

State Natural Heritage Program: TNC's Partnership Approach

By Robert M. Chipley

Incorporated in 1951, The Nature Conservancy (TNC) is a nonprofit organization committed to the preservation of natural diversity. Operating through identification, protection and stewardship of biologically critical sites, TNC now has over 400,000 members and manages the largest private preserve (numbering some 1,000) system in the world. Many of these reserves are critical reservoirs for populations of rare, endangered and threatened species and natural community types.

To meet our ambitious goal, we must spend scarce time and resources on the biologically most critical areas. Key to TNC's ability to identify such areas have been the State Natural Heritage Program (SNHPs), on which we rely in determining our protection agenda. First begun in South Carolina in 1974, these programs strive to create within the state a permanent and dynamic atlas and database on the existence, characteristics, numbers, condition, status, location, and distribution of occurrences of the elements of natural ecological diversity. The programs now operate in 48 states, 9 Latin American countries and one Canadian province.

Each program is set up as a partnership, involving a two-year contract between TNC and a natural resources agency in the state, such as the Maryland Department of Natural Resources, the New York Department of Environmental Protection, the Nebraska Game and Parks Commission and the California Department of Fish and Game. Under the agreement, TNC agrees to hire and train a staff (generally a coordinator, a botanist, a zoologist, a community ecologist and a data manager) in program methodology and to advise and supervise them as they set up the database. The state generally agrees to provide office space and support and declares its intention to incorporate the completed program into state government. Funding comes from the state, from federal funds and from private fundraising by the Conservancy. At present, 32 programs have fully transferred to state government; some of these have been part of state government for over 10 years.

The Heritage process begins with putting together a list of items (known as "elements") to be inventoried. These include rare, threatened and endangered (R, T&E) plants and animals and important natural community types. Our sources are existing lists, such as the plant lists put together in Maryland under contract with the USFWS. We then circulate these lists to appropriate experts in the state. Generally the lists incorporate up to 15-20 percent of the vascular plants and a like percentage of vertebrate animals. Included also are selected nonvascular plants and invertebrate animals on which there is sufficient information to determine their status. We also develop community classifications to include all important old-growth communities plus selected successional communities. The lists change as further information becomes available.

Each element is assigned two ranks to reflect its degree of rarity and endangerment – a global rank for its status throughout its range, and a state rank for its status in each state. Most vascular plants and all vertebrate animals in the U.S. already have been assigned global ranks. The TNC ranking system is easy to use and to interpret. In the global system, ranks



Parnassia glanca, lobelia kalmii



Potentilla fruticosa, calcareous fern



Potentilla fruticosa



Dicentra eximia



Potentilla fruticosa

Photos of five R, T&E species not federally listed, taken at the Delaware Water Gap NRA by the PA State Natural Heritage Program staff during their surveys of the park.

range from G1 (critically endangered with fewer than 5 occurrences or 1,000 individuals on earth) to G5 (extremely common and widespread); the state system parallels the global system, ranging from S1 to S5, but refers only to the element's status within the state's borders. Both global and state ranks are tracked in the central databases at TNC headquarters in Arlington, VA, and are accessible to anyone.

Once elements have been listed and ranked, we do a thorough search of secondary information; sources include specimen collections and herbaria, the literature, and knowledgeable individuals. Our goal is to determine point locations in the state for occurrences of the elements on our lists. Each time we encounter an item of this type – for example, the collection point of a specimen of a rare plant deposited in herbarium at the state university – we create a computerized "Element Occurrence Record" which in-

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corporates all the information from the specimen label sheet plus everything of relevance we discover subsequently – ownership of the land, results of field surveys to the site, population size and trends, etc. For each point, we also plot and mark the location onto our base maps – an entire set of the 7.5-minute topographic quad maps of the state. Each program scientist starts at the top of the list as determined by the ranking system – information on G1S1-ranked elements is gathered first, and gradually works down until all elements are represented by occurrences. Once secondary information has been incorporated, we begin field surveys, again concentrating on the rarest and most endangered elements on our lists.

We also accumulate information on "managed areas" – those owned and managed by conservation groups such as TNC, by federal agencies such as the Park Service, the Forest Service, Fish and Wildlife, Bureau of Land Management, Department of Defense, etc. and by state agencies such as state parks and forests. The boundaries of these managed areas also are plotted onto the base maps. Managed areas can function as important refugia for occurrences of rare and endangered elements.

At the end of the first two years, with processed occurrences numbering in the thousands, a picture of diversity in the state begins to emerge. We now have enough data to figure out which elements are very rare, and which are inadequately protected on managed areas – or not represented at all. We can also determine which sites in private ownership, if protected, would do most towards preserving the state's natural diversity. It is this list of priority sites that becomes the protection agenda for each state TNC office.

The Conservancy is only one of the many users of State Natural Heritage Programs. Both state and federal agencies have recognized that site-related data on this extensive an array of significant taxa just aren't available elsewhere. State highway departments have used the data to review proposed highway routes and to choose among the alternatives; utility companies have done likewise for power line corridors. Land managing agencies routinely consult the programs for input into management plans. Because we can easily determine from our databases how many occurrences exist for a given species, we have conducted many status reviews for taxa proposed as endangered or threatened and prepared a number of recovery plans.

All these programs, whether transferred or still on contract, form the State Natural Heritage Program Network. The result is easy exchange of information and steady improvement in methodology. We are about to add a new software package – the Biological and Conservation Data System, which will expand and make more efficient our data-managing capabilities, while tying more closely the protection efforts of TNC state offices to Heritage databases.

The program is a two-way street, with benefits in this case accruing both to the Park Service and to the Heritage Programs. Such programs not only give NPS a proven system for managing its own element-related data, but also link NPS with the existing and expanding support system of other Heritage programs.

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