

Future Research

FUTURE RESEARCH AREAS — In addition to studying the interrelationships between plants, animals and their environment on the ALE site, the impact of man will be examined on a controlled basis. Manipulations of some natural conditions will be made in selected peripheral regions to provide timely new information about such subjects as arid lands agriculture, range and water management, and the effects of pesticides, fertilizers and natural pollutants.

Looking ahead, the ALE Reserve will become increasingly important as a place for research, teaching and training in the broad spectrum of the environmental sciences as well as preserving a significant portion of a vanishing North American vegetation community.



PROJECT

ALE

ARID LANDS ECOLOGY



PROJECT ALE is operated for the U.S. Atomic Energy Commission by Battelle-Northwest.

Advisory policies for the Project are set by the ALE Scientific Committee, composed of consultants in ecology and representatives of neighboring educational institutions.

Programmatic policy, including coordination of scientific objectives, is determined by the scientific staff of the Battelle-Northwest Ecosystems Department.

Correspondence with the national scientific and educational community is welcomed.

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The ALE Project

AS THE WORLD'S POPULATION GROWS, it becomes increasingly important to preserve examples of different life zones for ecological study.

Studies of plants, animals and their interrelationships with their physical environment are being carried out on a 120-square mile Arid Lands Ecology Reserve in southeastern Washington. The ALE Reserve is a relatively undisturbed remnant of desert-steppe terrain. Its sagebrush-bunchgrass vegetation once made up an extensive part of the American heritage.

The U.S. Atomic Energy Commission established the ALE Reserve in 1967. It is operated by Battelle-Northwest, a division of Battelle Memorial Institute.

Present Study

CURRENT ALE RESEARCH programs include studies of the geological and ecological history of the site, its present physical characteristics, and the functional role of the plants and animals now living on the Reserve. The microclimate is also being studied to understand the role of temperature and precipitation in modifying plant and animal communities in this arid region.

Elevation ranges from 500 to 3500 feet above sea level on the Reserve. Life here is heavily stressed by drought (average annual rainfall at lower elevations is 7 inches), and by summer heat and winter cold. The site supports a community in miniature. Three foot tall sagebrush takes the place of trees. Among the

most numerous animals are Darkling beetles (sometimes 50,000 per acre) and pocket mice (40 per acre).

Mice, and other rodents as well as beetles are trapped to determine population levels and their specialized adaptations that permit them to survive in their harsh semi-desert environment.

Typical of plant studies being carried out is an intensive research project on the energy balance and cycling of important nutrients (such as nitrogen) in plants growing on the ALE Reserve.

