

Water Words Dictionary—Appendix E–3

DESERT RESEARCH INSTITUTE (DRI) [Nevada]

LISTING OF RESEARCH CENTERS

Primary Mission Statement, Major Laboratories, and Principal Skills and Activities Supported

ORGANIZATION:

The Desert Research Institute (DRI) is an autonomous, nonprofit research division of the University and Community College System. Since its creation by an act of the Nevada Legislature in 1959, the DRI has become one of the world's largest multidisciplinary environmental research organizations focusing on arid lands. The DRI's activities are directed from five research centers representing the **Geosphere** (Quaternary Sciences Center), **Hydrosphere** (Water Resources Center), **Biosphere** (Biological Sciences Center), and **Atmosphere** (Atmospheric Sciences Center and Energy and Environmental Engineering Center). Multidisciplinary teams drawn from these centers are assembled to address basic and applied research problems on a project-by-project basis.

DRI RESEARCH CENTERS:

Listed below are the DRI's five research centers, their primary mission statement, the major laboratories operated, and the principal skills and activities supported:

- [1] **Atmospheric Sciences Center (ASC)**—The ASC is a nationally recognized leader in the field of atmospheric sciences. The ASC's mission is to improve the fundamental understanding of the earth's atmosphere, particularly as it relates to the weather and to the climate of arid regions. The ASC is the home of the strongest atmospheric modification research program in the United States. Major laboratories include:

- Trace Chemistry Laboratory
- Ice Physics Laboratory
- Air Motions Laboratory
- Electronics Laboratory
- Mountain Laboratories (Storm Peak, Colorado, and Truckee Meadows and Mount Rose, Nevada)
- Aerosol Physics Laboratory
- Remote Mountain Weather Stations

Principal skills and activities supported:

- Cloud Microphysics and Chemistry
- Atmospheric Modification
- Atmospheric Water Resources
- Mesoscale Cloud Processes
- Aerosol and Cloud Effects on Climate
- Snow and Ice Physics and Chemistry
- Western Regional Climate Center

- [2] **Biological Sciences Center (BSC)**—The BSC focuses on plant and soil biology from an ecological perspective. The BSC's mission is to improve the fundamental understanding of the earth's biosphere, thereby providing the knowledge needed to effectively manage biological resources important to the future use and habitation of the earth. Major laboratories include:

- Phytotron with Weighing Lysimeters and Plant Growth Chambers
- Laboratory for Spatial Analysis
- Plant Physiology Laboratory
- Biogeochemistry Laboratory

- Eco-Toxicology Laboratory
- Microbial Ecology Laboratory
- Environmental Biology Laboratory

Principal skills and activities supported:

- Plant Physiology
- Microbial Ecology
- Biogeochemistry
- Plant Ecology
- Ecological Toxicology
- Natural Resource Management
- Dendroecology
- Remote Sensing
- Cooperative Institute for Aerospace Science and Terrestrial Applications
- Advanced Degree Programs in Plant Biology and Environmental Remote Sensing

- [3] ***Energy and Environmental Engineering Center (EEEC)***—The EEEEC largely conducts air resources research. The EEEEC’s mission is to conduct high-quality research to understand current and future human impacts on the environment, especially air quality, and the technology that can be applied to mitigate these impacts. Major laboratories include:

- Air Quality Standards Laboratory
- Organic Analytical Laboratory
- Atmospheric Chemistry Laboratory
- Computation Center
- Electronics Laboratory

Principal skills and activities supported:

- Air Pollution Field Study Design and Coordination
- Source Apportionment
- Atmospheric Transport and Chemical Transformation
- Visual Air Quality
- Quality Assurance Programs
- Modeling
- Air Pollution Monitoring
- Instrument Development
- Characterization of Ambient Aerosols
- Liquefied Gaseous Fuels Spill Test Facility Program
- Deposition and Gas Exchange Measurements
- Global Climate Change
- Atmospheric Analytical Chemistry
- Vehicle Emissions
- Advanced Degree Programs in Atmospheric Sciences

- [4] ***Quaternary Sciences Center (QSC)***—The QSC is one of approximately 15 Quaternary research programs worldwide. The QSC’s mission is to improve the fundamental understanding of past climates and associated environmental responses and human adaptations to climate change during the Quaternary Period (covering the last 1.8 million years). Major laboratories include:

- Dendrochronology Laboratory
- Sedimentology/Soils Laboratory
- Paleoecology/Paleobotany Laboratory
- Luminescence Dating Laboratory

- Faunal Laboratory
- Palynology Laboratory
- Archaeology Laboratory
- Archaeological Repository

Principal skills and activities supported:

- Archaeology and Anthropology
- Quaternary Environmental Analyses
- Quaternary History
- Remote Sensing
- Geographical Information Systems (GIS)
- Paleoclimatology and Climate Change
- Digital Imaging
- Recent Environmental Studies
- Advanced Degree Programs in Anthropology and Geologic Sciences

[5] **Water Resources Center (WRC)**—The WRC is the largest water research group focused on arid lands in the United States. The WRC's mission to improve the fundamental understanding and knowledge of hydrologic systems, with special emphasis on arid lands, for more effective management of hydrologic resources. Major laboratories include:

- Water Analysis Laboratory
- Computation Centers
- Soil Physics Laboratory
- Environmental Isotope Laboratory
- Hydrology Laboratory
- Geochemistry Laboratory
- Geophysics Laboratory
- GC/FTIR Laboratory

Principal skills and activities supported:

- Hydrogeology
- Geochemistry
- Isotope Hydrology
- Geostatistical Analysis
- Earth Systems Analysis
- Geophysics
- Groundwater Protection
- Water Resources Engineering
- State Water Institute
- Global Change
- Advanced Degree Programs in Hydrologic and Hydrogeologic Sciences