



# BLUE RIDGE RESEARCH AND CONSULTING, LLC

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Blue Ridge Research and Consulting delivers cutting edge solutions for a wide range of acoustic and vibration projects. Our extensive research capabilities give BRRC the unique ability to provide practical solutions to real world problems. BRRC projects range from military and civilian environmental noise studies to the design of outdoor warning systems. Specialized modeling and visualization tools allow BRRC to deliver concise, accurate results at public meetings. We provide expertise in the following specialty areas:

## Environmental Studies

- General and Specific Impact Analyses
  - Environmental Impact Analyses
  - Air Installation Compatible Use Zones (AICUZ) Studies
  - Part 150 Noise Studies
- Community Noise
  - Transportation
  - Industrial
  - Residential
- Military Issues
  - Aircraft Noise
  - Weapon System Noise
  - Sonic Boom
  - Training Ranges, Airspaces, and Routes
  - DoD Unique
- Natural Soundscapes
  - Characterization
  - Visitor Experience
  - Wildlife
- Animal Response to Noise

## Acoustic Modeling

- Atmospheric Acoustic Propagation
- Unique Sources
- Software Development
- Noise Control Studies
- Community Noise
- Audibility / Detection
- Intrusions to Natural Soundscapes
- Expertise with all DoD environmental noise & sonic boom models: NoiseMap, RNM, MR\_NMAP, NoiseRunner, PCBoom4, CORBoom, MOABoom, BoomMap, BNoise2, and SARNAM.
- Expertise with civilian transportation models: INM & TNM
- NMSim Development & Application

## Visualization Tools

- Auralization of Modeled Noise
- Three Dimensional Visualization
- Public Demonstration Animations

## Sound Source Characterization

- DoD Measurement Protocols
  - Aircraft
  - Helicopters
  - Weapon Systems
- Industrial
  - Compressors
  - Turbines
  - Generators
  - HVAC
- Transportation
- Natural
  - Wildlife
  - Geological

## Noise Impact Criteria

- Supplemental Metrics Development & Modeling
- Criteria Testing & Development
- Analysis and Assessment of Unique Situations

## Siren Systems

- Design Requirements
- Modeling
- Compliance with FEMA Standard

## Machinery Vibration

- Noise Reduction: Design Phase
- Noise Control: In-situ
- Fault Detection / Prognostics
- Active Noise Control