



Ecotoxicology Laboratory

FLORIDA INTERNATIONAL UNIVERSITY

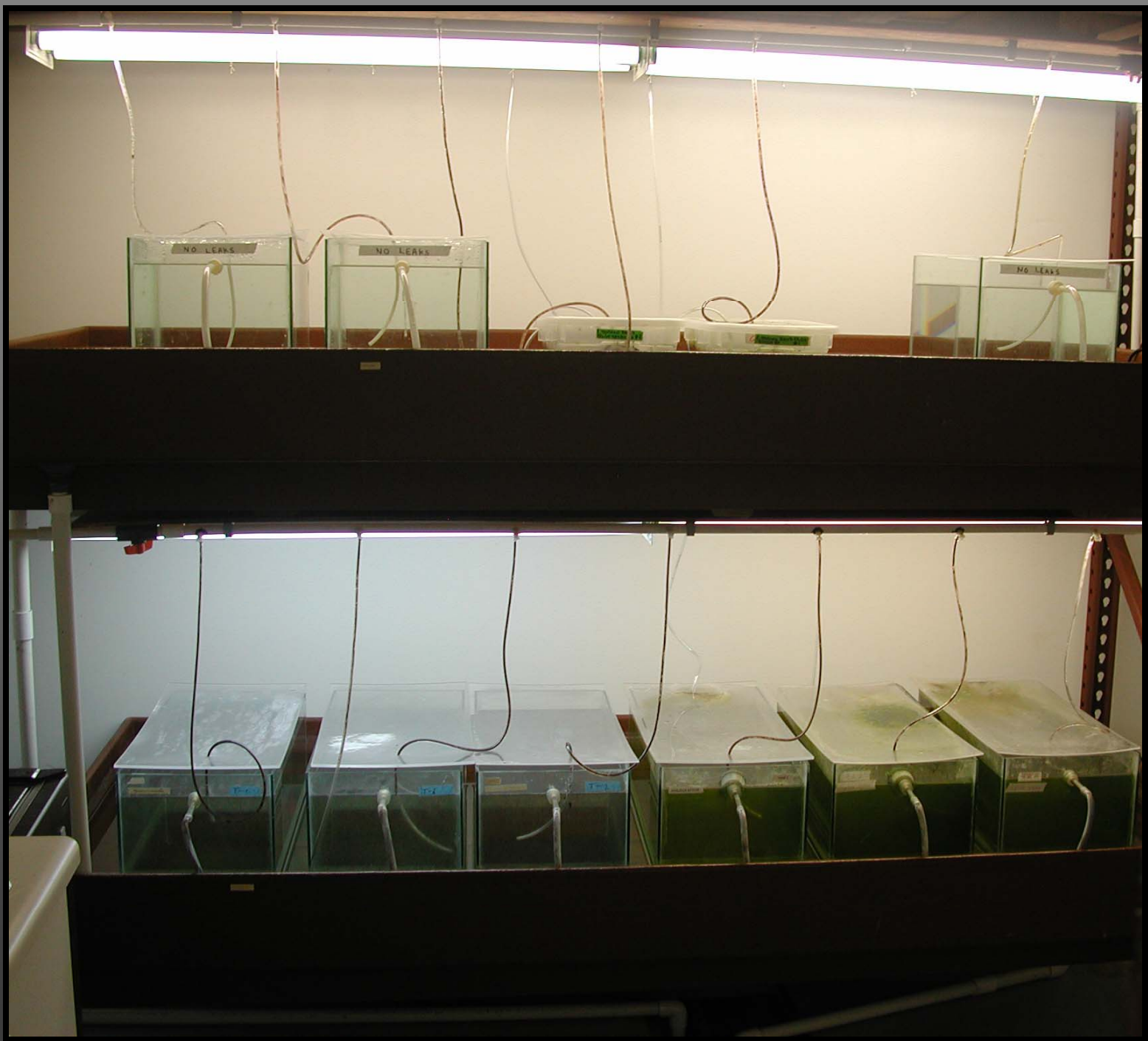






Culture room







Estuarine water mixing system



Automated toxicant delivery system





Exposure tanks



Outdoor Microcosm System





TOXICITY PLAN

- Laboratory Studies
 - Acute Tests- bacteria, phytoplankton, zooplankton, vascular plants, benthic macroinvertebrates, fish
 - Chronic Tests

Lab Test Considerations

- Potential Stressors-salinity, nutrients, chemicals (e.g., pharmaceuticals & personal care products)
- Biological Endpoints (Criteria for Effects)-survival, development, growth, reproduction
- Specific endpoints based on mode of action (MOA) of substances detected in final treated effluent
- Exposure Type- static versus flow-through water exposures, sediment
- Standard versus native toxicity test species
- Use of standard testing methodology with modifications

Outdoor Microcosm (Ecological Toxicity) Studies

- Replicated outdoor tanks containing sediment/Biscayne Bay water and organisms (e.g., phytoplankton, periphyton, zooplankton, benthic macroinvertebrates) exposed to different volume percentages (e.g., 100%, 50%, 25, 12.5) of final treated wastewater plus untreated controls
- Aging/Baseline Phase
- Treatment Phase (wastewater exposure)
- Post-Treatment Phase

Microcosm Considerations

- Length of studies
- Exposure Type- spike-static, short-term flow-through, etc.
- Potential variable/cyclical characteristics of final wastewater
- Biological endpoints-structural (e.g., number of phytoplankton, zooplankton species), functional (e.g., primary productivity, respiration)
- Analytical-chemical endpoints