

## 1.0 Introduction

The California Department of Water Resources (DWR) developed this Invasive Plant Management Plan (or Plan) as part of the Conservation Strategy of the Central Valley Flood Protection Plan (CVFPP). The Conservation Strategy tiers from the Conservation Framework, which was an integral part of the State's preferred SSIA, identified in the 2012 CVFPP. The Conservation Strategy describes how to make progress toward meeting the environmental objectives of the Central Valley Flood Protection Act of 2008 (Act) and related legislation throughout the flood management system in the Systemwide Planning Area (SPA). The SPA comprises five Conservation Planning Areas (CPAs) in California's Central Valley: the Feather River CPA, the Upper and Lower Sacramento River CPAs, and the Upper and Lower San Joaquin River CPAs (Figure 1-1). The SSIA includes developing and implementing multipurpose projects, and this Plan will guide the invasive plant management approaches undertaken as part of these projects.

The Conservation Strategy recognizes invasive plants as a primary stressor on the habitats, species, and ecosystem processes that are the focus of conservation planning. As of 2014, at least 68 plant species considered to be invasive by the California Invasive Plant Council (Cal-IPC) potentially occur in upland, riparian, wetland, and open water habitats in the Sacramento and San Joaquin Valleys (Cal-IPC 2013a). Many are widespread and abundant in vegetation managed as part of State Plan of Flood Control (SPFC) operation and maintenance (O&M). These species degrade riverine and floodplain habitats by altering ecosystem processes and displacing native plants. In addition, some of these invasive species, such as tamarisk (or saltcedar) (*Tamarix* spp.), giant reed (*Arundo donax*), and red sesbania (*Sesbania punicea*), are stressors that increase the cost and difficulty of operating and maintaining the SPFC.

These species can alter hydrology and sedimentation rates in riparian and aquatic systems (Cal-IPC 2011a) and can degrade flood system effectiveness. Importantly, recent studies have shown that certain invasive plant species have greater impacts on channel conveyance than native species adapted to the same areas (Stone et al. 2013). Dense stands of certain invasive species can alter channel morphology by retaining sediments and increasing the hydraulic roughness of the channel, which restricts flows and reduces flood conveyance (Bossard et al. 2000). For example, saltcedar traps and stabilizes alluvial sediments, narrowing stream channels and contributing to more frequent flooding (Bossard et al. 2000). Species with shallow root systems, such as giant reed and red sesbania, promote bank undercutting, collapse, and erosion (Bossard et al. 2000; Cal-IPC 2011b). Invasive terrestrial plants can reduce groundwater availability by transpiring large amounts of water, leaving less water available for native riparian vegetation (Bossard et al. 2000).

Invasive plants can also reduce the integrity of native riparian plant communities by outcompeting native plants, reducing habitat quality and food supply for wildlife, and interfering with wildlife management (Bossard et al. 2000; Cal-IPC 2011a). Nationally, invasive species are the second greatest threat to endangered species, after habitat destruction (Cal-IPC 2011a), and