Deterring Deer, Rabbits, and Gophers

Read on for some tips on how to manage for vertebrates that would love to eat some of your new plants, and also how to reduce spread of plant pathogens.

Unfortunately, figuring out how to manage pests is a part of managing habitat, including the pollinator habitat you will be creating with your habitat kits. While insect pest outbreaks are not generally common in native habitat areas, vertebrate pests such as deer, gophers and rabbits can be problematic. In addition, it is important to manage your restoration projects to minimize the introduction or spread of pests or diseases. Below are some tips that may be helpful for managing these types of pests in ways that won't harm pollinators.

Deer and Rabbits: People who don't garden or farm might find these critters charming, but a hungry deer can wipe out an entire restoration planting overnight. As a general rule, deer and rabbits are less likely to eat certain plants, such as milkweeds and salvias, because of their bitter sap or pungent oil. Other plants seem to be a favorite snack. Either way, if you know you have either rabbits or deer in the area, we recommend providing plant protectors around all plants when they are young. You can make your own from wire mesh or purchase tree and shrub protectors specifically designed for this purpose. Our staff have found the sleeve or tube style plant protectors to be the most effective. If you plan to make your own, we recommend using wire mesh rolls with 2"x 4" cells for the cages and rebar or t-posts to stake them in place. Here is a video that might be helpful in the construction and design.

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Pocket gophers / ground squirrels: Perhaps even more destructive than deer and rabbits, gophers and ground squirrels can wreak havoc in restoration sites. For moderate to low populations, some long-term strategies can be effective in keeping these vertebrate pests to a manageable level. For example, increasing resident populations of raptors or other natural enemies can be very effective. There are raptor boxes (for nesting and perching) that are designed for this purpose and can be installed in many locations. The Natural Resources Conservation Service (NRCS) offers technical and financial support with designing and implementing nest boxes, referred to as 'Structures for Wildlife'. Resources Conservation Districts and the California Department of Food and Agriculture may also offer assistance.

This being said, if you know your gopher or ground squirrel population is high at the time of planting, we highly recommend using gopher baskets, which provide an underground cage to protect plants' root ball. As with deer protectors, you can either make your own or buy products specifically designed for this purpose (google 'gopher baskets' to see options). If you are making your own, be sure to utilize hardware cloth or something of a similar gauge, as chicken wire is generally easy for gophers to chew through.

Gophers and other rodents can also cause damage by chewing through irrigation lines. The most effective strategy to protect irrigation is to suspend it on wires about a foot off the ground. It's a lot of labor, but apparently it works well. People also sometimes resort to encasing the dripline in pvc pipe to protect it.

Preventing the Spread of Diseases or Pathogens: Below are some recommendations from Susan Frankle, a Plant Pathologist with the U.S. Forest Service on preventing the introduction or spread of diseases or pathogens.

Best Management Practices to Prevent Pest Introduction and Spread from Restoration Activities

One of the best ways to help declining pollinator populations and other wildlife is to restore habitat, and planting Xerces habitat kits is a great way to jump start your path to enhancing habitat. But with all plantings and other human interventions there is a risk of inadvertently introducing harmful plant pathogens, insects, or weed seeds on materials brought to the site. Concern for accidental introduction of plant pathogens into restoration plantings ramped up about a decade ago when restoration ecologists in the San Francisco Bay Area noticed recently outplanted stock failing to thrive and dying. Investigations revealed that some of the nursery-grown plants were infected with *Phytophthora tentacula*, a plant pathogen never before detected in the U.S.

Many inputs to restoration plantings, such as nursery stock, mulch, irrigation water, or dirty tools, boots, or vehicle tires, may harbor soil-borne plant pathogens or weed seeds. To minimize the chance of contaminating sites during restoration activities best management practices have been developed to prevent pathogen or pest spread. The BMPS address project design and implementation and provide guidance for worker training, sanitation and other aspects of fieldwork or construction in restoration areas or other valuable habitats. The BMPS were designed to prevent *Phytophthora* pathogens but are effective to prevent weeds and other invasive species that spread in soil.

For more information on preventing pathogen introductions into restoration areas see the Phytophthoras in Native Habitats Work Group website, calphytos.org or contact Janice Alexander, UC Cooperative Extension Marin County, jalexander@ucanr.edu.

Learn more about Xerces California Monarch and Pollinator Habitat Kits

***Questions?* Contact us at centralvalleypollinators@xerces.org**

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