Presentation to the Savannah River Site Citizens Advisory Board

Savannah River Ecology Laboratory (SREL) FY24 Overview

March 25, 2025

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Professor, University of Georgia (UGA)

The University of Georgia
Savannah River Ecology Laboratory

Objectives

- Savannah River Ecology Lab (SREL) Mission
- Staffing
- Funding and Work Scope
- Significant Events
- Advances
- Opportunities For Fiscal Year 2025
- Challenges for Fiscal Year 2025

Consistent with the Facilities Disposition and Site Remediation Committee's 2025 Work Plan

Acronyms

ACP	Area Closure Project
DOE	Department of Energy
DOE-HQ	Department of Energy – Headquarters
DOE-SR	Department of Energy – Savannah River
ERDA	U.S. Energy Research and Development Administration
HVAC	Heating, Ventilation and Air Conditioning
NNSA	National Nuclear Security Administration
SREL	Savannah River Ecology Laboratory
SRNL	Savannah River National Laboratory
SRMC	Savannah River Mission Completion
SRS	Savannah River Site
UGA	University of Georgia
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS-SR	U.S. Forest Service – Savannah River

SREL History

1951 - Atomic Energy Commission (AEC) had concerns about environmental impacts resulting from Savannah River Site (SRS) construction and operations.

Dr. Eugene Odum

1951 to present – Funding from AEC, ERDA, and Department of Energy (DOE)

1954 – Established permanent lab on the SRS

1977 – Established current lab facilities

UNIVERSITY OF GEORGIA

Savannah River Ecology Laboratory

The University of Georgia operates SREL on the SRS under a Cooperative Agreement with DOE and is funded by a combination of DOE-EM, DOE-NNSA and other external funding sources, including USDA, DoD, COE, NSF, state agencies, and private NGO's. SREL has been on the SRS for 71 years.

SREL's Mission

"To provide the public with an independent evaluation of the ecological effects of SRS operations on the environment" through:

- **Education** and research training for undergraduate and graduate students
- **Service** to the community through environmental outreach activities
- An interdisciplinary program of field and laboratory **Research** conducted largely on the SRS and published in the peer-reviewed scientific literature

SREL's Value Proposition to DOE

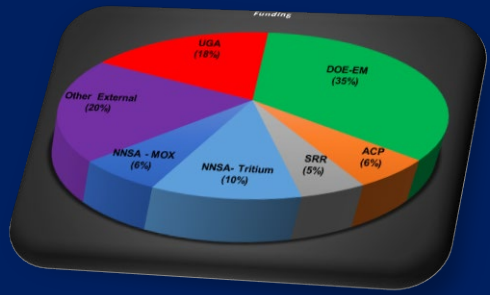
SREL is a significant scientific asset to the DOE and its contractors on the SRS

SREL is a good investment by DOE on the SRS

SREL's outreach program builds public trust in local communities

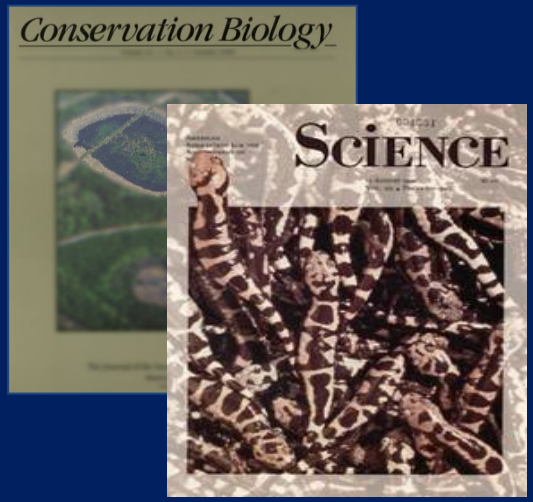
SREL's education programs fill gaps in critical scientific expertise for SRS and the nation

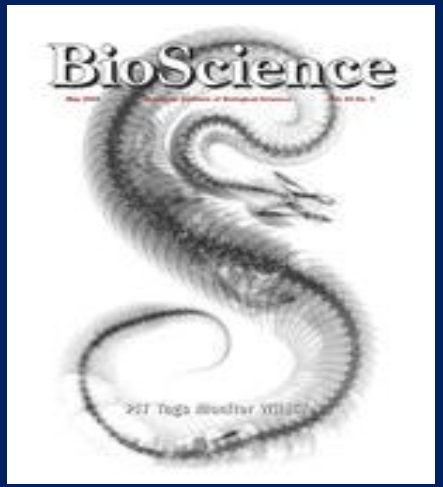
SREL is a unique asset for DOE and the General Public

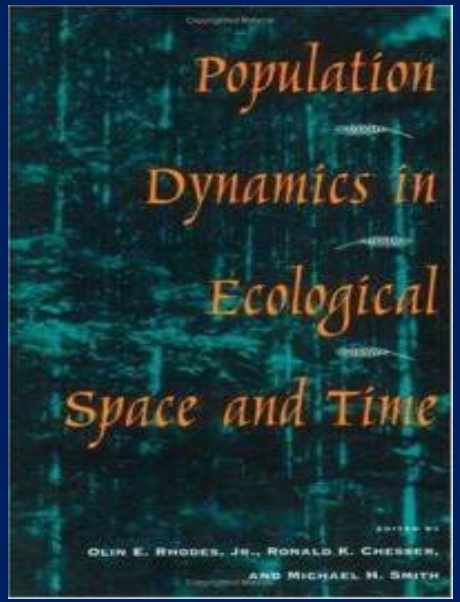


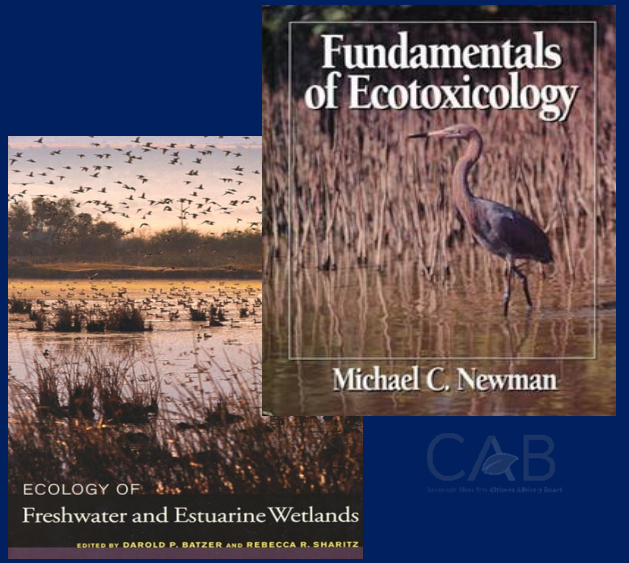
SREL Research Program's

- >**3804** peer-reviewed scientific publications to date
- **66** books









SREL Education Program

- >600 Theses and Dissertations
- Over 700 undergraduates representing all 50 states have participated in SREL-sponsored experiential learning programs
- Thousands of post –baccalaureate research opportunities for temporary undergraduate technicians

SREL Environmental Outreach Program

- Integrates SREL research into presentations for the general public
- Provides hands-on classroom and field experience for students
- Conducts educator workshops

In FY24, SREL:

- Held 371 talks reaching >26K people
- 61 public tours
- 34 exhibits at local or regional events
- 36 "Ecologist for a Day" programs for local schools
- Had ~13,000 social media followers – 1.8 million media impressions

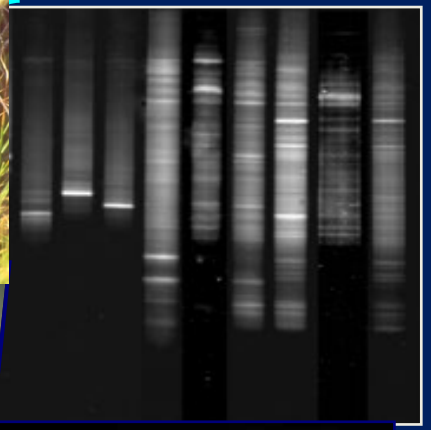
SREL in 2024

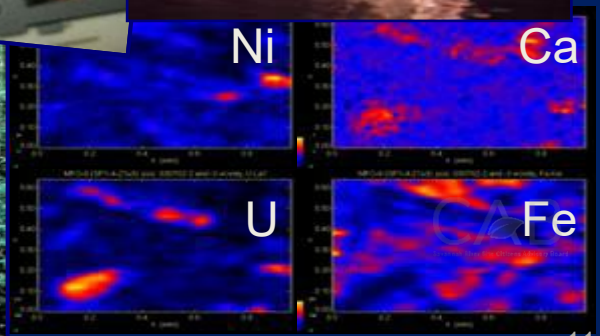
- UGA Employees
  - Research Faculty – 7
  - Tenure Track Faculty - 12
  - Emeritus Faculty - 4
  - Post Docs – 7
  - Outreach - 5
  - Res. Professional - 36
  - Research Support - 32
  - Graduate Students - 82
  - Admin & Support - 21

210 Staff & Students

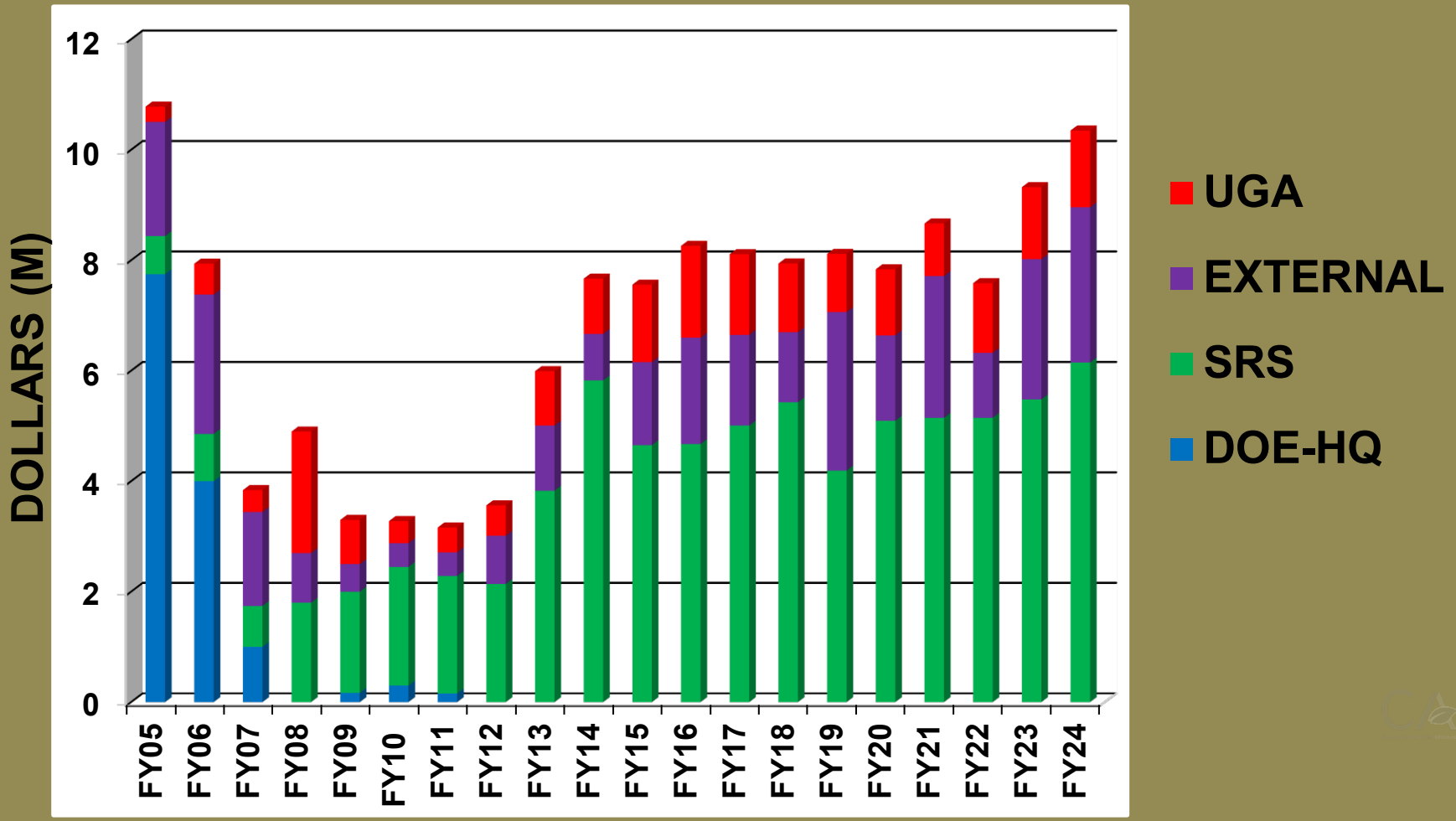
Disciplinary Expertise

- Aquatic and Terrestrial Ecology
- Geology / Soil Science
- Environmental Microbiology
- Epigenetics
- Molecular Genetics
- Environmental Chemistry
- Radioecology
- Ecotoxicology and Risk Assessment
- Wildlife Ecology
- Disease Ecology
- Plant Physiology
- Proteomics and Glycomics
- AI/ML Modelling and Statistics

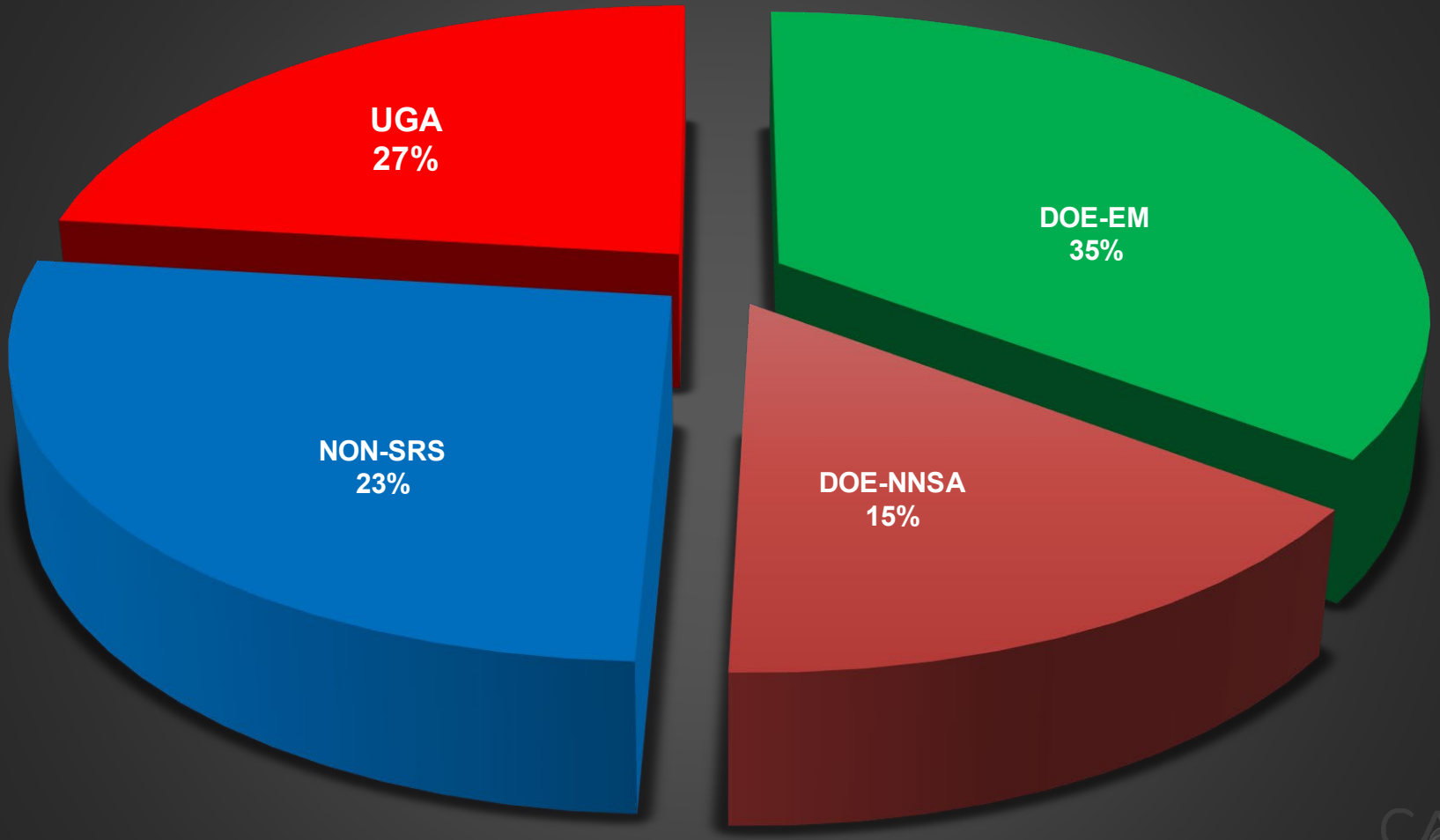




Recent Funding History



FY24 SREL Funding Sources



Significant Events in FY24

UGA

- Allowed majority (75%) of the 35% Indirect Costs to be retained by SREL
- Cost-Shared 11 faculty positions with SREL
- Provided funding for equipment and personnel
- Cost-shared graduate student and postdoctoral positions

DOE / SRS / External

- Building, equipment, utilities, and site access
- Funding provided by Department of Energy – Savannah River (DOE-SR) under 5-year Cooperative Agreement with DOE – EM (Now NNSA)
- Funding provided by DOE – National Nuclear Security Administration (NNSA)
- Continued project funding from Area Closure Project (ACP) and Savannah River Remediation (SRR)

Advancements in FY24

1. Work scope:

Research Set-Asides, Site Use Permitting

- Enacted significant land management activities for set asides
- Collaborated with USFS to restore habitats for threatened species

Graduate and Undergraduate Education Programs

- Advised 82 graduate students
- Mentored over 132 graduate students total
- Taught 40 courses on main UGA campus including 3 at SREL

Interdisciplinary Research

- Continuing collaborative research programs with Savannah River National Laboratory (SRNL), U.S. Forest Service–Savannah River (USFS-SR), Savannah River Mission Completion (SRMC), UGA, U.S. Department of Agriculture (USDA), National Science Foundation (NSF), U.S. Army Corps of Engineers (USACE) & other university, federal, state, and private partners Involving research on radionuclide and metal remediation, feral swine control & radioecology

Advancements in FY24

1. Work scope: Continued

Site-wide Source of Ecological Expertise

Provided ecological research support to Area Closures Project, SRMC, SRNL, etc.

Scientific Expertise

Submitted 38 Proposals as PI or coPIs to External Granting Agencies

Onboarded Two New Tenure Track Faculty–Disease Ecology (1) and Modelling (1)

Scientific Productivity

SREL staff and students published over 85 scientific articles and gave over 227 scientific presentations in FY24

Analytical Services

SREL staff and students analyzed over 3,481 samples for metal contaminants using ICP-MS or ICP-OES technologies

SREL staff and students analyzed over 543 samples for total or methyl mercury using SREL-based equipment

Opportunities for FY25

1. Increasing Engagement with BSRA Partners

2. Continued Development of Core Missions on the SRS:
   a. Radioecology and Low Dose Radiation Effects
   b. Metal and Radionuclide Ecotoxicology
   c. Radionuclide Fate and Transport Studies
   d. Enhanced Biomonitoring Technologies
   e. Outreach and Education Programs

Opportunities for FY25 (cont.)

3. Enhanced Analytical Capabilities
   a) High Resolution Inductively Coupled Plasma Mass Spectroscopy

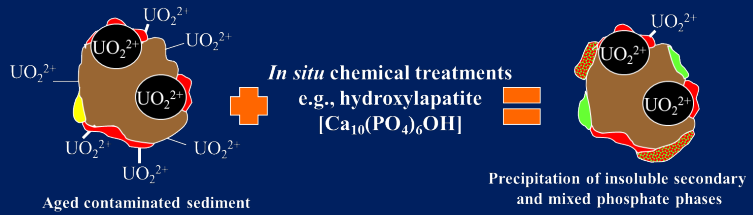
   d) High Resolution PFAS Analysis (DOE Certified Lab)

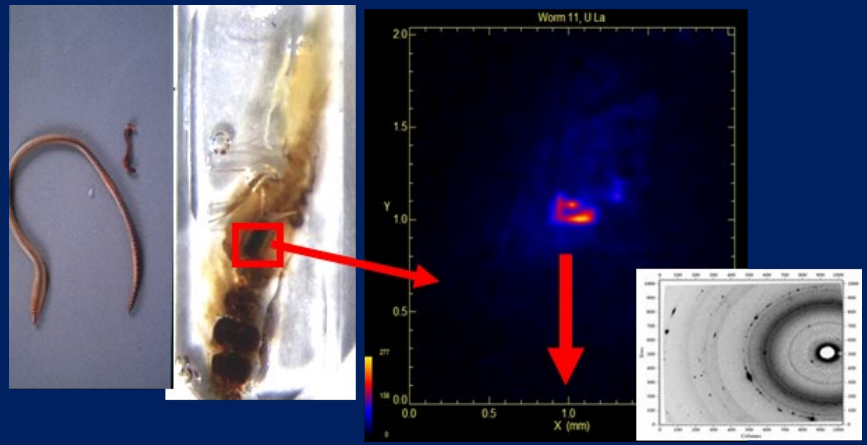
Potential Consumption Risk

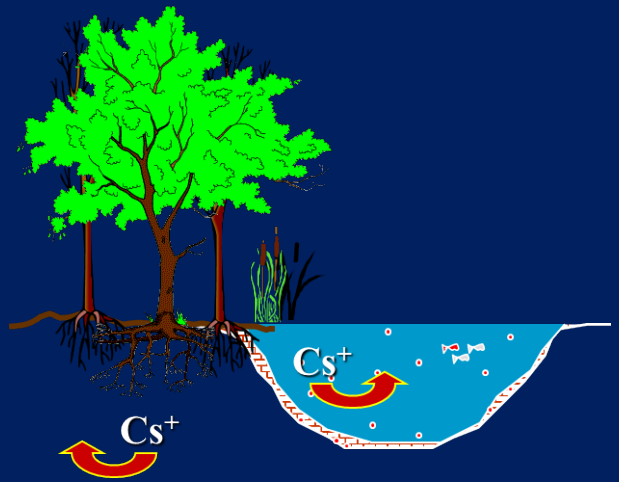
Ecological Receptors and Environmental Risk Assessment

Biomonitoring

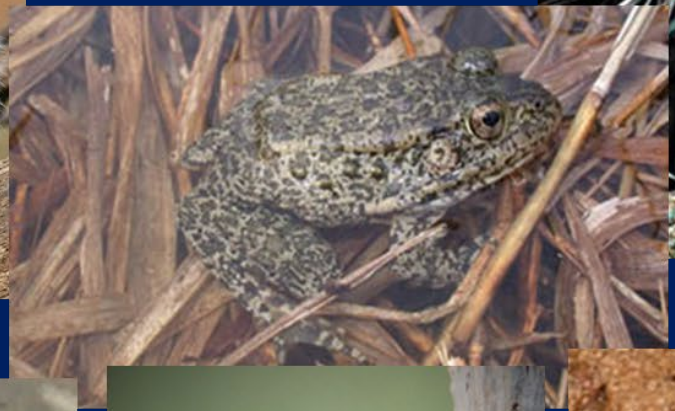
Environmental Remediation

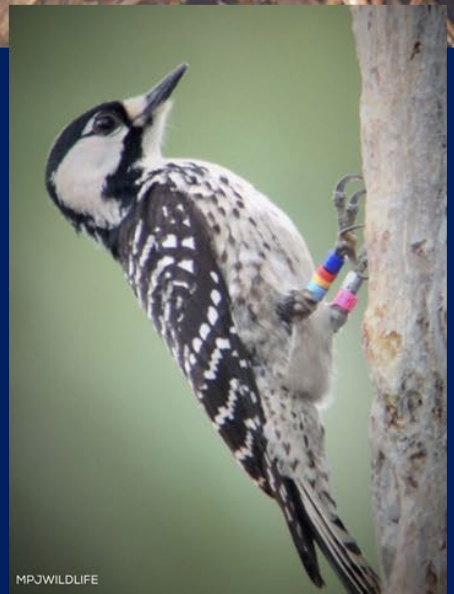






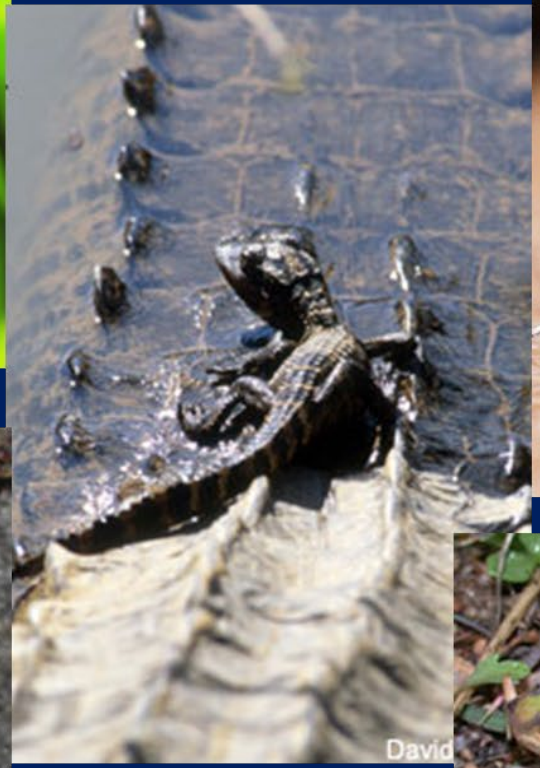
Environmental Stewardship





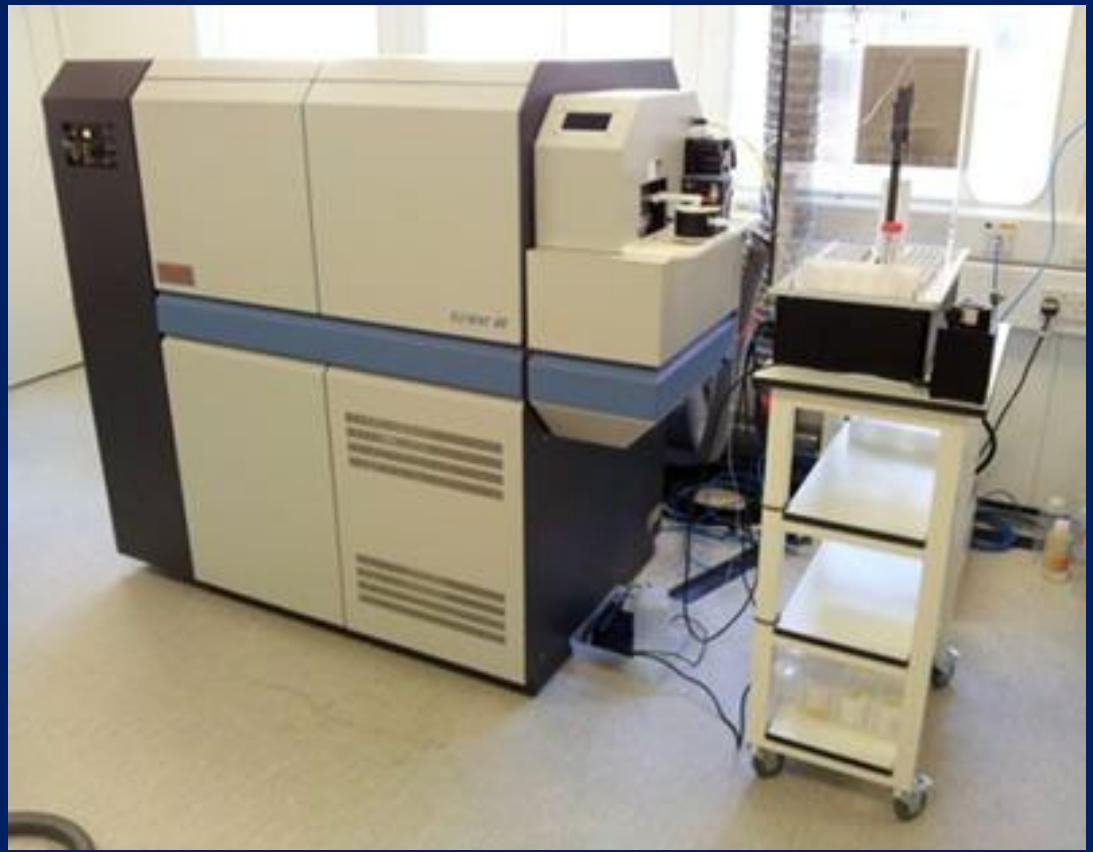
Human-Wildlife Conflict

Mechanistic Understanding of Contaminant Effects



New Initiatives

SREL Radiological Analysis Lab



New Initiatives

Solutions For a Secure Tomorrow Program (SoFAST)

- Talent Development for Future DOE Missions on SRS
- Undergraduate Experiential Learning for Students from Communities Surrounding the SRS
- Path to Graduate School for Undergraduate Interns from Summer Experiential Learning Programs Conducted at SREL
- Recruitment from Local High Schools and Regional Colleges and Universities
- Focus on Developing and Retaining Local Talent for Employment in the SRS Workforce

Challenges for FY25

1. Uncertainty With Current Federal Priorities and Goals
2. Staff Recruitment and Stability
3. Resources to Fulfill SoFAST Vision
4. Ability to Pursue Development of PFAS Analytical Capabilities This Fiscal Year

THANK YOU