Regional Mitigation Strategies: Argonne National Laboratory Support

Michael Dwyer

Argonne National Laboratory

- United States Government laboratory
- Operated by the University of Chicago for the U.S. Department of Energy
- Support the BLM under an existing interagency agreement

Argonne National Laboratory Research Divisions

- **Computing, Environment and Life Sciences**
  - Biosciences
  - Environmental Science
  - Mathematics and Computer Science
- **Physical Sciences and Engineering**
  - Chemical Sciences and Engineering
  - High Energy Physics
  - Materials Science
  - Nanoscience and Technology
  - Physics
- **Energy and Global Security**
  - Energy Systems
  - Global Security Sciences
  - Intelligence Analysis
- **Nuclear Engineering**
  - Photon Sciences
  - Accelerator Systems
  - APS Engineering Support
  - X-ray Science

Argonne National Laboratory

- Environmental Science Division
  - Atmospheric and Climate Science
  - Ecological Resources and Systems
  - Environmental Security and Restoration
  - Land and Renewable Resources
  - Radiation and Chemical Risk Management

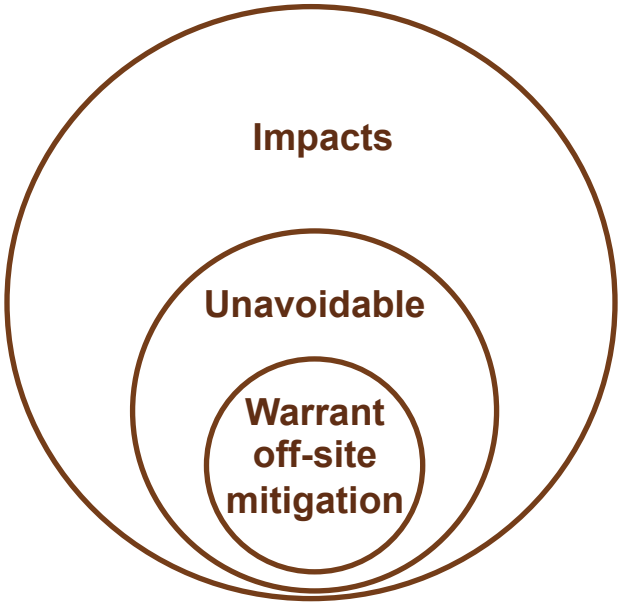
- Top scientists
- Emphasis on applied science
  - *First of a kind, one of a kind*

Why Argonne National Laboratory and BLM Regional Mitigation Strategies

- Under BLM direction, Argonne National Laboratory developed:
  - The Solar Programmatic Environmental Impact Statement (EIS)
  - The first Regional Mitigation Strategy
    - Dry Lake SEZ, Nevada (Pilot Project)
  - Draft Technical Reference – Regional Mitigation Strategies for Solar Energy Zones
  - Regional Mitigation Strategies in progress
    - Arizona
    - Colorado
    - Dry Lake Valley North, Nevada

Regional Mitigation Strategy development process

1. Impacts
2. Unavoidable impacts
3. Unavoidable impacts that warrant off-site mitigation
4. Mitigation goals
5. Mitigation actions & locations
6. Mitigation Fee
7. Monitoring & Adaptive Management



Challenges with Developing Regional Mitigation Strategies

- Developing and executing strategies for meaningful:
  - Native American consultation/collaboration
  - Stakeholder engagement
- Dealing with impacts that may or may not be residual
- Calculating the mitigation fee
  - Accounting for existing degradation of the project site
  - Incorporating existing Habitat Conservation Plans/mitigation fees
  - Dealing with risk
  - Incorporating a strategy to facilitate durability

Challenges with Developing Regional Mitigation Strategies

- Bounding the region
  - Variation in affected environments for effected resources
- Making explicit the relationship between residual impacts and mitigation actions
- Ranking proposed mitigation actions/locations
  - 'Additive' question
  - Protection versus restoration
- Strategy for fund management
- Developing and executing effective adaptive management plans

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