller materials and equipment, tools and boots. Please consult our disinfection protocol for fieldwork.

## Advice

- It should be aimed for to keep or process potentially contaminated soil, mud, plants, etc. within the source area.
- If the equipment has been in contact with water or moist soil it needs to be disinfected.
- All materials used on a location<sup>1</sup> need to be disinfected before using them at other sites
- Avoid unnecessary contact of material with surface water and/or with damp river- and stream banks.
- Target the disinfection measures on the parts of the materials/machine that have been in direct contact with water of (moist) soil near river-, stream and pond banks. For example: excavator buckets on bulldozers, mowing buckets, tires and caterpillar tracks, etc.
- It is important that the amount of transported material is limited as much as possible. Is disinfection not possible? Then remove as much muddy soil and vegetation of the machine as possible.

<sup>1</sup> A location is defined as a unique pond or stream system that is not directly connected to other waters in the area.



## More information

For the most recent version of this hygiene protocol and additional information please visit:  
<https://bsalinfoeurope.wixsite.com/eubsalmitigation2017/>



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