

## A.35 CALIFORNIA BEAKED-RUSH (*RHYNCHOSPORA CALIFORNICA*)

### A.35.1 Legal and Other Status

California beaked-rush (*Rhynchospora californica*) currently has no status under the federal or the California Endangered Species Act (DFG 2011).

The California Native Plant Society (CNPS) includes California beaked-rush on California Rare Plant Rank 1B.1 (formerly List 1B.1): Plants Rare, Threatened, or Endangered in California and Elsewhere (CNPS 2010). CNPS gives it a state ranking of S1.1, meaning there are less than six occurrences or less than 1,000 individuals or it is known to occupy less than 2,000 acres (CNPS 2008).



### A.35.2 Species Distribution and Status

#### A.35.2.1 Range and Status

California beaked-rush is endemic to California, where it is known from Marin, Sonoma, Napa, and Butte counties. The species ranges in elevation from 148 to 3,280 feet (45 to 1,000 meters) (CNPS 2008).



According to the California Native Diversity Database (CNDDDB), California beaked-rush is known from a total of 10 occurrences state-wide (CNDDDB 2008). Of the five occurrences located in Sonoma, Napa, and Marin counties, one is considered extirpated (occurrence no. 3). The four presumed extant occurrences were last seen in 1945, 1961, 1977, and 2003. At each occurrence, the size of the population is described as a few clumps of plants, with the exception of one population described as containing 18 plants (occurrence no. 10) (CNDDDB 2008).

#### A.35.2.2 Distribution and Status in the Plan Area

In Butte County, the California beaked-

rush is known from eight occurrences, found in the Paradise West and Richardson Springs quadrangles (see Figure A.37-1, *California Beaked-Rush Recorded Occurrences*). Four of the five CNDDDB reported occurrences are in the Plan Area, of which three are located in Upper Bidwell Park and one just south of the park, near the Plan Area boundary (see Figure A.37-1). The occurrences within the Plan Area range from 385 to 850 feet in elevation (CNDDDB 2008).

The sizes of the populations vary widely. The largest population in Butte County, located in Upper Bidwell Park, numbered 1,060 plants in 2002 (occurrence no. 5). Two other populations, both on the north side of Big Chico Creek in Upper Bidwell Park, consisted of 34 and 11 plants, respectively, in 2002, when visits to the populations were last recorded (occurrence no. 9, occurrence no. 8). Population sizes for occurrence nos. 7 and 6 (on the south side of Honey Run Road southwest of the Skyway, and northwest of Little Chico Creek just south of Ten Mile Home, respectively) were not quantified but were described as scattered small clumps of small numbers of plants.

### A.35.3 Habitat Requirements and Special Considerations

The California beaked-rush is known to occupy freshwater marshes, bogs, and seeps (Hickman 1993). Friends of Bidwell Park (2008) describes habitat as bogs, fens, meadows, and seeps in lower montane coniferous forest. One population in Marin County occupies the margins of a coastal marsh at Point Reyes National Seashore (CNDDDB 2008).

In Butte County, California beaked-rush inhabit hillside seeps within annual grassland or oak savanna (CNDDDB 2008). In Bidwell Park, habitat is described as the outer edge of seeps, and often in close association with deer grass (*Muhlenbergia rigens*) (Stuart Consulting 2002). In Butte County, all occurrences are found on Tuscan Formation soils (CNDDDB 2008).

Native plant associates of California beaked-rush include deer grass, dense sedge (*Carex densa*), spike rush (*Eleocharis* spp.), common blackseed (*Cyperus niger*), shortspike hedgenettle (*Stachys pycnantha*), Tinker's penny (*Hypericum anagalloides*), and arroyo willow (*Salix lasiolepis*). Common nonnative plant associates include little quaking grass (*Briza minor*), Italian ryegrass (*Lolium multiflorum*), Himalayan blackberry (*Rubus discolor*), and larger periwinkle (*Vinca major*) (CNDDDB 2008).

### A.35.4 Life History

The life history of California beaked-rush has not been studied in detail. The plant is a rhizomatous perennial herb in the Cyperaceae (sedge) family. It flowers from May through July (CNPS 2008). Little is known about its reproductive biology, though it may be wind-pollinated, as are most species within the Cyperaceae family.

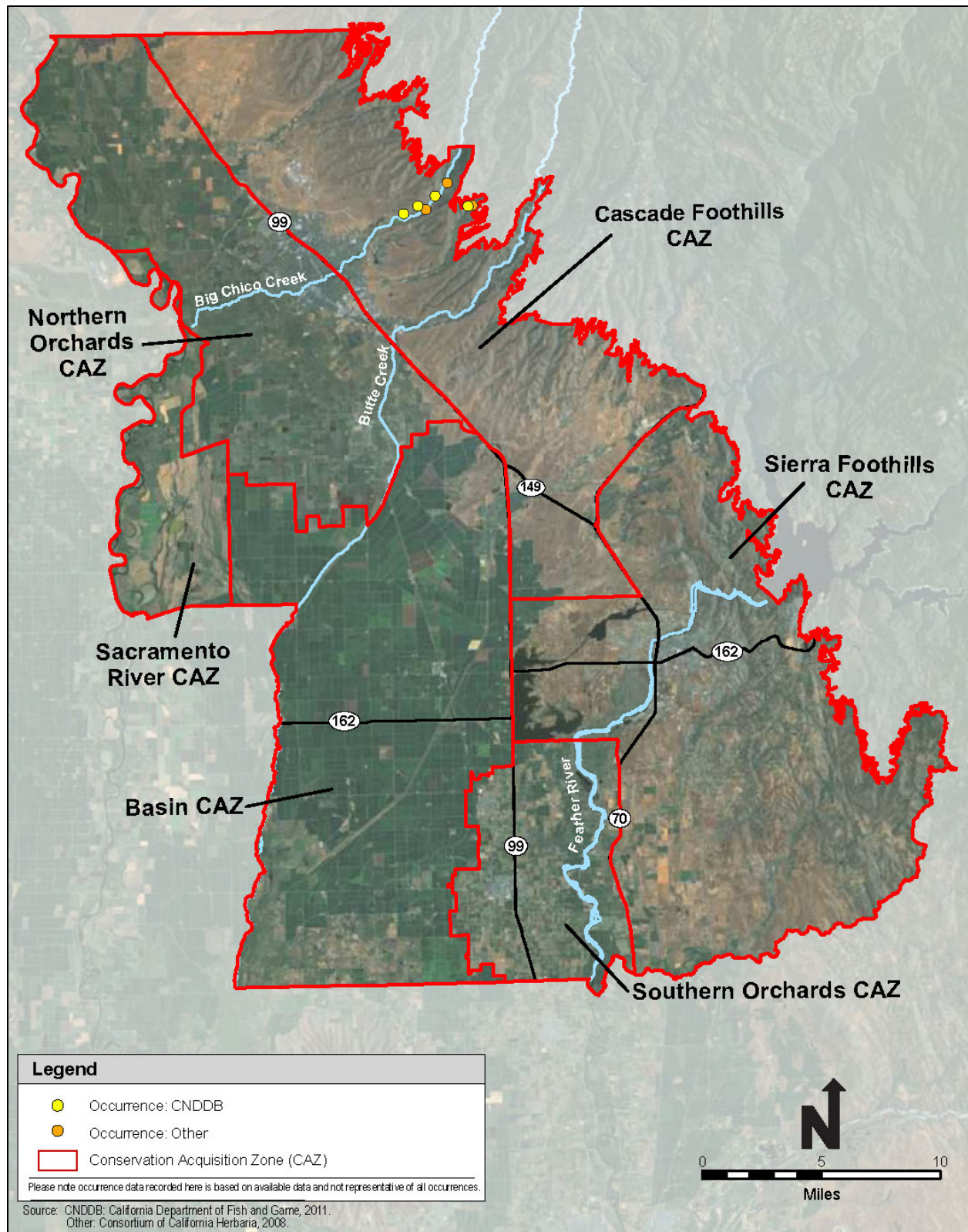


Figure A.35-1. California Beaked-Rush Recorded Occurrences

Fruiting takes place in the summer and fall (Hickman 1993). Seed dispersal in the plant has not been studied, though the ascending barbs at the seed tips (which give the species its common name) are thought to be a special morphological adaptation for dispersal.

### **A.35.5 Threats**

Threats to California beaked-rush include marsh habitat loss and fragmentation, competitive exclusion by nonnative annual grasses, and possibly fire suppression and overgrazing. In Butte County, populations are reported to be threatened by development and heavy cattle grazing (CNDDDB 2008). A population located in Napa is threatened by overgrowth of Himalayan blackberry and larger periwinkle, with a minor threat listed as human foot traffic (CNDDDB 2008).

In Butte County, the very limited geographic distribution of the California beaked-rush makes the plant particularly vulnerable to local extinction. Impacts associated with urban expansion are increasing rapidly in blue oak savanna, blue oak woodland, foothill woodland, and chaparral (Shevock 1996), the same ecosystems to which the beaked-rush is endemic within the county.

### **A.35.6 Relevant Conservation Efforts**

No specific conservation efforts for this species are known at this time.

### **A.35.7 Species Habitat Suitability Model**

A habitat suitability model has not been developed for California beaked-rush, because there is insufficient information regarding its habitat requirements and the distribution of the physical attributes that support its habitat in the Plan Area (e.g., the location of seeps).

### **A.35.8 Recovery Plan Goals**

A recovery plan and recovery goals have not been prepared for this species.

### **A.35.9 References**

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