

Memorandum



Refer to File No.: 0823-004-03

DATE: September 24, 2010
TO: Katrine Nielsen, BC Hydro
FROM: Gregory Sharam – Manager Wildlife and Ecosystems
CC: Rolf Schmitt – Senior Project Manager
SUBJECT: Coastal Tailed Frog Methodology

Dear Katrine,

Please find below our methodology for assessing coastal tailed frog for the NTL Environmental Management Plan implementation of vegetation clearing prescriptions.

Yours truly,

A handwritten signature in black ink, appearing to read "Greg Sharam", is written over a light blue horizontal line.

Greg Sharam
Manager, Wildlife and Ecosystems
Rescan Environmental Services

Coastal Tailed Frog

Coastal tailed frog have been identified to occur regionally near the southern area of the proposed NTL route, and some inventory effort has been conducted by BC MOE staff (Chris Broster, MOE Terrace). The BC Identified Wildlife Management Strategy (IWMS), Accounts and Measures V. 2004 (IWMS 2004) describes current distribution of coastal tailed frog as restricted to cool permanent mountain streams within the windward and leeward drainages of the Coast Mountains. The distribution extends from the Lower Mainland in the Fraser Basin to Portland Canal and the Nass River on the north coast. Considering this, focus of an assessment should be on coastal area, between Terrace and New Aiyansh. This suggests that restricting assessment efforts along the alignment to the coastal BEC, e.g., the CWH and MH biogeoclimatic zones is appropriate.

The following steps were considered in the development of the assessment for tailed frog:

1. mapping of suitable tailed-frog habitat;
2. identification of streams that have already been inventoried for tailed frog;

3. inventory of tailed frog within streams of high quality habitat and similar nearby streams; and
4. identification of habitat management requirements for streams confirmed to have tailed frog.

1. Mapping Suitable Streams

Habitat suitable for tailed frog is summarized in the IWMS Accounts and Measure 2004 (IWMS 2004) and it is described as permanent, fast flowing clear streams with a steep gradient and step-pool type structure. Tailed frog also requires mature or old growth conifer forest. This will include identifying S4, S5, S6 streams within the study area that have gradients exceeding 5%, (a gradient break often used by fisheries to determine differences in geomorphology from TRIM) and have riparian vegetation associated with the stream that includes mature (e.g. age class 6 through 9 or structural stage 6 and 7) conifer forests. Streams with minimal or early seral stage vegetation (e.g. from past forest development) may not be suitable as past development may effect water quality or riparian function.

A habitat model has been developed that employs the vegetation mapping produced for the EAC Application and TRIM topography to identify habitats that may have High habitat suitability, Moderate suitability, or Low/Nil suitability. The draft model parameters are described in Table 1. Emphasis is on identifying the most likely candidate streams for habitat suitability and possible field review if management of riparian habitat is not compatible with the development. Modeling will be conducted within the entire 2 km buffer along the alignment between Terrace and New Aiyansh. This modeling identified 8 high quality streams (Figure 1).

Table 1. Draft Coastal Tailed Frog Habitat Model Parameters.

Habitat Suitability Class	Vegetation (from VRI)	Stream Class (from FRPA or alternate description)	Slope (from TRIM data)	Notes
High	Structural Stage 6 and 7 conifer dominated at least 50 m	S4,S5,S6	>5%	Suitable vegetation may be along one or both banks
Moderate	Vegetation that is structural stage 3 to 5	S4,S5,S6	>5%	Vegetation described occurs on both banks
Moderate	Structural Stage 6 and 7 conifer dominated at least 50 m	S4,S5,S6	<5%	Vegetation on one or both banks
Low/Nil	all	S1, S2, or S3 and any ephemeral stream	All slopes	All large streams, and rivers

2. Identify Streams Surveyed and Evaluate Protection Afforded

The next step after the model is developed is to overlay streams identified as tailed frog habitat by the suitability map with fish inventory (from Rescan) or tailed frog inventory data (from MOE) to determine which have been inventoried and which are afforded protection via Fisheries Act/MOE Riparian/Stream protection guidelines etc. Possible streams providing tailed frog habitat can then be classed by the protection afforded from other values and be evaluated as to whether this protection is sufficient to facilitate tailed frog conservation. This will include prescriptions that may be similar to tailed frog WHA guidelines, as defined by BC Hydro from IWMS (2004) or MOE Best Management Practices, as described in the EMP.

Recent surveys have been conducted in this area during summer 2010 by Purnima Govindarajulu (BC Frogwatch) and Melissa Todd (MOFR). These surveys focused on the areas surrounding Terrace. After comparing habitat map to streams already surveyed and currently affording protection, an inventory of streams is planned to evaluate these streams and similar, nearby streams that may provide highly suitable habitat. Additional reconfirmation of streams already surveyed and confirmed as supporting tailed frog may be also be undertaken.

3. Inventory Streams

An inventory of identified high quality streams and similar, nearby streams is being conducted between September 21 and 25, 2010. This survey corresponds with the period of low flow (June to September) for this area and will use RISC standards for a present/not detected level intensity. This will include timed stream surveys along possibly affected reaches of streams and downstream areas to determine presence of coastal tailed frog tadpoles and adults. RISC inventory standards include walking up streams and turning over rocks and debris to look for the presence of tadpoles which may be hiding underneath. The RISC standards state that tadpoles will be present in a localized area of the reach, and will occur year round in similar location during their development; however, high flows and cold water may influence success of the inventory efforts if it is not undertaken at an appropriate time. Hence, the current field surveys will re-sample streams where coastal tailed frogs were previously observed near Terrace in 2010 to evaluate the efficacy of the current surveys.

Results of inventory can then be used to integrate coastal tailed frog conservation with the development as appropriate.

4. Manage Habitat

Streams identified as supporting coastal tailed frogs will be managed to minimize vegetation disturbance during the clearing/construction and maintenance of the NTL Project. The EMP identifies a 30 m management area around streams with coastal tailed frogs where no heavy machinery would be driven, hand clearing practices would be used wherever wheeled machinery can not reach, and no herbicides would be used during maintenance activities. Streams where no coastal tailed frogs are identified, but where frog biologists rated the streams as being high quality habitat would be reviewed and dealt with on a case by case basis. Additional management guidance is described in IWMS (2004) and MWLAP (2004).

5. References

- BC Identified Wildlife Strategy. 2004. Coastal tailed frog account. http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Amphibians/a_coastaltailedfrog.pdf (accessed September 2010)
- BC Ministry of Water and Water Protection (MWALP). 2004. Best Management Practices for Amphibians and Reptiles in Urban and Rural Environments in British Columbia. BC MWLAP, Victoria, BC.
- Resource Inventory Committee (RIC). 2000. Inventory methods for tailed frog and Pacific giant salamander. Standards for components of inventory of BC Biodiversity No 39. BC MWLAP, Victoria BC.