



## Forest Health Update for the National Mountain Parks 2009



**MPB activity and reproductive success**

*Kootenay National Park, June 2009*



Natural Resources  
Canada

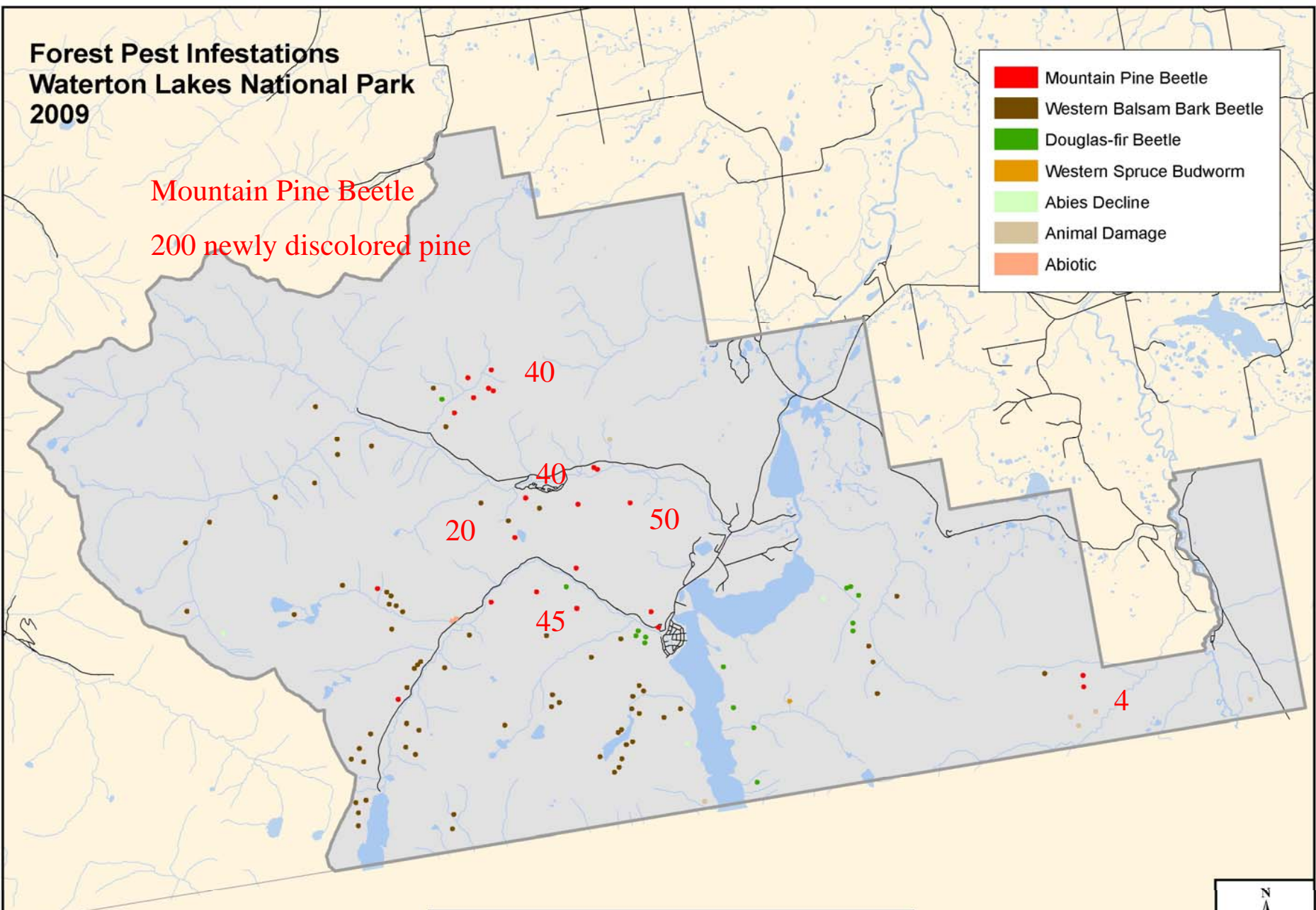
Ressources naturelles  
Canada

Canada 

# Forest Pest Infestations Waterton Lakes National Park 2009

Mountain Pine Beetle  
200 newly discolored pine

- Mountain Pine Beetle
- Western Balsam Bark Beetle
- Douglas-fir Beetle
- Western Spruce Budworm
- Abies Decline
- Animal Damage
- Abiotic




Blakinston Creek (June 3, 2009)



Lost Horse Creek Aug. 2009





**Discolored pine not affected by MPB only removed from aerial survey results if included in ground surveys**

**Armillaria at base of discolored pine**



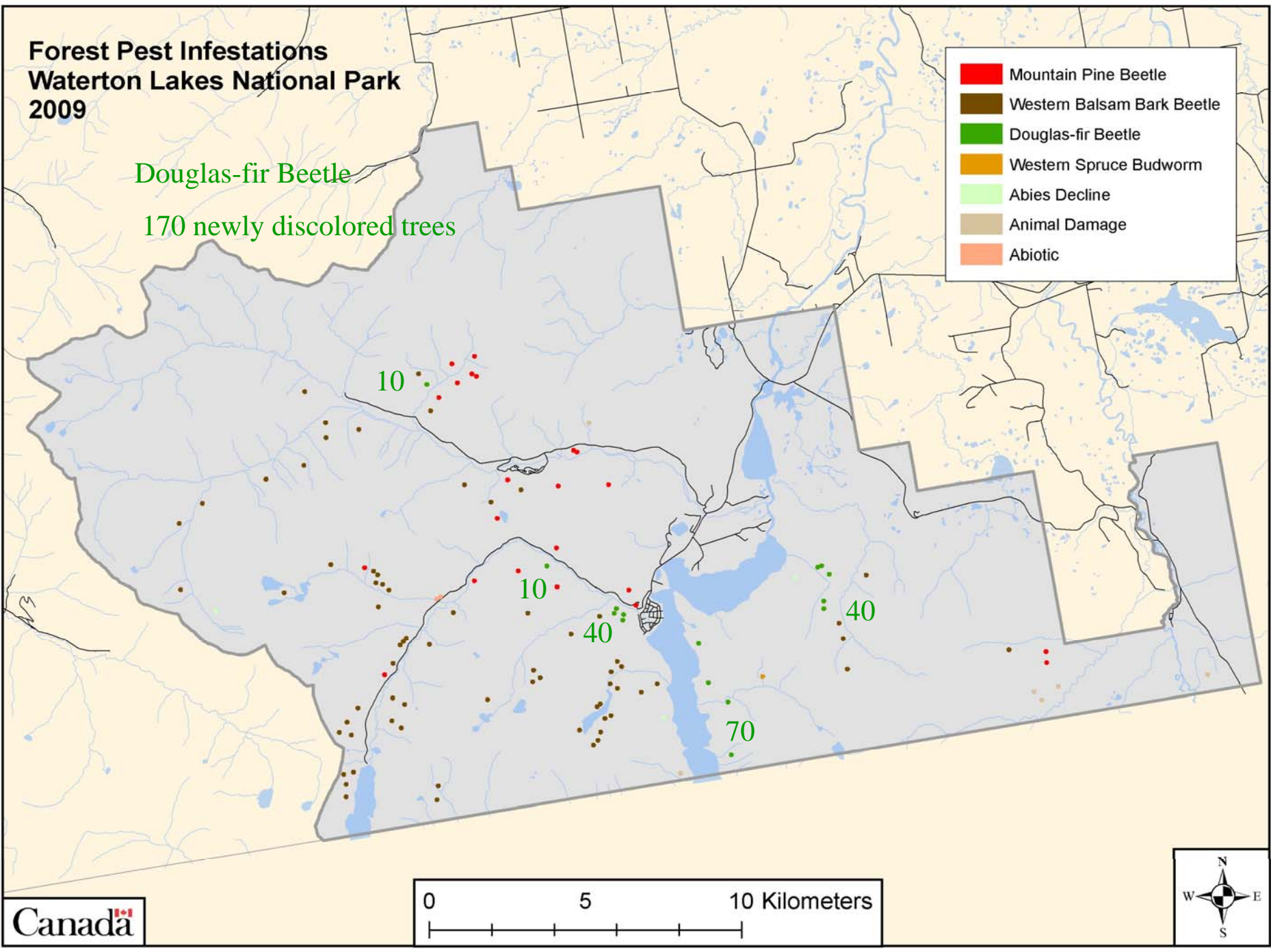
**Lodgepole pine beetle gallery in host shown above**



# Forest Pest Infestations Waterton Lakes National Park 2009

Douglas-fir Beetle  
170 newly discolored trees

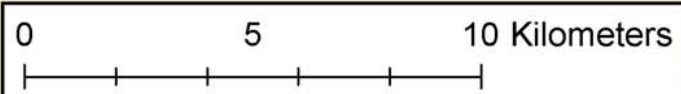
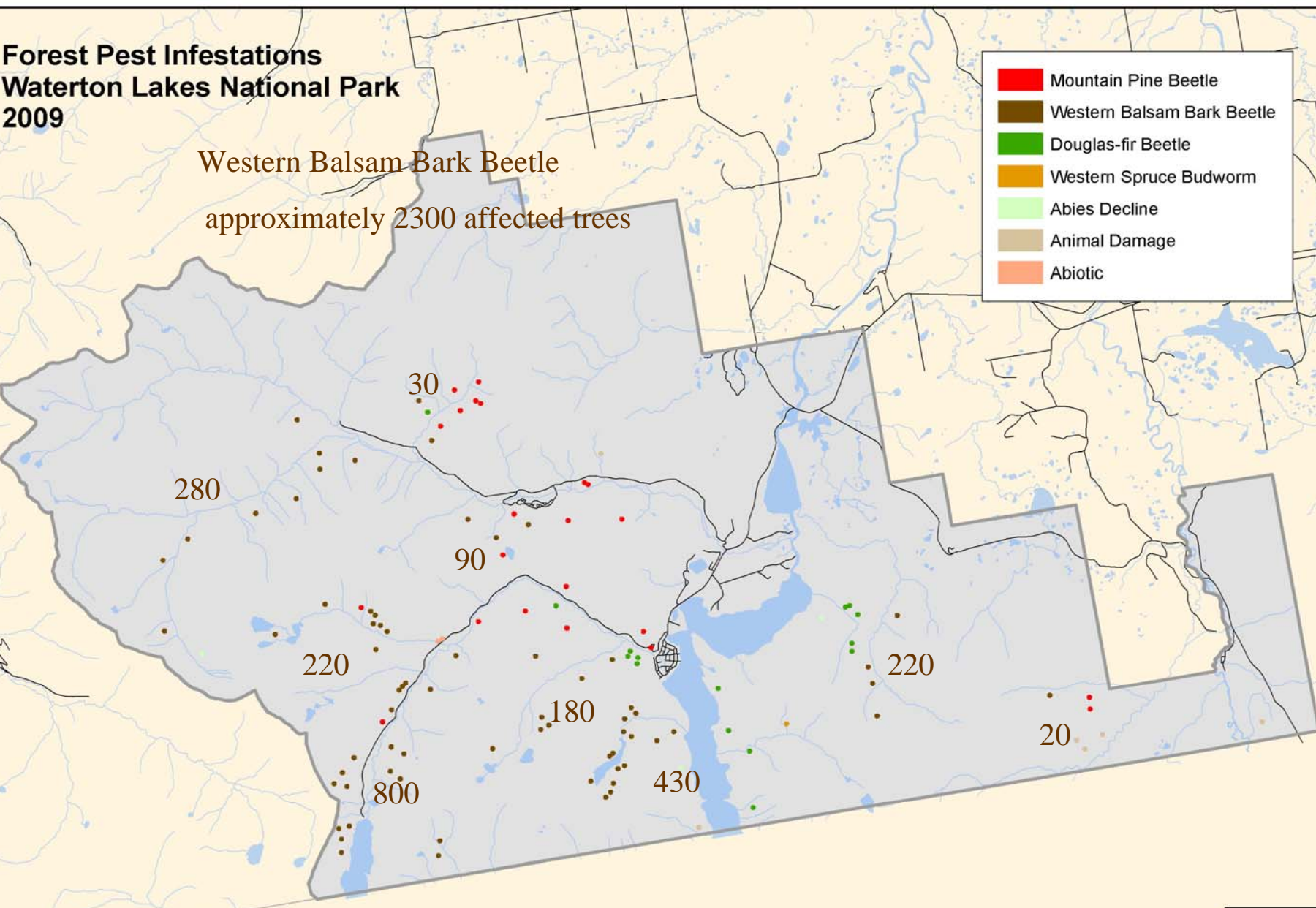
- Mountain Pine Beetle
- Western Balsam Bark Beetle
- Douglas-fir Beetle
- Western Spruce Budworm
- Abies Decline
- Animal Damage
- Abiotic



# Forest Pest Infestations Waterton Lakes National Park 2009

Western Balsam Bark Beetle  
approximately 2300 affected trees

- Mountain Pine Beetle
- Western Balsam Bark Beetle
- Douglas-fir Beetle
- Western Spruce Budworm
- Abies Decline
- Animal Damage
- Abiotic





Discolored Douglas-fir Upper Waterton Lake  
east shore



Discolored *Abies* Blankinston Falls trail



June 2009 sampling results

**Forest Pest Infestations  
Banff National Park  
2009**



**'R' Values**  
0.0, 3.2, 3.5, 0.01, 4.5  
0.0, 3.8, 0.0, 2.9  
0.2, 2.9  
0.2, 2.6

**BNP ave. 1.0**

**Attack densities  
MPB gallery starts/sample  
BNP 2.7**

0.0, 2.8

3.8, 2.4

2.9, 2.0



1.5, 2.3

1.7, 1.9

9.3, 2.5

0.6, 2.2

0.2, 2.5

	Mountain Pine Beetle
	Western Balsam Bark Beetle

0 10 20

Kilometers





Lake Louise pipestone site with live 4th instar larvae (June, 2009)



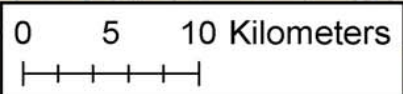
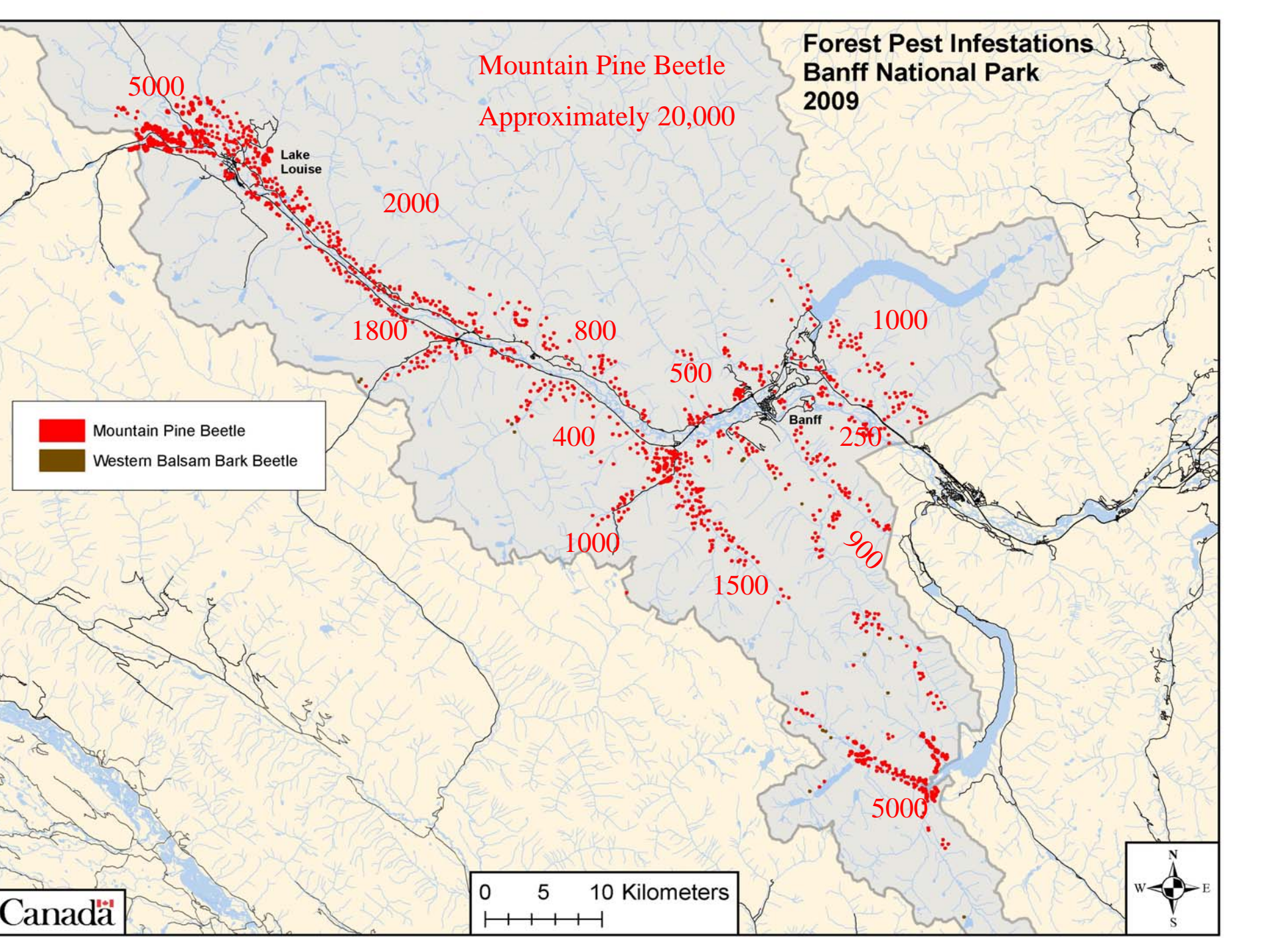
Fairholme, mortality of 1st-2nd instar larvae (16-10-09).



# Forest Pest Infestations Banff National Park 2009

Mountain Pine Beetle  
Approximately 20,000

■ Mountain Pine Beetle  
■ Western Balsam Bark Beetle





Bryant Creek drainage showing yellow color  
of pine recently affected by MPB (Aug. 2009)



Aerial view from the Yoho Park border  
(Aug. 2009).





Natural Resources  
Canada

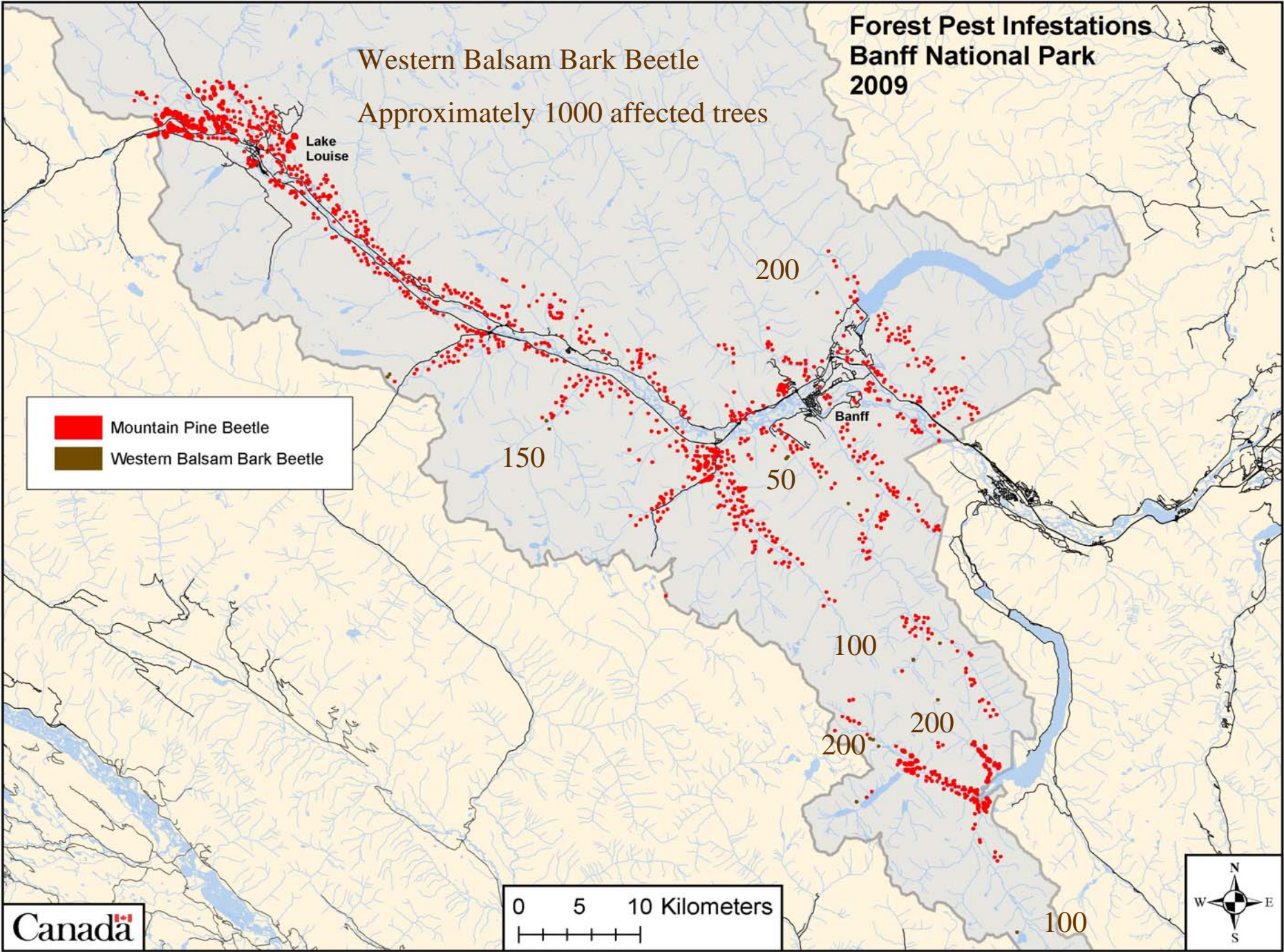
Ressources naturelles  
Canada

Canada

# Forest Pest Infestations Banff National Park 2009

Western Balsam Bark Beetle  
Approximately 1000 affected trees

 Mountain Pine Beetle  
 Western Balsam Bark Beetle





**Forest Pest Infestations  
Jasper National Park (Jasper area)  
2009**

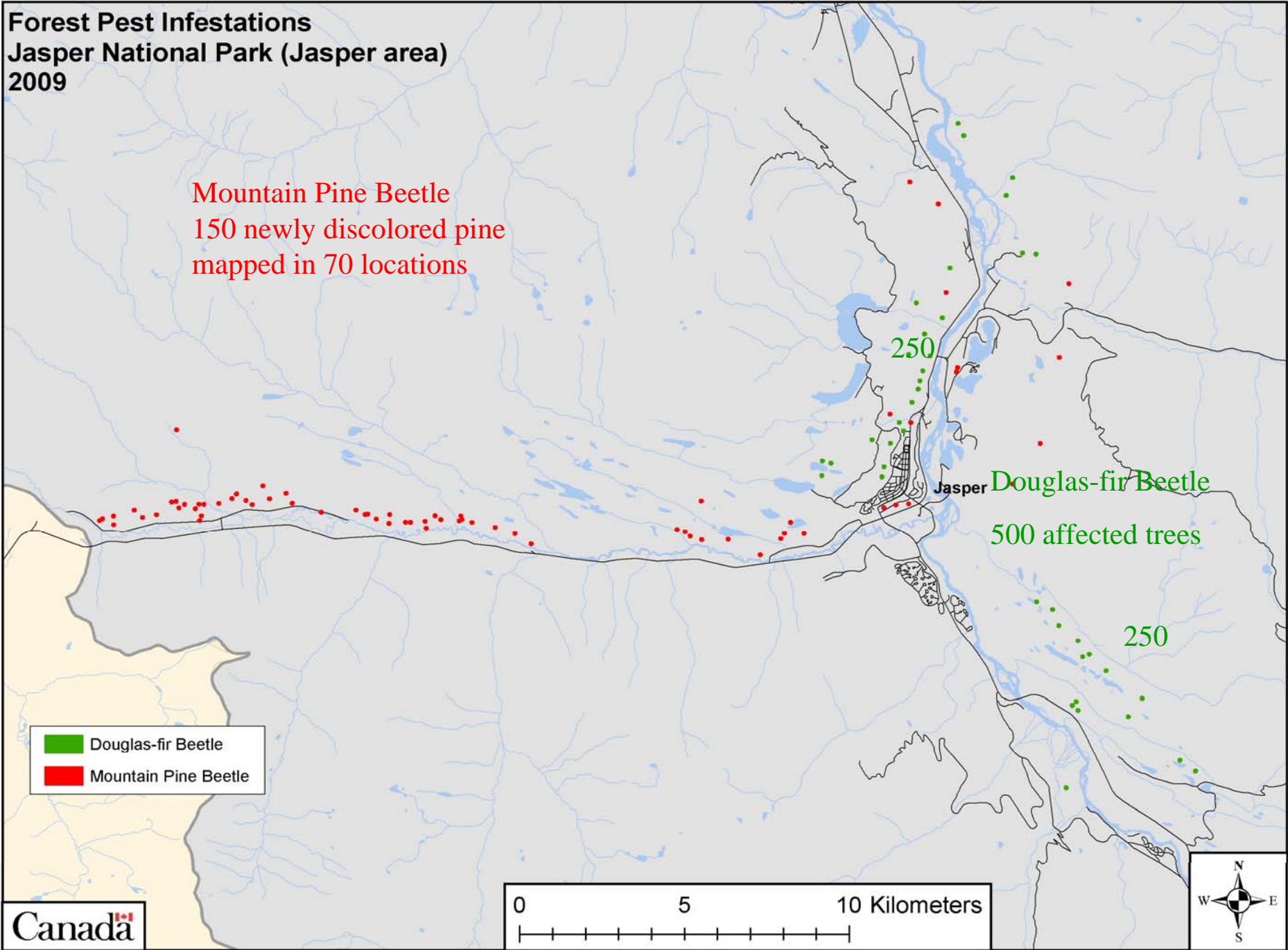
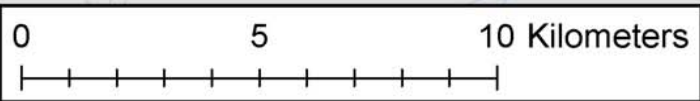
**Mountain Pine Beetle**  
150 newly discolored pine  
mapped in 70 locations

**Douglas-fir Beetle**  
500 affected trees

250

250

 Douglas-fir Beetle  
 Mountain Pine Beetle





Discolored Douglas-fir north of Jasper,  
(June , 2009)





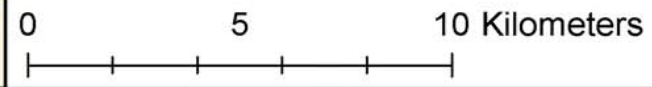
DFB in large diameter Douglas-fir  
(October, 2009)



**Forest Pest Infestations  
Jasper National Park (north region)  
2009**

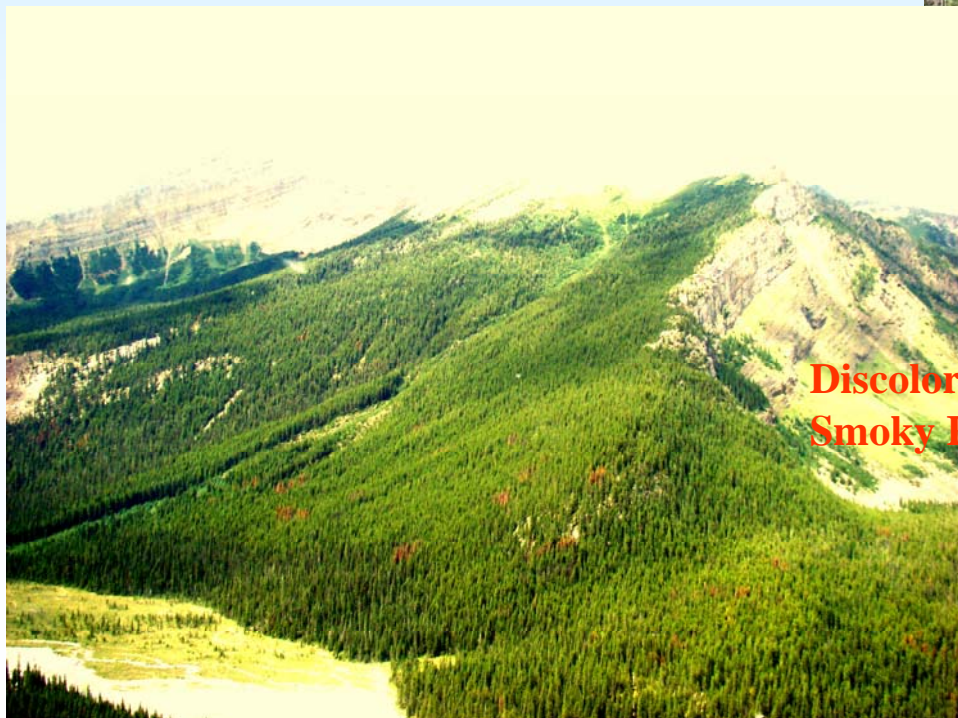
**Mountain Pine Beetle**  
360 newly discolored mapped  
1000 plus previously affected

-  Mountain Pine Beetle
-  Animal Damage





**Discolored lodgepole pine along the Miette River  
(June, 2009)**



**Discolored pine at the mouth of Chown Creek and  
Smoky River (Aug. 2009)**

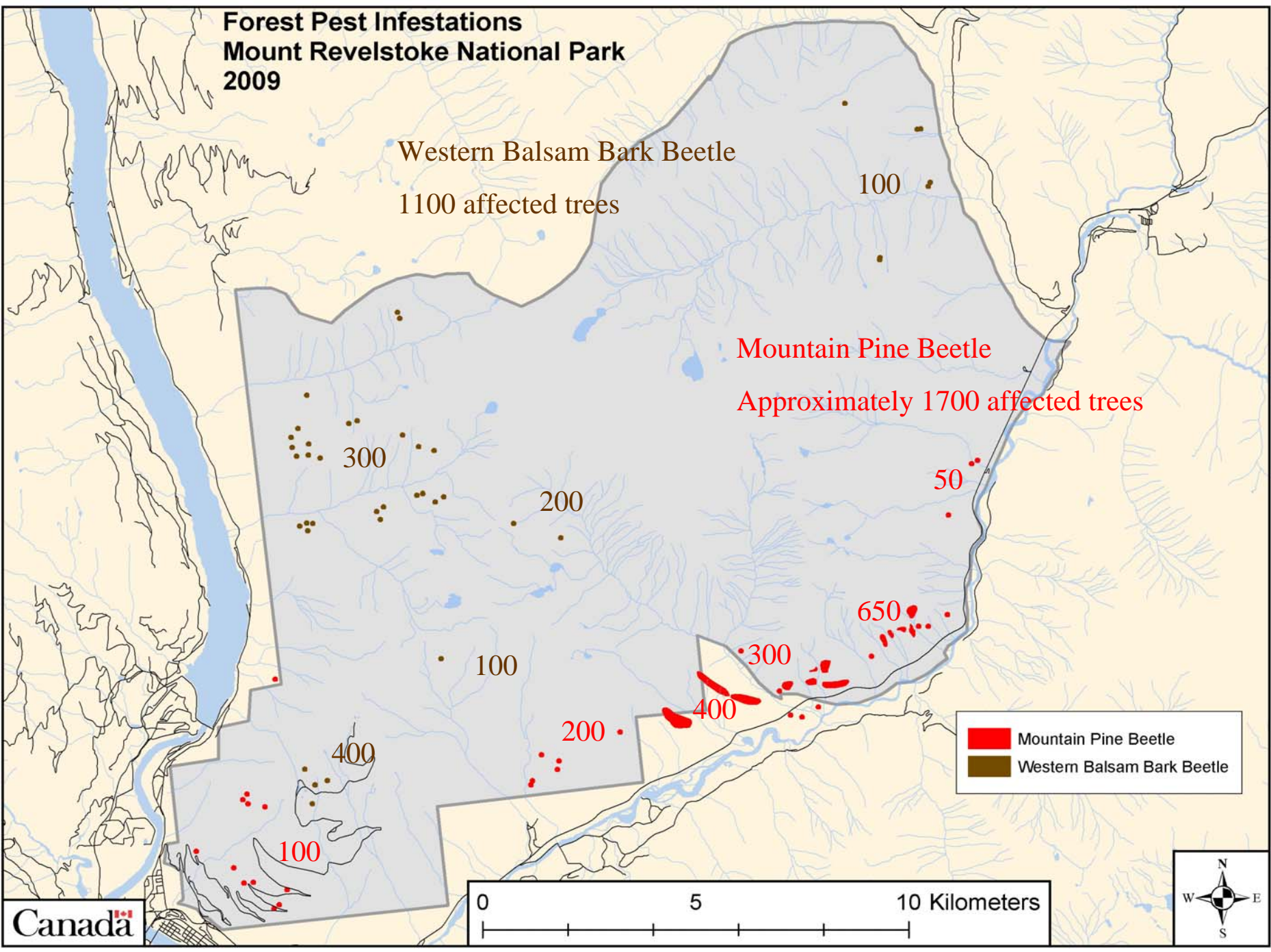






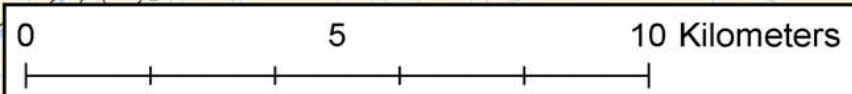
# Forest Pest Infestations Mount Revelstoke National Park 2009

Western Balsam Bark Beetle  
1100 affected trees

Mountain Pine Beetle  
Approximately 1700 affected trees



	Mountain Pine Beetle
	Western Balsam Bark Beetle

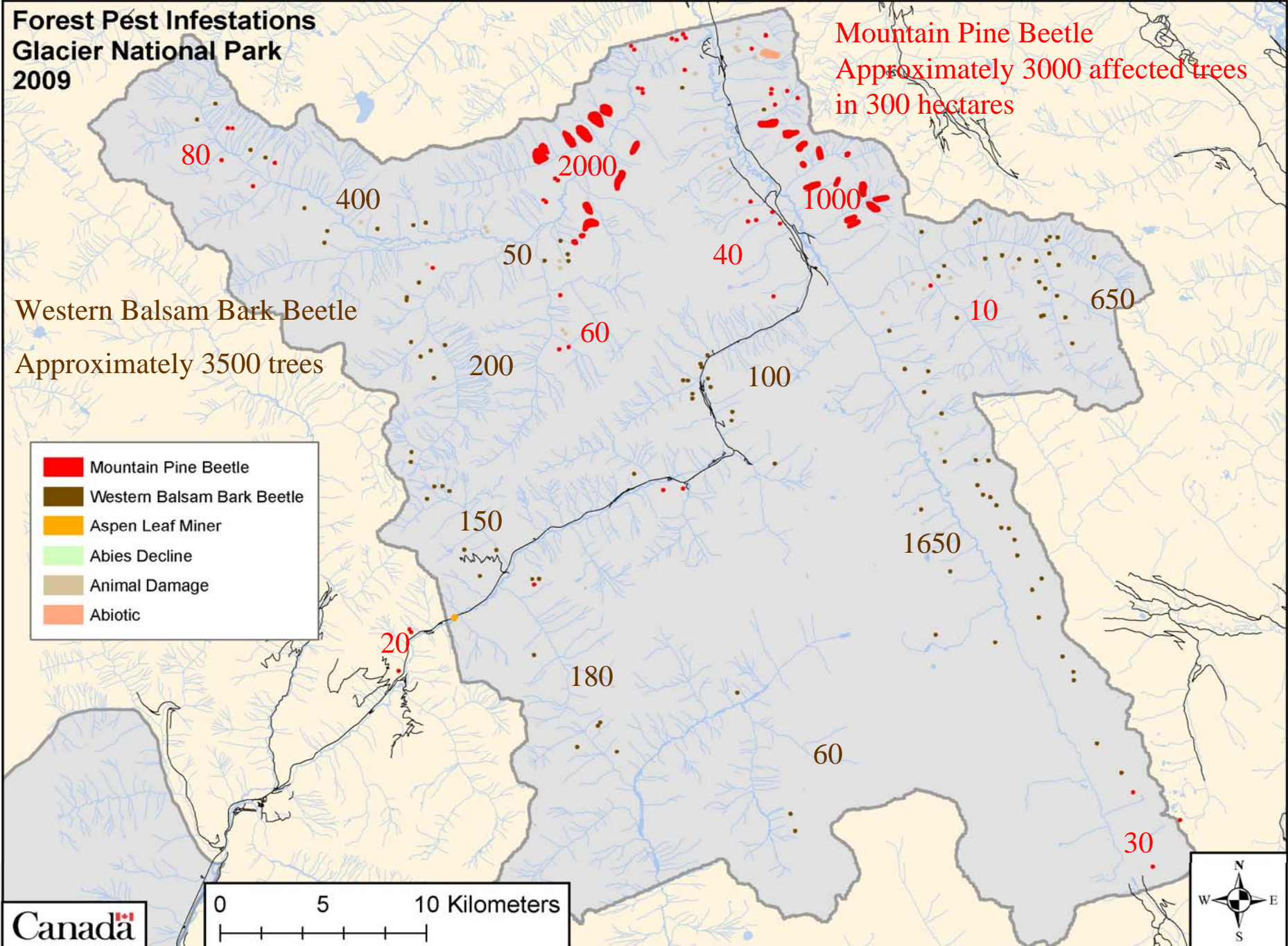
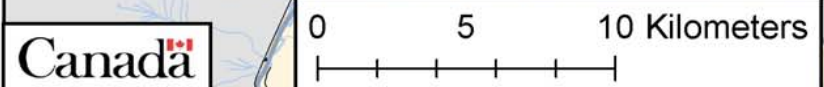


**Forest Pest Infestations  
Glacier National Park  
2009**

**Mountain Pine Beetle**  
Approximately 3000 affected trees  
in 300 hectares

**Western Balsam Bark Beetle**  
Approximately 3500 trees

- Mountain Pine Beetle
- Western Balsam Bark Beetle
- Aspen Leaf Miner
- Abies Decline
- Animal Damage
- Abiotic





MPB affected trees on a ridge west of Clachacudainn  
Creek



Discolored *P. albicaulis* mapped as a polygon by east  
gate



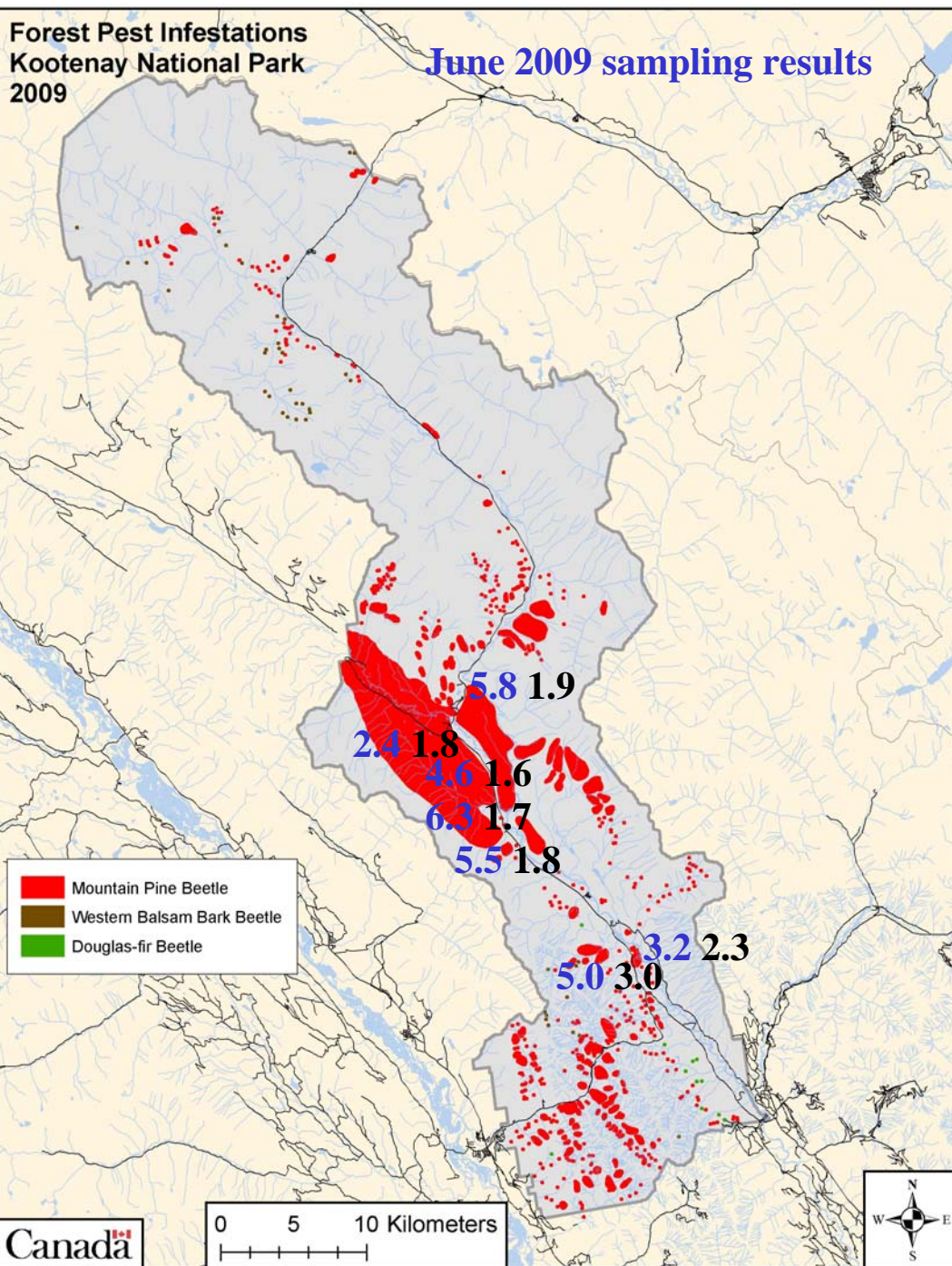
Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

Forest Pest Infestations  
Kootenay National Park  
2009

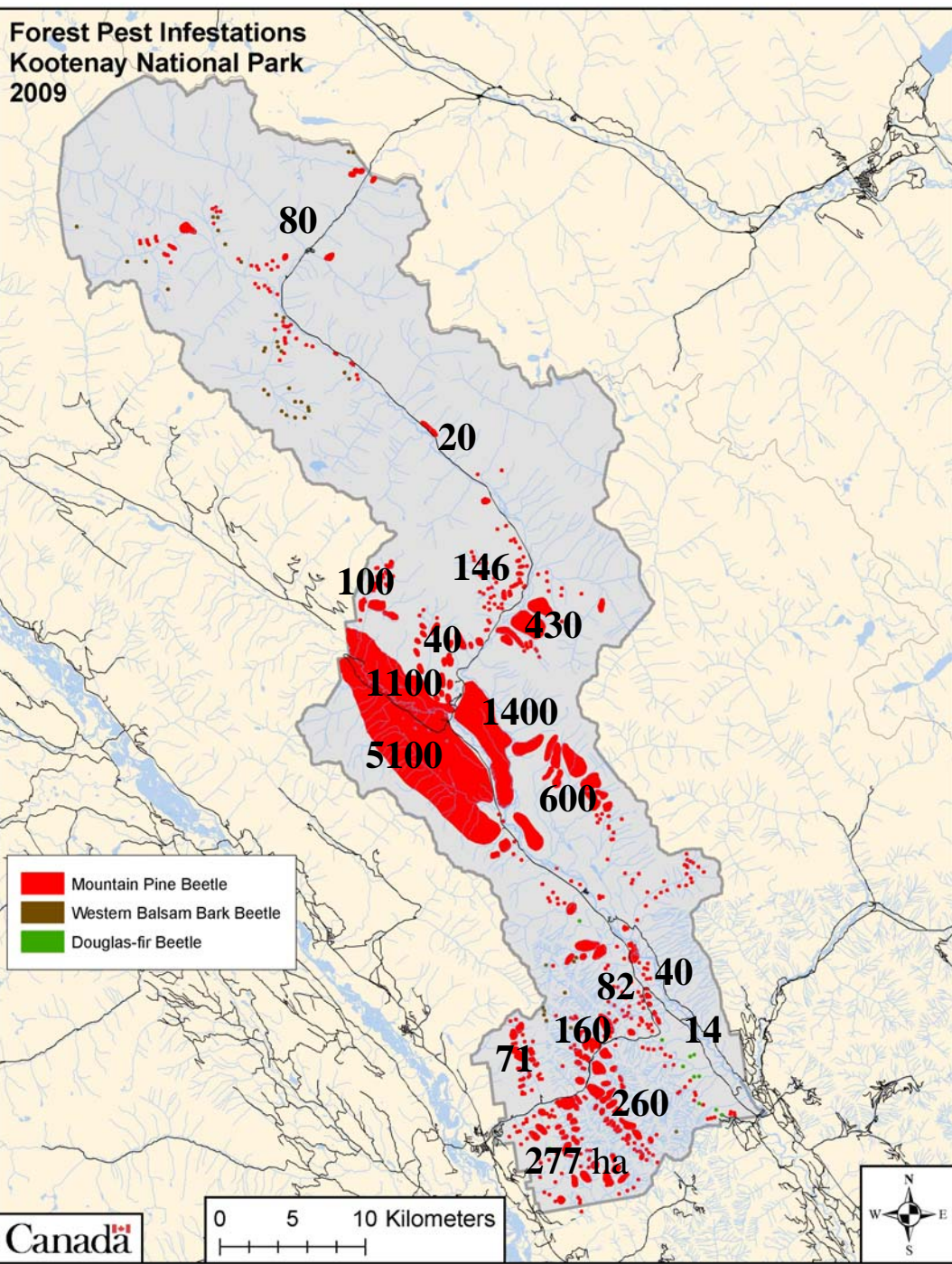
June 2009 sampling results



Attack densities  
MPB gallery starts/sample  
Average 2.0

'R' Values  
Average 4.7

**Forest Pest Infestations  
Kootenay National Park  
2009**



**Mountain Pine Beetle**

affected approximately 10,000  
hectares

areas shown in ha



Affected whitebark pine Sinclair Pass,  
Aug. 2009



View from Kootenay Crossing with Dolly Varden  
in background

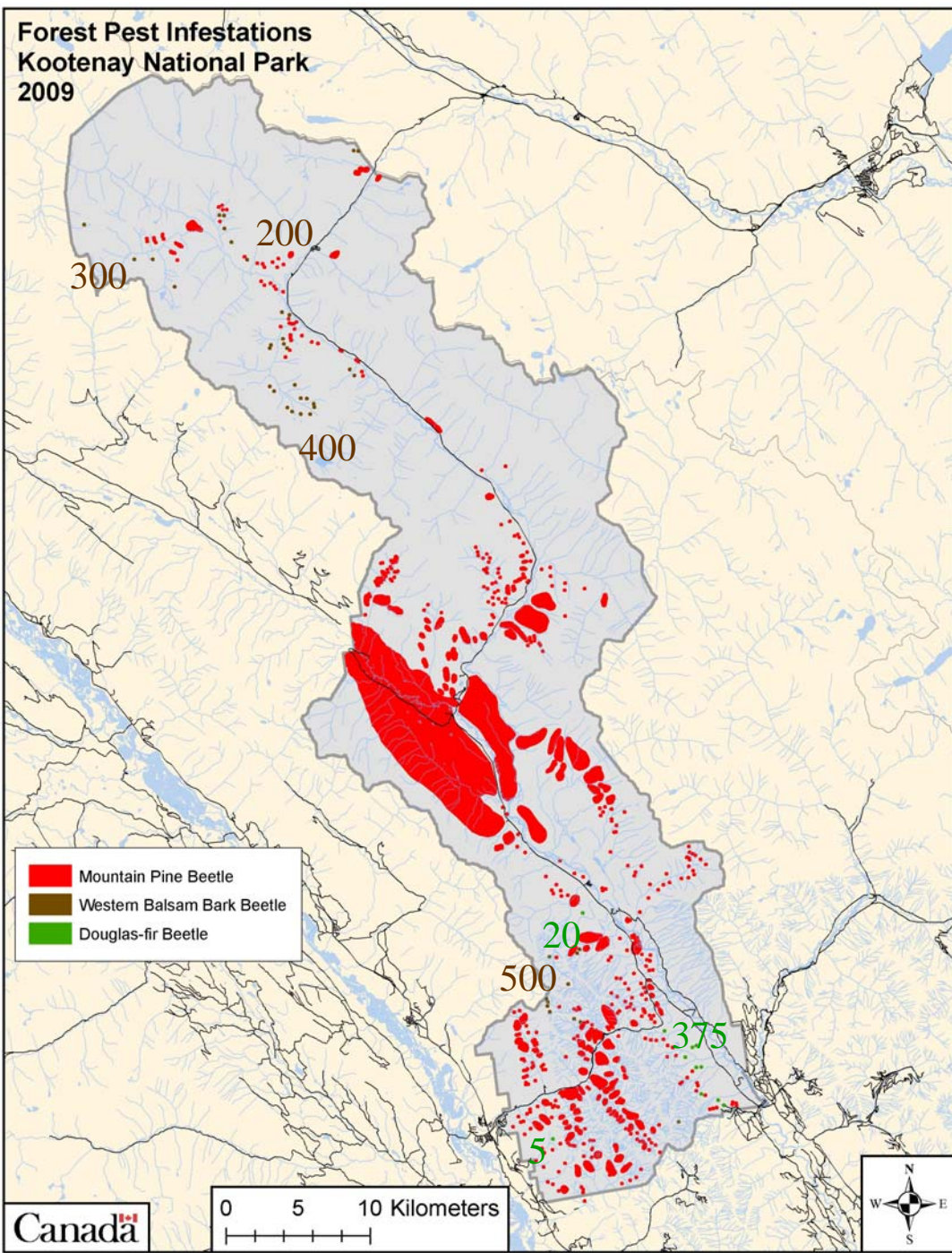


Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

**Forest Pest Infestations  
Kootenay National Park  
2009**



Western Balsam Bark Beetle  
Affected an estimated 1400 trees

Douglas-fir Beetle  
Affected an estimated 400 trees



## 'R' values

YNP (ave.) 3.6

## Attack densities

MPB gallery starts/sample

YNP 1.8

## MPB/Sample (ave.)

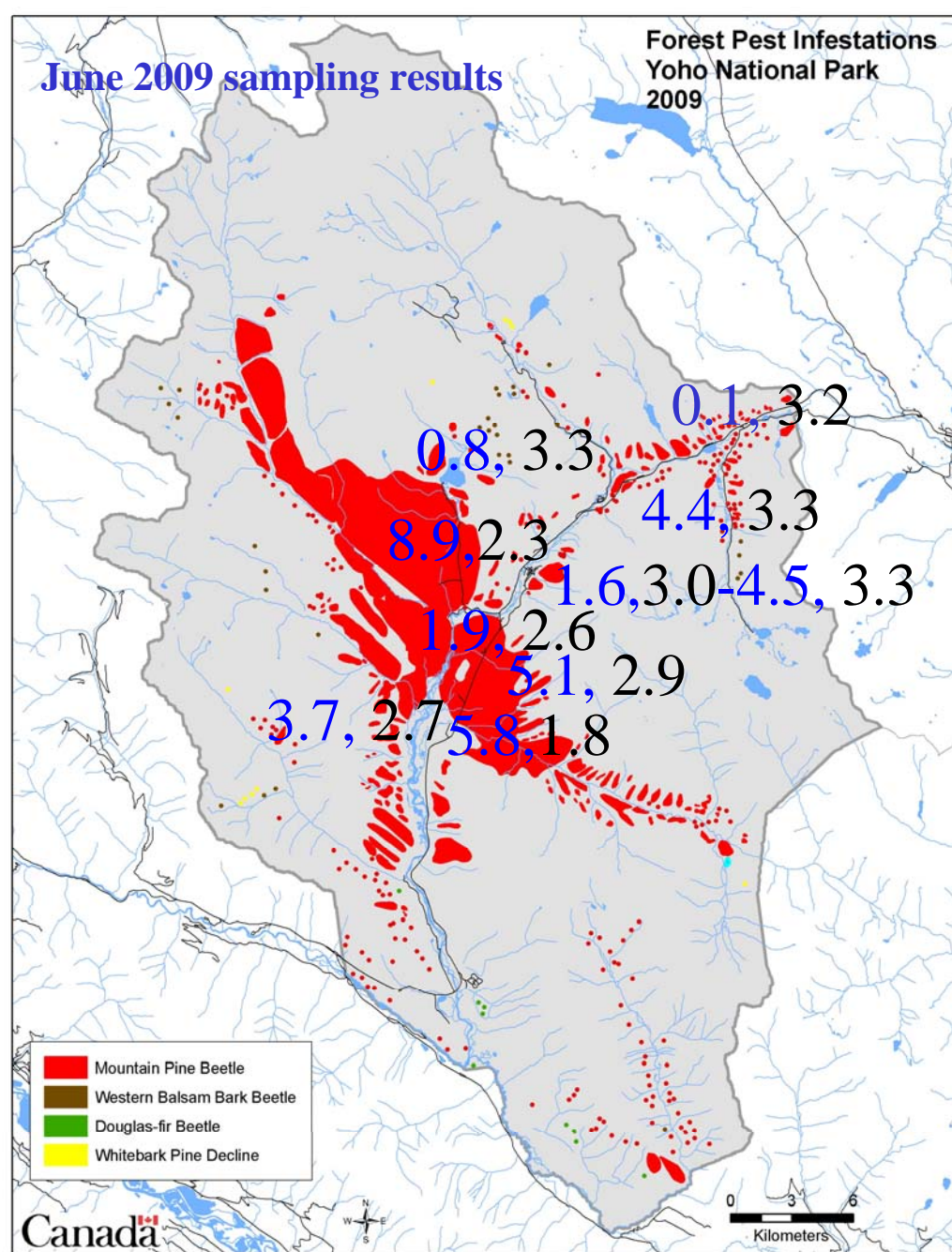
$$3.9 \times 1.8 = 7.0$$

$$3.7 \times 2.7 = 10.0$$

$$5.8 \times 1.8 = 10.4$$

$$4.5 \times 3.3 = 14.9$$

$$8.9 \times 2.3 = 20.5$$





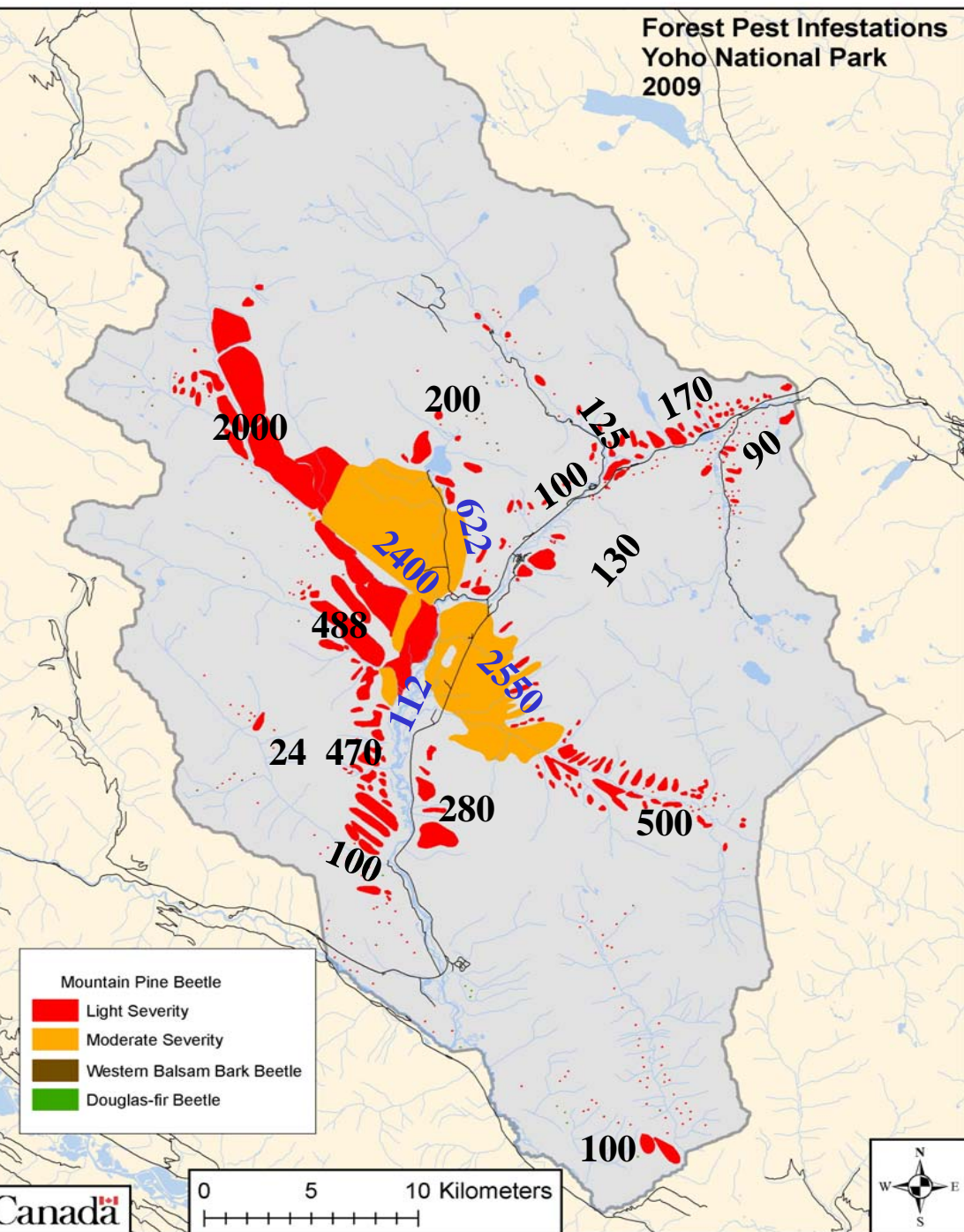
Forest Pest Infestations  
Yoho National Park  
2009

# Mountain Pine Beetle

Areas shown in hectares

0-10% affected 6100 total (in hectares)

11-30% affected 5900 total (in hectares)





A view of the Kicking Horse River, Ottertail River drainage top right.



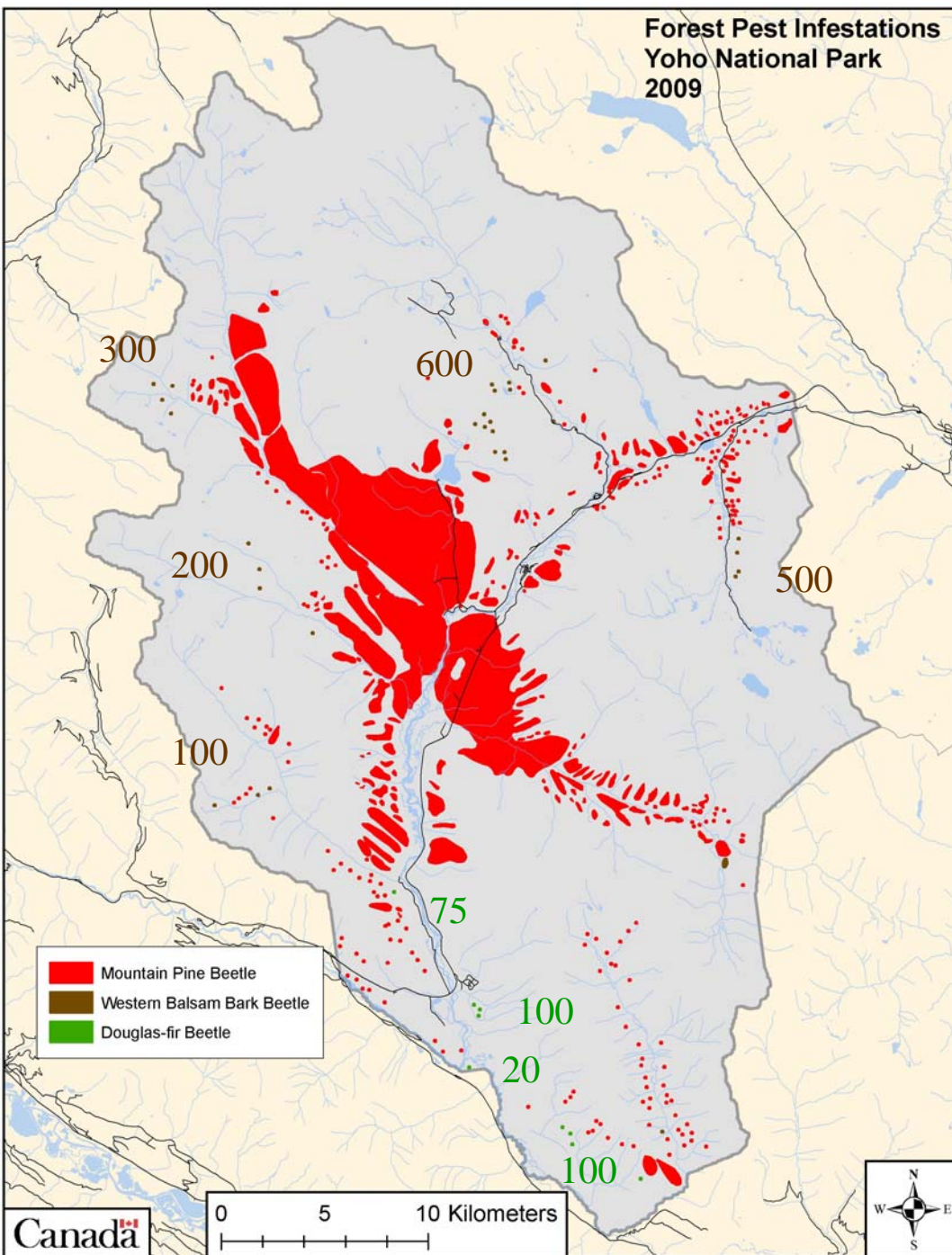
Upper Amiskwi River Drainage showing the pockets of MPB activity.



Forest Pest Infestations  
Yoho National Park  
2009

Western Balsam Bark Beetle  
Affected an estimated 1700 trees

Douglas-fir Beetle  
Affected approximately 300 trees





**Discolored Douglas-fir mapped in Hoodoo burn.**



**Discolored Douglas-fir near mouth of Porcupine Creek.**





## Special Thanks

Parks Canada: R. Kubian, J. Park, I. Pengally, D. Smith, B Sunbou , R. Schwanke, G. Walker, Fire and Trail crews

SRD: B. Horne, D. Lux

PFC: L. Humble, G. Thandi, L. Sanfranyik, B. Wilson et al.

Alpine Helicopters: pilots and technicians



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada 