

SPECIES SPOTLIGHT: Douglas Iris (*Iris douglasiana*)

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*There is the pale light of dawn, touched with purple and cream, in the Douglas Iris (Iris douglasiana)
to be found during May and June in the Coast Range Mountains... — Roland Rice 1920*

The English name *iris* stems from the Greek word for rainbow, and California's native iris blossoms do not fail to fulfill that colorful promise. Douglas iris flowers are usually light blue-violet, but can range from reddish-purple to deep blue-purple or sometimes pure or creamy white to light yellow (Keator 1990, Harlow and Jakob 2003, Bornstein et al. 2005). The range of colors within the species is from natural hybridization (San Francisco Botanical Gardens 2009). Some natural hybrid populations of Douglas iris have been given their own names, such as the *Marin iris* of the Coast Ranges north of San Francisco (Harlow and Jakob 2003).

Douglas iris is 1 of 11 iris species native to the Pacific Coast of North America. The group is called the *Californicae* series or Pacific Coast Native (PCN) iris. PCN irises are small, compact plants with basal fans of leaves arising from underground stems called rhizomes. Douglas iris is found in open grasslands and at the edges of forests. It is common in windswept coastal grasslands where its creeping tuberous rhizomes spread, often forming hardy clumps of dark green sword-like leaves. Some Douglas iris clumps are a single clone that can be hundreds of years old (San Francisco Botanical Gardens 2009, Society for Pacific Coast Native Iris 2012).



Douglas iris stems are branched, and each branch bears from 1–3 blossoms that open one at a time from early to late spring (Keator 1990, Harlow and Jakob 2003, Bornstein et al. 2005). Each iris flower consists of three upright petals called *standards*, an outer whorl of three spreading petal-like sepals called *falls*, and an inner whorl of petal-like stigmas that hide the stamens underneath (Bornstein et al. 2005).

The PCNs are “beardless” irises. This means that colorful veins decorate the falls rather than the bushy beard-like tufts seen in most garden varieties of iris. Both beards and veins act as nectar guides, visual cues that guide pollinators to the nectar and pollen. The pattern and colors of veins can vary among and within species (Parsons 2013). Douglas iris flower falls typically have purple veins that radiate from the hidden nectary and highlight a yellow pathway leading directly to the nectar supply inside. Douglas iris is an important nectar-producer for insects that forage in the cool, windy conditions along the Pacific Coast. In grasslands at Bodega Bay in Sonoma County, Douglas iris nectar supports long-tongued,

nectar-collecting native bees from three genera: *Habropoda*, *Bombus*, and *Anthophora* (Uno 1982).

The closest relatives of PCN iris are the *Sibericae* series, a group that today ranges from Japan, China, the Himalayas, and central Europe and France (Society for Pacific Coast Native Iris 2012). This means that PCN iris ancestors probably migrated to the North American Pacific Coast by way of the Bering Strait that lies between Russia and Alaska, crossing the grassland steppe land bridge that forms during Ice Ages when sea levels are low.

Douglas iris hybridizes readily with other PCN iris species, and it is likely that natural hybridization is responsible for the 11 species that are now recognized (Lenz 1958, Raven and Axelrod 1995, Harlow and Jakob 2003). Over time, populations adapted to local conditions and evolved their own characteristics (Society for Pacific Coast Native Iris 2012). Today, the PCNs are distributed from southern Washington to southern California. Eight species of the eleven PCN species are endemic to California, meaning they only occur within California (Raven and Axelrod 1995, Parsons 2013). Douglas iris is the most widespread of the PCNs, occurring along the Pacific Coast from Coos Bay, Oregon, to Santa Barbara County (Cosgrove 1978).

Douglas iris is named for David Douglas, the Scottish botanist/explorer/naturalist who sent the first seeds of a Pacific Coast native iris (*Iris tenax*²) to England in 1825. Scottish Naturalist Archibald Menzies was probably the first European to collect Douglas iris. The first humans to appreciate PCN irises were the native people who inhabited the North American Pacific Coast. Native Americans in California valued Douglas iris for its flowers, which were woven into dance wreaths by the Kashaya Pomo and crushed in hot water for body paint by the Potter Valley Pomo (Goodrich et al. 1980, Welch 2013). Potter Valley Pomo used the leaves to line underground ovens (Welch 2013), and Yokio women wrapped their babies in the soft green leaves to keep the young ones cool and hydrated while the women gathered manzanita berries during the hot summers (Chesnut 1902). A very weak leaf tea was drunk by the Coast Miwok “to clean the stomach” (Kelly 1996). Some PCN iris species, particularly *Iris macrosiphon*, were highly valued for the two fine strong fibers that run along their edges. Chesnut (1902) reports that string and rope made from Douglas iris fibers

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was “exceedingly pliable” and that Indians at the Round Valley Reservation in Mendocino County called it *deer rope* as it was especially valuable in making snares to catch deer.

All PCNs are considered species of horticultural merit, but Douglas iris is highly valued by gardeners because it is less finicky than other PCNs to transplant, easier to grow, and relatively pest-free. PCNs work well as ground covers, in rock gardens, and are considered deer- and rabbit-resistant. There are several excellent references on growing PCNs, and many varieties and hybrids are readily available in nurseries.

Some ranchers, however, consider Douglas iris an aggressive weed. Douglas iris has evolved defense characteristics that protect it from grazing and trampling. It is said to be toxic if ingested, although poisoning is rare because the leaves are bitter and unpalatable. The biggest problem is that the prolonged trampling that occurs in heavily grazed pastures weakens forage-quality plants, which stimulates the iris to spread and form dense stands that exclude other meadow plants and pasture grasses, thus becoming a problem to ranchers (CDFA 2013). There is some evidence that the iris may spread even under light-to-moderate levels of grazing (Huntsinger et al. 2007).

Harlow and Jakob (2003) report that agricultural commissioners in North Coastal counties found that Douglas iris was not a significant problem in rangeland. If it is a problem however, there are remedies. The California Department of Food and Agriculture (2013) website stresses that iris is a natural component of the meadow system and should not be eradicated. It gives these recommendations to control iris:

* *The best solution is to develop a grazing management plan to prevent excessive meadow utilization.*

* *Determine the iris distribution on your property by making a map with a rough estimate of the number of iris plants in each population.*

* *Monitor the populations to see if they are increasing or decreasing. Rapid increases may mean that the pasture is overused. Make modifications to the grazing plan.*

* *If iris dominates the pasture, plants can be hand dug. Leave the roots exposed in the sun to dry. Do not graze the area until the area has been recolonized by other plants.*

Richard King, CNGA Board Member, rancher, and holistic management instructor, recommends developing a grazing management plan that does not focus solely on iris, but one that prevents overgrazing of all the herbaceous perennials. King’s view is that plant stress from prolonged grazing and trampling of the palatable plants changes community dynamics far more than trampling the iris. Pasture plants need adequate recovery periods to fully restore vigor above and below ground. Prolonged grazing and trampling reduces the competitive ability of the more desirable plants, which allows iris patches to expand. These are some of his recommendations:

* *Describe what you want the site to look like and how the ecosystem processes must function to create and sustain such a site.*

* *Increase the productivity and vigor of high-quality perennial range forage species palatable to livestock. This requires planned grazing to minimize overgrazing of plants, minimizing excessive thatch accumulation, and maintaining good soil cover year-round.*

For more information on grazing management, sign up for the CNGA’s 2014 workshop titled “Improving Land Health and Profitability — A Workshop for Ranchers,” Richard King, instructor. Dates and location to be announced.



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