



Leetown Science Center

The Leetown Science Center conducts research to provide information needed to restore, enhance, maintain, and protect fish and other important aquatic and terrestrial organisms and their supporting ecosystems.



Healthy aquatic systems protect biodiversity.

Tracing its heritage to 1931, the Leetown Science Center is headquartered in Leetown, West Virginia, approximately 70 miles west of Washington, D.C. The Center, which includes laboratory facilities located in six states, provides outstanding support for the conduct of a wide variety of aquatic and terrestrial research.

Research at the Center currently focuses on three major themes: 1) restoration of populations of anadromous fish and other aquatic resources; 2) restoration of Appalachian streams and



Research assists restoration of anadromous fish populations, such as the Atlantic salmon.



New ways to eliminate barriers to fish passage are being studied.

other aquatic systems impacted by environmental degradation, such as acid mine drainage; and 3) management of federal lands and trust resources.

Research is conducted in collaboration with federal, state and other partners to develop biological and ecological information needed for sound resource management. Laboratory facilities include modern research ponds, extensive water holding and distribution systems for warm and cool water research, specialized wet and dry

laboratories, raceways, and a unique fish passage/engineering building. Scientists conduct studies on the impacts of fish barriers; diseases of fish and other aquatic organisms; aquaculture techniques and stream rehabilitation for restoration and protection of aquatic species, such as freshwater mussels; impacts of environmental change, land use, pollution, exotic species and other factors affecting aquatic and terrestrial communities; and ecosystem processes (including the human dimension) to improve natural resource management and sustainability.



Investigations of trust species, such as the Florida panther, assist resource management.

Scientific Capabilities

The broad diversity of scientific disciplines and expertise of LSC researchers permits an integrated approach to address the high priority information needs of resource managers and public policy makers. LSC employs a research team approach, using scientific expertise from its laboratories and research partners, to address broad-scale aquatic and terrestrial resource problems. Current team research programs include restoration of Atlantic salmon, Appalachian stream restoration, ecology and restoration of freshwater mussels, fish passage, invasive species and effects of fragmented habitats.

The Center supports Department of the Interior bureaus, and others, with information and technology to maintain and restore fisheries, and to better understand and manage aquatic and terrestrial ecosystems. Integrated laboratory and field research, often conducted with partners, generates sound management approaches to issues such as fish health, migrating fishes in large river systems, declining species and their restoration, and habitat degradation.

The Center's fish health research includes development of methods for the isolation, detection and identification of fish pathogens, and the prevention and control of fish diseases. Biomarkers to be used as indicators of contaminant effects are being developed as are molecular genetics methods for the identification of fish pathogens. New genetics methods are also being used to identify and differentiate terrestrial and aquatic species, strains, and populations.

Aquatic ecology research, including inventory and monitoring, provide information about the structure, function and health of aquatic systems, species, and their habitats. Current research areas include declining aquatic species, landscape ecology, invasive species, population genetics and dynamics, and aquaculture. The Center's environmental chemistry research is geared to identify the sources of environmental contaminants, and to understand their fates and ecological impacts on aquatic and terrestrial environments.

Center expertise in engineering and chemistry is used to develop new

methods for water conditioning, monitoring, and pollution abatement. New technologies support lake, stream, and river restoration, as well as the propagation of endangered species within the National Fish Hatchery system.

The Center's unique fish passage engineering facilities permit research on effective fish passage design for obstacles such as low-head hydro-dams on eastern U.S. rivers. Both basic and applied research related to anadromous fish populations and their associated ecosystems is being conducted at the Center's laboratories. Priorities include the restoration and enhancement of anadromous fishes, as well as determination of the environmental consequences of dams and altered ecosystems.

To address natural resource management problems of national parks, refuges, and other federal lands, the Center performs basic and applied research at the level of a landscape or watershed. Studies are conducted to provide managers with sound methods for restoration and management of aquatic and terrestrial species including large mammals, and to gain a better understanding of the nature of human influences on ecosystem processes and biodiversity.

The Center employs computer modeling and geographic information systems to develop protocols for the inventory and monitoring of both natural and human resources in aquatic and terrestrial ecosystems. Statistics and geographic information systems provide important support for Center research.



Location of Center Components

Leetown Science Center (1)

- Fish Health Branch
- Aquatic Ecology Branch
- Restoration Technologies Branch

Conte Anadromous Fish Laboratory (2)

No. Appalachian Research Laboratory (3)

So. Appalachian Research Branch (4)

Orono Field Station (5)

Columbus Field Station (6)

Great Smoky Mountain Field Station (7)

U.S. Geological Survey
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