Status of Regional Environmental Monitoring and Assessment Program (REMAP) Western Pilot Study within Idaho

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This is who we are

- Idaho Department of Environmental Quality
- Field Crews
- Region X EPA
- Corvallis ORD EPA
Idaho
REMARP was initiated to test the applicability of the EMAP approach to answer questions about ecological conditions at regional and local scales. Using EMAP Statistical Design and indicator concepts, REMAP conducts projects at smaller geographic scales and in shorter time frames than the national EMAP program.

Silver Creek
The objectives of REMAP

• Evaluate and improve EMAP concepts for state and local use.

• Assess the applicability of EMAP indicators at differing spatial scales.

• Demonstrate the utility of EMAP for resolving issues of importance to EPA Regions and states.
Idaho Landscape
The REMAP Western Pilot Study (Idaho) is being implemented to:

- refine monitoring tools that produce unbiased estimates of the ecological condition of waters across a large geographic area
- and to demonstrate those tools in large-scale assessment
Physical habitat characterization

- Channel dimensions
- Channel gradient
- Channel substrate
- Habitat complexity
- Riparian vegetation
- Anthropogenic alterations
- Channel-riparian interaction
- Alien invasive plant inventory

Selway River
Biologic characterization

- Periphyton Assemblage
- Benthic Macroinvertebrate Assemblage
- Aquatic Vertebrate Assemblages
- Fish Tissue Contaminants
Water chemistry

• Lab Analysis
  – Acid-base status
  – Trophic conditions (nutrient enrichment)
  – Chemical Stressors
  – Classification of water chemistry type

• Field Analysis
  – Dissolved Oxygen
  – Conductivity
  – Temperature
Bioregions

- Panhandle Basin
- Salmon Basin
- Snake River Basin
The three-year project was developed and funded by Region X EPA and implemented by Idaho Department of Environmental Quality.

2002
Snake River Bioregion

2003
Panhandle Bioregion

2004
Salmon Bioregion
The project incorporates seasonally hired individuals as well as DEQ senior staff. Monitoring conducted from whitewater rafts

- Can you find the 9 people in this image?
Idaho the Whitewater State
Idaho Wolman Pebble Count
Crew training

- DEQ orientation
- CPR/first aid
- Anti harassment
- Off-road driving skills
- Western Pilot methods
- Whitewater rescue and recovery skills

Jarbidge River
Off road driving and navigation skills

Is this the only way to the site?
Whitewater skills
Idaho's frequently and never before monitored rivers.

- Idaho’s ambient monitoring stations wadeable vs. nonwadeable
EPA randomly selected fourth order (RF3) or greater streams within three Idaho bioregions.
DEQ then used its waterbody size criteria (fifth order (1:100k) or larger, 15+ meters in wetted width, and/or must be a minimum of 0.4 meters in depth) to select streams appropriately sized for the study.

Above criteria corresponds to river sizes needed for inflatable raft use
17 sites were monitored during 2002, 15 in 2003 and 19 are planned for 2004.

- Bioregion based
- Target vs. alternate sites
Permitting

- Idaho Fish and Game Scientific Collection Permit
- U.S. Fish and Wildlife, Threatened and Endangered Species Take Permit (Section 10)
- Trespass Permits
  - Wild and Scenic Rivers/Wilderness
  - Tribal Property
  - Private Property
Elements that need attention (2003)

- Idaho specific alien plant list and codes
- Cross bank evaluation speculative
- Reduction of equipment required
- Modification of season, drying streams
- Economy of overtime
Will Idaho adopt this monitoring approach?

• Pros
  – reduces Idaho’s research efforts
  – promotes better data sharing
  – eases data management efforts
  – solid methods
  – implicit EPA approval

• Cons
  – conflicts somewhat with existing monitoring program
  – site selection may not be appropriate scale
  – cost of collecting every parameter under the sun

still undecided!
What about including

• Caffeine Monitoring
• Pharmaceuticals
  – Hormones
  – Antibiotics
  – Metabolic/endocrine drugs
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Using Bayesian Decision Networks to Estimate SFI (Fish Index) with Non-Compliant Data

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