

Table 1. Amphibian survey data sheet instructions.

SECTION 1 – LOCALITY: These data are essential. Many amphibian surveys have been hampered by the inability to relocate exact locations in the historical record.

Date: Use the format DD-MMM-YY (e.g., 05-APR-98).

Begin Time: List the time survey of habitat for amphibians began in 24 hour format.

End Time: List the time the survey ended in 24 hour format. (The total time should reflect only the amount of time spent searching for amphibians. Total time plus number of observers may be used to assess relative abundance.)

Observers: List names or initials of all persons involved in searching.

Locality: Describe the specific geographic location of the site. Use air distance in directions (e.g., 5 km N and 7.5 km W) of a map landmark that likely will not change (distance from a large town or city is not all that helpful).

State: Use the 2-letter abbreviation.

County:

Map Name: List the name of the U.S.G.S. quadrangle or other map used to locate the site.

Owner: List the public land manager (e.g., Challis RA, Salmon-Challis Natl. Forest), or name of the owner if the site is on private land.

Elevation: Circle scale used, meters are preferred.

T: township **R:** range **S:** section

Section Description: Describe the location of the site within the section (e.g., SE1/4 or NE1/4 of SE1/4)

UTM Zone, Northing, Easting: Universal Transverse Mercator coordinates are preferred over longitude and latitude.

SECTION 2 – SPECIES DATA List all amphibian species observed. If garter snakes are seen, list them here also.

Species: Use the scientific name. Convenient shorthand is to use a 4-letter code made up of the first 2 letters of the genus and species (e.g., *Bufo boreas* would be BUBO).

Adults/Juveniles/Metamorphs/Larvae/Eggs: Indicate presence with a check, but numbers seen are more valuable data.

Calling: Indicate yes if frogs are vocalizing in a breeding chorus.

Technique(s): List how observations were made: visual/aural id, hand collected, dip net/seine, or trapped (minnow-type traps can be used for larvae)

Voucher: Indicate whether a voucher specimen was collected. Good photographs may substitute for physical specimens.

Fish Present: If yes, list species if you can. Circle the question marks if you are not certain, but suspect that fish are present.

Entire Site Searched?: If no, list either the meters of shoreline or the area (m²) of habitat (e.g., amount of wet meadow) searched.

SECTION 3 – PHYSICAL AND CHEMICAL DATA Water chemistry data are difficult to collect accurately without quality equipment. Weather data are important for determining the quality of the observations (e.g., was an absence of amphibians due to observations made during a blizzard?)

Weather, Wind: Indicate atmospheric conditions.

Air Temperature: Take at chest height in shade. The Celsius scale is preferred.

Water Temperature: Take 1 m from margin and at 1 cm depth, or where egg masses are observed.

Color: This is a qualitative assessment of whether the water is clear or tea-colored from organic (humic) acids.

Turbidity: This is a qualitative assessment of whether the water is clear or clouded from suspended particulate matter.

SECTION 4 – HABITAT DESCRIPTION These data are important for developing hypotheses to explain changes in abundance of amphibians.

Origin: Decide whether the wetland is a natural geologic formation or man-made.

Drainage: Circle whether the site has permanent drainage, no drainage, or occasional drainage. Determining the potential for occasional drainage requires judgement. Look for clues in the topography and vegetation.

Site Type: Decide how best to describe the site. If there is evidence of past or present beaver activity, circle one of these choices in addition to your choice.

Site Length/Width: Record the maximum length and width of lakes and ponds. For streams, record the length and average width of the reach searched.

Stream Order: This is an index of stream size, and you will need a topographic map to determine it. First-order streams have no tributaries, second-order streams are formed by the confluence of two 1st-order streams, third-order streams are formed by the confluence of two 2nd-order streams, and so on.

Maximum Depth: Most times, you will not have access to a boat, so estimate depth (deep lakes are usually not important to amphibians).

Primary Substrate: Circle the type that covers the majority of the bottom of the site.

Emergent Vegetation: Circle the percentage of the margin of the site with emergent vegetation present, and list the dominant species. If you are unsure of species id, list the categories of the dominant species (e.g., cattail, sedges, etc.).

North Shoreline Characteristics: Circle whether shallows and emergent vegetation are present or absent. This is important in evaluating quality of breeding habitat in some mountain locations.

Forest Characteristics: List the closest distance between the water and the surrounding, and list the most common tree species. Leave these fields blank if there is no forest.

Table 2. Amphibians and reptiles of the study area: status and occurrence.

Common Name	Scientific Name	Abbreviation	Status ¹	Distribution	Estimated Abundance ²	Successful Sampling Techniques	Comments
Confirmed							
Long-toed Salamander	<i>Ambystoma macrodactylum</i>	AMMA		Limited	Common	visual search, dip net	larvae
Tailed Frog	<i>Aescaphus truei</i>	ASTR		Limited	Unknown	visual search, dip net	
Western Toad	<i>Bufo boreas</i>	BUBO	BLM-S, SSC-C	Intermediate	Common	visual search, dip net, incidental	metamorphs, adults
Pacific Treefrog	<i>Pseudacris (=Hyla) regilla</i>	PSRE		Limited	Common	visual search, dip net, automated recording, incidental	tadpoles, adults
Columbia Spotted Frog	<i>Rana lateralis (=pretiosa)</i>	RALU	BLM-S, SSC-A, FSR4-S	Widespread	Common	visual search, dip net, incidental	tadpoles, juveniles, adults
Painted Turtle	<i>Chrysemys picta</i>	CHPI		Limited	Uncommon	visual search, incidental	adults
Short-horned Lizard	<i>Phrynosoma douglasii</i>	PHDO		Intermediate	Uncommon	visual search, incidental	adults
Sagebrush Lizard	<i>Sceloporus graciosus</i>	SGGR		Limited?	Common?	visual search, incidental	adults
Rubber Boe	<i>Charina boilae</i>	CHBO		Limited?	Uncommon?	visual search, incidental	adults
Racer	<i>Coluber constrictor</i>	COCO		Limited?	Uncommon?	visual search, incidental	juveniles, adults
Gopher Snake	<i>Pituophis catenifer</i>	PICA		Limited?	Uncommon?	visual search, incidental	adults
Western Terrestrial Garter Snail	<i>Thamnophis elegans</i>	THEL		Widespread	Common	visual search, incidental	juveniles, adults
Common Garter Snake	<i>Thamnophis sirtalis</i>	THSI		Limited	Uncommon	visual search, incidental	adults
Western Rattlesnake	<i>Crotalus viridis</i>	CRVI		Widespread	Uncommon	visual search, incidental	juveniles, adults
Possible							
Boreal Chorus Frog	<i>Pseudacris triseriata</i>	PSTR					
Bullfrog	<i>Rana catesbeiana</i>	RACA					
Northern Leopard Frog	<i>Rana pipiens</i>	RAPI	BLM-S, SSC-A				
Great Basin Spadefoot	<i>Scaphiopus intermontanus</i>	SCIN					
Western Stink	<i>Eumeces skiltonianus</i>	EUSK					
Western Fence Lizard	<i>Sceloporus occidentalis</i>	SCOC					
Ringneck Snake	<i>Diadophis amabilis</i>	DIPU	BLM-S, SSC-C				
Night Snake	<i>Hypsiglena torquata</i>	HYTO					

¹BLM-S=Bureau of Land Management Sensitive Species

SSC-A=Idaho Dep. of Fish & Game Species of Special Concern (Priority Species)

SSC-C=Idaho Dep. of Fish & Game Species of Special Concern (Undetermined Status Species)

FSR4-S=Forest Service Region 4 Sensitive Species

²Estimate Abundance=Relative abundance in appropriate habitat for the species during the season when the species is active.

Table 3. Comparison of physical and chemical attributes of survey sites occupied by amphibian species to all sites surveyed. For complete details see Appendix II-V.

Attribute	Elevation (m)	Water Temperature (C)	pH	Conductivity (μS/cm)
All Sites (70)¹	1,146-2,926	4-29	7.2-9.7	1-280
Long-toed Salamander (3)	2134-2390	15-21		4-130
Western Toad (1)	2304	21	9.1	5
Pacific Treefrog (1)	1228	29		110
Columbia Spotted Frog (14)	1158-2512	9-25	7.2-9.3	4-280

¹Number in parenthesis = number of sites

Table 4. Proposed sites for long-term monitoring. Location information has been generalized where a complex of sites have been combined.

Site No.	Locality	County	Map Name	Elevation (m)	Twnshp	Range	Section	UTM Zone	Northing	Easting
CHALLIS RESOURCE AREA										
6	Lake Cr. beaver pond	Custer	Herd Lake	1999	9N	19E	15	11	4887200	723500
7	Herd Lake, south shore	Custer	Herd Lake	2187	9N	19E	25	11	4885100	726550
9	Horse Basin/Corral Basin enclosure	Custer	Paint Pot	1951	10N	19E	13,14,22, 23	11	4895000-4898000	724000-726000
13, 14, 58	Thousand Springs - Chilly Slough marsh complex	Custer	Dickey Peak et al.	1915	10N	21E	34,35	12	4892600	263700
21, 22, 23, 24, 25, 26, 69, 70	Spring Hill pond complex	Custer	Spring Hill	2150	11N	23E	10	12	4907900	282800
37	Burnt Cr. Lake	Custer	Burnt Creek	2499	9N	24E	4	12	4890850	289800
38	Burnt Cr. enclosure	Custer	Burnt Creek	2304	10N	24E	20	12	4895700	288400
39	Summit Cr.	Custer	Moffet Springs	1951	11N	25E	22,23	12	4905200	304000
41, 42, 43, 44	South Butte Mine pond complex	Custer	Clayton	2150	11N	17E	15	11	4906400	703750
49	Horse Basin pond	Custer	Horse Basin	2341	10N	20E	23	11	4895484	734981
65, 66	Bear Cr. Pond complex	Custer	Jerry Peak	2310	9N	20E	8	11	4889451	730847
2	McGowan Cr. stock pond	Custer	Antelope Flat	1849	12N	20E	36	11	4912900	735300
29	upper Road Cr. pond	Custer	Horse Basin	2377	10N	21E	31	11	4893450	737750
LEMHI RESOURCE AREA										
16	Texas Cr.	Lemhi	Gilmore	2073	13N	27E	5	12	4927900	320500
17, 18	Eighteenmile Cr. pond & bogs	Lemhi	Cottonwood Creek	2390	13N	28E	1	12	4927250	335300
20	Hot Springs Cr. Tule marsh	Lemhi	Sal Mountain	1256	21N	22E	28	12	5000000	274400
51	Yearian pond	Lemhi	Agency Creek	1939	18N	24E	13	12	4973200	298800
52	Yearian pond	Lemhi	Agency Creek	1926	18N	24E	13	12	4973100	298300
53	Hyde Cr. pond	Lemhi	Williams Lake	1317	20N	22E	5	12	4997200	273300
56	Warm Springs Cr. - ponds	Lemhi	Williams Lake	1228	21N	22E	29	12	5000100	273807
57	Tower Slough pond	Lemhi	Bird Creek	1158	23N	22E	18	12	5023398	272134
59, 60, 61	Birch Cr. CA marsh complex	Lemhi	Italian Canyon	1985	11N	29E	27	12	4902293	341061
62	Cow Cr. pond	Lemhi	Agency Creek	1951	18N	24E	12	12	4975661	298449
LOST RIVER MOUNTAINS										
31	Mud Lake	Butte	Methodist Creek	2266	8N	25E	36	12	4872800	305900
32	Twin Lakes	Butte	Methodist Creek	2190	7N	25E	1	12	4871000	305000
27	Carlson Lake	Custer	Doublespring	2487	11N	23E	17	12	4906600	280400
33	Doublesprings	Custer	Doublespring	2094	12N	23E	31	12	4911000	277700
34	Mud Spring enclosure	Custer	Burnt Creek	2353	10N	23E	9	12	4898900	281500
45	Grouse Cr. Lake	Custer	Meadow Peak	2560	12N	21E	3	12	4920400	264200
47	Wino Basin	Custer	Meadow Peak	2609	12N	21E	3	12	4921400	263100
63	Grouse Cr. pond	Custer	Meadow Peak	2304	12N	21E	11	12	4919303	265947
67	Merriam Lake	Custer	Elkhorn Creek	2926	9N	23E	17	12	4887776	279610