

# SLIPPING THROUGH THE CRACKS?

The Fate of Focal Species in the Great Bear Rainforest

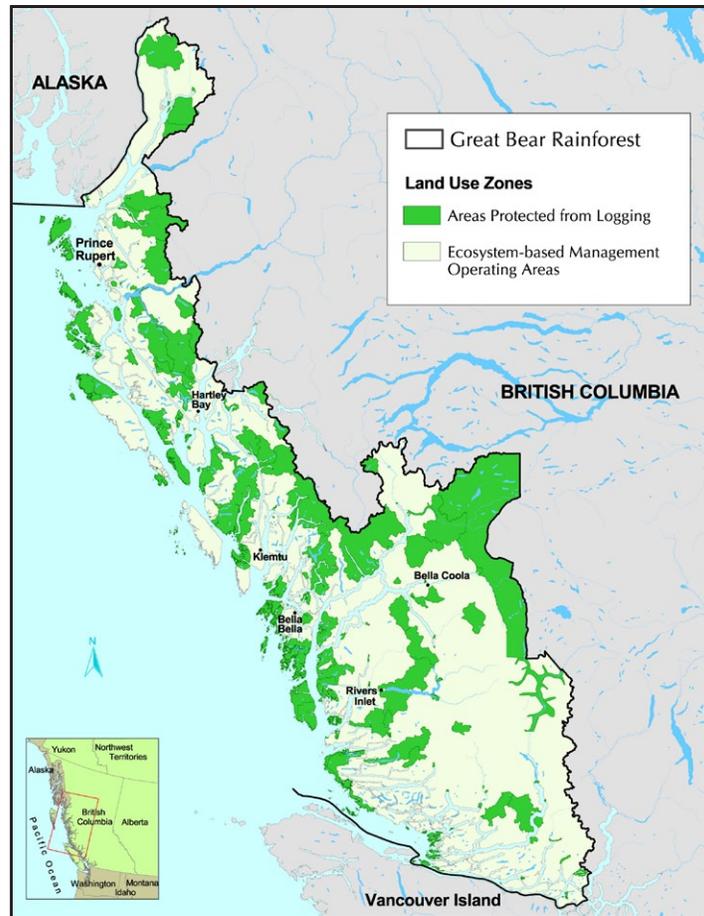


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## Introduction

Canada's Great Bear Rainforest is a global ecological treasure, dense with life and known for its cathedral-like old growth forests, concentrations of grizzly bear, salmon, wolves and the rare white 'spirit' bear. This rugged landscape, stretching along coastal British Columbia, represents 25% of the world's remaining intact temperate rainforest.

Building on the landmark 2006 Great Bear Rainforest Agreements to create protected areas on about a third of the landbase and implement new, 'lighter-touch' logging regulations under Ecosystem-based Management, the Province of British Columbia, First Nations, the forest industry and environmental groups reached a subsequent Agreement in March 2009. At the centre of the new Agreement is a commitment by all parties to move over the next five years towards the overall goals of Ecosystem-Based Management - maintaining ecological integrity and achieving high levels of human well-being. Ecological integrity is to be maintained by limiting risk to both ecosystems and to "focal" species, defined as species that need special management attention. In practice, this approach protects a portion of each type of ecosystem and of the habitat of each focal species in areas designated for lighter-touch logging through the EBM planning process.

As part of the five-year transition period, a set of 'lighter touch' (or transitional) logging requirements was developed in 2009, along with commitments to develop a more stringent set of regulations by March 2014. Commitments were also made to ensure that focal species habitat is at least being managed to maintain viable populations during this period<sup>1</sup>.

The purpose of this report is to take a closer look at the focal species of the Great Bear Rainforest, and to evaluate progress on key government commitments to protect focal species<sup>2</sup>. Recommendations include expedited completion of additional conservation measures, as well as measures to ensure that no crucial habitat is being logged in the interim.



Photo: Marni Grossman

The large, powerful Grizzly Bear is one of the iconic species of the Great Bear Rainforest. Although a vast network of Grizzly Bear trails once spread between Mexico and Alaska, the Grizzly Bear has been extirpated throughout much of its North American range.

1 Great Bear Rainforest update November 2009  
[http://www.savethegreatbear.org/files/gbr\\_update\\_nov09](http://www.savethegreatbear.org/files/gbr_update_nov09)

2 There are also provincial commitments to improve Human Well Being but this document only evaluates progress on focal species protection.

## Focal species in the Great Bear Rainforest

As part of Ecosystem-Based Management in the Great Bear Rainforest, a small number of species of conservation concern were identified as focal species: the Northern Goshawk (*laingi* subspecies), Marbled Murrelet, Coastal Tailed Frog, Mountain Goat and Grizzly Bear (see boxes).

These focal species represent a broad range of habitat types and are sensitive to the loss of mature and old forests. They include “threatened” species and species “of special concern” (also known as vulnerable species) listed by provincial and federal authorities. Threatened species are likely to face imminent extirpation if limiting factors are not reversed. Species of special concern have characteristics that make them particularly sensitive to human activities or natural events.

- **Marbled Murrelets** (*Brachyramphus marmoratus*) are threatened provincially, federally and in California, Oregon, and Washington (and listed as a species of special concern in Alaska).
- **Northern Goshawks** (*Accipiter gentilis laingi* subspecies) are threatened provincially, federally and internationally.
- **Grizzly Bears** (*Ursus arctos*) are a species of special concern in BC and Canada and threatened in much of the contiguous United States.
- **Coastal Tailed Frogs** (*Ascaphus truei*) are a species of special concern in BC and Canada.
- **The Mountain Goat** (*Oreamnos americanus*) is listed in the BC government’s conservation framework as one of the species with the highest priority for conservation under the goal of “preventing species and ecosystems from becoming at risk”.

For more detailed information on each of the five focal species noted in this report, please see Appendix: Spotlight on Five Focal Species in the Great Bear Rainforest



Photo: Norbert Kenntner

The fierce, raven-sized Northern Goshawk, coastal subspecies (*laingi*), is a bird of prey that relies on mature and old growth coastal temperate rainforests for foraging and breeding.

# How is habitat for focal species being protected in the Great Bear Rainforest?

Habitat for focal species is being protected in the Great Bear Rainforest through protected areas, transitional logging regulations, and through a number of government commitments to planning and analysis, consistent with Ecosystem-Based Management (EBM), but that have yet to be implemented (Table 1).

Mechanism	Status	Benefits for focal species	Risk factors for focal species
Protected Areas (Parks, Conservancies, and Biodiversity, Mining, and Tourism Areas)	Legislation complete  Majority of management plans yet to be developed	No logging, no large-scale development (with the possible exception of mining in some areas)	Sports (Trophy) Hunting (except where closures exist)  Lack of completed management plans means the allowable impact of activities permitted within protected areas is unclear.
New logging regulations (Land Use Objectives)	Transitional regulations legalized March 2009  Further regulations anticipated by 2014	Regulations protect riparian ecosystems and require protection of old growth ecosystems to a moderate level of risk for ecosystems (not focal species) across the Great Bear Rainforest; focal species habitat is to be captured within this amount.  Regulations require protection of Class 1 grizzly bear habitat.	The regulations were not developed with the intent of providing sufficient habitat for focal species based on species' needs. Habitat for focal species is to be captured opportunistically within old growth ecosystem areas. In some cases, little habitat will be protected because it is concentrated in landscape units (large watersheds or groups of watersheds used for planning purposes) requiring only limited old growth ecosystem protection.  Habitat conserved haphazardly (no larger-scale design). Habitat fragmentation from roads and logging.
Reserve designs to implement 2009 logging regulations (later to be translated into legally designated 'detailed' reserves)	Delayed  Agreed-to completion date was September 30, 2009.	Will "optimize" selection of habitats to protect.  Will provide greater certainty about amount and location of habitat protection.	Does not determine if amount of protected habitat is adequate to support healthy focal species populations.
Focal Species Gap Analysis and amendments to logging regulations	Delayed – not yet initiated  Agreed-to completion date was September 30, 2009.	Will compare habitat protected in reserves and Protected Areas to habitat needed in order to determine if focal species habitats will maintain viable populations.  Will lead to revised logging regulations if necessary to limit risk to focal species.	The Focal Species Gap Analysis is designed to ensure that there is enough focal species habitat to support persistence of these species (not managed to 'high risk'). Further measures will be needed by 2014 to manage focal species to low risk, similar to natural populations, in order to maintain overall ecological integrity in the Great Bear Rainforest.

Table 1. Mechanisms for focal species protection, implementation status, and benefits and risks for focal species.

## PROTECTED AREAS

About one third of the Great Bear Rainforest (2.1 million hectares) is protected from logging in Parks, Conservancies, or Biodiversity, Mining, and Tourism Areas (BMTAs). Some risk factors for focal species still exist even in protected areas, such as sports or trophy hunting and potentially local run-of-the-river hydro developments in conservancies, which may pose a significant risk to Coastal Tailed Frog habitats. Mining and tourism developments in the BMTAs also pose a risk, if inconsistent with the primary purpose of these areas, which is to preserve ecosystems and First Nations values.

The overall amount of protected area varies substantially in different sub-regions of the Great Bear Rainforest. In the southernmost portion of the Great Bear Rainforest (the South Central Coast), only 11% of the landbase is in protection, and several landscape units have no protection at all. In the mid-coast, roughly 41% of the landbase is in protected areas<sup>3</sup>, and in the North Coast, about 28% of the landbase is protected. Although these large protected areas capture significant amounts of habitat, they alone are not enough to capture the habitat requirements of the five focal species.

## TRANSITIONAL LOGGING REGULATIONS

In addition to the protected areas and a few areas that have previously been legislated by the Ministry of Environment to protect a small subset of habitat for grizzly bear, new, transitional logging regulations under EBM also provide for additional habitat protection for focal species. The very best (Class 1) habitats for grizzly bear must be retained, although they may be altered to allow for roads or cutblock boundary adjustments<sup>4,5</sup>. Riparian buffer requirements will also set aside floodplains, which overlap with important habitats for grizzly bears.

The remaining focal species do not have specific habitat protection requirements in the logging regulations. Instead, focal species habitat protection is proposed to be found within the areas that will be set aside to meet requirements to maintain representative examples of old forest ecosystems. These legal old growth representation requirements are themselves currently defined only by a total amount of area at the landscape level and not spatially identified.

## ADEQUACY OF PROTECTED AREAS AND CURRENT REGULATIONS

In the absence of targets for focal species habitat, it is unclear how much focal species habitat will be retained as a result of the transitional logging regulations. The quality and quantity of focal species habitat conserved could vary considerably depending on which areas are chosen.

The five focal species that the provincial government has identified in the Great Bear Rainforest are only a small subset of the species in the region that the government's own scientific advisors have listed as under serious threat<sup>6</sup> or of major concern. There are also other species of importance for ecological or social-cultural reasons in the region—coastal wolves, spirit bears, black-tailed deer, and American marten—and there is minimal, if any, habitat information available for many of these species. Given these inadequate habitat inventories, it is difficult to know whether meeting the needs of the five identified focal species will provide sufficient habitat for other important species.

3 It should be noted that a large percentage of this protection is found in Tweedsmuir park on the eastern edge of the region, which represents interior forest types rather than coastal temperate rainforest.

4 Despite the fact that sports hunting has been identified by government biologists as one of biggest threats to the grizzly bear, the Province continues to allow a sports trophy hunt of grizzly bears in the Great Bear Rainforest.

5 In portions of the mid-coast and in the North Coast, 50% of Class II habitat for grizzly bears must also be retained, although which 50% has not yet been spatially identified and is expected to be captured through the landscape reserve design process.

6 The BC Conservation Data Centre lists species and ecosystems that are endangered, threatened, or of special concern at a provincial scale. A search of BC Species and Ecosystems Explorer on the government website turns up dozens of listed species in the Great Bear Rainforest.

## Additional conservation measures

The provincial government committed in March 2009 to undertake key pieces of work to address outstanding conservation issues. Of these commitments, two short-term commitments of critical importance to focal species were to be completed by the fall of 2009: the Strategic Landscape Reserve Design (SLRD), and the Focal Species Gap Analysis. Both of these key commitments have been subject to substantial delays, and appear to lack the political leadership and technical coordination necessary to bring them to successful completion.

### Commitment #1: Strategic Landscape Reserve Design (Mapping the 2009 Logging Regulations)

As part of their 2009 commitments, the provincial government agreed to design a landscape reserve network to “spatialize”, or map out, which new areas will be off limits to logging. The Strategic Landscape Reserve Design (SLRD) process was intended to apply ecologically sound planning principles that maximized the quality, amount and connectivity of focal species habitat captured in the reserve network.

If the best habitats for focal species are effectively represented in old growth reserves, there will be a substantial benefit to focal species<sup>7</sup>. It is unclear, however, whether the best habitats will be chosen through the reserve design process, or if focal species habitats will be included only if they do not reduce access to timber.

### IS THE BC GOVERNMENT DELIVERING ON ITS COMMITMENT?

Although the Province committed to complete stage one of the reserve network (SLRD), by the end of September 2009, the work is largely incomplete. Preliminary work to describe a methodology is underway and several pilots have been completed. However work on the broader landscape reserve design that includes 140+ landscape units has only just begun, and there is still no clear timeline for completion.

A Marbled Murrelet flies 30 kilometers or more to sea to forage, and flies back to the nest carrying a fish in its bill for its young.



<sup>7</sup> Rumsey, C. and H. Horn. 2010. Co-location Project Final Report. Prepared for the Ecosystem-Based Management Working Group. Integrated Land Management Bureau, Nanaimo, B.C.

## Commitment #2: Focal species habitat gap analysis

A second major commitment to be completed in 2009 was to ensure that focal species are currently being managed at least to a level that will allow for ongoing species persistence, during the five-year transition to a management regime that poses low risk to species and ecosystems. There were three steps to this commitment:

1. A scientific process to provide the best available information on what constitutes risk thresholds for focal species. Habitat amounts greater than the high risk threshold are defined as adequate to support minimum viable populations of these species. Habitat amounts greater than the low risk threshold will support populations of focal species similar to those found under natural conditions.
2. A Focal Species Gap Analysis, to be conducted concurrent with the Strategic Landscape Reserve Design, to determine if and where additional habitat needs to be set aside for each species to ensure that focal species habitats are maintained above the high risk threshold during the 5-year transition period.
3. Revisions to the transitional logging regulations. If the 'focal species gap' is significant, revisions may be made to the logging regulations to ensure that individual focal species have legislated targets for habitat protection.

### IS THE BC GOVERNMENT DELIVERING ON ITS COMMITMENT?

The Government initially committed to complete the first step, the scientific process to determine habitat needs, by the end of June 2009, in order to support concurrent completion of the reserve design and the focal species gap analysis by the fall of 2009. Due to lack of political leadership and effective project management, as well as limited resources (there is no government budget for this work), the provincial government currently does not expect to have this basic information until after March 2010—nine months late.

In addition, despite the initial commitment to complete the gap analysis and reserve design concurrently, governments are now insisting that the gap analysis will not occur until completion of the landscape reserve design—which is already more than nine months behind schedule. There is therefore no clear timeline for completion of the conservation gap analysis across the entire region or subsequent revisions to the logging regulations.

Coastal Tailed Frogs are the dominant grazer in fast-flowing, fish-free, coastal headwater streams and can serve as an umbrella species for the communities of organisms associated with these streams: protecting their habitat will protect other inhabitants of upland streams.



Photo: O'Neill/Greenpeace

## What is the significance of this delay?

Although the BC Government pledged to protect the biodiversity of the Great Bear Rainforest, it cannot confirm that it is maintaining enough habitat to prevent the extirpation of the five focal species from the Great Bear Rainforest, let alone managing them to low risk as is required to fully implement Ecosystem-Based Management. Yet the provincial government continues to issue licenses and permits to build roads and log in the unprotected areas of the Great Bear Rainforest. These permits are not being informed by the best available knowledge and have a high likelihood of degrading critical focal species habitat.

Scientists have identified that we are in the midst of climate change impacts that are much more severe than earlier modeling predicted, and habitat loss and degradation will make species and ecosystems far more vulnerable to shifts in climate envelopes<sup>8</sup>. Given that four of the five focal species for the Great Bear Rainforest are already formally listed as at-risk, continuing delays on focal species habitat conservation may jeopardize the health of focal species populations in the Great Bear Rainforest.

## Conclusion

A recent analysis conducted by a committee of scientists specializing in focal species identified that even if the very best habitats for the five focal species are chosen through the Strategic Landscape Reserve Design process, there will not be enough habitat protected under current transitional logging requirements to present a low ecological risk to any of the five focal species in the Great Bear Rainforest<sup>9</sup>.

Significant progress has been made to establish management of healthy rainforest ecosystems. However, until such time as the Province makes substantial progress on its commitments to protect focal species habitats, there is no assurance that vulnerable species are secure in the Great Bear Rainforest - despite innovative collaborative management agreements to maintain biodiversity that have been heralded around the world. Agreements on paper, no matter how excellent, are not enough: real, on-the-ground change is needed. Whether a world-class conservation model does emerge will depend on whether governing bodies take decisive action to meet their commitments.

## Recommendations

The Province and other decision makers must act quickly to protect focal species habitat in the Great Bear Rainforest in order to ensure that, during the 2009-2014 transition period to low ecological risk management, options are maintained to manage focal species to low levels of risk:

1. The provincial government needs to provide decisive leadership and utilize effective project management to **complete the landscape reserve plans and the focal species gap analysis ASAP and to the high standard agreed to by all parties.**
2. In order to prevent negative ecological impacts caused by process delays and to avoid any appearance that the Great Bear Rainforest Agreements are a “talk and log” process, **there should be no more approvals of new licenses or permits to cut or build roads in the unprotected areas of Great Bear Rainforest until the strategic landscape reserve design and the focal species gap analysis are completed.**

<sup>8</sup> Pojar, J. 2010. A New Climate for Conservation: Nature, Carbon, and Climate Change in British Columbia. Report commissioned by the Working Group on Biodiversity, Forests and Climate. [online] URL: [cpawsbc.org/files/NewClimate\\_report\\_CPAWS.pdf](http://cpawsbc.org/files/NewClimate_report_CPAWS.pdf)

<sup>9</sup> H.L. Horn, P. Arcese, K. Brunt, A. E. Burger, H. Davis, F. Doyle, K. Dunsworth, P. Friele, S. Gordon, A. N. Hamilton, S. Hazlitt, G. MacHutchon, T. Mahon, E. McClaren, V. Michelfelder, B. Pollard, S. Taylor, F.L. Waterhouse. 2009. Part 1: Assessment of Co-location Outcomes and Implications for Focal Species Management under EBM. Report 1 of the EBM Working Group Focal Species Project. Integrated Land Management Bureau, Nanaimo, B.C. [online] URL: [ilmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg\\_docs/ei02c\\_report\\_3.pdf](http://ilmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg_docs/ei02c_report_3.pdf)

The study was limited, for data availability reasons, to the mid-coast and south central coast portions of the Great Bear Rainforest. Deficits in habitat protection were larger in the south central coast in all cases.

## Appendix:

# Spotlight on Five Focal Species in the Great Bear Rainforest



### Focal Species: Marbled Murrelet

The Marbled Murrelet is a small, diving sea bird that spends most of its time foraging at sea, but is dependent on old growth forests for nesting. The body shape adaptations that make Marbled Murrelet so effective at diving and underwater travel make take off and landing very difficult—and that makes for very specific nesting site requirements. Marbled Murrelets typically nest on large mossy platforms in very old (>250 years), structurally complex, and productive forests that are usually within 30 km of the ocean<sup>10</sup>. These platforms must be high up in the canopy, well-enough hidden to provide security from predators, and next to an opening in the forest canopy, so that the birds can approach the nest from below using a stall-landing technique, and take off by jumping off the nest and flying from a free-fall<sup>11</sup>.

Marbled Murrelets have a very slow reproductive rate: they do not breed until 2-3 years of age, and each breeding female usually lays only one egg per year, which has less than a 50% chance of surviving to fledge<sup>12</sup>. This slow reproductive rate, combined with the logging of nesting habitats throughout much of the bird's range and threats at sea such as oil spills and gill-netting (in which Marbled Murrelets are accidental 'bycatch'), has resulted in a rapid population decline, estimated at an astonishing 70% loss in the last 25 years<sup>13</sup>. For these reasons, the Marbled Murrelet is now listed as threatened (red-listed) by the B.C. Conservation Data Centre, and threatened under the Canadian Species at Risk Act. It is also listed under the US Endangered Species Act.

B.C. is thought to have approximately 27% of the global population, and the Great Bear Rainforest is home of up to half of BC's Marbled Murrelet population.

10 H.L. Horn, P. Arcese, K. Brunt, A. E. Burger, H. Davis, F. Doyle, K. Dunsworth, P. Friele, S. Gordon, A. N. Hamilton, S. Hazlitt, G. MacHutchon, T. Mahon, E. McClaren, V. Michelfelder, B. Pollard, S. Taylor, F.L. Waterhouse. 2009. Part 1: Assessment of Co-location Outcomes and Implications for Focal Species Management under EBM. Report 1 of the EBM Working Group Focal Species Project. Integrated Land Management Bureau, Nanaimo, B.C. [online] URL: [ilmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg\\_docs/ei02c\\_report\\_3.pdf](http://ilmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg_docs/ei02c_report_3.pdf)

11 Burger, A. E. 2002. Conservation assessment of Marbled Murrelets in British Columbia: a review of the biology, populations, habitat associations, and conservation Technical Report Series No. 387. Canadian Wildlife Service, Pacific and Yukon Region, British Columbia. Issued under the Authority of the Minister of Environment Canadian Wildlife Service. [online] URL: [www.sfu.ca/biology/wildberg/bertram/mamurt/PartA.pdf](http://www.sfu.ca/biology/wildberg/bertram/mamurt/PartA.pdf)

12 Ibid.

13 Piatt, J.F., K.J. Kuletz, A.E. Burger, S.A. Hatch, V.L. Friesen, T.P. Birt, M.L. Arimitsu, G.S. Drew, A.M.A. Harding, and K.S. Bixler. 2006. Status Review of the Marbled Murrelet (*Brachyramphus marmoratus*) in Alaska and British Columbia. U.S. Geological Survey Open File Report 2006 1387. [online] URL: [pubs.usgs.gov/of/2006/1387/](http://pubs.usgs.gov/of/2006/1387/)



## Focal Species: Northern Goshawk (subspecies *laingi*)

The fierce, raven-sized Northern Goshawk, coastal subspecies *laingi*, is a bird of prey that relies on mature and old growth coastal temperate rainforests for foraging and breeding. The goshawk forages for forest birds and small mammals like squirrels within enormous home ranges of roughly 9,000 hectares each in the Great Bear Rainforest<sup>14</sup>, the size of 16,000 football fields.

The Northern Goshawk plays an important role in coastal ecosystems. As a top predator, it is thought to play a critical role in the food chain, by regulating prey populations<sup>15</sup>. The goshawk is also an 'ecosystem engineer': each breeding pair builds and maintains between three and nine nests within its home range, but uses only one per year. The remaining nests are used by other birds like forest owls, ravens, and Great Blue Herons, many of which can't build their own<sup>16</sup>.

There are estimated to be fewer than 400 breeding pairs of Northern Goshawk subspecies *laingi* in all of BC, representing 50% of the world's population of this subspecies<sup>17</sup>. The Great Bear Rainforest includes 50% of the BC range for this subspecies but is thought to include only about 20% of its breeding pairs. Yet typically at least 2500 adult individuals are needed to maintain viable populations of birds<sup>18</sup>. The Northern Goshawk subspecies *laingi* is vulnerable to the logging of the old growth and mature forests, and is listed as threatened (red-listed) by the BC Conservation Data Centre, the Canadian government, and international authorities.



## Focal Species: Grizzly Bear

The large, powerful Grizzly Bear is one of the iconic species of the Great Bear Rainforest. Although a vast network of Grizzly Bear trails once spread between Mexico and Alaska, the Grizzly Bear has been extirpated throughout much of its North American range. The Great Bear Rainforest is the stronghold for the southern range of North America's coastal Grizzly Bear population and supports Canada's largest and densest concentrations of grizzlies<sup>19</sup>.

Unlike its interior cousins, the coastal Grizzly Bear is heavily reliant on salmon for its survival in a relationship that is tightly linked with the health of stream-side forests. Salmon-eating bears drag fish carcasses into nearby forests, dispersing the nitrogen and phosphorus-rich carcasses across the forest floor. The result of this fertilization is highly productive, diverse and structurally complex stream-side

14 Doyle, F. I. 2005. Breeding success of the goshawk (*A. gentilis laingi*) on Haida Gwaii/Queen Charlotte Islands 2005: is the population continuing to decline? Wildlife Dynamics Consulting, Telkwa, BC. Unpublished report.

15 Northern Goshawk *Accipiter gentilis laingi* Recovery Team. 2008. Recovery strategy for the Northern Goshawk, *laingi* subspecies (*Accipiter gentilis laingi*) in British Columbia. Prepared for the B.C. Ministry of Environment, Victoria, BC. 56 pp. [online] URL: [www.env.gov.bc.ca/wld/documents/recovery/rcvrystrat/northern\\_goshawk\\_rcvry\\_strat\\_200508.pdf](http://www.env.gov.bc.ca/wld/documents/recovery/rcvrystrat/northern_goshawk_rcvry_strat_200508.pdf)

16 Ibid.

17 Ibid.

18 Traill, L. W. Bradshaw, C. J. A., and B. W. Brook. 2007. Minimum viable population size: a meta-analysis of 30 years of published estimates. *Biological Conservation* 139:159-166.

19 Raincoast Conservation Society. 2009. Grizzly Bears: at the Heart of Terrestrial Conservation. Web. 15 February 2010. URL: [www.raincoast.org/projects/grizzly-bears/](http://www.raincoast.org/projects/grizzly-bears/)

forests. The bears, meanwhile, feast on fat-rich salmon to gain enough weight to survive a long, cold winter in hibernation.

In recent years, chum salmon returns have dropped precipitously in the Great Bear Rainforest. During the fall of 2009, local people in the Great Bear Rainforest reported that a majority of bears had not returned to fall fishing grounds, raising concerns that the bears had starved in their dens overwinter.

The Grizzly Bear is a wide-ranging omnivore that has slow reproductive and dispersal rates<sup>20</sup>. The wide range of habitats that the bears require makes them an 'umbrella species' for conservation planning, because the protection of their habitats will also protect habitats for a large variety of other species. Currently, Grizzly Bears are listed as species of special concern (blue-listed) by the BC Conservation Data Centre and by the federal government.



## Focal Species: Coastal Tailed Frog

The Coastal Tailed Frog is a small, long-lived frog that is uniquely adapted to life in the cool, fast-flowing mountain streams of the coastal temperate rainforests.

These miniscule (2.5-3 cm) frogs have reduced lungs and breathe mostly through their grainy-looking skin. They have no external 'ears' and are voiceless, since they live amid the constant sound of rushing water. Their most remarkable physical feature is the 'tail' found on adult males which is used for internal fertilization, an adaptation that ensures that sperm reach the eggs rather than being washed downstream.

Coastal Tailed Frogs live in cool (6-18° C), clear, fast-flowing, permanent mountain streams, and in the adjacent old growth forests. Coastal Tailed Frogs are slow-reproducing habitat specialists that are very sensitive to changes in the conditions in and around their home streams. Logging removes cover vegetation, leading to a drier and harsher terrestrial environment, disturbs streambeds and increases water temperatures. Upstream logging and associated roads can lead to chronic siltation. Silt fills the spaces between rocks that are critical for feeding, egg-laying, over-wintering, and refuge from flooding or small, stream-bed movements.

Coastal Tailed Frogs are listed as a species of special concern by the BC Conservation Data Centre (blue-listed) and the government of Canada. Throughout the Coastal Tailed Frog's range, much of its habitat has been altered or destroyed by logging (and by urbanization in the more southern parts of its range). Current forest practice requirements in the Great Bear Rainforest that provide protection for fish streams do not provide protection for the streams that tailed frog rely upon. Future run-of-the-river hydro projects may also threaten Coastal Tailed Frog habitat.

20 H.L. Horn, P. Arcese, K. Brunt, A. E. Burger, H. Davis, F. Doyle, K. Dunsworth, P. Friele, S. Gordon, A. N. Hamilton, S. Hazlitt, G. MacHutchon, T. Mahon, E. McClaren, V. Michelfelder, B. Pollard, S. Taylor, F.L. Waterhouse. 2009. Part 1: Assessment of Co-location Outcomes and Implications for Focal Species Management under EBM. Report 1 of the EBM Working Group Focal Species Project. Integrated Land Management Bureau, Nanaimo, B.C. [online] URL: [http://lmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg\\_docs/ei02c\\_report\\_3.pdf](http://lmbwww.gov.bc.ca/slrp/lrmp/nanaimo/cencoast/ebmwg_docs/ei02c_report_3.pdf)



## Focal Species: Mountain Goat

If that patch of snow on the cliff face just moved, then you have probably spotted a Mountain Goat. The Mountain Goat is a large hoofed mammal endemic to North America and found in mountainous terrain throughout the Great Bear Rainforest. The species is probably best known for its quick and nimble climbing through steep and rocky terrain. Perhaps less known is the Mountain Goat's reliance on old growth forests for its survival.

Winter habitats are a critical factor limiting for Mountain Goat survival. Mountainous terrain brings the perils of cold, harsh winters that can cause mortality exceeding 50% of the local population during severe winters<sup>21</sup>. Old-growth forests are an essential component of goat winter ranges particularly because large, old trees and closed canopies limit snow accumulation, increasing the availability of winter forage foods in the understory, and enabling Mountain Goats to expend less of their limited energy on moving through deep snow. Lichen that falls from older trees is a major winter food source (and is not present in younger stands). Forests also provide important shelter during cold winters.

Mountain Goats are matriarchal, with females living in 'nursery groups' with their young during most of the year. Nursery groups occupy habitats that are critical for the survival of the population. These areas typically are found adjacent to steep, rocky 'escape terrain'. Nursery groups return year after year to the same small areas of winter habitat and, because of this fidelity, can be harmed by even small losses of habitat.

BC is thought to support over half of the world's Mountain Goat population<sup>22</sup>. Mountain Goats reproduce slowly relative to other ungulates, and have showed localized population declines in parts of B.C. The Mountain Goat is listed in the BC government's Conservation Framework as a very high priority for conservation under the goal of "preventing species and ecosystems from becoming at risk."

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.



Photo: Lee Coursey, (Flickr)

Mountain Goats, despite their name and bearded appearance, are not actually goats. They are members of the antelope family.

*ForestEthics, Greenpeace and Sierra Club BC, as Rainforest Solutions Project, promote conservation options and economic alternatives to industrial logging on British Columbia's Central and North Coast and Haida Gwaii.*

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