

Answer Key for Mount St. Helens— A Story of Succession Questions

1. Plants such as willow, vine maple, and black cottonwood were able to re-sprout from roots protected in moist soil. Some snow-protected Pacific silver fir and mountain hemlock trees also survived.
2. Survivor or biological legacy. Whole plants may regenerate from root fragments that are carried downstream on logs and other debris and are deposited along river margins. Those remnants of the old landscape are known as “biological legacies,” and their influence on the new landscape may be significant. They serve as source populations for species to recolonize a disturbed area.
3. Each prairie lupine plant created a microhabitat that was hospitable to several other plant species. Besides enriching the soil by fixing nitrogen, the lupines also physically trapped windblown debris and attracted insects. As the insects died on or around the plant, their remains enriched the soil with organic matter.
4. Abiotic factors were critical to plant and animal survival and colonization. Wind played an important role in transporting spiders, insects, and seeds into the blast zone. Plant survivors, rocks, and landscape features acted as “nets” that caught windblown seeds. This process, in turn, enabled plants to establish. Over the long term as organic compost from vegetation accumulates over many decades, a rich, well-developed forest soil will develop from the 1980 deposits.
5. Plants and animals that survived the blast attracted birds, deer, and elk from nearby areas. Later, lupine patches facilitated the growth of other plants and attracted a variety of animals.
6. A “colonizer” is a plant that becomes established in a new environment.
7. As red alder trees became established, they influenced succession because they were able to “fix” nitrogen and to improve the fertility of the soil. Also, the rapidly growing alder trees created shade and added organic material to the ground surface, thus allowing shade-tolerant plant species to become established. Thirty years after the eruption, red alder is now a dominant tree.
8. Answers will vary.
9. Answers will vary.