

2012 AMPHIBIAN SURVEY IN THE CROWSNEST PASS AREA



**A joint project by
Crowsnest Conservation Society &
Alberta Conservation Association**



October 2012



2012 Amphibian Survey, Crowsnest Conservation Society

1.Introduction and Discussion

The 2012 amphibian survey carried out by Crowsnest Conservation Society (CCS) was the second survey done in the Crowsnest/Castle drainage areas in partnership with the Alberta Conservation Association (ACA). The 2012 survey was a follow-up to the 2011 prototype survey.

The program started with acquiring equipment: nets, sample boxes, data forms, maps, and 4 GPS units. Orientation and field seminars directed by Kris Kendall, biologist with ACA, were carried out July 11, 2012. Following the field seminars, volunteers carried out the surveys based on the protocol designed by Kris Kendall and refined in last year's survey. We had a total of 14 volunteers doing field surveys from July 14 to August 25, 2012. A total of 39 ponds were surveyed, and a few visual checks were done on our control site (Site 15). Sixteen of the ponds were deemed to have acceptable conditions for amphibians and were surveyed twice because no boreal toad tadpoles were encountered in the first attempt. A number of other ponds were not surveyed twice due to unacceptable conditions, e.g. no water, heavy cattle use, connection to a cold stream, access problem due to high water, etc. In keeping with the overall protocol strategy, 8 of the ponds surveyed this year were repeat surveys of sites where no boreal toad tadpoles were found in the 2011 survey. See figure 1 for the map of the sites surveyed.

In addition to numbered preselected sites, volunteers were requested to add any small ponds or marshes they knew about to the list. This was a good approach to getting more volunteers involved in the program, and added to the number of ponds that could be easily surveyed.

Boreal toad tadpoles were the primary species sought, but all amphibian species found were recorded.

A field trip involving the Crowsnest Pass Boys and Girls Club was conducted July 27 at site 15, the same location where last year's field trip occurred. Similar to last year, this was a valuable exercise.

Improvements were made to the nets used for capturing frogs and tadpoles. The steel hoop and mesh nets provided by ACA on wood handles were effective, as were the steel kitchen strainers taped to extendible aluminum poles designed last year by CCS. A steel hoop and mesh net taped to the end of an extendible aluminum pole was the best tool for the job. We still need to devise a better way to transport the bleach solution sprayers without leakage.

2.Results

2012 seemed to be a poor year for boreal toad tadpoles in the survey area, but a good year for Columbian spotted frog tadpoles and adults. The immediately preceding winter conditions were characterized by higher than normal water levels in ponds at freeze-up and a mild winter with low to moderate snowpack. The summer months of 2012 turned hot and dry July 6 and remained that way for 2.5 months. Some landowners indicated that the spring months of 2012 featured noticeably lower frequency of calling than normal from the 2 spring frog species: wood frogs and chorus frogs.

Boreal Toads

Boreal toad tadpoles were scarce in this year's survey. Only one tadpole was found in the 39 sites surveyed. This was at site 1, which was a repeat survey this year of a site that showed no tadpoles in the 2011 survey. Only a few tadpoles were seen in the visits to control site 15. By comparison, site 15 had thousands of tadpoles in 2011. Our findings illustrate the cyclical nature of toad populations, and for site 1, the value of resurveying sites that previously showed no tadpoles.

Adult boreal toads were observed at 4 sites (site 2, 4, Chinook Lake and Trevor's Pond). A single young-of-last-year boreal toad was found at Trevor's Pond, and a tiny toadlet from the current year's hatch was found at site 2.

Columbian Spotted Frogs

2012 seemed to be a good year for Columbian spotted frogs. Tadpoles were found at 3 sites (site 23,29,32). Young-of-the-year were observed at 4 sites (30-2,13,29, and Trevor's Pond). Adult Columbian spotted frogs were found at 6 sites (site 42-B, 23,9,16,15, and Trevor's Pond) plus the control site 15. During the Boys and Girls club outing at site 15 on July 27, there were none of the usual boreal toadlets on the favored emergence beach area, but several large adult Columbian spotted frogs were patrolling this shoreline where the toadlets should be (possibly predatory behaviour). These large frogs at site 15 were easily captured, not exhibiting much of their usual escape behavior.

Several of the deeper ponds, which offer overwintering habitat, could contain Columbian spotted frogs, but were inaccessible due to deep water levels flooding reeds and grass around the shorelines.

Salamanders

Salamander in the larval stage were observed at 4 sites (site 23, 11,2, and Trevor's Pond). With the exception of one individual, it is believed that these larvae were the long-toed salamander species. Site 23 was a very prolific site for salamander larvae similar to the survey in 2011. It has a large number of old submerged logs from deadfall trees in the water, a habitat condition we previously noted as being favorable for salamanders.

Wood Frogs

Young-of-the-year wood frogs were found at 2 sites (Emil & John Pond and Emil & John south) in the Burmis Estates subdivision area. A single adult wood frog was observed at site 18.

Chorus Frogs

A single young-of-the-year chorus frog was found at Emil & John Pond.

Data Spreadsheets

Appendix A contains a spreadsheet listing the observations tabulated from the field notes and digital picture file links where applicable.

3. Boreal Toad Cumulative Results, 2011 and 2012

We have now surveyed a total of 51 sites in the combined 2011 and 2012 surveys. See Figure 2 for locations. Boreal toad tadpoles were found at 6 sites. At all 6 sites, coniferous forest is present within close proximity to the ponds, probably offering some underground overwintering habitat. Water depth and type of aquatic vegetation do not seem to be factors.

See figures 3 to 5 for summary maps of the breeding locations where the 3 most common species of amphibian tadpoles were found, namely Boreal Toads, Columbian Spotted Frogs, and Long-toed Salamanders.

4. Volunteer Feedback.

We have received volunteer feedback from most of our volunteers. They indicated the surveys were educational, had a fun factor, and they would like to participate again next year. Having more copies of the brochure for identifying amphibians was mentioned as something that would be helpful for next year's survey.

5. Acknowledgements .

Crowsnest Conservation Society would like to thank our volunteers for their time and effort in conducting surveys, participating in orientation and field seminars, and collating data. We would also like to acknowledge the work done by Alberta Conservation Association researching survey methods, providing equipment and materials, and providing the opportunity for volunteer surveys like this one across Alberta.

Report written by Jim Rennie

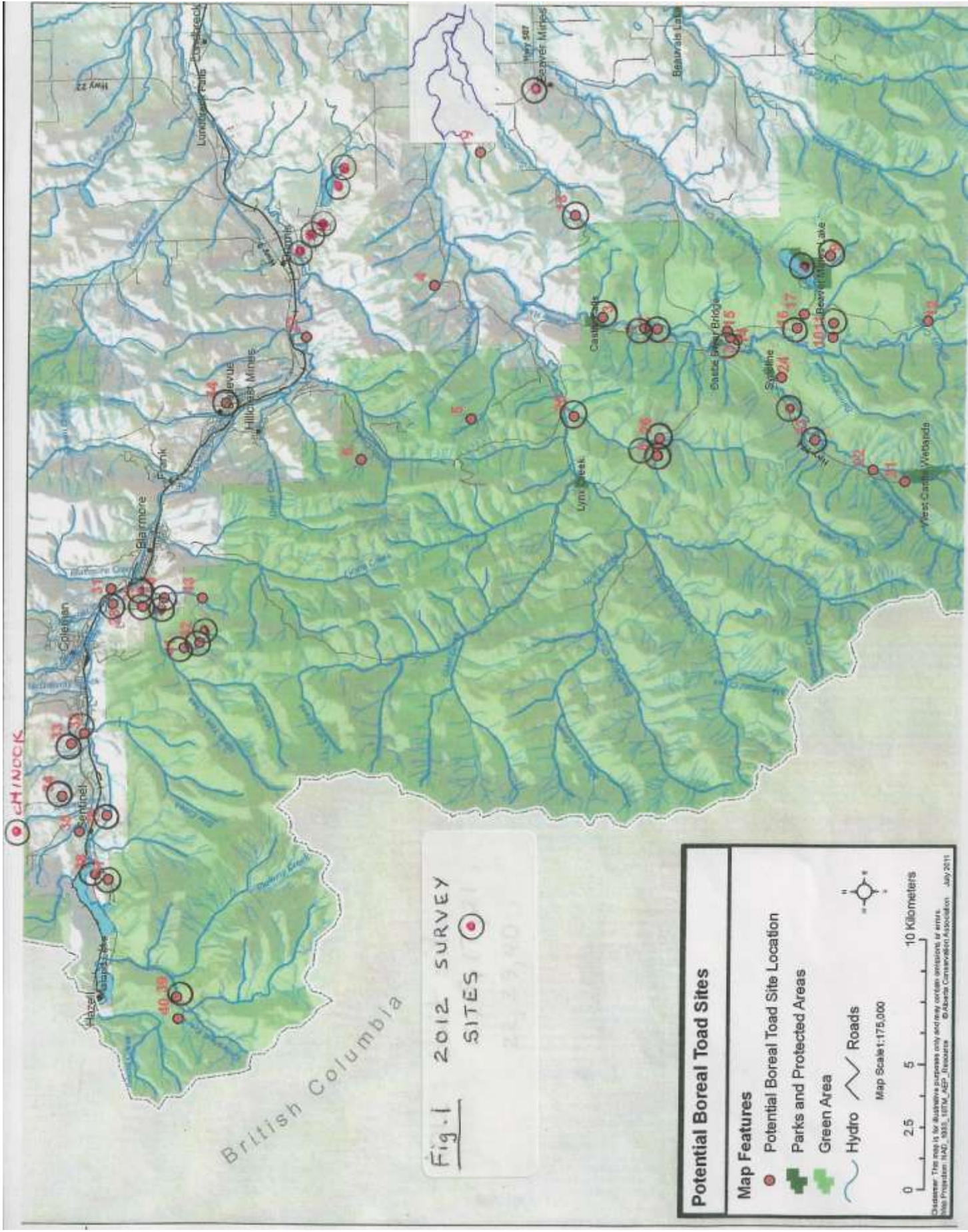


Fig.1 2012 SURVEY SITES

Potential Boreal Toad Sites

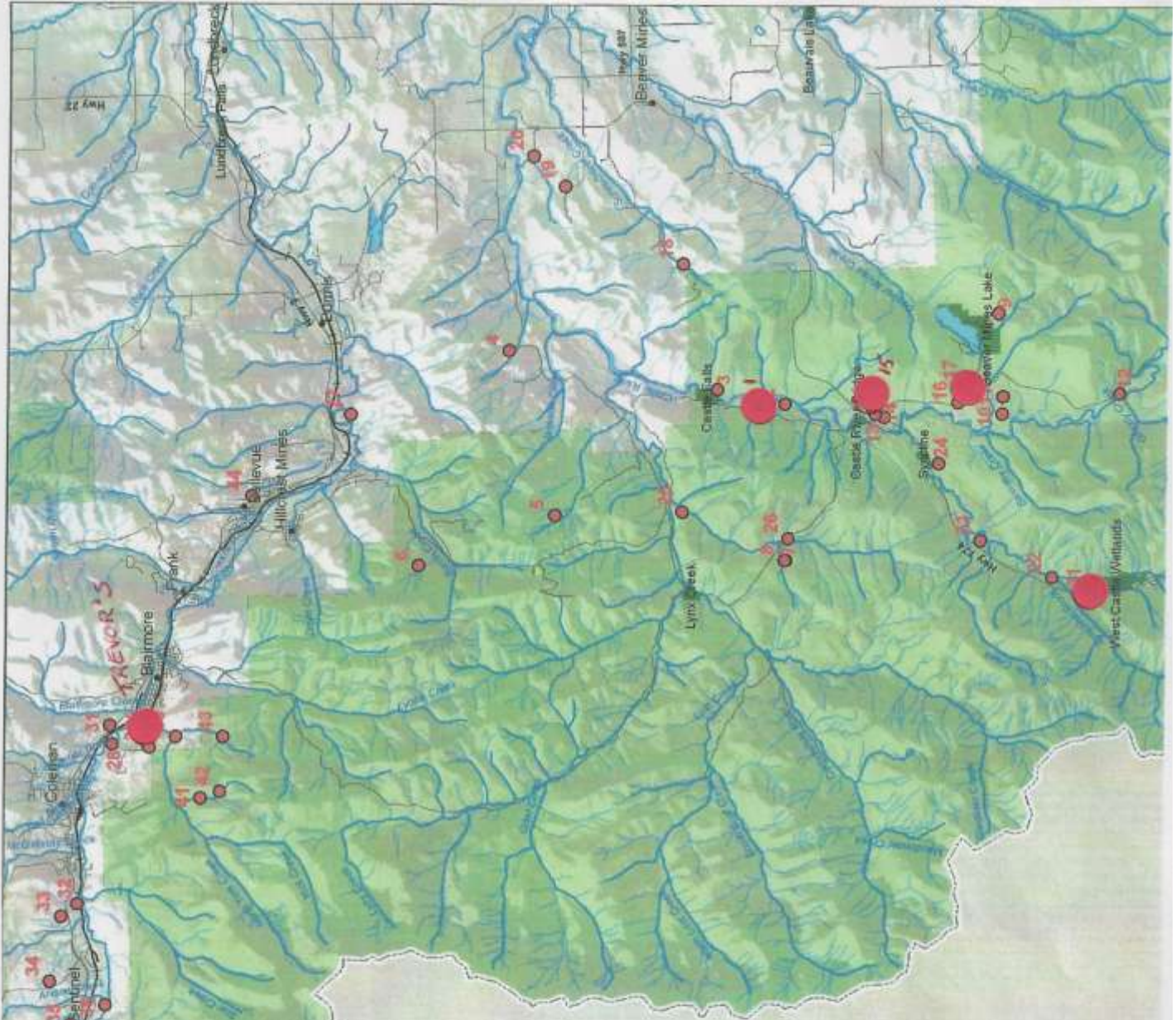
Map Features

- Potential Boreal Toad Site Location
- Parks and Protected Areas
- Green Area
- Hydro
- Roads

Map Scale 1:175,000

0 2.5 5 10 Kilometers

Disclaimer: This map is for illustrative purposes only and may contain omissions or errors.
Map Projection: NAD_83, UTM_ASP_19zone © Alberta Conservation Association July 2011



British Columbia

Fig 3 2011 AND 2012
BOREAL TOAD
BREEDING SITES



Potential Boreal Toad Sites

Map Features

- Potential Boreal Toad Site Location
- Parks and Protected Areas
- Green Area
- Hydro
- Roads

Map Scale: 1:175,000

0 2.5 5 10 Kilometers

Disclaimer: This map is for informational purposes only and does not constitute an assurance or warranty.
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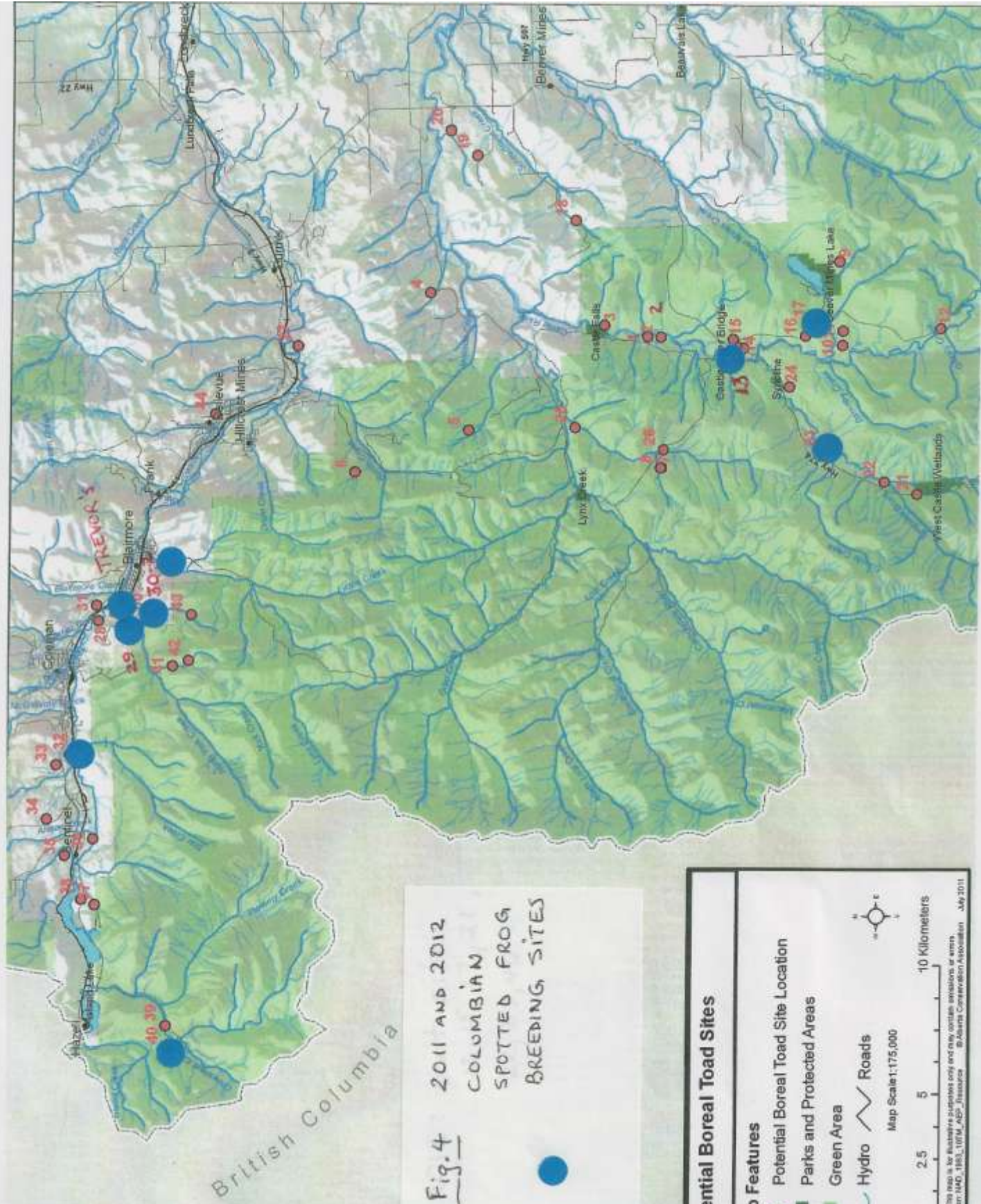







Fig.4 2011 AND 2012
COLUMBIAN
SPOTTED FROG
BREEDING SITES



Potential Boreal Toad Sites

- Map Features**
-  Potential Boreal Toad Site Location
 -  Parks and Protected Areas
 -  Green Area
 -  Hydro
 -  Roads



0 2.5 5 10 Kilometers
Map Scale: 1:175,000

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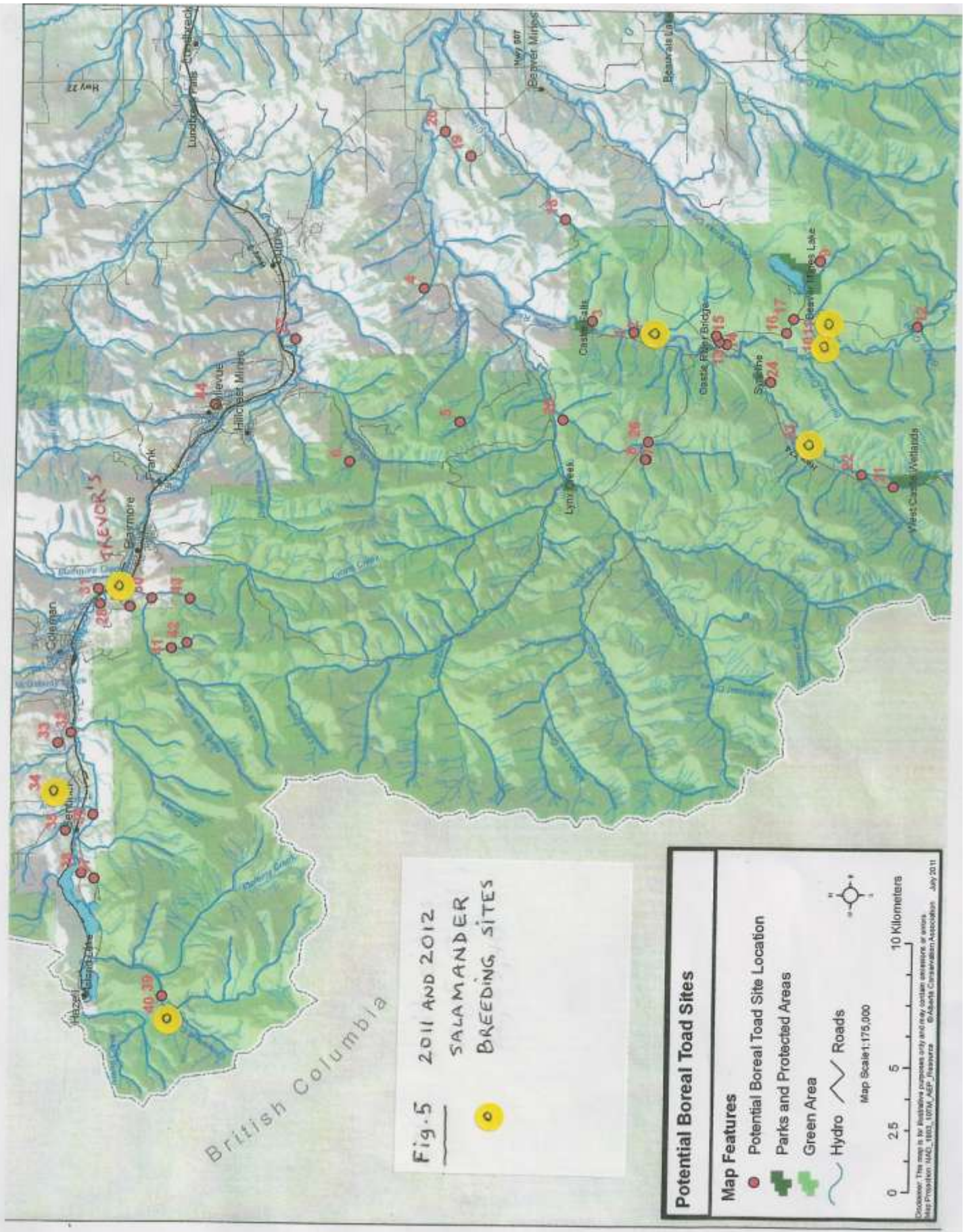


Fig. 5 2011 AND 2012
SALAMANDER
BREEDING SITES

Potential Boreal Toad Sites

Map Features

- Potential Boreal Toad Site Location
- Parks and Protected Areas
- Green Area
- Hydro
- Roads

Map Scale: 1:175,000

0 2.5 5 10 Kilometers

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