

Summary Questions

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The discussions at the meeting suggested that the following questions should be considered for further research issues.

- 1) What is the impact of white pine blister rust (*Cronartium ribicola* J. C. Fischer) on young trees? What is the definition of hazard zone maps for planting white pines (*Pinus* L.) or currants or gooseberries (*Ribes* L.)?
- 2) What is the impact of white pine blister rust on nurseries and Christmas trees?
- 3) Can cultivated *Ribes* escape into the forest areas? Should we reassess benign neglect in forest areas?
- 4) How can one estimate the amount of rust coming from a commercial *Ribes* planting?
- 5) Where should new *Ribes* be planted?
- 6) Is there reinfection of rust within pines? Are there short-cycle rusts? Can white pine blister rust spores from pines skip *Ribes* and infect pines directly?
- 7) What is the value of white pines in our forest, habitats, and ecosystems? What would be the value of commercial *Ribes* production.
- 8) Are there likely to be future pathogenic infection of white pine blister rust from Asia or elsewhere?
- 9) What is the fundamental biology of white pine blister rust interaction with the environment or microclimate?
- 10) What is the effect of immune pines or currants/gooseberries on rust mutation?
- 11) What are the white pine blister rust resistance mechanisms in Pines? In *Ribes*?
- 12) Are resistance mechanisms operating with a gene-for-gene-for-gene system?
- 13) What resistance genes can be brought into currants or gooseberries?
- 14) Can there be development of seedless or sterile (no pollen) *Ribes*?
- 15) What is the regulatory control or international conventions for moving *Ribes*, pines or rust?
- 16) If *Ribes* are planted on a small scale by niche farmers, is this a problem to pine forests?
- 17) What strategies should be deployed for resistant pines? Should they be planted on high hazard sites?
- 18) Does it matter if susceptible *Ribes* are planted on high hazard sites where inoculum is present in high concentration?

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