

# **Interim Management Protocol for Coastal Tailed Frogs BC Timber Sales Strait of Georgia Operating Areas – version 1.0**

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## **Introduction**

BC Timber Sales (BCTS) in the Strait of Georgia Business Area must protect Species-at-Risk, including the Coastal Tailed Frog (*Ascaphus truei*), which is classified as *Special Concern* by COSEWIC and is a *Schedule 1* species under the federal *Species at Risk Act*. BCTS will manage for species at risk exists whether or not the Forest District budget for Wildlife Habitat Areas (WHAs) is adequate to accommodate additional WHAs. Because budgets for Coastal Tailed Frogs are quickly being exhausted and breeding sites will continue to be discovered, BCTS has established a protocol for managing habitat for Coastal Tailed Frogs outside of WHAs, while still meeting harvest obligations.

The following protocol outlines the management of Coastal Tailed Frog breeding sites discovered on BCTS operating areas where WHAs are not being considered. As new information becomes available or as new policy is implemented, BCTS will alter this protocol to meet new requirements.

## **Approach**

This management protocol is based on the following principles:

1. To assess areas planned for development for potential Coastal Tailed Frog habitat, especially breeding sites; Tailed Frog adults remain relatively close to streams and their breeding sites and larvae are particularly vulnerable to forest harvesting;
2. To reduce the likelihood of loss of current breeding populations and sites (streams) as a result of BCTS forestry activities (Coastal Tailed Frogs occur in 40-60% of streams surveyed on the coast of BC; Dupuis et al. 2000);
3. Minimize timber supply impacts through leveraging existing leave areas; and,
4. To monitor the effectiveness of the reserve design and associated management to inform future iterations of the protocol.

## **The Protocol**

For proposed blocks containing at least one S5 or S6 (i.e., fishless streams that do not require riparian protection within the range of the Coastal Tailed Frog), a habitat assessment will be conducted to determine whether populations may occur in the area in association with potential breeding sites.

Streams with a high potential for Coastal Tailed Frog breeding include those that are:

- Small (<15 m wide), permanent, fishless, and below 2,100 m
- Fast flowing, and contain clear, cold water (5-18°C)
- Intermediate gradient and have a step-pool morphology (e.g., 15-30% slope; Sutherland et al. 2001)
- Streams in basins draining >10 and <50 km<sup>2</sup> (Dupuis and Friele 2003) and underlain by weather resistant (consolidated) parent material that result in larger, smooth substrates (e.g., >25% cover of boulders, and cobbles >64 mm; Sutherland et al. 2001)
- Located in late seral/old forest (e.g., watersheds with <3% of the area <20 years old; Sutherland et al. 2001)

Surveys conducted in late summer (e.g., July-Sept.) may allow identification of Coastal Tailed Frog tadpoles (tadpoles exist in streams year-round but high flows make surveys difficult; egg masses are laid under boulders

and are rarely found). Coastal Tailed Frog *tadpoles* are brownish-grey to black, with a sucker-type mouth facing downwards (to cling to rocks), and a small white spot on the tip of the tail (the tadpoles of no other species on the coast exist in fast-flowing streams). *Juvenile and adult* Coastal Tailed Frogs are tan to black with a light-coloured band or triangle between the eyes and snout, a large head lacking a tympanum (ear drum), and vertical pupils. The outermost toes of the hind feet are flattened and wide, and males may have a 'tail' (see Proulx et al. 2003).

On discovery of a suspected Coastal Tailed Frog adult or tadpole along or within a permanent stream within or adjacent to a BCTS planned development, the area forester (field team) will refer the discovery to a professional biologist, who will undertake the following, in cooperation with field team staff or designated contractor(s):

#### **Field Verification of the Coastal Tailed Frog Breeding Site(s)**

The biologist will use RISC (2000) standard methods to attempt to verify that Coastal Tailed Frogs are breeding in the identified stream where the adult or tadpole was observed survey methods (at least 3 reaches per stream). The biologist will survey all permanent streams within, and those immediately adjacent to the cutblock (approximately 1 day of fieldwork) in order to determine the potential extent of occupancy. The habitat characteristics of each surveyed stream will be recorded to RISC (2000) standards. These records will be maintained at the Timber Sales Office and field team locations.

Rationale: Coastal Tailed Frogs have specific breeding requirements and the only way to confirm their presence is to conduct stream surveys. They may occur only within one or a few streams within a watershed and connectivity between sites is critical. Habitat characteristics are measured for comparison to features of known Tailed Frog breeding sites.

#### **Design of Riparian and Connectivity Reserve(s)**

If a Coastal Tailed frog breeding site is identified, the biologist will work with the forest engineer to design a riparian buffer along at least two occupied streams or stream reaches within the cutblock (of which some will meet wildlife tree retention targets and the rest may be new reserve) with the following characteristics:

1. In cutblocks found to contain high habitat quality for Tailed Frogs (i.e., tadpoles found in the majority of reaches and streams; adjacent to mature/old forest), riparian reserves containing a 30-m core and a 20-m management zone ( $\geq 10\%$  basal area) will be established along the length of at least two streams or centred on reaches containing high densities of tadpoles. Where slopes exceed 60%, buffers should extend to the top of the inner gorge;
2. In cutblocks with low occupancy and densities of tadpoles (e.g., few tadpoles and/or  $\leq 10\%$  of streams), windfirm riparian reserves containing a 10 m core and a 20 m management zone ( $\geq 10\%$  basal area) will be established along the length of at least two streams;
3. Priority streams are those with the highest densities of tadpoles, closest to headwaters, and adjacent to old/mature forest with the greatest potential to establish and maintain forest connectivity;
4. Windfirm corridors or tree patches will be retained between the two buffered streams and/or between streams and surrounding old/mature forest;
5. Planned roads and yarding operations avoid crossing the streams, if practicable. All roads are suitably constructed to avoid siltation, slope failure, slumping, and other hazards; and,
6. Follows Identified Wildlife measures for access, harvesting, silviculture and Additional Management Considerations as much as practicable (IWMS 2004).

Rationale: The design of the riparian buffers needs to follow the ecological characteristics outlined in IWMS (2004) and Forest Stewardship Plans (FRPA 2004) as much as possible in order to be effective, while still maintaining access to timber resources. This will require careful design of riparian buffers that use existing leave areas. Other management actions, such as suitable road-building and yarding practices, are equally important to the success of the management protocol (e.g., minimizing road building, and not allowing yarding operations across any water bodies or streams; see Dupuis 2004).

## **Reporting**

The area forester will notify the regional office of the Ministry of Environment and the BCTS planning forester for the area on discovery of the breeding site and will submit full documentation (including relevant maps) upon completion of field verification, design of riparian and connective patch reserves, and management plans to minimize impacts to streams.

**Rationale:** Monitoring species-at-risk is a core activity of the Ministry of Environment, and all information on the location and status of Coastal Tailed frog breeding sites is critical to the long-term management of the species.

## **Monitoring**

The planning forester will ensure that streams with confirmed breeding will be visited during low water periods (typically Aug.-Sept.) to determine occupancy for various cohorts in each of the 3 years following harvest (approximately 1 day of fieldwork per year). If tadpoles are not found during the initial survey within each year or only one cohort is found (e.g., late-stage tadpoles) additional surveys will be conducted that season for a maximum of three surveys/year. Results will be shared with the regional office of Ministry of Environment and the field team.

If occupancy is not detected for 3 consecutive years, the reserve will be removed. The biologist will attempt to determine the reason for the absence of breeding Coastal Tailed Frogs and will provide recommendations for revising the management protocol if required.

**Rationale:** Because there are significant gaps in our knowledge of Tailed Frog habitat relationships and responses to management (IWMS 2004), it is critical to monitor the response of Tailed Frogs to the design of riparian buffers and related access, harvesting, and silviculture management. However, streams may become unsuitable for Tailed Frogs for reasons unrelated to forest harvesting activities, in which case reserves no longer occupied should be removed and redeployed in other occupied areas.

## **Adaptive Management**

This protocol will be revised every 5 years (or as required, through continuous improvement) based on monitoring results and available literature related to Coastal Tailed frog biology and habitat management.

**Rationale:** An important aspect of adaptive management is the requirement to revisit and revise management strategies periodically to reflect the most recent information available.

## **Literature Cited**

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