

Splendid CUE Rises From Soggy Teahouse Dregs

By William Anderson and Dick Hammerschlag

It all came together on January 20, 1985, a day so cold that the outdoor activities of Inauguration Day had to be cancelled. All systems at the Ecological Services Laboratory had failed under this cold weather stress; and, though the facilities at the new location were not completely renovated, there was little choice but to move. With encouragement and support of Jack Fish, Regional Director, the natural science program of the National Capital Region (NCR) began moving to their new home. From many suggestions, Mr. Fish selected the Center for Urban Ecology (CUE) as the new name for the laboratory-office area since he feels that name best describes the types of services the NCR natural science program provides.

From a scattered science group, operating out of the Hains Point "Teahouse" (too often underwater from a swollen Potomac River), the NCR headquarters building on Ohio Drive, and a trailer in Prince William Forest Park, the NCR natural science program has been transformed into a compact, efficient organization housed at what used to be the Palisades maintenance yard of Rock Creek Park. The now unified crew, still led by Regional Chief Scientist, Dr. William Anderson, consists of 11 permanent members in a well-designed facility that has laboratories for soils and agronomy, water quality and related aquatic problems, integrated pest management (IPM) and plant pathology, plant ecology, and wildlife.

The new complex displays ingenious adaptive use of vehicle bays to accommodate laboratories and offices. A passive solar walkway has been constructed outside of what had been the bays. This provides protected connection among all the offices and laboratories without invading them. When the vehicle doors were removed, a wall separated the bays from the solar walkway. Internally the bays were renovated so that two offices were made from a single bay, or two bays were made into one laboratory.

On a recent tour of the CUE, Dr. Richard Hammerschlag, Chief of the CUE brimmed with satisfaction. "One of the great advantages we have now," he said, "is the ability to isolate laboratory functions and separate them from office-type duties. Cross contamination from soils samples to water samples and plant pest material is relatively easily contained." Included in the CUE are a transfer room where microorganisms can be isolated and maintained in pure culture; a utility area for preparing media, distilling water and cleaning glassware; an environmental control room with growth chambers that can be programmed to mimic growth conditions for organisms under study; a small conference room; and a small, but complete kitchen facility.

The new facility is conducive to constant interaction among the scientists and technicians of the CUE, yet it provides them privacy and isolation necessary to accomplish more involved and complex tasks. NCR Chief Scientist Anderson is an ardent advocate of the need for research on problems associated with natural resources in urban parks. "Vegetation, soils, water, air and wildlife are significant components of

our urban National Parks," he said. "These are natural resources, and we must understand the needs and limitations of these resources in order to manage these parks well. The taxpayers and elected officials may not get to the great natural parks too often, but the parks of our nation's capital are the setting for some of the most heavily visited sites in the entire National Park System. What is done in managing resources here in the Washington, D.C., area reflects not only on NCR but on the resource stewardship of the entire Service. Our work speaks the language city people understand, and we are an urban nation."

In addition to managing the laboratory, Dr. Hammerschlag is working with the impact of water quality parameters on submersed aquatic vegetation, with emphasis on the exotic species *Hydrilla verticillata*. "All this is in connection with the dramatic rebirth of the Potomac estuary," Hammerschlag said. "In the past three years we've really begun to see improvement of water quality in the Potomac resulting from improved treatment of waste water and better run-off control through the watershed. The Potomac received a little help from conscientious watershed management and now it is further correcting itself."

Dr. Jim Sherald is engaged in an ambitious pest management program. His major research emphasis is on fastidious xylem-inhabiting bacteria which are associated with biotic scorch of such major shade tree species as the American elm and the sycamore. Sherald also is responsible for Dutch elm disease management and research, and coordinating the Regional integrated pest management program. He cooperates extensively with the U.S. Forest Service in research, monitoring and mitigation of gypsy moth. Pest management assistant, Carol DiSalvo, provides Jim invaluable aid in maintaining the pest management activities.

Kudzu, English ivy and wisteria are just three of the exotic species targeted by Dr. L. Kay Thomas and his plant ecology research team. The team is exploring approaches that will reduce the impact or eliminate exotic species in such a way as to release the native vegetation to its former dominance. A vast array of tactics is being evaluated - 16 tactics for kudzu alone, including grubbing out, grazing, and prescribed burning in an urban setting. "All of these tactics are being looked at from an ecological perspective - how least to interfere with the re-establishment of native plants," said Thomas.

Dr. John Hadidian, the CUE urban wildlife specialist, is now working primarily on raccoons and the rabies among them that has become a new problem for urban park managers. The study on raccoon ecology in Rock Creek Park and its urban environs includes the animals' food preferences, denning areas, territories and movement patterns. Hadidian also has worked on the biological bases for implementing a plan to mitigate the impact of a dense population of squirrels on the vegetation in an urban National Park.

Jim Patterson and John Short, research agronomist and soil scientist respectively, are broadly

involved with the description and characterization of man-influenced soils – how to modify them and make them more productive for urban landscapes. Their work covers turf evaluation and the formation of crust when soils are compacted. “We study how such compaction affects air and water movement in the root zone,” Patterson said, “and look for ways to offset heavy user impacts on this resource so critical to urban parks.”

A 16 port computer system has been installed to coordinate and unify the functions of the CUE. All the offices are tied into the computer system, which is complete with graphics capabilities, word processing, data base management and statistical packages. Each office has a keyboard that is hard-wired into the central processing unit thus avoiding expense and duplication while allowing each person to work at his own desk and have the advantage of an increased central storage capacity. Julie Riedel administers and maintains the computer system, and assists the CUE staff and park personnel on data management issues.

Also housed in the facility are the offices and warehouse of the Parks and History Association. The Association is a cooperating association that operates park-related publications outlets at most major National Park Service sites in the National Capital Region.

The Division of Natural Science Services operates a five-acre greenhouse and nursery complex on Daingerfield Island along the George Washington Memorial Parkway just south of Washington's National Airport. In addition to being an integral part of the research activities of the CUE, the greenhouse and nursery provides special plant material to the parks. Much of the material made available by the nursery has resulted from the CUE research effort or is native plant material that is not available through commercial sources.



A passive solar walkway connects all offices and laboratories with the administrative area, conference room and common use area of the Center for Urban Ecology. The brick columns define the former vehicle bays. This modification of the former Palisades maintenance yard allows total utilization of existing space for laboratory and office purposes, rather than sacrificing any to interior passageways.



One of the 5 similar laboratories in the Center for Urban Ecology. Each laboratory occupies two former vehicle bays.



Two offices, similar to this, were created from a single vehicle bay. Acoustical wall paneling and carpeting on the floor minimize sounds. A keyboard and video display in each office is hard-wired to the computer operating system in the administrative area.