NCERA-101 station report (2023) – NASA Ames Research Center, Moffett Field, CA 94035

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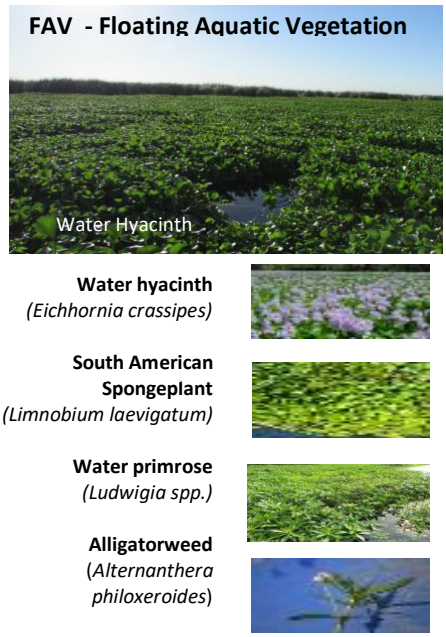
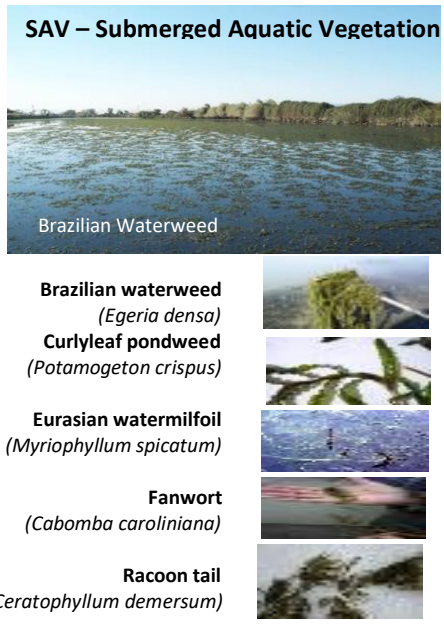
2. Facilities:
   • New LED Lighting Systems upgrade in Existing Controlled Environment Chambers
   • Preparing for Aquatic Plant Gas Exchange System

3. Unique Plant Responses
   • Nutrient response (particularly nitrogen & phosphorus) of selected Floating Aquatic Vegetation (FAV) and Submerged Aquatic Vegetation (SAV).





4. Accomplishments:

   • <u>Ames Research Center / State of California Space Act Agreement - Utilizing Adaptive Management Methods for Invasive Aquatic Plant Management</u>:
   - Transferred remote sensing, satellite-based, Floating Aquatic Vegetation (FAV) mapping and biomass assessment tool to State of California Department of Boating and Waterways for operational testing.

- Modeling ecosystem response to environmental variability and predicted climate change trends utilizing FAV growth models parameterized (light, temperature, nutrients) with environmental response studies in Controlled Environment facilities.
- Initiating Submerged Aquatic Vegetation environmental response studies.

• NASA Climate Adaptation Science Investigators (CASI) Workgroup Initiated:
Preparing for an Extreme Future - Aquatic Ecosystem Response and Interdisciplinary Understanding of Landscape Scale Changes with Extreme Climate Events
- Focus on extreme event modification and reshaping of aquatic and riparian community structure and function and understanding potential impact using State-and-Transition Ecosystem modeling. Extremes are forecast using projections generated from the NASA Earth Exchange (NEX) Global Daily Downscaled Projections (GDDP) dataset; includes 35 Global Circulation Models (GCM) from the Coupled Model Intercomparison Project Phase 6 (CMIP6).
- Controlled environment studies to inform ecosystems models and critical irreversible state transition vulnerability.