

# WILDLIFE RESOURCE VALUE EFFECTIVENESS EVALUATIONS



# WILDLIFE RESOURCE VALUE



## Fine Filter:

- Wildlife Habitat Areas
- Ungulate Winter Range
- General Wildlife Measures
- Wildlife Habitat Features
- Specified Areas

## Coarse Filter:

- Riparian areas (terrestrial)

# WHA & UWR IMPLEMENTATION

Year	UWR ha	# WHAs	WHA ha
2000	0	2	74
2001	6203	43	8,421
2002	0	46	9,822
2003	907,089	68	30,409
2004	731,428	115	603,468
2005	1,124,515	125	12,437
2006	1,601,673	153	43,879
2007	344,651	483	48,685
<b>TOTAL</b>	<b>4,715,559</b>	<b>1035</b>	<b>757,195</b>

# WRV PRIORITY QUESTIONS

Do WHAs / UWRs maintain the *habitats, structures & functions* necessary to meet the goals of the WHA / UWR<sup>1</sup>, and is the *amount, quality and distribution* of WHAs / UWRs contributing effectively with the surrounding land base (including protected areas and managed land base) to *ensure the survival*<sup>2</sup> of the species now and over time?

1 = winter habitat requirements

2 = winter survival for UWR

# WORK TO DATE

- Overview framework document
  - criteria & procedure for setting priorities
  - (research acquisition, implementation plan)
- Supporting technical guides:
  - *planning and designing effectiveness evaluations*
  - *using conceptual models*
  - *developing & testing protocols*

# PROTOCOLS & PILOTS SUMMARY

<i>SPECIES</i>	<i>INDICATORS</i>	<i>PROTOCOL</i>	<i>PILOT</i>	<i>STAT REVIEW</i>	<i>IMPLEMENT</i>
Badger					09/10
Gopher Snake					09/10
Tailed Frog					09/10
Mountain Goat (UWR)				08/09	09/10
Mountain Goat (WHA)				08/09	09/10
Northern Goshawk					
Bull Trout					
White-headed Woodpecker					
Marbled Murrelet					
Mule Deer					
Elk					
Caribou					

# PILOT SPECIES

1. Badger
2. Gopher Snake
3. Mountain Goat
4. Tailed Frog
5. Northern Goshawk



# INDICATORS OF EFFECTIVENESS

FUNCTIONALITY X RISK = EFFECTIVENESS

Office (GIS):

- area of permanent habitat loss
- road density
- traffic volume
- road mortalities
- # or density of stream crossings
- age class within/adj to WHA
- measures of connectivity

# DECISION MATRIX

<i>Functionality rating</i>	<i>Risk rating</i>		
	<i>Low - Nil</i>	<i>Long-term</i>	<i>Immediate</i>
Highly functional	5	4	3
Moderately functional	4	3	2
Not functional	2	1	1

EFFECTIVE: (4 – 5) = no management action

EFFECTIVE BUT AT RISK = (2 - 3) = change management practices

NOT EFFECTIVE: (1) = change management practices (restoration)

# TAILED FROG



- Long living (15 – 20 yrs)
- Slow to mature (7 – 9 yrs)
- Long larval period (1 – 5 yrs)
- Do not vocalize
- Males have 'tails'
- Deposit eggs in fast-flowing streams
- Unique adaptations include:
  - flattened suction mouth (larvae)
  - flattened bodies

# TAILED FROG HABITAT

*Moist, cool microhabitat*



*Large boulders forming stable steps that withstand floods & sediment pulses*

*Coarse substrates with interstitial spaces*

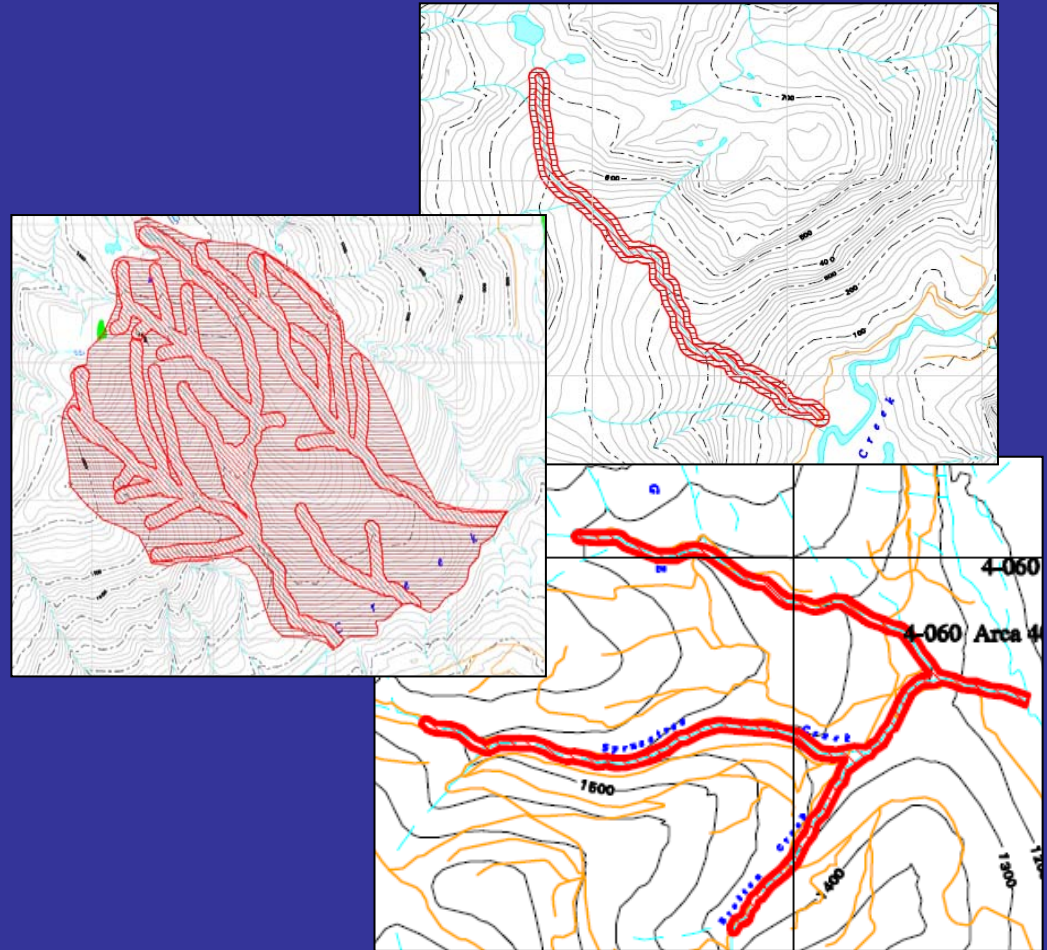
*Perennial streams with step pools*

*P. Friele*

*6 – ~22 °C*

# TAILED FROG WHAs

- Two species:
  - Rocky Mountain
  - Coastal
- Three types of WHAs
  - watershed
  - ribbon
  - network



# TAILED FROG WHAS BY DISTRICT

## April 2007

MFR district	# WHAs	Total ha
North Coast	2	611
Kalum	10	3266
North Island- Central Coast	9	187
Cascades	15	333
Rocky Mountain	18	1232
Kootenay Lake	1	8
Total	55	5637

\*started working on evaluations in 18

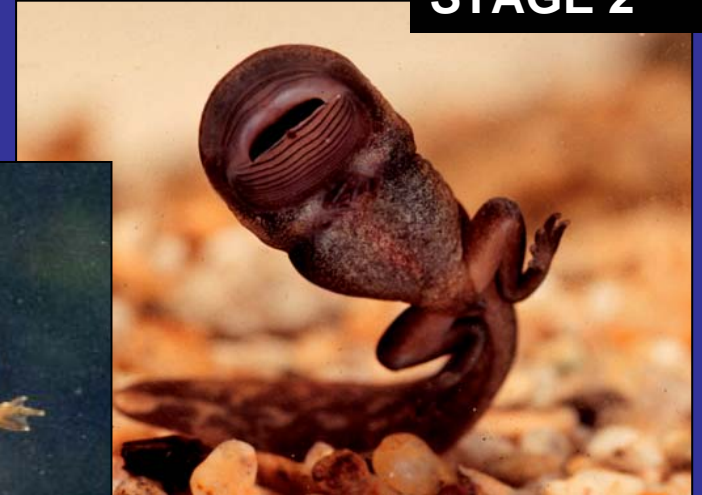
# INDICATORS

## Population:

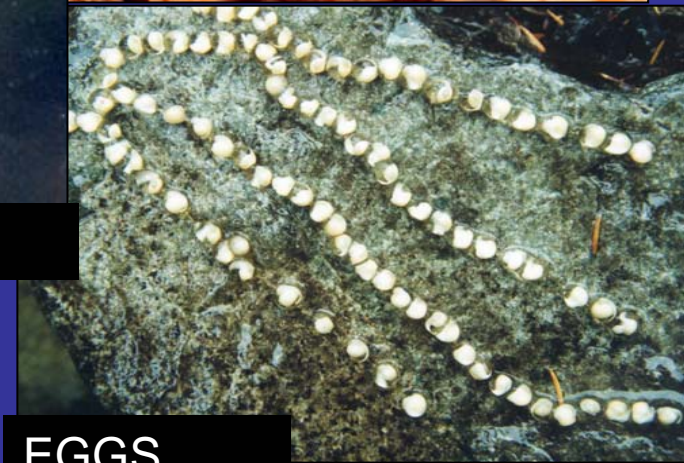
- Larval abundance
- Age class



STAGE 4



STAGE 2

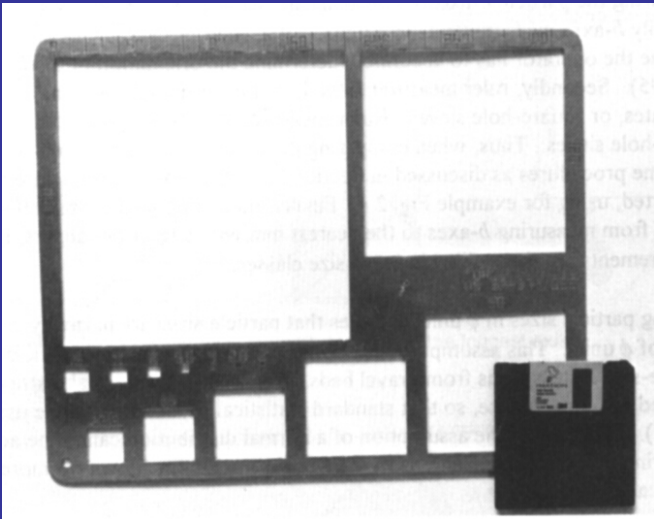


EGGS

# INDICATORS

## Habitat:

- Substrate texture
  - step forming (>300mm)
  - refuge forming (40 – 300mm)
  - refuge filling (>2 – 39mm)
- Water, soil temperature & humidity



*Measuring grain size classes*

# TAILED FROG PILOTS



*Larval monitoring*

## Purpose:

- Testing sample sizes for trend analysis & sampling design to optimize *time, effort, cost & certainty*

## Forest Districts

- Cascades (GIS + Field)
- Rocky Mountain (Field)
- Kalum (GIS)
- North Coast (GIS)

# SNAKE WHAs



- Communal hibernacula  
*(Western Rattlesnakes, Racers, Gopher Snakes, Night Snake?)*
- Include denning, foraging and egg-laying habitats
- 2 WHAs in Cascades FD & 10 in Okanagan-Shuswap FD

# INDICATORS

*Den counts*



*Stubble height*



*Visual obscuring*



*Cover objects*

# BADGER WHAs



- Established for areas with high burrow density (especially maternal dens) & prey concentrations
- 7 approved, 2 proposed
- All in Rocky Mountain FD
- Started working in all

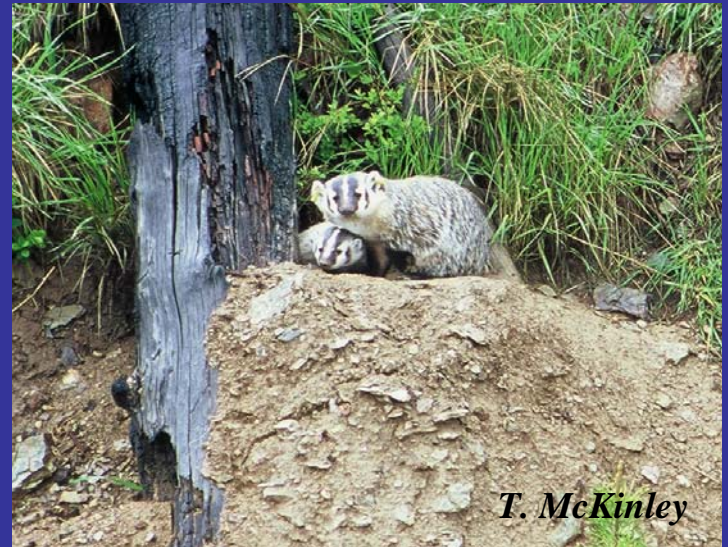
# INDICATORS



*Burrow density counts*



*Presence of family group or female*



# MOUNTAIN GOAT UWR & WHAs

315 660 ha in UWR + some within  
another 1,200,293 ha

- Campbell River
- North Island – Central Coast
- Squamish
- Skeena – Stikine
- Kalum
- Mackenzie
- Peace
- Arrow Boundary
- Rocky Mountain

10 WHAs in Peace



*Jared Hobbs*

# INDICATORS



*Pellet count monitoring at permanent plots in WHA*

## UWR

- Snow depth & consolidation
- Abundance of arboreal lichens
- % canopy cover by strata
- Signs of use (tracks, pellets, hair, visual sightings)
- Pellet counts

# MOUNTAIN GOAT PILOTS

## UWR

*3 pilot areas:*

- *Okanagan-Shuswap*
- *Sunshine Coast*
- *Lakes*

FREP Report 2008

## WHA

*9 WHAs:*

- *Peace*

# SHORT-TERM IMPLEMENTATION PLAN

Framework	07/08
Technical guides	08/09
MOE Implementation & Data Management Plan	08/09
WHA & UWR Implementation Plan	08/09
Monitoring protocols, pilots & statistical review *New: routine protocol for UWR evaluation	08/09
FREP Report – Mountain Goat	07/08
FREP Report – Badger & Tailed Frog	08/09
Training materials	08/09
Phase in implementation for pilot species	09/10

# MORE INFORMATION

## *FREP Wildlife Value Web Page*

<http://www.for.gov.bc.ca/hfp/frep/values/wildlife.htm>

## *MOE Sharepoint*

<http://sharepoint.env.gov.bc.ca/ESI/FREP-Wildlife/default.aspx>

## *IWMS Home Page*

<http://www.env.gov.bc.ca/wld/frpa/iwms/index.html>

## *UWR Home Page*

<http://www.env.gov.bc.ca/wld/frpa/uwr/index.html>

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