

**Canaan Valley National Wildlife Refuge  
HC 70 Box 189  
Davis, WV 26260**

**Cheat Mountain Salamander (*Plethodon nettingi*) Monitoring**

***ABSTRACT***

**Purpose and Need:**

The Canaan Valley NWR was established in 1994 to protect the rare and unique habitat and wildlife resources present in the Canaan Valley watershed. In addition to the unique and regionally significant wetland habitats, the Canaan Valley NWR owns higher elevation habitat consisting of northern hardwood and spruce forest. These higher elevation habitats have at least two known populations of the Federally Threatened Cheat mountain salamander (*Plethodon nettingi*). These populations occur on the Kelly-Elkins Tract of the refuge and were initially identified by Dr. Thomas Pauley of Marshall University in 1991.

A primary responsibility of the U.S. Fish and Wildlife Service is to identify, monitor, and protect nationally listed endangered and threatened species of plants and animals. When these species occur on a National Wildlife Refuge, the Service is responsible and assumes a lead role in the welfare of these species. Therefore the Canaan Valley NWR staff will establish a comprehensive monitoring program for the Cheat mountain salamander on the Kelly-Elkins Tract.

Project goals are to establish baseline information on the Cheat mountain salamander, monitor the known populations on the Kelly-Elkins property and determine impacts from various uses and changes of the habitat within the population range. Searches for other populations of the salamander will be conducted on this property given suitable habitat availability. Changes in populations for this species are important to document to focus efforts on the protection and enhancement of this threatened species. These goals are consistent with the Recovery Plan goals to aid in the description of the range of this species, surveying areas of known populations to gather more information on distribution, abundance, population characteristics and the effects of human-induced habitat alterations.

**Methods:**

Salamander surveys will be conducted by protocol established by Dr. Thomas Pauley to remain

consistent with previous monitoring efforts. Dr. Pauley is an acknowledged expert in the field and an authority on the Cheat mountain salamander. Transects will be established at 20 meter intervals within known population ranges and other suitable habitat of Cheat mountain salamander. Transects will be marked permanently using the refuge GPS unit and mapped. Surveys will be conducted during spring and late summer in an attempt to determine recruitment into the populations on the Kelly-Elkins Tract.

Additionally, some investigations may be made into the potential use of the existing ski trails on the Kelly-Elkins property. Cover boards may be placed within known populations on the ski trail in an attempt to determine limiting factors and potential use of these open areas by the Cheat mountain salamander. If placing artificial cover on ski trails proves to be effective in attracting Cheat mountain salamanders, then creating "cover corridors" with boards or other artificial means may be a method to allow salamanders to move across these open ski trail areas. This would allow potentially isolated populations of the salamander to mix thereby increasing genetic variability and ultimately, population stability.

### **Reporting:**

Surveys conducted by the Canaan Valley National Wildlife Refuge for the Cheat Mountain salamander will be summarized by refuge staff. Results will be compiled into yearly reports documenting methods and findings during the field season. These reports will be sent to cooperating agencies and others in the field (such as Dr. Thomas Pauley). A final report will be issued to the West Virginia Department of Natural Resources as required by the permitting process as well as to keep nongame/endangered species biologists and managers aware of the status of this species on the National Wildlife Refuge.