

Aquatic Amphibian Monitoring Protocol for Klondike Gold Rush National Historical Park
Standard Operating Procedure (SOP) No. 7
Amphibian Handling Guidelines
Version 1.0 (April 2009)

Revision History Log

Previous Version #	Revision Date	Author	Changes Made	Reasons for Change	New Version #

7.1 Handling Amphibians

While conducting Routine Amphibian Surveys (see SOP No.1 Sampling Design and Field Methods), observers will often have to handle amphibians for identification, measurement, chytrid fungus testing, and/or detailed examination. This SOP details the guidelines in place for the Amphibian Research and Monitoring Initiative (ARMI), as assembled by the USGS National Wildlife Health Center (NWHC).

7.1.1 General Handling Guidelines

When handling amphibians, hands should be kept wet and clean of insect repellent and other chemicals. The unprotected skin of amphibians makes them vulnerable to desiccation and contaminant absorption. Do not let an animal get overheated or dried out. If it begins to dry, pour water over it and hold it in cupped hands or container with water for a minute or so.

Amphibians can be handled using bare hands as long as the handler washes their hands between amphibians in water to which the animals would normally be exposed. This will ensure that the risks to amphibians of exposure are not increased above environmental levels (Berger 2004). If no water is available for washing hands between amphibians, the handler should wear unused disposable gloves.

Amphibians do not appear to show signs of stress after handling; however, unnecessary handling should be avoided and amphibians should be handled and released as quickly as possible at the site from which they were captured (Berger 2004). The duration of handling should be as short as possible. Handling procedures that are quick may have less effect on stress levels than longer procedures (Adams 2007).

7.1.2 Handling Considerations for Anurans

Adult frogs and toads will attempt to escape capture, primarily by kicking and attempting to jump or hop away. This type of kicking can cause dislocations of leg or hip joints and could break or fracture the back. To prevent these types of injuries, hold adult frogs and toads by grasping them firmly around the waist with their legs extended and gently held together while supporting the body.



Figure 7.1 Toads are held by grasping them firmly around the waist while supporting the body.

7.1.3 Handling Considerations for Caudates

Adult salamanders can drop (autotomize) their tails, or could injure their backs trying to twist free of capture. To prevent this, salamanders should never be grasped by their tails but should be grasped mid-body between fore-limbs and hind-limbs.

7.1.4 Handling Considerations for Larvae

Tadpoles and salamander larvae have very thin skin that is easily damaged. In particular, salamander larvae have delicate external gills that are extremely fragile. To avoid tearing, puncturing, or damaging skin or external delicate tissues, never directly handle tadpoles and larvae and do not keep tadpoles or larvae out of water. Instead, use a small net and/or coax larvae into a clear plastic bag or container with enough water to cover the entire larva (including gills in salamander larvae). In transferring tadpoles and larvae from a dipnet or small net to a container or plastic bag with water, do not pick them up with your hands but invert the dip net and dip the larva into the water so that it can swim into the water freely. Examine larvae and tadpoles through the bag or container, and release gently.

Tadpoles normally share water and placing them in a common container does not increase their rates of physical contact. They can therefore be held in groups in containers, as long as all members of the group are from the same site. Tadpoles should not be held with batches of tadpoles collected from other sites in the same or different water bodies.

Do not detach individual eggs from an egg mass, nor the mass from supporting vegetation. Observe eggs and egg masses without handling them.

7.2 Preventing disease transmission during handling

All equipment used in handling amphibians must be disinfected between sites according to hygiene procedures. See SOP No. 3: Hygiene Protocol for Control of Disease Transmission between Amphibian Study Sites.

7.3 References

Adams, M. J., Stephanie Galvan, David Reinitz, Rebecca A. Cole, Sanjay Pyare, Meg Hahr, Purnima Govindarajulu (2007). "Incidence of the Fungus *Batrachochytrium dendrobatitis* in Amphibian Populations along the Northwest Coast of North America." *Herpetological Review* 38(4): 2.

Berger, S. R., LF Skerratt, R. Alford, D. Mendez, S. Cashins, N. Kenyon, K. Hauselberger, J. Rowley (2004). Hygiene Protocol for Handling Amphibians in Field Studies. Townsville, Australia, Amphibian Diseases Group, James Cook University.