

### Considerations for treating populations of Western Spruce Budworm:

- Western spruce budworm (WSBW) is the larval stage of a small moth. Adult moths fly and lay eggs on host foliage in early August. Larvae feed from just prior to “bud break” in the spring until early July—depending on weather.
- Timing of treatment must coincide with optimal larval feeding and foliage development. Should treat when about 90% of host buds have opened and less than 15% of the developing larvae are in the third instar (budworm larvae go through six instars). For elevations in Bridger Canyon, that will probably be about mid-June. We would suggest getting help to assess larval and foliage development to assure proper timing of treatment.
- Recommended treatment material: *Bacillus thuringiensis* (Bt), a bacterial insecticide affecting only certain orders of insects. Especially effective against moth larvae, such as WSBW. A couple of other insecticides are registered (“Sevin” [carbaryl], “Dimilin” [insect growth regulator]), but Bt is the most “environmentally friendly.”
- Bt available from Valent, Inc. (Steve Nicholson, 613-376-1070), as Foray 48B. Applied as it comes (“neet”)—no mixing required, at rate of ½ gallon per acre. Timing is critical—note point #2 above. Bt must be ingested by larvae to be effective.
- Treatment to tree canopies most effectively done with helicopter. Larger areas can be treated with fixed-wing aircraft; but must fly low enough to get adequate foliage coverage. May require specialized spray nozzles to get proper coverage—recommend “Miconair” rotary atomizers. Unless there is a local applicator familiar with treating tree canopies, you may also need assistance with equipment specification and evaluation.
- Total treatment costs will probably average between \$25-30 per acre. Bt costs about \$25 gal, applied at ½ gal/ac. Application costs will range from \$5-15/ac. Helicopters are generally more expensive than fixed-wing; but fixed-wing aircraft are not as adaptable to forest applications. May be more difficult finding a contractor with a fixed-wing aircraft with proper equipment and who can adequately do the job.
- Almost 77,000 acres infested by budworm on Bozeman RD in 2005. More than 500,000 acres Region-wide. We anticipate population increases in 2006. Continuing damage will be dependent upon budworm populations, weather (especially moisture) in 2006, and possible development of Douglas-fir beetle populations (bark beetles are true tree-killers; but there are more options for preventing beetle-caused mortality).

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