

Western Monarch Management Windows

Timing Management in Monarch Breeding Habitat

Each spring, monarchs disperse from overwintering grounds on the California coast and Mexico to spread across the United States and southern Canada in search of milkweed plants (*Asclepias* spp.) on which to lay their eggs. In the West, monarchs breed and lay eggs continuously from spring to fall, ending when the final breeding generation(s) of adults migrates back to their overwintering grounds. However, the timing of when breeding begins and ends varies across the West. Understanding when monarchs are present and breeding in a region allows land managers to avoid using management practices such as mowing or burning during times when monarch immature stages (eggs, larvae, pupae) are present.

Based on the best available data for when and where monarchs breed in the West, we have developed regionally appropriate monarch breeding habitat management windows, shown on the map on the back of this fact sheet. These windows are periods when management activities are least likely to have negative effects on monarchs. Data used includes breeding data and adult records from Journey North (www.learner.org/jnorth/monarchs) and the Western Monarch Milkweed Mapper (www.monarchmilkweedmapper.org), as well as expert opinion by field biologists and scientists. Management windows were customized by EPA Level III ecoregion. Based on the availability of data, some ecoregions were combined into the same window and one ecoregion in southern California (the Sonoran Desert 10.2.2) was split into two management windows.

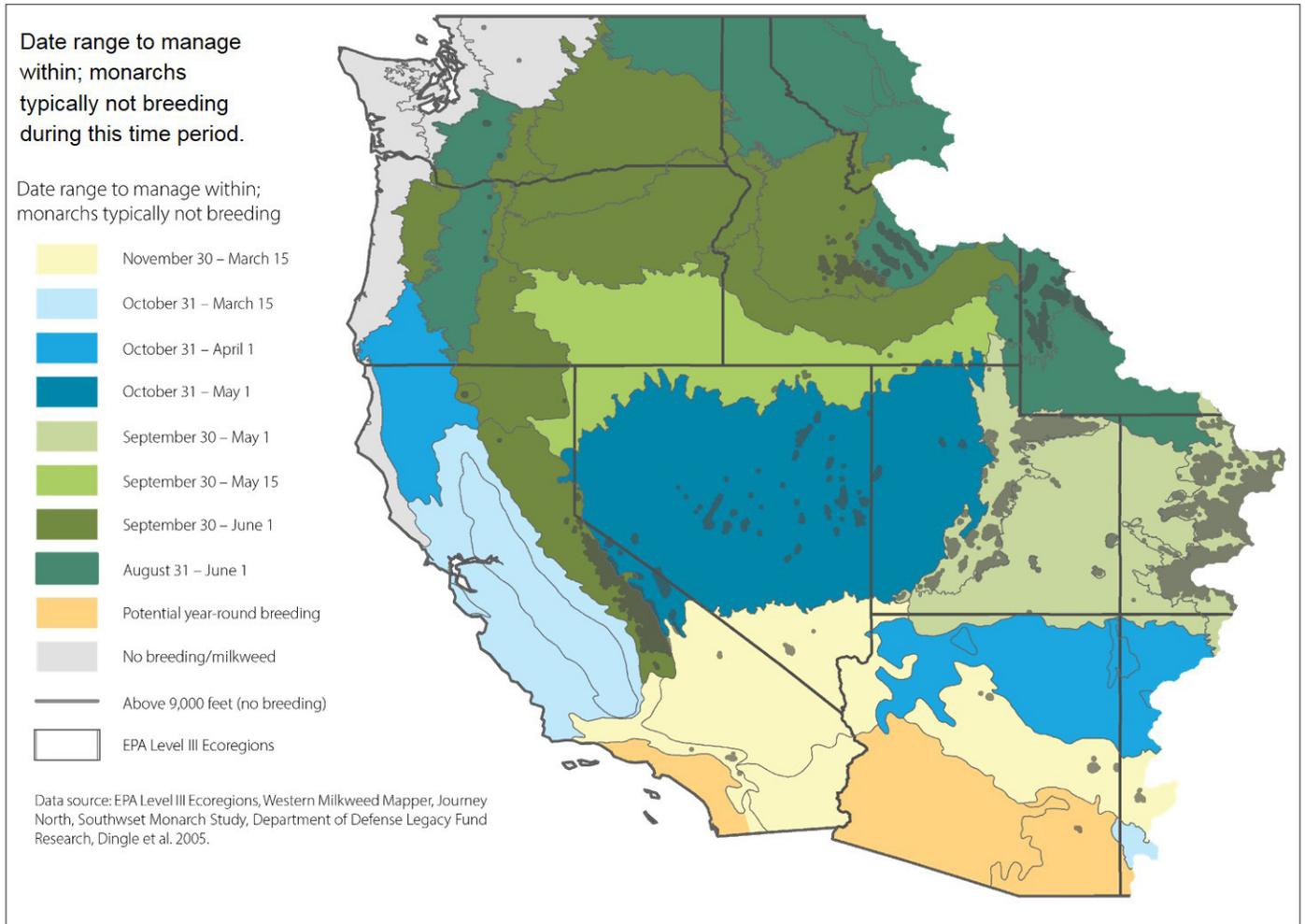
We are still learning about the phenology of monarch breeding—when the earliest breeding begins and the latest breeding ends—in different regions of the West. As such, these management windows should be viewed as approximate recommendations. The exact timing of monarch breeding may vary from year to year and site to site, and these windows may be revised in the future as we learn more. This is especially true for areas where little data is currently available on the timing of monarch breeding, such as in Montana and Wyoming.

As every year and site are slightly different, consider surveying milkweed plants for immature stages of monarchs prior to mowing, burning, grazing, or using pesticides. This is especially helpful if the management timing falls on the cusp of the recommended window for your region or if it has been an early-spring or late-fall year. If management must take place while immature monarchs are present, spot-apply management to avoid milkweed plants when possible or try to leave at least some milkweed unaffected to act as a refugia. Generally milkweeds are easy to identify, and training staff or volunteers to recognize milkweed and avoid mowing, spraying, or otherwise disturbing plants during the breeding season can be an effective solution.



(Photo: Xerces Society / Candace Fallon.)

Recommended Management Timing for Monarch Breeding Habitat



A few notes:

1. Milkweed (and therefore monarch breeding) does not typically occur above 9,000 feet.
2. In southern California, monarchs are known to breed year-round on tropical milkweed (*Asclepias curassavica*), a non-native species commonly planted in gardens.
3. In southern Arizona, monarchs have been documented breeding year-round on native milkweed species such as rush milkweed (*A. subulata*).

For additional guidance on managing western monarch habitat, check out the many resources available on the Xerces Society website, www.xerces.org.

The resources include *Managing Monarchs in the West: Best Management Practices for Conserving the Butterfly and its Habitat*, from which this handout is adapted.