

AMPHIBIAN SURVEYS
IN
BANFF NATIONAL PARK
and adjacent areas

2003

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Summary and Recommendations

This report contains a compilation of our observations of amphibians in Banff National Park - and nearby areas - in 2003. It also includes some observations by Brenda and Dwayne Lepitzki as well as records of the park's only known snake species - Wandering Garter Snake (*Thamnophis elegans*) - that were all from the Cave & Basin area as reported by the Lepitzkis and two sightings from Carrot Lake as reported by Mike McIvor. It represents the continuation of surveys begun in 1992 which are intended to provide a better understanding of the distribution of amphibians in this part of the Rocky Mountains. (See McIvor and McIvor, annual reports from 1994 to 2002.) These observations include random/opportunistic sightings but primarily are from surveys conducted for the specific purpose of collecting information about amphibians.

Early in the season there was an attempt to locate adult frogs and toads by the sound of their calling at breeding sites. Later efforts involved more concerted searches for egg masses, larvae and young-of-the-year. A variety of wetlands - marshes, ponds, lakes, backwaters of the Bow and other rivers - were surveyed in afternoons or evenings, some on several occasions.

Some new sites were visited for the first time and evidence of breeding was found in most of them: In the Lake Louise area, Griz 59 Pond had wood frog egg masses; Pine Point Wetland, a large, beautiful site between Bath Creek and the Bow River had two adult and one juvenile wood frogs, Columbia spotted frog adults and egg masses with hatchlings and tiny tadpoles nearby, and an adult boreal toad and tadpoles; at Lost Lake we found a large adult boreal toad but no evidence of breeding. Upper Hidden Cliffs Wetland near Johnston Canyon had boreal toad tadpoles as well as long-toed salamander tadpoles and old egg masses.

Last year we visited Taylor and Solitary Ponds in the Taylor Creek area in September for the first time. We found froglets of both wood and Columbia spotted frogs at Solitary but no amphibians at Taylor. This year we added boreal toad to the list of species breeding at Solitary Pond when we found tadpoles. At Taylor Pond we found juvenile wood frogs in mid-June and an adult wood frog as well as juveniles and tadpoles in mid-July.

(As an aside, some interesting observations of wildflowers were among the highlights of this years surveys. We found the linear-leaved or slender-leaved sundew (*Drosera linearis*) at Pine Point Wetland and in large numbers at both Taylor and Solitary Ponds. It is possible these are the first sightings of this plant in the park since John Macoun reported it from somewhere in the Lake Louise area in 1904. And at Taylor Pond we saw many clumps of bog rosemary (*Andromeda polifolia*) in bloom in mid-June. This may be the first record of this species for the entire Bow River watershed.)

Direct evidence of breeding in the form of egg masses, larvae, or metamorphosed young was found for all 4 species of amphibian known to occur in Banff National Park. The first wood frog of the year was heard calling in Pond 1 at Muleshoe Flats on April 15, the earliest date by two days we have recorded and thirteen days earlier than last year. The first egg masses we found were at West Pond in Amphibian World, and Lakeside Pond on April 22.

The first long-toed salamander eggs were in Moose Meadow Pools on April 21, again, the earliest date we have reported and a full three weeks earlier than last year. However, there was nothing early about the first boreal toad egg strings that were in Sunshine Wetlands on May 17. We found one Columbia spotted frog egg mass that same day in Sunshine Wetlands although we did hear this species calling, along with wood frogs, at the Yamnuska on April 30.

Late observations for the year came from a variety of locations in September. On September 1, there were 6 boreal toad toadlets and 2 adult wood frogs near the north-east corner of Carrot Lake. In Boom Lake Trailhead Pond on the 10th there were 11 boreal toad tadpoles with 7 tiny toadlets near the edge of the water. The same day there was a toadlet at Muleshoe Riverside. And the last records came from Ishbel Pond on the 21st where we and the Lepitzkis saw 2 toadlets and 1 large, long-toad salamander larvae, the latter a new species for this wetland.

In the absence of regular monitoring throughout the season it is not possible to know how many wetlands were affected by the hot, dry conditions in the summer of 2003 to the extent that breeding success may have been impaired. We do know, for instance, that one of our new sites - Upper Hidden Cliffs Wetland - where we found boreal toad and long-toed salamander tadpoles on June 9, was mostly dry when we returned on July 20. And both the large pond that held the salamanders and the small pool that held the toads were completely dry, leading us to believe it is unlikely there was time for metamorphosis. If the recent drying trend continues it will raise some questions about the long-term viability of amphibian populations at individual sites particularly those most susceptible to drying and most isolated from other wetlands.

We note the recent publication in *Conservation Biology* of a paper describing biological criteria for buffer zones around wetlands to accommodate amphibians and reptiles. (Semlitsch and Bodie, 2003). In Banff National Park little if anything is known about the terrestrial habitat requirements of these animals. We trust this knowledge deficiency will be addressed in the coming years and that consideration of these habitat requirements will be part of future planning and environmental assessment processes. And we offer our strong, on-going encouragement to Parks Canada to continue to expand the scope of amphibian research and monitoring.

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AMPHIBIAN SURVEYS IN BANFF NATIONAL PARK AND ADJACENT AREAS. 1992-2003

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Abbreviations used in this report for amphibians (as per Macdonald, C., W.E. Roberts, D.M. Ealey, *The Vertebrate Species of Alberta*, Alberta Naturalist, Vol. 23, No. 3, Federation of Alberta Naturalists)

TISA tiger salamander (*Ambystoma tigrinum*, Green)
LTSA long-toed salamander (*Ambystoma macrodactylum*, Baird)
BOTO boreal toad (also known as western toad) (*Bufo boreas boreas*, Baird and Girard)
BCFR boreal chorus frog (*Pseudacris triseriata maculata*, Agassiz)
WOFR wood frog (*Rana sylvatica*, Le Conte)
SPFR spotted frog (*Rana pretiosa*, Baird and Girard), reclassified as Columbia Spotted Frog (*Rana luteiventris*), Green et al. 1997
WGSN wandering garter snake (*Thamnophis elegans vagrans*, Baird and Girard)

CODES FOR WIND SPEED AND SKY CONDITIONS

Temperature, wind and sky conditions (T.W.S.) are indicated using numbers: Temperature in degrees Celsius; wind speed according to the Beaufort Scale; and sky conditions using Weather Bureau code numbers as is done for Breeding Bird Surveys.

WIND SPEED CODES:

Beaufort #'s	Wind Speed in miles/hr.	Indicators of Wind Speed
0	Less than 1	Smoke rises vertically
1	1 to 3	Wind direction shown by smoke drift.
2	4 to 7	Wind felt on face; leaves rustle.
3	8 to 12	Leaves, small twigs in constant motion; light flag extended.
4	13 to 18	Raises dust and loose paper; small branches are moved.
5	19 to 24	Small trees in leaf sway; crested wavelets on inland waters.

SKY CONDITION CODES:

0 - Clear or a few clouds
1 - Partly cloudy (scattered) or variable sky
2 - Cloudy (broken) or overcast
4 - Fog or smoke
5 - Drizzle
7 - Snow
8 - Showers

AREAS IN BANFF NATIONAL PARK

LOCATION: Carrot Creek Area and east.

SITE DESCRIPTION:

Carrot Lake (GPS: UTME: 608864 - UTMN: 5668641) located south of the TCH, west of Carrot Creek. It is a large pond with beaver channels.

Wolfwillow Wetland (GPS: UTME: 607563 - UTMN: 5669211) located west of Carrot Lake. A series of channels and pools between Carrot Lake and CP tracks.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/06/04	1600	22	21/1/0						Carrot Lake. Checked usual site at N/W corner of lake. Nothing found.	M&DM
03/07/01	1115	19	17/2/0	BOTO		500+			Carrot Lake. Found in usual place. Some tadpoles were very small.	M&DM
03/08/09	1445 - 1615		28/1/0	BOTO WGSN		2	8 toadlets 1		Carrot Lake. Found in usual place. Tadpoles: 1 with 4 legs, 1 with 2 legs. Toadlets: 20 mm. In size. WGSN 20 cm. in length, seen in N/W corner of lake, in damp, sandy, rocky area.	MM
03/09/01	1500 - 1630		21/1/0	WOFR BOTO WGSN			6 toadlets	2	Carrot Lake. WOFR seen with toadlets in S/E corner. Toadlets, 20 - 30 mm. in size, seen in damp grassy area at S/E corner, 1 at N/W corner. Adult WGSN (60 cm.) seen in N/W corner.	MM
03/07/01	1300	16	18/2/1	BOTO		1000+		1	Wolfwillow Wetland. Adult seen on bank above channel. Tadpoles found in usual place.	M&DM

LAKE MINNEWANKA LOOP

LOCATION: 2-JACK LAKE AREA.

SITE DESCRIPTION: the "pipe traps" (UTM: PG045757) boxes (3) over water line north of the Lakeside Campground. One on either side of Minnewanka road and a third near 2-Jack Lake.

Black Pond (GPS: UTME: 604479 - UTMN: 5676244) small pool on west side of road and between road and 2-Jack Main Campground.

Lakeside Pond, (UTM: PG046758) pond, full of emerging vegetation, on east side of road, north end of 2 Jack Lakeside Campground.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/15	1530		11/3/1						"pipe trap" ice at the bottom	M&DM
03/04/22	1515	8	17/0/1						Black Pond. Pond full. Nothing seen.	M&DM
03/04/22	1430	10-11	17/0/1	WOFR LTSA	1			4	Lakeside Pond. Saw 3 WOFR at N end and heard 1 at S end. Fresh LTSA e.m. on E side. Lots of mosquito larvae.	M&DM
03/04/24	1645	10	11/0/3	WOFR LTSA	21 2			2	Lakeside Pond. WOFR calling. Egg masses: 1 of 18, 1 of 1, 1 of 2 found on E side in water 12.5 cm. deep. Found 1 new LTSA e.m. in same area as WOFR e.m.	M&DM

LOCATION: Quiet Pond (GPS: UTME: 899489 – UTMN: 8669596).

SITE DESCRIPTION: small pond south east of Bankhead. Includes small wetland south (South of Quiet Pond) and east (Pool East of Quiet Pond) of Quiet Pond.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/22	1515	11	15/2/2	WOFR LTSA	7 5			1	Quiet Pond. WOFR egg masses at S end: 3 (larvae elongating), 1 with hatchlings, 3 fresh. LTSA egg masses on W side: 4 elongating, 1 fresh.	M&DM
03/07/27	1500 – 1630	20	27/2/0	WOFR BOTO			87 froglet 1 juv.	2	Quiet Pond. Adult WOFR: 1 on N side, 1 on W side. Froglets included 1 with tail, 1 much larger than others, seen on S side, some towards N/W corner. BOTO, 40 mm. in size seen on S side.	M&DM
03/05/22	1500	13	15/2/2	WOFR	2				South of Quiet Pond. WOFR egg masses in marsh; 1 fresh (a few dead embryos) and 1 with hatchlings.	M&DM
03/05/22	1600	13	15/2/2	WOFR	4				Pool E of Quiet Pond. WOFR egg masses: 1 fresh, 2 with hatchlings and 1 with many dead embryos.	MM

LOCATION: North Old Dump Wetland (UTM: PG038742).

SITE DESCRIPTION: shallow pond choked full of reeds and sedges, north of road through old dump site on Lake Minnewanka road loop.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/15	1600		11/3/1						Water levels up, sitting on top of ice.	M&DM
03/04/22	1540	14	17/1/2	WOFR	24			1	The driest we have seen this pond at this time of year. Only a few pools left with water deep enough for eggs. Heard 1 WOFR and found 1 of 24 (fresh, a few dead) e.m.	M&DM
03/04/27	1530	8	7/0/7	WOFR				6-8	Heard WOFR from 3 places. Water has gone up (rain and snow for 2 days) No new egg masses found after a quick check.	M&DM
03/05/22	1615	12	15/2/2	WOFR	1				One fresh egg mass on E side. Poor light.	MM

LOCATION: Amphibian World (UTM: PG040738).

SITE DESCRIPTION: shallow sedge marsh below the old dump site south of Lake Minnewanka Loop (also called South Old Dump Wetland).

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/22	1600 – 1630	13.5	17/1/2	WOFR LTSA	27 1			18+	West Pond. Water levels lower than usual. Heard a cacophony of sounds. Saw 18 WOFR. 1 of 27 fresh e.m. (only 1 cluster with dead embryos). Found only 1 fresh LTSA e.m.	M&DM
03/04/22	1600 – 1630	18.5	17/1/2	WOFR				many	Main Pond. Many WOFR calling from inside a patch of bulrushes. Water levels low. Could not get near the area.	M&DM
03/05/21	1130 – 1200		12/1/2	WOFR	14				West Pond. Found mostly dead embryos, a few hatchlings.	M&DM
03/05/21	1130 – 1200		12/1/2	BOTO				3	Main Pond. Heard BOTO calling at E end.	M&DM
03/05/22	2200			BOTO				many	Main Pond. John Woods recorded several BOTO calling at E end.	M&DM
03/07/05	1545		15/2/2	WOFR BOTO			29 juv. 1 juv.	2	Main Pond. WOFR seen in wet meadow at E end. Saw BOTO on N side.	MM
03/08/11	1415 – 1645		22/2/1	WOFR BOTO			22 froglets 6 juv.	1 1	West Pond. Pond completely dry. BOTO and WOFR seen in pond area.	MM
03/08/11	1415 – 1645		22/2/1	WOFR BOTO			111 frog. 4 juv. 48 toadlet. 6 juv.		Main Pond. Seen around pond. Water levels very low.	MM

LOCATION: Osprey Pond (UTM: PG048735).

SITE DESCRIPTION: located east of Amphibian World and north of surge tower, west of re-located Osprey nest.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/24	1545	11	11/0/8	WOFR LTSA	14 15			7 1	Water level low. WOFR adults seen and heard on W side. Egg masses; 1 of 14 (fresh, a few dead) in water 7.5 cm. deep. LTSA adult seen on W side. LTSA eggs sifted over in water 10 cm. deep. Adult WOFR and LTSA were near egg masses.	MM
03/08/15	1515 – 1600		32/1/0	SPFR BOTO			1 juv.	1	Pond almost dry.	MM

LOCATION: Johnson Lake Area (UTM: PG057725).

SITE DESCRIPTION:

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/25	1200		18/2/2	WOFR				1	Johnson Lake. Heard near creek draining beaver pond.	MM

VERMILION LAKES AREA

LOCATION: Cave & Basin Area. (UTM: 598501E – 5669636N).

SITE DESCRIPTION: marsh complex fed by sulphur springs.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/22	1315	32	20/1/1	BOTO				1	Cave & Basin. Basin outflow. UTM: 598427E – 5669624N. Huge (5-6cm snout to vent), sitting in outflow pool with legs and belly in water, resting, in shade. Digital photo.	D&BL
03/04/26	0952		10/1/2	BOTO				1	Cave & Basin. Basin outflow. UTM: 598422E – 5669631N. Large, seen just northwest of pipe, resting at edge of water under overhanging bank, then half an hour later up on leaves and grass 10 cm. away, resting. Digital photo.	D&BL
03/06/04	1230		15/1/0	BOTO				1	Cave & Basin. Upper carex marsh. UTM: 589510E – 5669488N. Large toad, resting on Chara after being handle by a boy. Digital photo.	D&BL
03/07/15	1317	26	22/3/1	WOFR				2	Cave & Basin. Basin outflow (last temp. site). UTM: 598318E – 5669635N. Adult (5-7 cm. snout to vent) jumped in stream, swam upstream under algal mat, came up for air in a minute or so. 2 nd jumped in from W bank, smaller (5cm), Digital photo of each.	D&BL
03/07/16	1000	26	15/??/??	WOFR				1	Cave & Basin. Basin outflow (last temp. site). UTM: 598318E – 5669635N. Adult (5 cm.) seen in water on bottom of stream, same place as yesterday.	D&BL
03/07/07	1007		22/4/0	BOTO				1	Cave & Basin. Horse path below marsh board walk, east. UTM: 598512E – 5669660N, Toad (8 cm. snout to vent) hopped along side of path in dust for 0.5 m., then into veg. below (N) towards marsh when horses came by.	D&BL
03/08/12	1329	33	21/3/2	Unkn			?	?	Cave & Basin. Basin outflow (last temp. site). UTM: 598318E – 5669635N. Two amphibians jumped into stream. Not seen to be able to identify.	D&BL

LOCATION: Vermilion Lakes complex. Major wetland forming 3 lakes in BNP west of town of Banff and south of TCH.

SITE DESCRIPTION: Fenland Trail east of First Vermilion Lake.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/27	1500		10/2/1	WOFR				some	Fenland Trail. Pond at northern end (near bridge to V.L. road. Calling in pond but numbers not discernable due to incredible traffic noise. Did not check pond for eggs.	D&BL

LOCATION: 5 Mile Wetland

SITE DESCRIPTION: 3 large ponds (old gravel pit) on south side of TCH and west of 5 Mile Bridge. Old beaver dam between Pond 2 and Pond 3. Another beaver dam at outlet of Pond 3.

Pond 1 (GPS: UTME: 593290 – UTMN: 5668958)

Pond 2 (GPS: UTME: 593237 – UTMN: 5668796)

Pond 3 (GPS: UTME: 593358 – UTMN: 5668749)

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/17	1500 – 1540	8	7/1/2						Walked around Pond #1 and N side of Pond 2 & 3. No signs of amphibians. Pond #1 has small fish. Water levels seem high.	M&DM

SUNSHINE WETLANDS

LOCATION: Sunshine Wetlands

SITE DESCRIPTION: calcareous ponds just west of Sunshine turn-off, on north side and beside the TCH.

Pond #1 (GPS: UTME: 590698 – UTMN: 5668431)

Pond #2 (GPS: UTME: 590748 – UTMN: 5668484).

Pond #3 (GPS: UTME: 590801 – UTMN: 5668588)

Pond #4 (Ochre Pond) (GPS: UTME: 590786 – UTMN: 5668621).

Ochre Minor (GPS: UTME: 590786 – UTMN: 5668629)

Backswamp (GPS: UTME: 590683 – UTMN: 5668822), extensive wetland on south side and adjacent to Bow River, immediately west of Sunshine Wetlands.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/17	1200	5	5/1/2	WOFR BOTO	12 4				Pond #1. On E side. WOFR egg masses: all single clusters, one fresh, the rest elongating, a few dead embryos. On W side. WOFR egg masses: 1 of 2 (elongating, a few dead), 1 of 1 (fresh), 1 of 1 (fresh). BOTO egg masses; 1 fresh in W bay, 3 fresh in S bay (section closest to TCH has dried up.) Water level quite low for rest of pond.	M&DM
03/08/05	1415 – 1615	24	27/1/0	WOFR BOTO			1 juv. 7 froglet 1 juv. 2 toadlet	1	Pond #1. Water levels very low.	MM
03/05/17	1220	8	5/1/2	BOTO	2				Pond #2. Fresh BOTO strings in E bay. Water levels low.	M&DM
03/05/17	1240	8	5/1/2	WOFR SPFR BOTO	2 1 8				Pond #3. WOFR egg masses on W side: 1 of 1 (elongating, few dead), 1 of 1 (elongating, few dead). One SPFR egg mass in the outlet (dots enlarged, pale on 1 side, a few eggs elongating, hatchlings). May have floated into the outlet from Pond 3. BOTO strings: 3 strings on S side of E bay (a few tiny hatchlings), 4 fresh strings covered with silt in E bay and 1 (elongating) on W side. Water levels low.	M&DM
03/08/05	1415 – 1615		27/1/0	WOFR BOTO			8 froglets 3 juv. 1 toadlet		Pond #3.	MM
03/05/17	1300	8	5/1/2	WOFR LTSA	10 10				Pond #4 (Ochre Pond). WOFR egg masses: 1 of 1 (some dead, some hatchlings), 1 of 1 (some dead, rest elongating), 1 of 1 (some dead, rest hatchlings), 1 of 1 (fresh, few dead), 1 of 1 (fresh), 1 of 1 (fresh), 1 of 1 (few dead, rest elongating), 1 of 1 (fresh), 1 of 1 (elongating), 1 of 1 (few dead, rest elongating). LTSA egg masses: all clusters with few eggs, all elongating, only a few dead. Water level high.	M&DM
03/05/17	1320	7	5/1/2	WOFR	6				Ochre Minor. WOFR egg masses: only 1 of 1 fresh, rest elongating, a few dead, 1 of 1, 1 of 2, 1 of 1, 1 of 1. Channel to Backswamp mostly dry. Ochre Minor Pond full.	M&DM

LOCATION: TCH WEST

SITE DESCRIPTION:

WL-7 (Boto Pond), Redearth Flats, (km. 36.8 -37.5) (GPS: UTME: 583394 – UTMN: 5675231) large gravel pit with pond at east end of disturbed area.

Has drainage channel to the Bow River on north side. **Stump Pond** and **West End Pond** (GPS: UTME: 583324 – UTMN: 5675339) are at the west end of that complex.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/08/10	1300 – 1330	17	21/1/0	WOFR BOTO		22	111 toadl.	2	WL-7 (Boto Pond). Most tadpoles had 4 legs.	MM
03/08/10	1100	12	19/1/0	WOFR			276 frogit.		WL-7 (West End Pond).	MM

BOW VALLEY PARKWAY

LOCATION: Muleshoe Area

SITE DESCRIPTION: west and east of Muleshoe - series of wetlands, ponds that are described as from east to west:

Muleshoe Pond; (GPS: UTME: 588486 – UTMN: 5670481) large pond, river meander cut off by railway tracks.

Primrose Pond (GPS: UTME: 588900 – UTMN: 5670716), a beaver pond complex on south side of railway track and at south end of Pond #3.

Pond #1 (GPS: UTME: 589094 – UTMN: 5670779) small wetland (choked with reeds) just west of Trans Alta fenced area, on north and beside CP tracks.

Pond #2 (GPS: UTME: 588917 – UTMN: 5670920) small pools (1 square) between "Goose Pond" and Pond #1.

Pond #3 (GPS: UTME: 589017 – UTMN: 5670796) opposite Pond #1, below and on south side of track - channel that runs along track and south to Primrose Pond.

Channels West (UTM: NQ890705) running parallel and on both side of railway track from Pond 2 to Goose Pond.

Goose Pond (GPS: UTME: 588900 – UTMN: 5671231) west of Muleshoe - floating bog north of CP track (just east of Stunted Spruce).

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/11	1640		14/0/1	WOFR				1	Muleshoe Pond. Heard from parkway.	M&DM
03/05/16	1230	9.5	6/2/1	LTSA	70+				Muleshoe Pond. Found mostly on W side, larvae elongating.	MM
03/06/26	1130		17/1/1	BOTO			1 juv.		Muleshoe Pond. Seen on W side.	MM
03/09/10	1215			BOTO			1 toadlet		Muleshoe Riverside. Toadlet 25 mm. long, seen on W side of backwater.	MM
03/04/13	1600		7.5/3/2						Goose Pond. Pond open. Nothing heard.	M&DM
03/04/15	1400		11/3/1						Goose Pond. Water high, sitting on top of ice. Nothing heard.	M&DM
03/04/18	1510	11	5/1/2						Goose Pond. Water levels high. Nothing heard.	M&DM
03/04/21	1645		18/1/1	WOFR				many	Goose Pond. Heard from parkway	M&DM
03/04/15	1400		11/3/1	WOFR				1	Pond #1. Tentative call. Pond half-full. Frost under muck. Snowbank on E. side	M&DM
03/04/18	1540	9	5/1/2	WOFR				8	Pond #1. Seen and heard.	M&DM
03/08/19									Pond #1. Pond filled up again. Covered with Polygonum amphibium.	M&DM
03/04/15	1400								Pond #2. Water full-up, sitting on top of ice. Nothing heard.	M&DM
03/04/18	1430	9	5/1/2	WOFR				few	Pond #2. Heard calling in the flooded clearing N of pond.	M&DM
03/08/20	1445		21/1/0	WOFR			5 froglet	1	Pond #3. Seen at S end area below beaver dam on Primrose Pond.	M&DM
03/04/18	1435	10	5/1/2						Channels West. Water levels high. Nothing heard or seen.	M&DM

LOCATION: Stunted Spruce Pond (GPS: UTME: 588827 – UTMN: 5671613).

SITE DESCRIPTION: small pond (wetland) west of Muleshoe on south side of Bow Valley Parkway - boggy area with stunted trees around pond.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/16	1130	9	5/2/1	WOFR LTSA	4 60+				WOFR egg masses: all single clusters, 1 fresh, 2 elongating, 1 with hatchlings nearby. LTSA egg masses: 1 fresh, all others elongating, most attached to sticks and small branches at bottom of pond.	MM

LOCATION: Ranger Creek Willow Flats. (GPS: UTME: 587232 – UTMN: 5673394).

SITE DESCRIPTION: flooded willow stand located 1 km. west of Skull Creek. below pull-off on south side of Bow Valley Parkway (BVP).

Ranger Creek Beaver Pond (UTM: NG873727) large pond formed by recent beaver dam at south end of willow flat.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/26	1715	15	17/1/1	WOFR BOTO				3 1	Heard from middle of pond.	MM

LOCATION: Hillsdale Area

SITE DESCRIPTION: Ishbel Wetland: (GPS: UTME: 584823 – UTMN: 5677520) wetland with creek and pond at the base of open slopes on Mt. Ishbel.

Hillsdale Wetland: (UTM: NG848758) series of calcareous pools located northwest of Hillsdale Meadows.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/09/21	1330	12	13/1/1	BOTO LTSA		1	2 toadlets		<u>Ishbel Wetland</u> . BOTO, 15 mm. long, seen at N edge of pond. Large larva, 52 mm., in N/E corner of pond. Pictures.	M&DM B&DL
03/09/21	1200		13/1/1						<u>Hillsdale Wetland</u> . Checked whole area. Nothing found.	M&DM B&DL

LOCATION: Hidden Cliffs Wetland. (GPS: UTME: 581756 – UTMN: 5677636).

SITE DESCRIPTION: Hidden Cliffs Wetland located east of Johnston Canyon, small calcareous ponds above a cliff band.

Upper Hidden Cliffs Wetland located above Hidden Cliffs Wetland on a higher bench, a large wetland with calcareous pools at west end and deep pond at east end.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/06/09	1600 – 1700	16 20	18/0/2	BOTO LTSA	25+	250+ 7			Checked the calcareous pool above cliffs. Nothing found. Found BOTO tads in one of the small pools (20°) at W end and S side of Upper Hidden Cliffs Wetland. LTSA larvae were seen on the N side of the deep pond (16°C) at E end. Also saw 25+ empty egg masses.	M&DM
03/07/20	1215		25/1/0	BOTO			1 juv.		BOTO juv. about 30 mm. long seen where deep pond used to be. Area totally dry. The small calcareous pools at W end were mostly dry. Tadpoles probably didn't have time to metamorphose.	M&DM

LOCATION: Frog Hollow (GPS: UTME: 583222 – UTMN: 5676037).

SITE DESCRIPTION: small "kettle" pond east of Lizard Lake and south side of Bow Valley Parkway.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/11	1630		14/0/1	WOFR				2	Heard from Parkway.	M&DM

LOCATION: Lizard Lake (GPS: UTME: 582796 – UTMN: 5676009).

SITE DESCRIPTION: pond located in deep gully along the Bow Valley Parkway. Also known as Pilot Pond.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/26	1500 1700	15	17/1/1	WOFR LTSA	18 150			3	Heard 2 WOFR calling tentatively, one seen. WOFR egg masses: most on N side, 4 fresh, 6 elongating and 8 with hatchlings. LTSA egg masses found mainly on N side and SW part of pond, most elongating, 9 fresh, 1 all dead, 6 half dots, half dead.	MM

LOCATION: Moose Meadow Wetland.

SITE DESCRIPTION: series of ponds just west of Johnston Creek in a rehabilitated site (old gravel pit) between CP tracks and river.

South Channel: (GPS: UTME: 579321 – UTMN: 5677836) natural channel relatively undisturbed on south side of disturbed area.

Moose Meadow Pools: (GPS: UTME: 580073 – UTMN: 5678616) small pools located at northern edge of the meadow, south of Bow Valley Parkway.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/08/04	1130 – 1500	21	24/1/1	WOFR SPFR BOTO			1 froglet 1 juv. 1 juv. 1 froglet	1 1	South Channel. Adult SPFR seen on N side. BOTO seen along channel, Toadlets were tiny (10 mm., 1 with tail not resorbed)	M&DM
03/04/21	1630	13	18/1/1	LTSA	20				Moose Meadow Pools. Fresh LTSA egg masses: 7 in N pool, 13 in S pool.	M&DM
03/05/11	1620	Cold	14/0/1	WOFR LTSA	2 20				Moose Meadow Pools. WOFR egg masses: 2 fresh with a few dead embryos. Same LTSA egg masses as last trip. Embryos elongating. Water was up a bit.	M&DM
03/06/25	1340	12 (S) 13 (N)	17/1/2	LTSA		6			Moose Meadow Pools. 5 in S pool, 1 in N pool.	M&DM

LOCATION: Castle Junction Area.

SITE DESCRIPTION:

Vista Lake (GPS: UTME: 568417 – UTMN: 5676957) located at north end and on east side of Kootenay Parkway, north of Altrude Lakes.

Boom Lake (GPS: UTME: 564538 – UTMN: 5679238) at the outlet of the lake.

Boom Lake Trailhead (GPS: UTME: 568257 – UTMN: 5677854) small pools located on east side of Kootenay Parkway across from Boom Lake Parking Lot.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/09/10	1030		9/4/1						Vista Lake. Checked outlet. Nothing seen.	MM
03/07/16	1120	16	18/1/0	BOTO			2 juv.	2	Boom Lake. Found in usual place at outlet stream. One adult seen in deep moose track. One juvenile jumped in with it and crawled under it.	MM
03/06/03	1830	15	16/1/0	BOTO	5				Boom Lake Trailhead. BOTO strings: 2 fresh, 2 covered in silt, a few hatchlings.	M&DM
03/09/10	1100	8	10/4/1	BOTO		11	7 toadlet		Boom Lake Trailhead. Toadlets about 12mm. long, emerging. Tadpoles had 4 legs.	MM

LOCATION: Bow Valley Parkway west of Castle Junction.

Site Description: Island Lake (GPS: UTME: 581531 – UTMN: 5694115) located approximately 1 km. north of BVP, just east of Outlet Creek.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/08/12	1045 – 1330		20/1/1	WOFR			6 froglet	1	Island Lake. Adult seen on N side of lake. Froglets: 1 on S side of lake, 5 in small pond on S side of lake.	M&DM

LAKE LOUISE AREA

LOCATION: Lake Louise Area and west
SITE DESCRIPTION:

Floating Pond (GPS: UTME: 571102 – UTMN: 5681128) located 1/2 km. west of Mannix Pit, 1/2 km. south of TCH.

Solitary Pond (GPS: UTME: 567590 – UTMN: 5683794) located 1 km. south of TCH and southeast of Taylor Lake Trail.

Taylor Pond (GPS: UTME: 568814 – UTMN: 5684324) located 1/2 km. south of TCH and west of Taylor Lake Trail.

Sera Pond (GPS: UTME: 565607 – UTMN: 5685862) located 1 km. south of TCH, 3 km. west of Taylor Creek.

Ross Pond (GPS: UTME: 549038 – UTMN: 5699683) located 300 meters up Ross Lake trail from the 1A junction, and at a dry creek bed on left, head up for less than 200 meters, to a grassy opening. Go up and east to swamp.

The following wetlands are located west of Lake Louise, west of Icefield Parkway and north of the Trans-Canada Highway.

Echo Pond. (GPS: UTME: 553918 - UTMN: 5699749) access from TCH above West Boundary Pond North and north of CP tracks.

Heron Pond. (GPS: UTME: 553773 – UTMN: 5700054) follow drainage upstream from Echo Pond.

Griz 59 Pond. (GPS: UTME: 553976 – UTMN: 5699955) located east of Heron Pond.

Pine Point Wetland. (GPS: UTME: 552457 – UTMN: 5702123) access from Lost Lake Trail and follow drainage down from Missing Lake.

Lost Lake. (GPS: UTME: 550474 – UTMN: 5702575) from Missing Lake travel northwest across ridge for approximately 1 km.

Missing Lake. (GPS: UTME: 550581 – UTMN: 5701988) access from Lost Lake Trail, approximately 1.5 km. from trailhead

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/07/14	1411 – 1430		21/1/1	SPFR		48+	3	1	Floating Pond. Adult on W side. Young around pond. Tadpoles seen mostly at S end, some at N end, varied in size from small to medium to mostly large.	DM KG
03/06/16	1430 1600	20 28	19/1/1	?FR WOFR BOTO		24+ 200+		3	Solitary Pond. WOFR adult seen on edge of pond. Small to medium size frog tadpoles seen on W and E side. Too small to identify. BOTO tadpoles in shallow part and on E side of pond.	M&DM
03/06/16	1200 1330	22	19/1/0	WOFR			7 juv.		Taylor Pond. Small juvenile WOFR seen on the outside edge of wet area around pond.	M&DM
03/07/15	1130 – 1430	20	21/1/1	WOFR		50+	13 juv.	2	Taylor Pond. Adults and juveniles on N side and at E end. Tadpoles at W end.	M&DM
03/06/18	1200 1330	18	21/0/1						Sera Pond. No signs of amphibians. Lots of odonates emerging.	M&DM
03/06/08						many			Ross Pond. Saw many unidentified tadpoles in shallow water.	BB&RB
03/05/31	1200	11	11/1/5						Echo Pond. Checked east side. Nothing found.	M&DM BB & RB
03/05/31	1300	11	11/1/5						Heron Pond. Checked all around pond. Reg Bunyan found a dead fish.	M&DM BB & RB
03/05/31	1445	13	11/1/5	WOFR	10				Griz 59 Pond. WOFR egg masses all with hatchlings.	M&DM BB & RB
03/06/06	1230 – 1530	17 20	21/0/0	WOFR SPFR BOTO	9	100+	1 juv.	2 4 1	Pine Point Wetland. WOFR adult and juv. seen in small pond at W end. The juv. was missing a left hind leg. 1 SPFR adult seen on S side near outlet. 3 seen at W end near inlet stream. SPFR egg masses: 5 on S side and 4 on N side, had hatchlings and small tadpoles. One BOTO adult seen on S side. BOTO tadpoles were in shallow water on N side. Brook Trout seen in channel stream.	M&DM RB
03/06/06	1700	15	21/0/0	BOTO				1	Lost Lake. One large BOTO adult seen on E side.	M&DM RB
003/06/06	1800	13	21/0/0						Missing Lake. Checked all around. Nothing found.	M&DM RB

ICEFIELDS PARKWAY

LOCATION: Icefields Parkway (from south to north).

Ramshorn Pond (GPS: UTME: 555542 – UTMN: 5690224) located up small creek at south end of rock slab on east side of Icefields Parkway, 200 m. from TCH Junction.

Bow Lake Outlet (GPS: UTME: 539606 – UTMN: 5722879) located at south end of Bow Lake.

Num-Ti-Jah Pools – East Pool (GPS: UTME: 537043 – UTMN: 5726358)

West Pool (GPS: UTME: 536904 – UTMN: 5726336) both located just across the lakeshore trail from Bow Lake.

Top-of-the-Bow Wetland (GPS: UTME: 536194 – UTMN: 5727898) located south of Gravel Pool and on the south side of creek running across Icefields Parkway.

Bow Summit Pond (GPS: UTME: 534971 – UTMN: 5730164) located on east side of Bow Summit, beside old abandoned road. Elevation 2070 m.

Sunset Pond (GPS: UTME: 506269 – UTMN: 5768632) located beside parking lot for Sunset Pass trail.

Sunset West (GPS: UTME: 506233 – UTMN: 5768628) located opposite Sunset Pond on west side of Icefields Parkway. Depressions (puddles) on old dirt track.

Asphodel Pond (GPS: UTME: 503321 – UTMN: 5771811) located 11 km. north of Rampart Creek Campground, on east side of Icefields Parkway.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/31	1615	12	12/1/5	LTSA	23				Ramshorn Pond. LTSA egg masses seen on W side, some fresh, some elongating. Some were found near outlet for the first time.	M&DM RB
03/07/24	1400	25	17/1/0	BOTO		10+		1	Bow Lake Outlet. Found in usual area, at edge of large pool. Tadpoles medium size. Hard to find in the mud and vegetation.	MM
03/07/24	0800	7	10/0/0	BOTO		150+			Num-Ti-Jah Pools. Found in E pool, medium size, no legs. Temperature later at 11:50 went up to 18° and the water up to 19°C.	MM
03/06/25	1100	9 – 13	10/1/1	BOTO	2			1	Top-of-the-Bow Wetland. BOTO egg strings: 1 with elongating embryos in water 10 cm. deep, 1 with hatchlings in shallow water (13°).	M&DM
03/06/25	0945 – 1045	10	10/0/1	BOTO		1000			Bow Summit Pond. Tadpoles seen near 9 old egg masses on E side.	M&DM
03/07/08	1430								Sunset Pond. Nothing found.	M&DM
03/07/08	1415	17	12/1/2	BOTO		500+			Sunset West.	M&DM
03/07/08	1400		12/1/2	BOTO			1 juv.		Asphodel Pond.	M&DM

AREAS IN KOOTENAY, YOHO, JASPER NATIONAL PARKS

LOCATION: Kootenay National Park.

SITE DESCRIPTION:

Numa Pools: West Pool (GPS: UTME: 569133 UTMN: 5667437), East Pool (GPS: UTME: 559171 UTMN: 5667460).

located at Numa Flats, on both side of the Parkway, north of Numa Creek.

Simpson Mineral Lick (UTM: NG733496) located 1.2 km. north of Simpson River Trailhead, on east side of Kootenay Parkway.

Simpson South (UTM: NG733496) approximately 400 m. north of Simpson River Trailhead, on the west side of Parkway and on the other side of a low ridge with culvert separating it from Simpson North.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/05/03	a-noon	3	6/2/2						Numa Pools. Nothing seen or heard.	M&DM
03/05/20				LTSA		1			Numa Pools. Checked both sides. Found 1 LTSA small larvae (2.5 cm. long) at the edge of pond on W side of parkway.	M&DM
03/05/28									Numa Pools. Nothing found.	M&DM
03/05/03	a-noon	12	6/1/2	SPFR BOTO	2 4				Simpson Mineral Lick. Main Pond. SPFR egg masses: 1 fresh, 1 not as fresh. BOTO strings: 1 string covered with silt. East Pond. BOTO strings: 2 fresh, 1 covered in silt.	M&DM
03/05/03	a-noon	10	6/1/2	SPFR LTSA	3 100+				Simpson South. SPFR egg masses on E side: 2 fresh, 1 elongating. LTSA egg masses near SPFR e.m.: 100+ clustered in shallow water. Have never seen LTSA egg masses all bunched up before.	M&DM

AREAS IN THE BOW VALLEY EAST OF BANFF NATIONAL PARK

LOCATION: Yamnuska Natural Area.

SITE DESCRIPTION: at the base of Mt. Yamnuska and Mt Loder north of Seebe.

Meadow Lake; (UTM: PG) Muir Pond; (UTM: PG332645). New Beaver Pond; (UTM: 633919E – 5664819N).

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/04/30	1530		12/0/0	WOFR				some	Meadow Lake. Could hear them calling from the cutline and the bluff.	M&DM
03/05/24	0800 1430		27/0/0	WOFR WGSN				1 2	Muir Pond. Mike and others heard WOFR in pond and saw a large WGSN (75 cm.) on cutline 500 m. W of parking lot Diane saw a small WGSN at base of bluffs at 0800.	M&DM
03/04/30	1430		12/0/0	WOFR SPFR				some 1	New Beaver Pond. Heard calling.	M&DM
03/07/06	1330		22/2/3	BOTO				1	New Beaver Pond. Singing. Not seen.	D&BL
03/07/06	1420		22/2/3	BOTO				1	New Beaver Pond. Hopped out of vegetation, wetland drying out, water left in puddles. Digital photo.	D&BL

LOCATION: Bow Valley East of Banff National Park.

DATE	TIME	H2O °C	T/W/S	SPECIE	egg mass	larvae	young	adult	NOTES	seen by
03/07/18	1600		25/4/0	BOTO		300 +			Canmore, Rundle Canal Pond. Seen in warm shallows, some 5 cm. with back legs, a few with front legs and gills still present, these losing black colouration and getting warts.	D&BL
03/07/18	1600		25/4/0	LTSA		6			Canmore, Rundle Canal Pond. Swimming near shore, dark colour, with gills.	D&BL

Table 1. Presence of amphibians in specific sites visited in Banff National Park, 1992-2003 (in alphabetical order)

UTME	UTMN	UTM	Specific sites	Area	BOTO			WOFR			SPFR			LTSA		
					A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L
		NG617934	Allium Pond	Bow Valley P.West	X											
		NG666758	Altrude Lakes	Castle Junction	X	X										
		NG671765	Altrude Lakes Area	Castle Junction	X	X	X									
		PG040738	Amphibian World	Minnewanka Loop	X	X	X	X	X	X				X		X
		NG894697	Antler Pond	Muleshoe				X								
503321	5771811	NH039709	Asphodel Pond	Icefields Parkway		X	X						?			
593098	5669718	NG937894	BVP North Pond	BVP Wetland				X		X				X		X
593286	5669579	NG936693	BVP South Pond	BVP Wetland				X	X	X						X
590663	5668822	NG907688	Backswamp	Sunshine Wetland	X	X	X	X								
579689	5677696	NG795785	Barenaked Pond	Moose Meadow Wild		X					X	X				
		PG062727	Beaver Pond	Johnson Lake				X			X					
		PG139187	Belgium Lake	Upper Spray	X		X									
604479	5676244	PG045759	Black Pond	Minnewanka Loop												X
		NG562975	Blackpoll Ponds	Lake Louise									X			
564538	5679239	NG643791	Boom Lake	Castle Junction	X	X	X									
568257	5677854	NG883777	Boom Lake Trailhead	Castle Junction		X	X									
539606	5722873	NH395228	Bow Lake Outlet	Icefields Parkway	X	X	X									
534971	5730164	NH350298	Bow Summit Pond	Icefields Parkway	X	X	X									
		PG116671	Busy Pond	Carrot Creek				X	X	X						X
610411	5670481		Carrot Ck.Sulphur Spring	Carrot Creek	X	X		X	X	X						
608864	5668641	PG092678	Carrot Lake	Carrot Creek	X	X	X	X								
		PG984919	Cascade Beaver Pond	Cascade	X	X	X				X		X			
574889	5680858	NG748807	Castle Cliffs Wetland	B.V. Parkway					X	X						X
598501	5669636	NG985695	Cave & Basin	Cave & Basin	X			X	X		X					
588836	5670876	NG890705	Channels West	Muleshoe				X								
		PG057732	Cold Pond	Johnson Lake				X	X	X			X			X
575212	5679434	NG752792	Copper Lake	Castle Junction				X	X	X						
592901	5669346	NG934693	Cory Pond	B.V. Parkway												X
559303	5695774	NG595954	Cranberry Pond	B.V. Parkway							X					
553999	5700968	NH542007	Crowberry Pond	Icefields Parkway												X
		NG728784	Curve Pond	Castle Junction				X		X			X			
		PG115672	Cutline Pond	Carrot Creek				X		X						X
603150	5669819	PG031696	Devil's Cauldron	Banff Golf Course										X		
		NG546973	Divide Ponds (S)	Lake Louise							X	X	X			
612493	5666961		East Boundary Pond	Carrot Creek				X								X
		NG943688	5-Mile Riverbend	Bow River	X			X								
593290	5668958	NG933687	5-Mile Wetland Pond 1	5 m. W. of Banff				X								
598751	5671280	NG987709	Fenland Trail	Vermilion Lakes				X		X						
595281	5669873	NG954695	Fingers	Vermilion Lakes						X						X
571102	5681128	NG713808	Floating Pond	West of Castle Jct.							X	X	X			

* A = adult, Y = young, E-L = eggs, larvae (tadpoles), X = Present. (does not include random sightings of amphibians away from breeding sites)

continued...

Table 1. Presence of amphibians in specific sites visited in Banff National Park, 1992-2003 (In alphabetical order) continued...

UTME	UTMN	UTM	Specific sites	Area	BOTO			WOFR			SPFR			LTSA		
					A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L
598308	5670305	NG983701	Sora Pond	Vermilion Lakes	X			X		X						X
579321	5677835	NG795785	South Channel	Moose Meadow Wet.	X	X	X	X	X	X	X	X	X			
562723	5691910	NG629919	Split Level Pond Lower	B.V. Parkway				X	X	X						
562631	5691853	NG628918	Split Level Pond Upper	B.V. Parkway				X	X							
571702	5678703	NG715783	Strider Pond	Castle Junction				X		?			?			
588827	5671613	NG889713	Stunted Spruce Pond	B.V. Parkway	X			X	X	X						X
598820	5669941	NG987697	Sundance Pond	Cave & Basin area				X		X						X
506259	5768632	NH063684	Sunset Pond	Icefields Parkway			X									
506233	5768628	NH063684	Sunset West	Icefields Parkway			X									
595046	5669670		Tall Willow Wetland	Vermilion Lakes						X						X
566814	5684324		Taylor Pond	Lake Louise				X	X	X						
596530	5670016	NG965697	Teardrop Pond	Vermilion Lakes				X		X						
554651	5699756	NG547998	Tiny Herbert Lake	Icefields Parkway				X		X						X
536194	5727897		Top-of-the-Bow Wetland	Icefields Parkway	X	X	X									
		NG745817	Trackers Wetland	B.V. Parkway			X									
579347	5677856	NG795776	Turquoise Pond	Moose Meadow Wet.		X		X								
		NG754810	Upper Castle Cliffs Wetl.	B.V. Parkway		X	X									
581756	5677636		Upper Hiddlen Cliffs Wetl	B.V. Parkway		X	X									X
		PG130228	Upper Spray Wetland	Upper Spray	X		?				X		?			
		NG984705	VL-1	Vermilion Lakes	X	X		X	X							
		NG976705	VL-2	Vermilion Lakes	X			X	X							
			VL-2 & VL-3	Vermilion Lakes		X										
		NG957699	VL-3	Vermilion Lakes	X			X			X					
		NG953698	VL-3 West	Vermilion Lakes		X		X								
		PG039741	Vernal Pool	Minnewanka Loop	X		X	X	X	X						
568416	5676957	NG685767	Vista Lake	Castle Jct. Area	X		X									
		NG882701	WL-4	TCH - west				X		X						X
		NG865723	WL-6	TCH - west				X		X						
583395	5675231	NG834749	WL-7 (Boto Pond)	TCH - west	X	X	X	X		X						
583024	5675339		WL-7 (West End Pond)	TCH - west					X	X						
		NH208585	Warden Lake Area	Icefields Parkway	X	X	X									
			Wenkchemna Pool	Moraine Lake			X									
		NH503006	West Boundary Ponds	TCH - west								X				
590648	5668471		West of Pond #1	Sunshine Wetland												
		NH555005	Whitehorn Lake	Lake Louise			X	X		X		X				X
607563	5669211	PG075690	Wolfwillow Wetland	Carrot Creek	X		X		X							
		PG113668	Zapped Pond	Carrot Creek				X		X						X

* A = adult, Y = young, E-L = eggs, larvae (tadpoles), X = Present. (does not include random sightings of amphibians away from breeding sites)

Table 2. Wetlands identified in Banff National Park where amphibians have yet to be found.

BJ Pond,
 Big Cut Pond,
 Bath Pond,
 Castle Bridge Wetland,
 Castle Pond,
 Damned Pond,
 Deep Pit,
 East Gate Wetland,
 Echo Pond,
 5-Mile Wetland Pond 2,
 5-Mile Wetland Pond 3
 Green Pond,
 Hidden Cliffs Wetland,
 Heron Pond,
 Lower Duthill,
 McNair Pond,
 Missing Lake,
 Moose Meadow Beaver Pond,
 Sera Pond,
 Silverhorn Pond,
 TCH 54.5, TCH 60, TCH 60.3, TCH 61,
 TCH Wetland,
 2 Culvert Pond,
 West Pond (west of Cave & Basin),

Table 3. Presence of amphibians in specific sites visited in Kootenay National Park 1992-2003 (in alphabetical order)

UTME	UTMN	UTM	Specific sites	BOTO			WOFR			SPFR			LTSA		
				A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L
			*												
		NG663754	Kerr Ponds		X	X									
		NG674380	Kootenay Pond										X	X	
559171	5667460		Numa Pool East			X									
559133	5667437		Numa Pool West			X									X
		NG?	Rescue Pond												X
		NG733496	Simpson Mineral L.	X	X	X						X			X
			Simpson Pool & Channel												X
		NG732494	Simpson North	X		X									X
		NG733496	Simpson South	X						X	X	X	X		X
			Violet Pond									X			

* A = adult, Y = young, E-L = eggs, larvae (tadpoles), X = Present. (does not include random sightings of amphibians away from breeding sites)

Table 4. Presence of amphibians in specific sites in Canmore, Bow Valley Provincial Park, Yamnuska, Peter Lougheed Provincial Park and Kananaskis Country 1992-2003 (in alphabetical order).

UTME	UTMN	UTM	Specific sites	Area	BOTO			WOFR			SPFR			BCFR			LTSA			TISA		
					A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L	A	Y	E-L
			Bow V. S. Borrow Pit	B.V. P.P.				X		X				X								
		PG160363	Buller Pond	K-Country							X	X	X									
		PG129596	Canmore Creek	Canmore		X	X												X			
		PG358591	Chilver Lake	B.V.P.P.	X			X		X				X								
632623	5662519	PG327623	Coyote Lake	Yam.				X		X												
		PG323625	Crescent Lake	Yam.				X	X													X
634123	5664119	PG342639	Duck Pond	Yam.										X								
		PG353063	Elk Pass	P.L.P.P.			X															
			Elbow River	K-Country			X															
		PG358612	Flowing Waters	BV.P.P.				X														
		PG331631	Great Swamp	Yam.				X			X	X										
		PG328624	Hilltop Pond	Yam.				X		X												
		PG334632	Little Stony Pond	Yam.				X														
634323	5664519	PG344643	Loony Pond	Yam.					?			?										
		PG322593	Many Springs	B.V.P.P.	X																	
			Meadow Lake	Yam.				X														
		PG335598	Middle Lake	B.V.P.P.				X						X								
		PG332645	Muir Pond	Yam.				X			X			X								
		PG339645	New Beaver Pond	Yam.	X			X			X		X									
633323	5663719	PG334635	Old Beaver Pond	Yam.				X			X	X										
		PG137597	Quarry Lake	Canmore	X		X	X		X							X	X	X			
		PG343648	Roadside Pool	Yam.										X								
			Rundle Canal Pond	Canmore			X														X	
		PG345614	Salamander Ponds	B.V.P.P.	X		X	X		X				X			X	X	X			
		PG333632	Stony Meadow Pond	Yam.				X		X	X		X									
			Weigh Station Pond	W. of Cal.										X								
		PG339636	Willow Pond	Yam.				X		X	X		X		?							
633923	5664019	PG340638	Yellowleg Pond	Yam.				X		X	X		X									
		PG337634	Yellowleg West	Yam.				X	?	X	X	?	X									

* A = adult, Y = young, E-L = eggs, larvae (tadpoles), X = Present. (does not include random sightings of amphibians away from breeding sites) + B.V.P.P. = Bow Valley Provincial Park.

Table 5. Definite breeding sites in areas visited inside Banff National Park, 1992-2003 (presence of eggs &/or larvae &/or young).

<p>Boreal Toad (total:61 sites)</p>	<p>Altrude Lakes, Altrude Lakes Area, Asphodel Pond, Amphibian World, Backswamp, Barenaked Pond, Belgium Lake, Boom Lake, Boom Lake Trailhead, Bow Lake Outlet, Bow Summit Pond, Carrot Creek Sulphur Spring, Carrot Lake, Cascade Beaver Pond, Gravel Pool, Healy Pit Wetland, Hermit Ponds, Healy Pit Wetland, Hillsdale Wetland, Hole-in-the-Wall Pond, Horse Pond, Horsetail Wetland, Ishbel Wetland, Lake of the Sticks South, Lower Spray River, Moraine Creek Wetland, Muleshoe Area, Muleshoe Pond, Muleshoe Riverside, Num-Ti-Jah Pools, Osprey Pond, Pine Point Wetland, Quiet Pond, Rainy Bay, Ramparts Backwater, Rathole, Silverhorn Pond (lower), Solitary Pond, South Channel (Moose Meadows), Sunset Pond, Sunset West, Sunshine Wetland: Pond #1 & West, Pond#2, Pond#3, Pond#4 (Ochre Pond), Top-of-the-Bow Wetland, Trackers Wetland, Turquoise Pond, Upper Castle Cliffs Wetland, Upper Hidden Cliffs Wetland, VL-1, VL2 & VL3, VL3 West, Vernal Pool, Vista Lake, WL-7 (Boto Pond), Warden Lake Area, Wenkchemna Pool, Whitehorn Lake, Wolfwillow Wetland.</p>
<p>Wood Frog (total:74 sites)</p>	<p>Amphibian World, Bow Valley Parkway North Pond, Bow Valley Parkway South Pond, Busy Pond, Carrot Creek Sulphur Spring, Castle Cliffs Wetland, Cave & Basin, Cold Pond, Copper Lake, Curve Pond, Cutline Pond, Fenland Trail, Fingers, Frog Hollow, Goose Pond, Griz 59 Pond, Hayfield Channel, Hayfield Pond, Healy Pit Wetland, Horse Pond, Island Lake, Kingfisher Lake, Lake of the Sticks North, Lake of the Sticks South, Lakeside Pond, Lily Pond, Lizard Lake, Muleshoe: Pond #1, Pond #2, Pond #3 & Pond #4, North Old Dump, Ochre Minor, Openside Pond, Osprey Pond, Pine Point Wetland, Sunshine Wetland: Pond #1 & West, Pond #2, Pond#3, Pond #4, Powerline Pond, Primrose Pond, Quiet Pond, Quiet Pond West, Ramshorn Pond, Ranger Creek Willow Flats, Rathole, Red-tail Pond, Rundevview Pond, Siliverton Pond, Smith Lake Area, Solitary Pond, Sora Pond, South Channel (Moose Meadows), Strider Pond, Sundance Pond, Lower Split Level Pond, Upper Split Level Pond, Stunted Spruce Pond, Tall Willow Wetland, Taylor Pond, Teardrop Pond, Tiny Herbert Lake, VL1, VL2, Vernal Pool, WL-4, WL-6, WL-7 (Boto Pond), WL-7 (West End Pond), Whitehorn Lake, Wolfwillow Wetland, Zapped Pond.</p>
<p>Spotted Frog (total:19 sites)</p>	<p>Blackpoll Ponds, Cascade Beaver Pond, Cold Pond, Curve Pond, Divide Ponds South, Floating Pond, Hayfield Pond, Lake of the Sticks North, Lake of the Sticks South, Moraine Creek Wetland, Osprey Pond, Pine Point Wetland, Smith Lake Area, Solitary Pond, South Channel (Moose Meadows), Sunshine Wetland: Pond #3, Pond #4 (Ochre), West Boundary Ponds, Whitehorn Lake.</p>
<p>Long-toed Salamander (total:47 sites)</p>	<p>Amphibian World, BVP North Pond, BVP South Pond, Black Pond, Busy Pond, Castle Cliffs Wetland, Cold Pond, Cory Pond, Crowberry Pond, Cutline Pond, Devil's Cauldron, East Boundary Pond, Fingers, Frog Hollow, Healy Pit Wetland, Hidden Pond, Hillsdale Wetland, Horse Pond, Ishbel Pond, Lakeside Pond, Lake of the Sticks South, Lizard Lake, Marvel Lake, Moose Meadow Pools, Muleshoe Pond, Norquay Pond, North Old Dump, Osprey Pond, Openside Pond, Muleshoe area: Pond #1, Pond #3. Ochre Minor, Powerline Pond, Quiet Pond, Ramshorn Pond, Ranger Creek Willow Flats, Rundevview Pond, Sora Pond, Stunted Spruce Pond, Sundance Pond, Sunshine Wetland: Pond #4 (Ochre Pond), Tall Willow Wetland, Tiny Herbert Lake, Upper Hidden Cliffs Wetland, WL-4, Whitehorn Lake, Zapped Pond.</p>

Table 6. Probable breeding sites in areas visited inside Banff National Park, 1992-2003 (adults present during breeding season, frogs and toads vocalizing).

<p>Boreal Toad (total:20 sites)</p>	<p>Allium Pond, Cave & Basin, 5-Mile Riverbend, Frog Hollow, Glacier Lake, Goldeneye Pond, Hayfield Pond, Island Lake, Lake of the Sticks North, Little Baker Lake, Lost Lake, Middle Springs, Ochre Minor, Primrose Pond, Quiet Pond West, Ranger Creek Beaver Pond, Ranger Creek Willow Flats, Sora Pond, Stunted Spruce Pond, Upper Spray Wetland.</p>
<p>Wood Frog (total:19 sites)</p>	<p>Antler Pond, Backswamp, Beaver Pond at Johnson Lake, Carrot Lake, East Boundary Pond, 5-Mile Riverbend, 5-Mile Wetland, Herbert Lake, Healy Fireroad Pond, Hidden Pond, Horse Barns, Johnson Lake, Little Herbert Lake, Moose Meadow Pools, Muleshoe Pond, Old Rock Pond, Raven's Point Wetland, Turquoise Pond, VL-3 West, VL-3.</p>
<p>Spotted Frog (total:7 sites)</p>	<p>Beaver Pond at Johnson Lake, Cave & Basin, Goldeneye Pond, Johnson Lake, Sora Pond, Upper Spray Wetland, VL-3.</p>

Table 7. Definite breeding sites in areas visited in Jasper and Kootenay National Parks, 1992-2003 (presence of eggs &/or larvae &/or young).

Boreal Toad	Kerr Ponds, Numa Pools, Simpson Mineral Lick, Simpson North.
Spotted Frog	Simpson Mineral Lick, Simpson South, Violet Pond.
Long-toed Salamander	Horseshoe Lake, Kootenay Pond, Numa Pools, Rescue Pond, Simpson Mineral Lick, Simpson North, Simpson Pool & Channel, Simpson South.

Table 8. Definite breeding sites in areas visited in the Bow Valley east of Banff National Park and areas in Kananaskis Valley, 1992-2003 (presence of eggs &/or larvae &/or young).

Boreal Toad	Chilver Lake, Elbow River, Elk Pass, Salamander Ponds, Quarry Lake.
Wood Frog	Bow Valley South Borrow Pit, Canmore Creek, Coyote Lake, Crescent Lake, Hilltop Pond, Quarry Lake, Salamander Ponds, Stony Meadow Pond, Willow Pond, Yellowleg Pond, Yellowleg West.
Spotted Frog	Buller Pond, Great Swamp, New Beaver Pond (Yamnuska), Old Beaver Pond, Stony Meadow Pond, Willow Pond, Yellowleg Pond, Yellowleg West.
Long-toed Salamander	Quarry Lake, Salamander Ponds.
Tiger Salamander	Crescent Lake.

Table 9. Probable breeding sites in areas visited in the Bow Valley east of Banff National Park and areas in Kananaskis Valley 1992-2003 (adults present during breeding season, frogs and toads vocalizing).

Boreal Toad	Many Springs, New Beaver Pond (Yamnuska).
Boreal Chorus Frog	Bow Valley South Borrow Pit, Middle Lake, Chilver Lake, Duck Pond, Muir Pond, Roadside Pool, Salamander Ponds, Weigh Station, Willow Pond.
Wood Frog	Beaver Ponds near CP tracks, Chilver Lake, Flowing Waters, Little Stony Pond, Meadow Lake, Middle Lake, Muir Pond, New Beaver Pond (Yamnuska), Old Beaver Pond (Yamnuska), Sheep River.
Spotted Frog	Muir Pond.

Reptile Sightings 2003 B&DLepitzki

Codes:

Wind: 0:calm, smoke vertical; 1:direction by smoke drifts; 2:felt on face, leaves rustle; 3: leaves in constant motion, extends a light flag; 4: raises dust, small branches move; 5: small trees sway, crested wavelets.

Sky: 0:clear or a few clouds; 1:partly cloudy, scattered or variable; 2:broken cloud or overcast; 4: fog or smoke; 5:drizzle; 6:showers; 7:snow.

Species: WASN Wandering Garter Snake; RUBO Rubber Boa

UTM: Hand held Garmin 12CX

Location	UTM	Date dd/mm/yr	Time	H ₂ O t°C	TW/S °C/codes	Spp. Code	# Young	# Adults	Comments
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	16/01/03	14:30		-5/0/1	WGSN		1	70 cm long, crawling upstream through water and wet rocks to concrete pilon and "pillow" on west side of stream, digital photo (D)
Cave Outflow East, south bank of Flats	598501E 5669636N +/- 5.5	09/02/03	11:50		-2/4/1	WGSN		1	45 cm long (18 ") swimming upstream and on south bank of Flats, digital photo (D)
Cave Outflow East, base of Falls	598501E 5669636N +/- 5.5	08/04/03	13:13		8/-1	WGSN		1	20-30 cm long, coiled in water, digital photo (D)
Snake Corner	598462E 5669600N +/- 7.3	10/04/03	13:52		14/4/0	WGSN		1	size unknown, head looking out of corner, pulled in right away
Cave Outflow East, upstream of Marsh 1	598501E 5669636N +/- 5.5	16/04/03	13:30		9/2/2	WGSN		1	30cm long, resting then moving through water & veg. upstream, a few intermittent snowflakes falling
Cave Outflow East, horsepath below Marsh 1	598522E 5669656N +/- 5.7	18/04/03	12:30		6/1/2	WGSN		1	20-30 cm long, crossed horsepath, moving rapidly towards marsh
Snake Corner	598462E 5669600N +/- 7.3	20/04/03	10:25		6/2/1	WGSN		2	one size unknown, only partly visible, resting in corner, one 20-30 cm long, resting on ground in sun next to corner

Snake Corner	598462E 5669600N +/- 7.3	21/04/03	11:17		6/1/0	WGSN		1	size unknown, head medium size, moving in corner
Cave Outflow East, between Flats and base of Falls	598501E 5669636N +/- 5.5	21/04/03	11:20		6/1/0	WGSN		1	one 20 cm long skin in water
Snake Corner	598462E 5669600N +/- 7.3	21/04/03	12:15		10/1/0	WGSN		1	bigger head in corner, only head visible
Cave Outflow East, between Flats and base of Falls	598501E 5669636N +/- 5.5	21/04/03	12:20		10/1/0	WGSN		1	20-30cm long, moving upstream in veg., under overhanging bank and in water
Snake Corner	598462E 5669600N +/- 7.3	22/04/03	15:07		20/0/2	WGSN		1	one big (>25 cm) coiled in corner
Snake Stroll (path to corner)	598437E 5669599N +/- 4.2	22/04/03	15:07		20/0/2	WGSN		1	one 15-20 cm long resting between timbers 6 m up path
Cave Outflow East, upstream of BW1	598508E 5669646N +/- 6.9	22/04/03	15:15		20/0/2	WGSN		1	30 cm long, moving upstream in water quickly
Cave Outflow East, upstream of BW1	598508E 5669646N +/- 6.9	26/04/03	11:37		2/0/2,7	WGSN	1		10 cm long, resting in water, looked like a big dew worm
Cave Outflow East, upstream of BW1	598508E 5669646N +/- 6.9	27/04/03	11:20		4/0/2	WGSN	1		10 cm long, same individual as above, dead, in semicircle around a plant, wound on top of skull, next day (28th) was dragged onto boardwalk by someone
Above Basin Outflow	598442E 5669622N +/- 4.7	01/05/03	16:30		11/2/1	WGSN		4	one big (very wide) brown, one medium (20 -30 cm) grey, two smaller (15 - 20cm) sandy brown snakes, most likely mating, all coiled into one mass, little movement, on grass and leaves right of path, in sunny patch, digital photo
Above Basin Outflow	598442E 5669622N +/- 4.7	01/05/03	17:15		11/2/2	WGSN		1	medium (20 - 30 cm) grey, moving through grass and leaves toward Snake Corner

near Basin Outflow	598435E 5669621N +/- 9.2	02/05/03	10:30		8/0/2	WGSN		1	20 cm long, resting in leaves on ground to right of boardwalk
near Basin Outflow	598434E 5669619N +/- 4.9	14/05/03	13:59		13/4/2	WGSN		1	20-30cm long, resting then moving down boardwalk to grass, leaves, above outflow
Start of Snake Stroll	598511E 5669612N +/- 8.0	19/05/03	10:05		8/3/0	WGSN		1	25 cm long, stretched out but resting in veg. next to path, gone at 10:20 when lots of people around
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	19/05/03	11:30		10/3/1	WGSN		1	25cm long, in water
Upper & Lower Outflow, temp. East	598570E 5669660N +/- 5.8	19/05/03	11:35		10/3/1	WGSN		1	15 cm long, moving onto veg. from path
Cave Outflow West, west of Ice Curtain	598488E 5669620N +/- 4.2	20/05/03	10:45		15/1/1	WGSN		1	30 cm long, resting in veg. on stream bank
Cave Outflow West, below Falls	598496E 5669624N +/- 8.5	20/05/03	10:45		15/1/1	WGSN		2	both 30 cm long, resting in veg. pointing upstream
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	20/05/03	10:45	30	15/1/1	WGSN		1	20-30 cm long, in water moving slowly, moving up the falls, snake skin in water here
Start of Snake Stroll	598511E 5669612N +/- 8.0	23/05/03	12:50		14/4/2	WGSN		1	~30 cm long,, coiled in grass & leaves next to path, digital photo
Marsh Boardwalk, opposite Flats 1	598503E 5669656N +/- 5.5	23/05/03	13:05		14/4/2	WGSN		1	~40cm long, moving very slowly through moss & Scirpus towards stream, about 7m from water
Snake Stroll	598473E 5669599N +/- 4.2	30/05/03	10:30		12/1/2	WGSN		1	20 cm long, coiled & folded in crack in timber, just east of snake stroll
Just North of Horse Path & West of 1 st marsh trail crossing	598523E 5669676N +/- 5.8	30/05/03	10:54			WGSN		1	~40 cm long, coiled in grass, between horsebridge 1 & 2, digital photo

Cave Outflow West, just above base of falls	598496E 5669624N +/- 8.5	01/06/03			12/1/1	WGSN		1	30-40cm long, body diameter ~2.5 cm, coiled, resting in water & moss
Basin Outflow, above temp. 5	598365E 5669628N +/- 9.2	17/06/03	13:00	32	23/1/0	WGSN		1	20-30 cm long, in shade, moving in water upstream slowly, snake skin pieces seen in water below horsebridge
Above Basin Outflow, on path	598422E 5669569N +/- 6.3 "Snake2"	27/06/03	15:30		20/3/1	WGSN	1		under 20 cm, moving quickly from pavement to veg. on west side of path
Snake Stroll, near bent spruce	598472E 5669594N +/- 6.8	02/07/03	14:05		13/4/2	WGSN		1	30-40cm, body 3 cm diameter with two bulges part way to tail, partly coiled, resting on leaf litter & cones then moving under root when approached for GPS reading, digital photo
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	06/07/03	09:58		12/1/0	WGSN		1	20 cm long, moving in water up small falls into veg. behind overhanging bank
Cave Outflow East, base of falls	598498E 5669630 +/- 6.8	12/07/03	09:59		18/0/2	WGSN	1		under 20 cm, resting then moving upstream in water below platform to dry land
Basin Outflow, above bushes	598422E 5669631N +/- 4.9	12/07/03	09:59		18/0/2	WGSN			1 big skin, 1 medium skin, in water
Snake Stroll	598503E 5669610N +/- 5.8	17/07/03	09:55		22/4/0	WGSN		1	40cm long, 3-5 cm diameter, resting in sun in veg. Then moved downhill a short distance, photo
Snake Corner	598469E 5669594N +/- 11.6	24/07/03			19/3/0	WGSN		1	20-30cm long, coiled on ground near hole, moved into hole
Snake Corner, 1 m. east	598469E 5669594N +/- 11.6	27/07/03	09:54		17/0/0	WGSN		1	20-30cm long, resting in sun on timber, moved slowly along timber towards snake corner, photo
Snake Corner, downhill side	598469E 5669594N +/- 11.6	07/08/03	09:35		15/2/1	WGSN			unknown size/age, head looking out from hole, pulled in as we walked by
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	10/08/03	09:45	-32	15/0/0	WGSN		1	20cm long, in water then moved onto veg. under b'walk, had mosquitofish in mouth & swallowed it tail first, photo series

Basin Outflow	598427E 5669624N +/- 4.1	12/08/03	12:45		21/3/2	WGSN		1?	~25cm long, in veg. on bank, moved through veg. downstream
Basin Outflow, north bank	598427E 5669624N +/- 4.1	12/08/03	12:45		21/3/2	WGSN			1 big skin just above water on veg.
Snake Stroll	598472E 5669594N +/- 6.8	02/09/03	10:55		15/0/0	WGSN		1	35-40 cm long, moving slowly through veg.
Snake Corner	598462E 5669600N +/- 7.3	03/09/03	11:50		10/0/4*	WGSN		1	*sky smoky, 40cm long, resting on ground
Basin Outflow, split btw temp. 4 & 5	598365E 5669628N +/- 9.2	09/09/03	13:33	32	8/0/6	WGSN		1	20-30cm long, resting in veg. in water
Cave Outflow East, btw Flats1 & Marsh1	598508E 5669646N +/- 6.9	29/09/03	10:45		6/1/2	WGSN		1	20-30cm long, in veg. & moss by water, wriggling then moved away slowly, tail is a stump but wound did not look fresh
Cave Outflow East, base of falls	598501E 5669636N +/- 5.5	09/10/03	14:31	31	12/3/2	WGSN		1	~45cm long, moving slowly upstream in water, tongue flicking, went under small overhang, very grey in colour