

# Perchlorate in the Environment: Ecological Considerations

**Jim Carr, Ken Dixon, Andrew Jackson, Scott  
McMurry, Reynaldo Patino, Jacques Rinchar, Phil  
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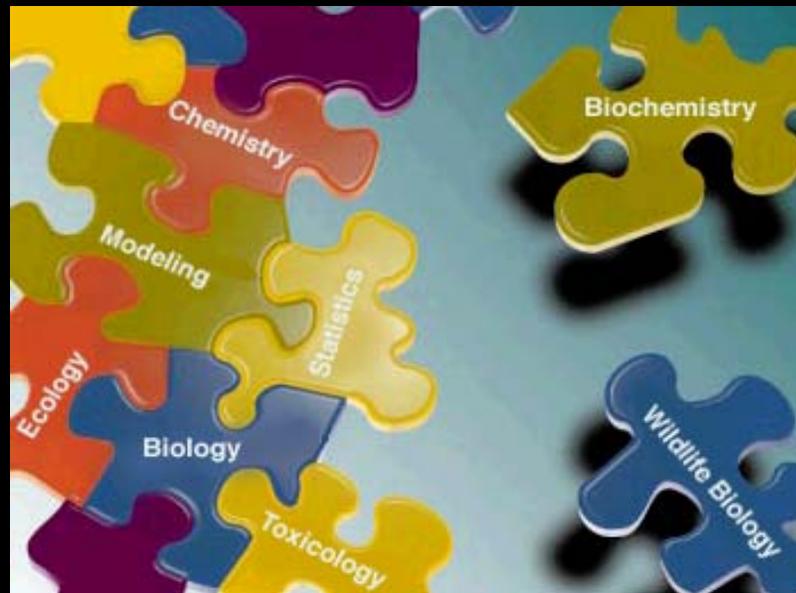


- **Todd Anderson**  
Analytical Chemistry/Exposure
- **Jim Carr**  
Ammonium Perchlorate Disruption of Thyroid Function in Natural Amphibian Populations: Assessment and Potential Impact
- **Jacques Rinchar**  
Effects of Perchlorate on Fish
- **W. Andrew Jackson**  
Perchlorate in the Environment: Fate in Saturated Sediments and Surface Waters
- **Phil Smith**  
Routes of Exposure among Terrestrial Species
- **Scott McMurry**  
Perchlorate Exposure and Effects in Raccoons
- **Ken Dixon**  
Perchlorate in the Environment: Modeling Considerations



# Ecological Risk Assessment

- **Using Wildlife and Sentinels**
- **Linking Laboratory and Field Biomarkers**
- **Using Wildlife to Guide Remediation Decisions**
- **Linking Environmental Health to Human Health**



# Perchlorate Studies at Tech

- Environmental Fate/Exposure
  - Analytical Methods Development**
  - Transport in Soil**
  - Plant Uptake**
- Toxicology
  - Earthworms**
  - Amphibians**
  - Fish**
  - Small Mammals**



# Field Sites

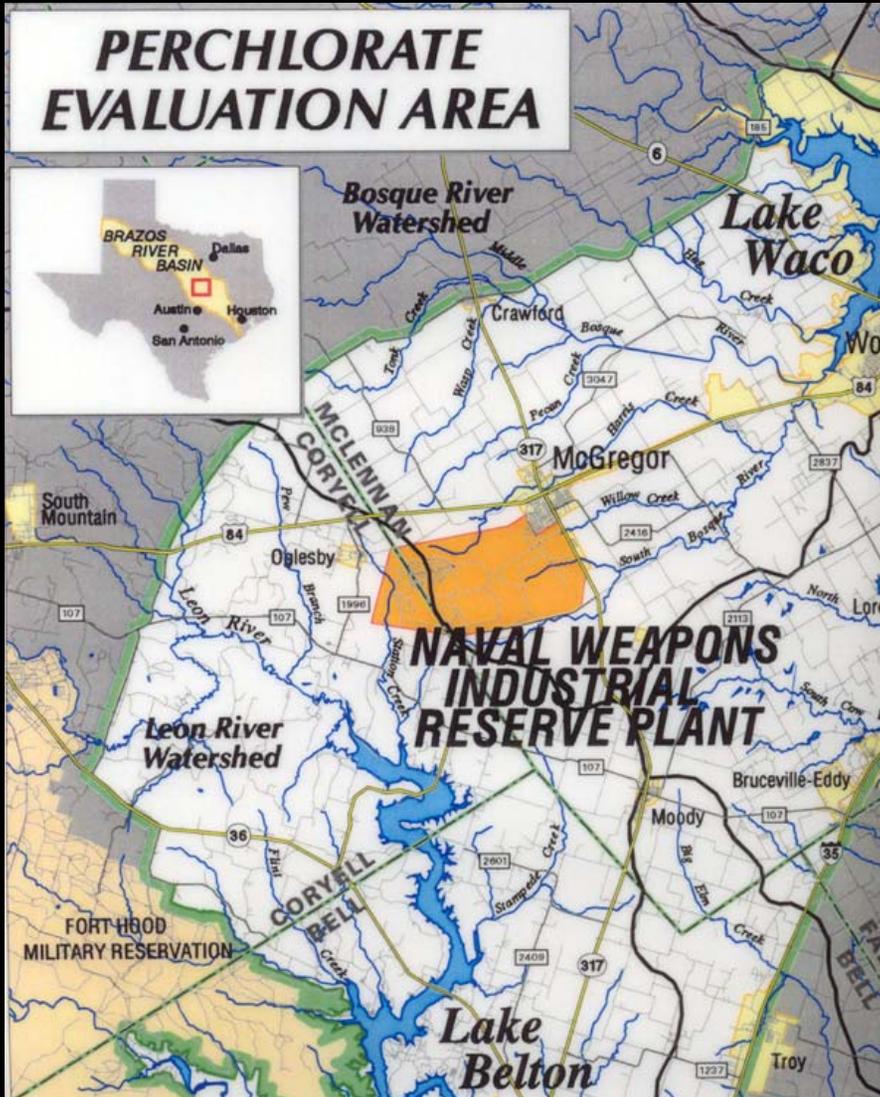
- Longhorn Army Ammunition Plant  
East Texas near Caddo Lake  
Rocket Motor Testing
- Naval Weapons Industrial Reserve Plant  
Central Texas near Lakes Waco and Belton  
Jet-Assisted Takeoffs



# LHAAP



# NWIRP



# Exposure to Perchlorate

Media Concentrations

Water

Soil

Vegetation

Tissue Concentrations

Trophic Transfer

