PLANT RARITY IN THE BAY-DELTA: A STATUS UPDATE ON FIVE SPECIAL-STATUS PLANTS

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OVERVIEW

The Sacramento-San Joaquin Delta covers 1,150 square miles and receives approximately 50 percent of California’s stream flow, with its waterways and wetlands forming the West Coast’s largest estuary. The Delta provides critical habitat for many plant, fish, and wildlife species; however, as a result of the massive reclamation that began in the late 1800s, this transformation of the Delta has resulted in a loss of 98% of freshwater emergent marsh habitats (SMF 2014). Due to continued threats including increasing water diversions, loss of habitat, invasive species, and impaired water quality, over a third of the Delta’s indigenous fish species are extinct or are threatened with extinction. A variety of endemic special-status plant species are similarly threatened; baseline data on existing populations is essential to understanding future population declines of these species. We focus on five rare plants that are endemic to Sacramento-San Joaquin Delta and surrounding regions.

MASON’S LILAEOPSIS

Linnaeopsis masonii

Apiales

Perennial rhizomatous herb (18.1 & State Rare)

Blooms April–November

Synonyms

L. masonii var. occidentalis (TJM1), L. masonii var. masonii (TJM2).

Habitat

Flooded marshes and swamps, generally near mean high water.

Rarity pattern

Narrowly distributed and abundant where found.

Threats

Seriously threatened by marsh habitat alteration and loss, and erosion. Possibly threatened by herbicide application.

DELTA TULE PEA

Lotus jepsonii var. jepsonii

Fabaceae

Perennial rhizomatous herb (18.1)

Blooms May–September

Synonyms

L. jepsonii subsp. jepsonii. Jepson pea, Delta lupine (presumably upper reaches of tidal sloughs in the SF Bay Marin shoreline) and San Joaquin County (USFWS 2013).

Habitat

Perennial rhizomatous herb (1B.2)

Invasives.

Management implications of predicted future sea level rise and salinity changes

Threats

Distributed andabundant where found.

Currently restricted to tidal sloughs in the SF Bay (TJM2).

POSSIBLY EXTIRPATED

OF THE OCCURRENCES HAVE BEEN REPORTED IN THE LAST 10 YEARS. THE OLDEST OCCURRENCE IS FROM 1935.

Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 2006–2016

173 occurrences; 24% with unknown condition and one possibly extirpated. Of the occurrences with the condition reported, 44% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

Threats

Seriously threatened by stream bank alteration, levee maintenance, erosion, and foot traffic.

Currently restricted to tidal sloughs in the SF Bay (TJM2).

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1980–2005

52 occurrences; 34% with unknown condition and one possibly extirpated. Of the occurrences with the condition reported, 44% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

Threats

Seriously threatened by salmon and steelhead runs.

Currently restricted to tidal subtidal sedimentary habitats in the SF Bay (TJM2).

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1900–1949

5 occurrences; 67% with unknown condition and two possibly extirpated. Of the occurrences with the condition reported, 30% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

Threats

Serious threat to all five species is marsh habitat alteration and loss which is largely due to land conversion (e.g., agriculture) but also due to management activities (e.g., levee maintenance, water control, and biotic forces (e.g., erosion, flooding). Also threatened by sea level rise and competition with invasive species.

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1980–2005

12 occurrences; 37% with unknown condition and one possibly extirpated. Of the occurrences with the condition reported, 47% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

Threats

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Currently restricted to tidal subtidal sedimentary habitats in the SF Bay (TJM2).

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1900–1949

3 occurrences; 67% with unknown condition and one possibly extirpated. Of the occurrences with the condition reported, 30% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1980–2005

9 occurrences; 91% with unknown condition. Of the occurrences with the condition reported, 81% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

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Habitat

Perennial rhizomatous herb (1B.2)

Presumed Extant, 1900–1949

1 occurrence; 100% with unknown condition. Of the occurrences with the condition reported, 100% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

Threats

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Habitat

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Presumed Extant, 1900–1949

2 occurrences; 100% with unknown condition. Of the occurrences with the condition reported, 100% are in fair or poor condition.

Management implications of predicted future sea level rise and salinity changes

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