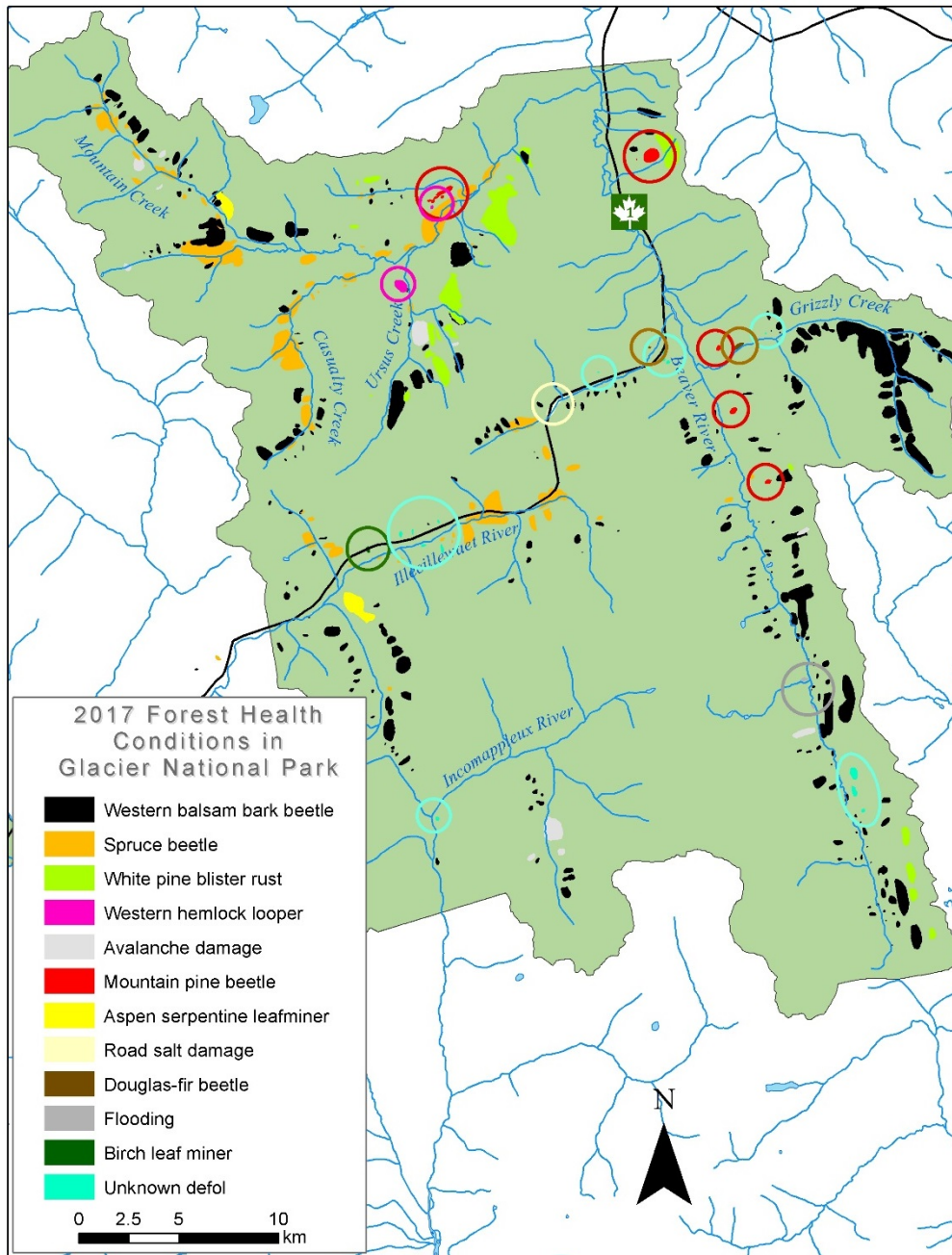


Northern Forestry Centre

Glacier National Park



Glacier and Mount Revelstoke National Park surveys were conducted together. Ground surveys were conducted on June 7-8, while the aerial survey took place on August 24, 2017. Smoke hampered visibility during the Glacier aerial survey, especially in the north end of the park in the Beaver River Valley. Data capture in this area was incomplete.

Mountain pine beetle, (*Dendroctonus ponderosae*): Although populations are still low, two new areas containing moderate patches of suspected MPB-caused pine mortality were recorded near the confluence of Ursus and Mountain Creeks, and on the west-facing slope above the east gate. These patches, along with pockets mapped along the west-facing slopes of the Beaver River Valley, totalled 94 Ha in 2017.

Western balsam bark beetle, (*Dryocoetes confuses*): New subalpine fir mortality, caused by the Western Balsam Bark Beetle, totalled 4,243 Ha in 2017. Though this suggests populations are slightly down considering 4,500 Ha recorded in 2016, it is important to note visibility due to smoke was an

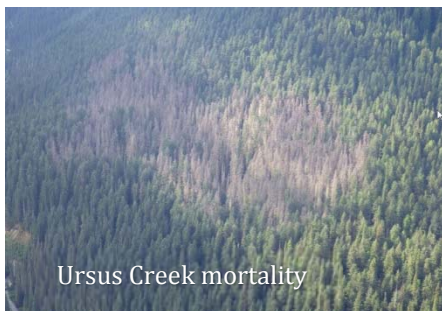
issue in some areas of the park. The new mortality continues to be most heavy along the east side of the Beaver River, and in the Grizzly, Mountain, Casualty, and Ursus Creek valleys. It is also still active in several tributary valleys off the Illecillewaet and Incomappleux Rivers.



Spruce beetle, (*Dendroctonus rufipennis*): Spruce beetle mortality increased from the 1,635 Ha recorded in 2016 to the 2,019 Ha mapped in 2017. The majority of mortality continues to occur in the north along the Mountain, Ursus, and Casualty Creeks, and along the TransCanada valley from Glacier Park Lodge to Bostock Creek. The majority of the expansion has occurred along the latter, including up into the Bostock valley. Ground surveys in 2017 revealed decent brood production for both *D. punctatus* and *D. rufipennis* so infestations are expected to continue. Samples collected and identified at NoFC confirmed both species. Enhanced SB assessments will occur in 2018.

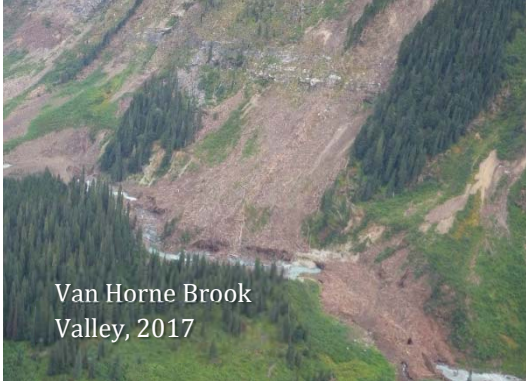
White pine blister rust, (*Cronartium ribicola*): In 2017, approximately 1,011 Ha of mostly moderate White pine blister rust was recorded along Ursus and Mountain Creeks, and along the east side of the Illecillewaet River near the east gate. Visibility was severely limited in the latter area due to smoke so its likely data capture was not complete there. Further mortality was mapped on Bald Mountain and in the southeast end of the park along the west facing slopes of the Beaver River valley (Caribou Peak).

Aspen serpentine leaf miner, (*Phyllocnistis populiella*): Although a new patch was recorded in 2017, aspen serpentine leaf miner defoliation remained static with approximately 185 Ha mapped. Aspen stands continue to be affected along the TransCanada by the north and west park gates. An additional patch affecting scattered aspen was recorded along the south-west slopes of Nordic Mountain.



Suspected Western hemlock looper, (*Lambdina fiscellaria lugubrosa*): Mortality is now evident at the suspected Western hemlock looper defoliation recorded at Ursus Creek in 2016. There also appeared to be some trace to light defoliation occurring in adjacent stands. Another suspect patch was recorded further north on Mountain Creek. Total area recorded in 2017 is 33 Ha. Again, these have not been confirmed as WHL. It is also important to note several other patches of unknown defoliation were recorded in 2017 at various locations. Further attempts to identify the unknown damage will be taken in 2018.

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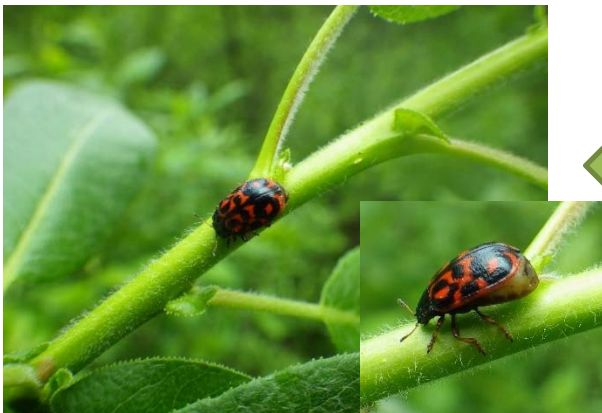
Van Horne Brook
Valley, 2017

Avalanche damage: There seemed a substantial amount of avalanche paths, which caused damage to forests in 2017, possibly due to heavy snowfalls during 2016/17. Areas mapped totalled 323 Ha and mostly occurred along the Mountain and Ursus Creeks, along the Beaver River near the south end of the park, and the Van Horne Brook tributary.

Douglas-fir beetle, (*Dendroctonus pssuedotsugae*): Approximately 11 Ha of suspected Douglas-fir beetle mortality was mapped in Glacier in 2017. These two small patches were located along Grizzly Creek and the east side of Mount Tupper.

Miscellaneous observations

Road salt damage: Roughly 34 Ha of road salt damage was mapped along the TransCanada Hwy in 2017. The damage was most obvious just north of the Glacier Park Lodge but was also seen by the west gate. This is an annual issue in many parks.



Alder leaf beetle (*Chrysomela mainensis*): This alder leaf beetle was one of several found defoliating alder in the Hemlock Grove area. Damage caused can become extensive but this pest is still considered a minor pest.

Cedar leaf blight, (*Didymascella thujina*): Trace amounts of cedar leaf blight were found affecting western red cedar in the Bostock Creek trail area and Hemlock Grove.



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Eriinea on Mountain Ash caused by, (*Eriophyes* sp.): Several Mountain ash in the Loop Brook trail area were lightly infested with *Eriophyes* mites. These mites cause a felt-like frost on the leaves but cause not serious damage to their hosts. Many *Eriophyes* species feed on many different hosts, and most are common throughout Canada.

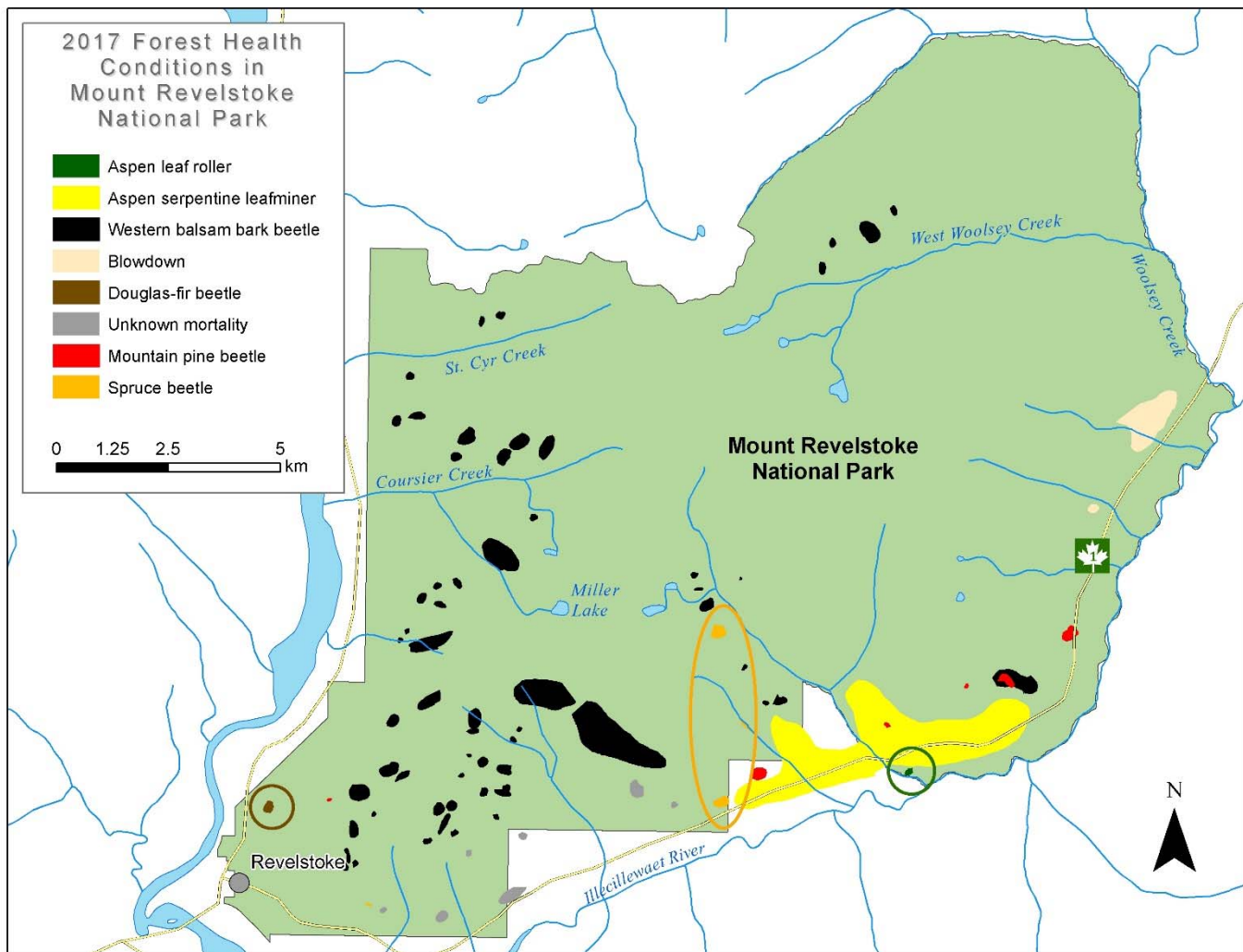
Spruce needle rust, (*Chrysomyxa ledicola*): Spruce-Labrador tea needle rust was present in light amounts in the Hemlock Grove area. Needles can drop prematurely with this rust, and severe infections rarely follow consecutive years.



Snow mold on subalpine fir, (*Herpotrichia juniperi*): Several subalpine fir were infected by snow mold, otherwise known as Brown Felt Blight, on Bald Mountain. This disease mostly affect seedlings and saplings because the fungi develop beneath the snow. It causes branch and tree mortality if the infection is severe enough.

Mount Revelstoke National Park

As in Glacier National Park, Mount Revelstoke National Park ground surveys were conducted on June 7-8, while the aerial survey took place on August 24, 2017.



Mountain pine beetle, (*Dendroctonus ponderosae*): Only 24 Ha of suspected mountain pine beetle caused mortality were recorded during Mount Revelstoke National Park 2017 surveys, 8 Ha of which, were outside the park. This is down from the 96 Ha recorded in 2016. As with the last few years, observations were mapped on south-facing slopes along the TransCanada Hwy. MPB is currently static population in MRG.

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Western balsam bark beetle, (*Dryocoetes confuses*): Approximately 550 Ha of mostly light to moderate subalpine fir mortality caused by the western balsam bark beetle, occurred throughout Mount Revelstoke National Park in 2017. This is down this year because mortality normally found on the east side of the park along the slopes of Mount Klotz was negligible in 2017. Most new mortality is still occurring on the surrounding slopes of Meadows in the Sky, and in the Coursier, St. Cyr, West Woolsey Creeks, and along the south-facing slopes of Hwy 1.



Severe ASL at
Clachnacudainn Creek

Aspen serpentine leaf miner (ASL), (*Phyllocnistis populiella*): Approximately 723 Ha of severe aspen serpentine leaf miner defoliation continues defoliating both aspen and cottonwood along the TransCanada Hwy in the Hanner Lake / Clachnacudainn Creek areas. This is a slight increase over the 602 Ha mapped in 2016.

Spruce beetle, (*Dendroctonus rufipennis*): Spruce beetle also decreased in 2017 and only 18 Ha of new mortality were recorded. The decrease is mainly due to the absence of new mortality in the two patches mapped in the West

Woolsey Valley in 2016. The remaining mortality is in the Clachnacudainn Creek valley and south facing slope above Hwy 1, just west of the creek.

Douglas-fir beetle, (*Dendroctonus psuedotsugae*): Approximately 4.7 Ha of suspected Douglas-fir beetle mortality was mapped in Mount Revelstoke on the west slopes of Meadow in the sky in 2017.

Blowdown: A blowdown event occurred in the spring of 2017 along the east slopes of Mount Klotz. Approximately 96 Ha were recorded consisting of one large patch found above the Giant Cedar Boardwalk, and one small patch further south above the Skunk Cabbage Boardwalk.

Unknown damage: Approximately 37 Ha of of scattered currently fading mortality, were recorded along the south-facing slopes of Meadow and the Sky and Inverness SW4. Ground-truthing will occur in 2018.

Miscellaneous observations

Northern tent caterpillar, (*Malacosoma californicum pluviale*): Localized northern tent caterpillar populations at the west park gate parking area were found causing trace defoliation. Defoliation from this insect is common throughout Western Canada.



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Septoria Leaf blight on Cottonwood, (*Septoria populicola*): Septoria leaf blight was noted causing damage to young Cottonwood trees by the west park entrance, and the Skunk Cabbage and Giant Cedar boardwalk areas. It is common and has been observed in this park almost annually in the last 5 years.

Parasitized Poplar leaf roller, (*Pseudosciaphila duplex*) by an *Ichneumonid* wasp: Light poplar leaf roller defoliation was present by the west park gate. This parasitized pupa sample in the picture was collected and identified at NoFC. Note the aphids and another unidentified larva were also present taking advantage of the added protection of the rolled leaves.



Leaf miner on willow, (*Gracillariidae* species near or = *Micrurapteryx*): Light to moderate mining was occurring on willow in the skunk Cabbage area. Samples were collected and adult moths were reared out for identification. Interestingly, all adult moths turned out to be female and male moths are required for further species identification. NoFC entomologist, Greg Pohl believes it may be a new species for North America. More samples will be collected in 2018 for further identification.

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Leaf beetle on Cottonwood, (*Zeugophora* sp.). This sample was collected at Skunk Cabbage but could only be identified down to genus. It did not match any specimens in NoFC collections. The *Zeugophora* genus are known leaf feeders that cause minor damage.



Cottonwood leaf beetle, (*Chrysomela scripta*): Several cottonwood saplings in the Skunk Cabbage area had light defoliation from the cottonwood leaf beetle. This beetle is common and present throughout Western Canada on an annual basis.

Leaf miner on Alder, (poss. *Microptereryx occultella*): Light to moderate damage from a leaf miner occurred in the alder around Skunk Cabbage and Giant Cedar Boardwalks. A sample was collected and adults reared which appear to be *M. occultella*, However, alder is not listed as a host for this species so it may be a new host record, or a new species. Further collections and identification will be done on this miner in 2018.



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Older hail damage: Old hail damage was found on Cottonwood in the Skunk Cabbage area. The wounds have healed however; it is possible some disease may have infected them. Some dieback was present on a couple trees, but most appeared generally healthy.



Leaf galls on Cottonwood, (*Eriophyes* sp.): Several cottonwood saplings in the Giant Cedar and Skunk Cabbage area had light damage from *Eriophyes* mites. As the mites feed underneath, the galls form providing added protection from the elements.

White pine blister rust, (*Cronartium ribicola*): White pine blister rust continues infect young western white pine throughout the park and is easily found at Skunk Cabbage and Giant Cedar boardwalks.



Northern Forestry Centre



Suspected Dotted line looper,
(*Protoarmia pocelaria*): Two of these loopers were found during ground surveys in the Giant Cedar Boardwalk area crawling on the boardwalk. To find 2 of so easily means populations of this insect are up. They have been known to feed on both conifers and hardwoods, but cause no significant damage. There was no visible defoliation occurring in the boardwalk area.