



Ministry of  
Forests, Lands, Natural  
Resource Operations  
and Rural Development

# Forest Health Bulletin

## After 25 years of service, Ken White, Forest Entomologist in the Skeena Region, will be retiring in March 2021.

Ken first knew that he wanted to work with insects when he was about 10 years old. Ken was enthralled by them, and there was always so much to learn about them. After he finished his post-graduate education and worked at a few different entomology-related jobs, an opportunity came up to be the Regional Entomologist for the Skeena Region. That was in 1996, and he has enjoyed being in this position since that date.

The Regional Entomologist is an interesting position that has allowed Ken to be a source of information to all the clients of the ministry and has also allowed him to see some incredible places while in pursuit of insect issues - places that many people never get to see. As the regional entomologist, Ken has been able to spend time looking at bugs under a microscope or seeing the impact they have on a large scale. He has had so many amazing opportunities throughout his career.

Ken lived through "Beetlemania", when the mountain pine beetle dramatically changed the forest composition of British Columbia's interior. Ken has also seen the recent rise in spruce beetle, and the cyclic defoliator events that occur with numerous species. All of these have impressed upon him the importance of insects as landscape level agents of change.

Ken's favourite moments in the last 25 years have all involved being in the outdoors looking at various insects with enthusiastic people. Touring the province to help train staff on the Stand Development Monitoring protocols, collecting dragonflies in Tweedsmuir Park with staff from the Royal B.C. Museum, collecting and identifying soil arthropods from numerous sites on the north and Central coast – these adventures are some of his best memories.

Ken would like to send a thanks out to all those who he has worked with over the years. He will miss working for government but he's sure he will continue to be interested in insects in his retirement. They are a constant source of fascination for Ken and his greatest connection to the natural world.

The Forest Health team wishes Ken a happy retirement and would like to thank him for his contribution to the Ministry! He will be deeply missed!

*Ken White, MPM, RPF, RPBio has been the Regional Forest Entomologist in the Skeena Region for 25 years.*



**Tim Ebata, Provincial Forest Health Officer, is calling it a day after spending 34.5 years in the forest health program.**

Tim started his Forest Service career on a snowy day in 1986, driving up from the UBC Faculty of Forestry to Telkwa, B.C. in his Honda Civic which was packed with bare necessities, including his incomplete M.Sc. thesis. It was a great place to start a career in both forestry and as a practicing forest entomologist. The old Prince Rupert Forest Region was full of supportive staff who were willing to take a young city-slicker under their wings and provide a solid understanding of operational forest management practices and explain the idiosyncrasies of government policy. Tim could not have asked for a better first supervisor in the ministry than Mike Geisler, Pest Management Coordinator. Teamed up with Wayne Martin, they completed some amazing projects that included estimating the efficacy of fall and burn on mountain pine beetle (MPB) suppression, establishing the first set of damage criteria for free-growing, battling an outbreak of voles devastating newly planted openings, and conducting porcupine damage surveys in the North Coast's Khutzeymateen valley (a.k.a. "Porkies") followed by a release of radio tagged fishers and setting up a bounty.

Fast forward nine and a half years to June 1995, when Tim took the opportunity to become the "forest health project specialist" to coordinate investment opportunities for forest health through the newly announced Forest Renewal B.C. funding initiative in Victoria, B.C. Working with pioneering provincial forest health staff, Dr. John Muir, Peter Hall, John Henigman and the late, Val Fletcher, the branch lead many initiatives and Tim was tasked with enabling the province's take-over of the provincial aerial overview survey (AOS) from the Canadian Forest Service's Forest Insect Disease Survey that disbanded in 1985. The timing of initiating the provincial AOS program was perfect as it captured the beginning of the MPB outbreak, and the data was available to inform government about the progress and magnitude of the emergency, and fed numerous analyses, plans, and announcements. While this catastrophe was unfolding in 1998, the Federal Canadian Food Inspection Agency re-organized

its priorities and divested itself of North American gypsy moth eradication in Western Canada. This was the start of Tim's 22-year involvement in gypsy moth eradication where he started as the media spokesperson and eventually ran the program.

At branch, Tim had the opportunity to work closely with regional specialists and coordinate various forest health programs around the province, and in 2010, Tim was promoted to Forest Health Officer. Highlights from Tim's branch career include traveling to represent the province at National and International meetings, providing subject matter testimony at the World Trade Organization's softwood lumber tribunal in Washington, DC, presenting forest health conditions updates to ministry executive, and providing support and advice to ministry staff, industry and the public.

The most cherished part of Tim's career is the opportunity to meet so many wonderful people across government and beyond. Tim has worked with excellent staff in government and industry, who are all passionate and committed to forest health and sound forest management. Tim would like to thank everyone who have made my career so rewarding.

*Tim Ebata, M.Sc., RPF, has been the Provincial Forest Health Officer for 21 years.*



## The Balsam Bark Weevil, *Pissodes striatulus*, Life History and Occurrence in Southern British Columbia.



*Pissodes striatulus* emerging from a chip cocoon.

Over the past two decades, *subalpine fir* *Abies lasiocarpa* (Hook.) Nutt. mortality in B.C. has increased due to insect attack, root disease and climatic stress. Much of this mortality is attributed to the western balsam bark beetle (WBBB), *Dryocoetes confusus* Swaine, largely considered the most destructive insect pest of subalpine fir, causing scattered mortality over large areas of high elevation forests. However, there is little ground survey information on the incidence and impact of damaging agents in these sensitive and often remote high elevation forests. Subalpine fir ecosystems are extremely valuable forests due to their inherent hydrologic contribution, carbon sequestration, and habitat attributes but are increasingly compromised by climate extremes, pests and harvesting. Subalpine fir is intolerant of high temperatures or moisture deficits; therefore, as changes in climate continue, we will continue to see elevated stress levels in subalpine fir.

While conducting studies on WBBB, a weevil was observed attacking and killing live, mature subalpine



*Dryocoetes confusus* gallery.

fir trees; acting as a primary invader, much like tree-killing bark beetle species. The weevil was identified as the balsam bark weevil, *Pissodes striatulus* (Fabricius) (Coleoptera; Curculionidae). Little is known about this insect in western forests, so a study was conducted to determine its life history and occurrence.

Our study reveals that *P. striatulus* regularly attacks and occasionally kills subalpine fir in

lower elevation, more climatically stressed stands in southern B.C., and is likely ubiquitous throughout all subalpine fir ecosystems in B.C.

*P. striatulus* may act as both a primary attacker, killing live subalpine firs, and a secondary attacker, associated with WBBB. Both insects are known to colonize

trees exhibiting reduced vigour caused by age (senescence), climate stress (drought), or pre-existing stressors (e.g. disease).

Evidence of *P. striatulus* is often difficult to detect. Unlike WBBB, which leaves diagnostic galleries etched into the sapwood, *P. striatulus* rarely does so. The weevil often spends its entire development period within the phloem-cork portion of the bark where its galleries are quickly obscured by those made by woodborers and other insects that arrive after the weevil has initiated attack.

*P. striatulus* is capable of mass attacking and killing large, mature subalpine fir. Due to its abundance in lower elevation stands which experience more frequent and severe drought events, we hypothesize that this abiotic stress on the host tree attracts the weevil. Adult weevils are likely long-lived and capable of oviposition over multiple years, like other *Pissodes* species. This enables *P. striatulus* to take advantage of periodic stressor events such as drought to build up populations rapidly. As moisture stress and higher annual temperatures become more prevalent in all forests, this emphasizes the need for additional monitoring and research on how climate change can influence insect-host relationships.

*Lorraine Maclauchlan, Ph.D., RPF, has been the Regional Forest Entomologist in the Thompson Okanagan Region since 1987.*



*Pissodes striatulus* gallery.