

# Department of the Interior

## Alternative Toxicology Test Method Activities



# DOI Mission

- Protects and manages the Nation's natural resources & cultural heritage
- Provides scientific & other information about those resources
- Honors trust responsibilities & commitments to American Indians, Alaska Natives & affiliated island communities



# Some Toxicological Research

## Very limited regulatory authority on “chemicals”

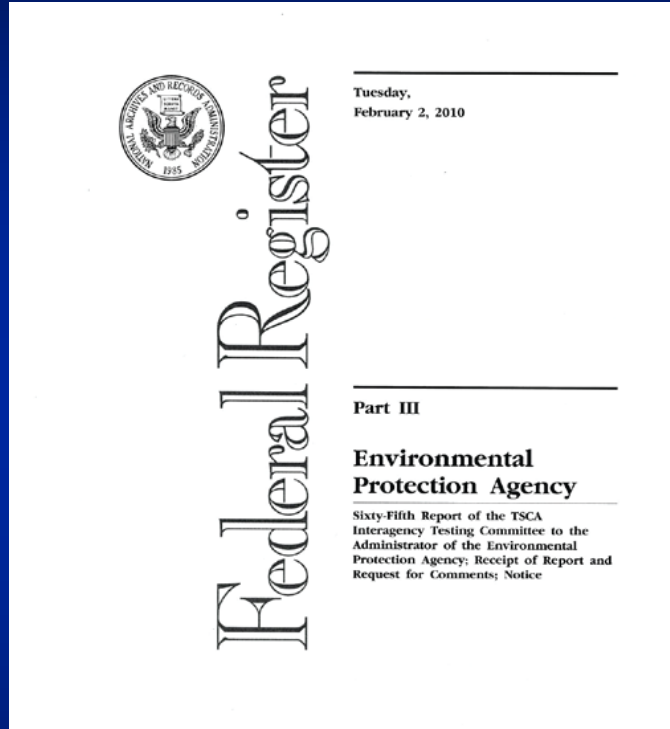
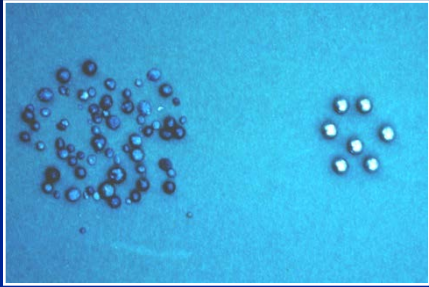
U.S. Geological Survey  
U.S. Fish and Wildlife Service

1. Toxicological research (hypothesis testing)
2. Environmental contaminant biomonitoring
3. Natural Resource Damage Assessment
4. Registration of “shot” used in hunting
5. Registration of chemicals used in aquaculture

# Embrace 3 R's



# Registration of Non-toxic Shot



lead replacements:  
steel  
bismuth-tin  
copper-clad iron  
tungsten-bronze  
tungsten-iron  
tungsten-matrix  
tungsten-nickel-iron  
tungsten-polymer  
tungsten-tin-bismuth  
tungsten-tin-iron  
tungsten-tin-iron-nickel

Bottom Line – many shot types registered using existing information, risk assessment and no toxicity test (harmonized with Canada)

# Screening and Testing Candidate Fishery Management Chemicals

- Toxicants and therapeutics
- Developing a tiered approach:
  - Physiochemical data to identify SAR
  - Developing *in vitro* fish cell lines to replace *in vivo* testing
  - Genomic analyses attempting to identify biomarkers of toxicant-sensitive and resistant species

# Adverse Outcome Pathway

