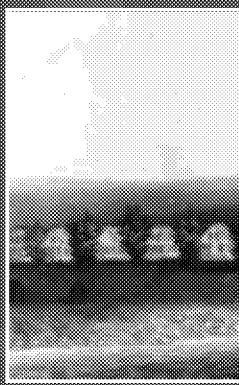
EPA
United States
Environmental Protection
Agency

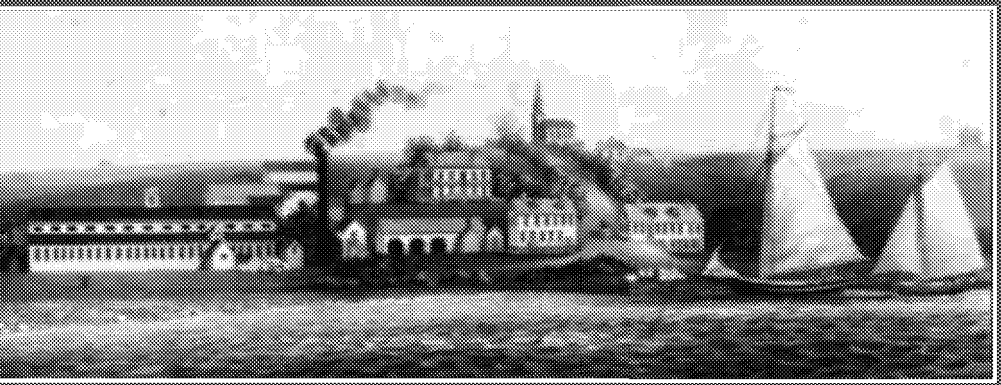
Overview of US EPA
Atlantic Ecology Di



Wayne Munns
Director, US EPA ORD AED

New England State Commissioners
June 19, 2018

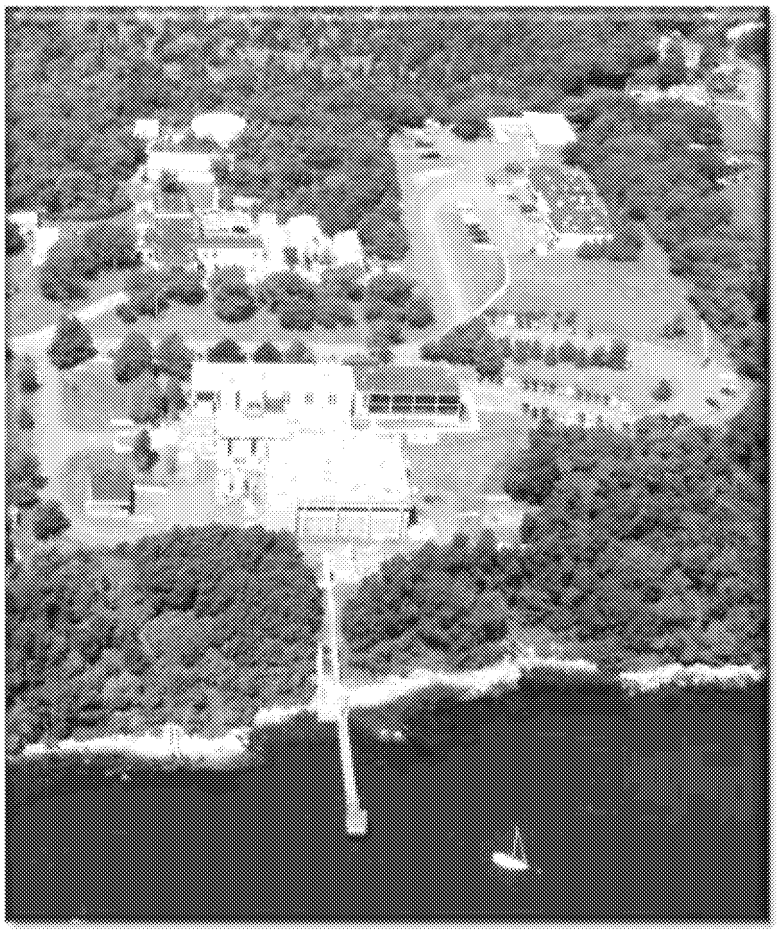
A ORD's vision (AED)



' Visit to AED

AED Supports EPA's Mission

Quantifying the socio-ecological effects of anthropogenic stressors on coastal waters and watersheds of the Atlantic seaboard to inform decision making in a systems context



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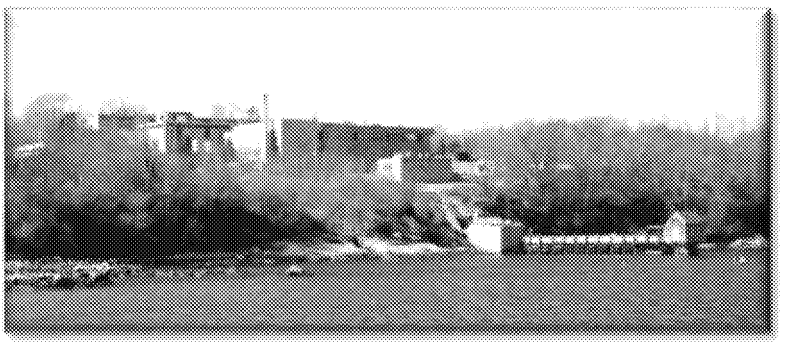
Historic Strengths

- Aquatic toxicity test method development
- Marine chemistry
- Monitoring & assessment
- Ecological risk assessment

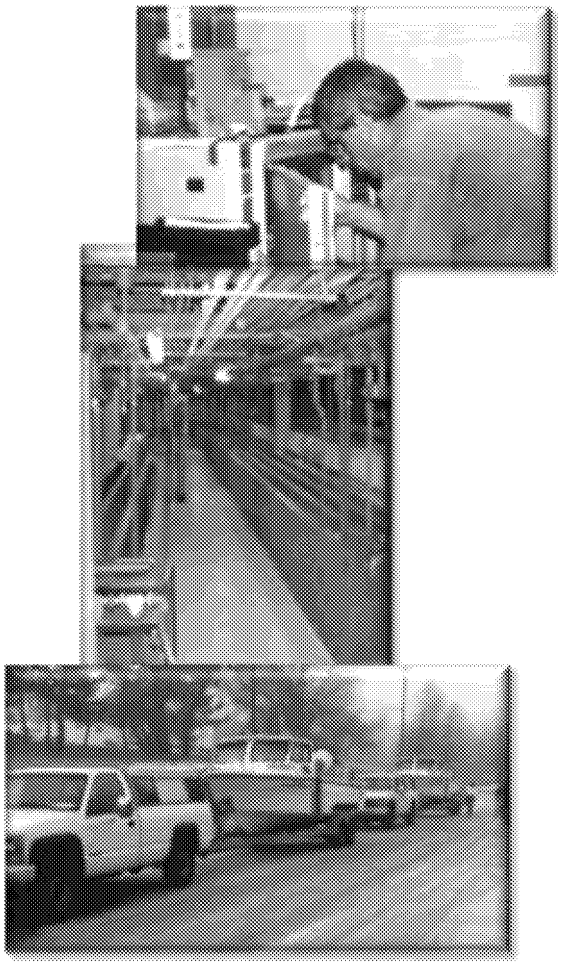


Expertise & Capabilities

Current Strengths

- Coastal stress & restoration ecology
- Landscape ecology & spatial analysis
- Ecological modeling
- Wetlands & watershed ecology
- Integrated systems research
  - Human-eco interactions
  - Social sciences, ecosystem services (nature's benefits) & valuation
  - Decision science & tools
  - Sustainable systems

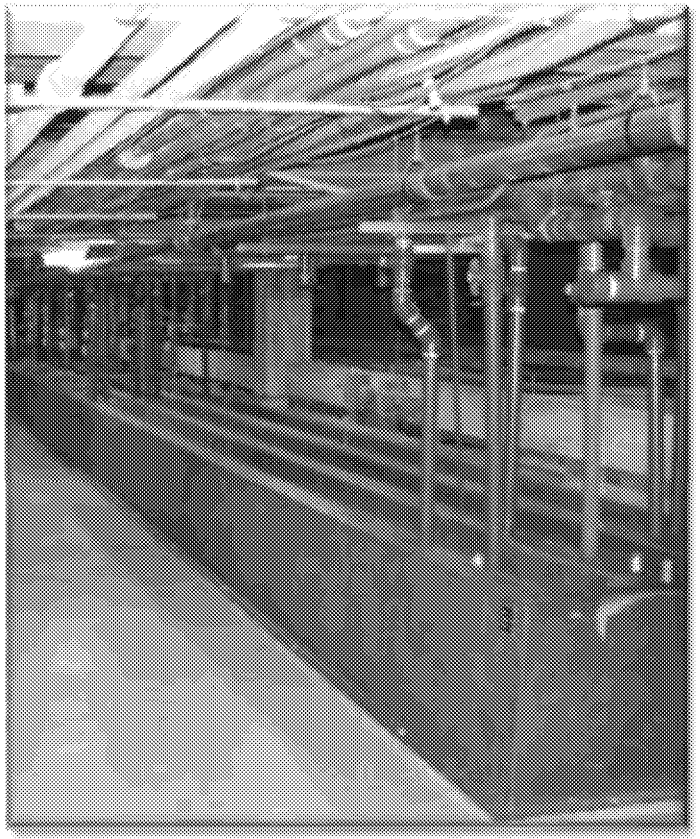
AED at a Glance



Location	• Coastal southern New England • 11 federally-owned acres • Co-located with academic, state and federal labs with ~600 research-associated personnel
Federal Workforce	• ~70 FTE • Majority hold advanced degrees (MS or PhD)
Additional Personnel	• ~25 contractors (O&M, IT, Security, Library) • SEEs, student services contractors • Post docs, students, interns, visiting scientists
Facilities	• 100,000 ft^2 workspace • 7 buildings – promoting green operations • Year-round supply of natural seawater
Core Capabilities	• Highly-trained, enthusiastic workforce • Analytical labs & instruments for coastal ecology, aquatic toxicology, chemistry • Seawater system & wet lab facilities • Information technology • Research fleet & field support

Unique Seawater Delivery System & Analytical Capabilities

- 2 wet laboratories
  - Clean Narragansett Bay seawater
  - 300,000 gallons seawater daily flow
  - Raw, filtered, heated, chilled
  - Controllable dissolved oxygen levels
  - Controllable salinity
- Experimental greenhouse
- Analytical equipment
  - Organics, metals
  - Nutrients
  - Stable isotopes
  - Sediments



Accessing Coastal Environments to Solve Current Problems

- Transportable sampling platforms
- Safe, quick, cost-effective and with minimum impact on the environment
- Diverse sampling gear

- Geographic Information System (GIS) lab
  - Entry, analysis & display of spatially oriented data
  - Development of communication & education materials
- "Big data" capabilities
  - Access to & distribution of data
  - State-of-science analysis methods
- Printers, drivers, digitizer access for users

Translating Data into Useful Information

Addressing National Problems with Local Applications

- Centralized ORD planning driven by needs of
  - EPA program and regional offices
  - States & tribes
- Coordinated research across ORD & partners
- Producing knowledge & tools to inform decisions at multiples scales

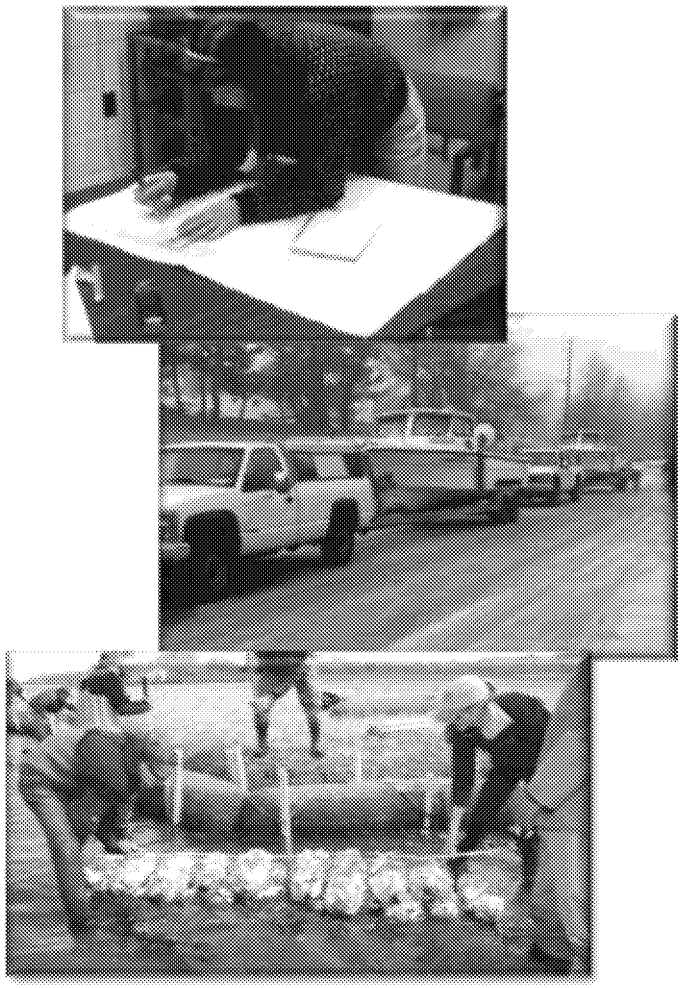
Addressing State Needs

- Science & Technology Advisory Board to RI Executive Climate Change Coordinating Committee (EC4)
- Newport, RI Water Supply TMDL
- Sampling support to states for National Coastal Condition Assessment
- Narragansett Bay and Watershed Sustainability Demonstration Project
- Social-ecological systems on Cape Cod, MA
- Triple Value Simulation (3VS) models in multiple states
- Southeast New England Program
- State fish consumption advisories

- Stormwater Low Impact Development (LID) Guidance Manual for RI
- Developing approaches for dissolved oxygen & nutrient criteria for multiple states
- Monitoring & analysis of Superfund remediation effectiveness

Key Messages

- AED's research
  - Addressing national problems with regional & local applications & benefits
  - Integrated & transdisciplinary in approach, engaging partners throughout
  - Flexible strengths evolve to meet emerging national & state needs
- AED provides key science services to states
  - Unique research capabilities informing regulatory missions
  - Expert knowledge of local & regional ecological, social & economic issues
  - Highly valued partnerships & key stakeholder networks
  - Rapidly deployable field capability responding to environmental emergencies



United States Environmental Protection Agency

- **AED web pages**
  https://www.epa.gov/aboutepa/about-national-health-and-environmental-effects-research-laboratory-nheerl#aed
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