College of New Caledonia
CNC
Research Forest

Experimental Trapping of Spruce Beetle: Examining the effects of Light Intensity and the Efficiency of Artificial Lures

Project Summary

Lindgren Funnel trap, equipped with Hobo ® Temp/Light Pendant to monitor the effects of light intensity on beetle flight. Uschenko 2020.

INTRODUCTION: The prevalence of spruce beetle in British Columbia's forests is having substantial impacts on mature forests. Since the increase in outbreak severity in the Omineca Region, trapping of these native bark beetles has become an increasingly common practice. Since 2017, the College of New Caledonia's Research Forest has installed and monitored Lindgren funnel traps equipped with Synergy Semiochemicals Standard Enhanced Lure for the Rocky Mountains to further understand the relationship between beetle flight response and air temperature. While this concept is still actively pursued, two new concepts are being implemented during the summer of 2020.

OBJECTIVES: Upon consultation with Jeanne Robert, the Regional Entomologist for the Omineca Region, further funnel trapping studies are being initiated to examine the impact of light intensity and the effectiveness of artificial lures. All funnel traps used in both trials will be equipped with marine antifreeze (wet cups) to minimize beetle escapement, with specimens collected weekly.

METHODS: Examining the Effects of Light Intensity

- 30 Lindgren funnel traps are to be installed at equal distances (10m) along a reserve of mature spruce forest impacted by spruce beetle
- Trap installations are to encompass a light gradient ranging from full shade to full sunlight conditions.
- All traps will be equipped with Synergy Semiochemicals Standard Enhanced Lure for the Rocky Mountains
- All traps will be equipped with Hobo®Onset UA-002-08 Temperature/Light loggers, recording light exposure (hourly).

METHODS: Efficiency of Artificial Lures

- 15 Lindgren funnel traps are to be installed along a reserve of mature spruce forest impacted by spruce beetle
- Three treatments will be implemented
  - Treatment A: Artificial lures (Synergy Semiochemicals Standard Enhanced Lure for the Rocky Mountains
  - Treatment B: Natural lure: a small (5cm x 5cm x5cm) chunk of live, uninfected spruce (bark included).
  - Treatment C: Control (no lures are to be utilized)
- To minimize influence among treatments, all traps are to be spaced 50m apart
- An additional replication of this trial will be conducted at a site no closer than 500m