

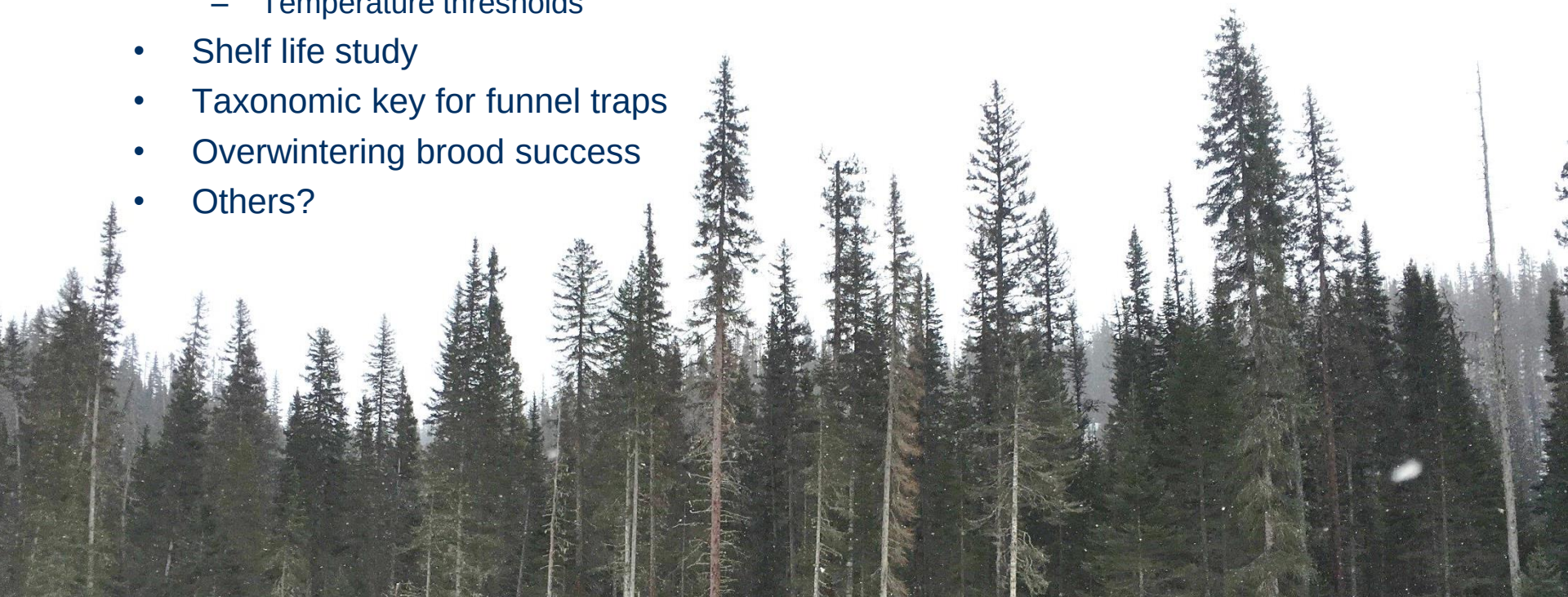


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Spruce beetle



- Kathy Bleiker projects
 - Degree day model
 - Temperature thresholds
- Shelf life study
- Taxonomic key for funnel traps
- Overwintering brood success
- Others?





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- Spruce beetle flight modeling data
 - Use 'degree days' and latitude to predict beetle flight patterns – Bleiker and Van Hezewijk 2016
 - One degree day = the average temperature for a day is one degree over the threshold temperature
 - E.g. $(\text{Max-min})/2 = \text{average temp}$
 - $\text{Average temp} - \text{threshold temp} = \# \text{ degree days}$
 - Development threshold value is 5.6°C
 - Flight threshold value is 16°C





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- Spruce beetle overwintering thresholds
 - Trap trees – can we pick some up in June?
 - Standing trees for longer term plots:
 - Expect new trees to be attacked in spring 2017
 - No harvesting for 5 years. If that is not possible, then no harvesting till after Sept. 2020 so that we can follow through two beetle generations on two-year life cycle
 - Good road access, so can drive a pickup truck right to the site. Pickup access from April through October 15th would be ideal
 - Ideally within 2.5 hr drive of some sort of accommodation (town with a motel)



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- Spruce retention and salvage: shelf life study
 - Lewis and Thompson (2011)
 - 2 sites of 10 locations
 - 5 tree types
 - Unattacked
 - 1-year attack
 - 2-year attack
 - Recent dead
 - Older dead
 - UNBC dendrochronology lab this summer
- FP Innovations will do a mill study





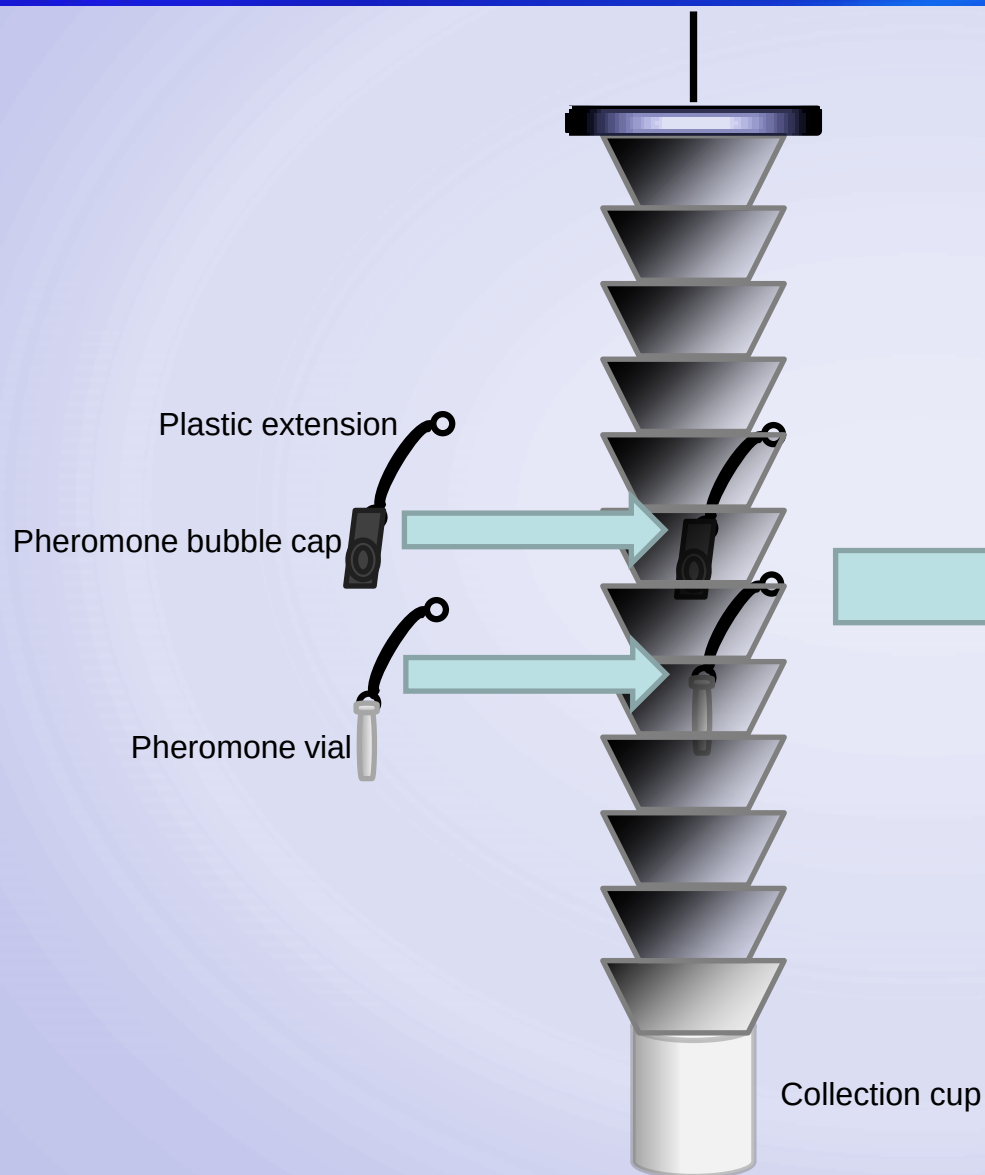
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- Key for trap catches
 - Location
 - Biggest catch or series of representative catches



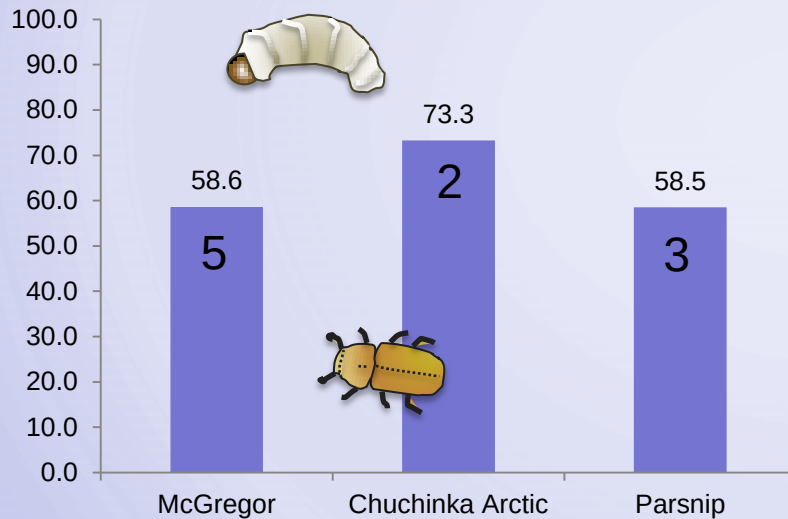
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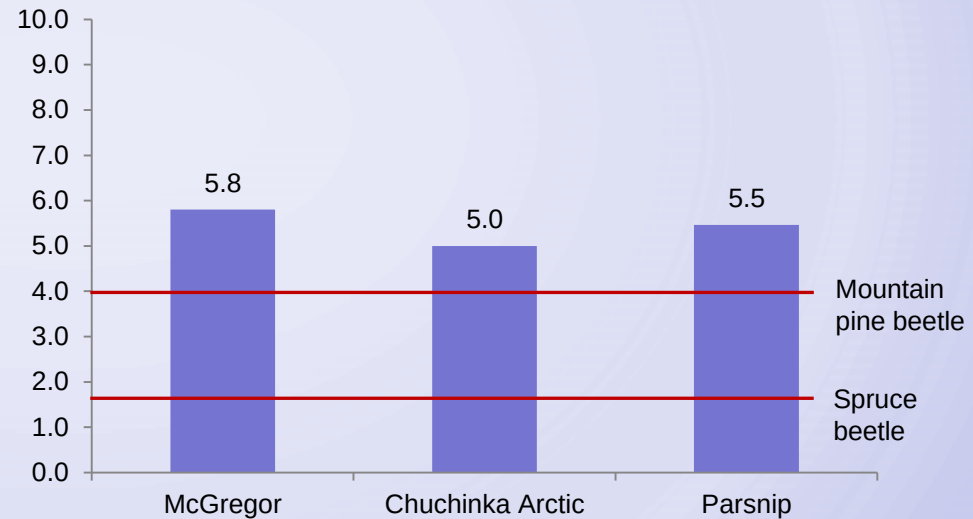


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- Overwintering brood success data
 - Data is in for McGregor and Parsnip areas
 - Two additional sites from Mackenzie planned



Development Index (D)



Population trend ratio (R)



What are we doing?

- Research – other potential projects
 - Spruce beetle change detection via remote sensing?
 - Replacement for MSMA using RNAi technology?
 - Baseline biodiversity?
 - Others?