The California Department of Boating and Waterways is the lead agency in the control of a major non-native invasive submersed plant – Egeria densa. CDBW acquired hyperspectral image over the Sacramento-San Joaquin river Delta from 2003 to 2008 to map and assess the dynamics of the invaded submersed plant community.

We used image spectroscopy to produce yearly distribution maps of the submersed plant community and assess the dynamics of its spread and persistence. We considered persistence as the amount of vegetation that remained from year to year and spread as the yearly new growth.

**Persistence** decreased with time in the system

**Spread**

New growth accounted for 40-60% of the yearly distribution

**Goal:** Determine the distribution and dynamics of the submersed aquatic vegetation to guide management actions towards the maintenance of navigable waterways

**Image spectroscopy**

Each plant and their constituents (chlorophyll, mesophyll, cellulose, etc.) interact differently with electromagnetic radiation from the sun, resulting in unique spectral signatures. Spectral measurements are quantities that can be used to detect mathematically species and communities distributions.