

RESULTS FOR TERRESTRIAL COMMUNITIES AND SYSTEMS*

Targets Selected

Terrestrial and palustrine community targets were set at the *association* level of The Nature Conservancy's national classification (Grossman et al. 1998). The association is defined by the overstory and understory species composition and environmental setting. The Heritage databases contained 798 Element Occurrences from a possible 142 associations. The quality and size of the Element Occurrence database varied dramatically by state. Virginia contributed a large fraction of the total Element Occurrences, followed by Pennsylvania, Maryland, and West Virginia. In West Virginia, rare community occurrences, other than shale barrens, were few. As many as 75% of rare communities in West Virginia may not be represented in the database.

Since most Element Occurrences were listed with local names and not names from the National Vegetation Classification, the Ecology Expert Team crosswalked local names to National names to provide consistency. Where this was not possible due to insufficient information, the Element Occurrence was not used in selecting portfolio sites. In many cases the recommendation was simply to acquire more information on the Element Occurrence so that it could be better evaluated at a later date.

Viability

Of the 142 community associations in the Central Appalachian Forest, about 5% are matrix types, 40% are large patch types and 55% are small patch types. If we consider the communities relatively equal in biodiversity value, then clearly most of the biodiversity of the ecoregion is concentrated in the patch communities, making them natural targets for reserve selection. However with regard to land cover, the 8 matrix forests likely cover close to 75% of the remaining natural landscape, while the large patch may cover an estimated 20%, and the small patch communities probably cover less than 5% of the landscape. Clearly the matrix types are important targets for the maintenance of the biological integrity and fundamental structure of the region. Note also that most matrix and some large patch communities are mainly threatened by degradation and fragmentation while small patch communities are generally more susceptible to the hazards of rarity. Thus the different occurrence types call for different viability criteria and conservation strategies.

Table 1 shows the minimum sizes set for viable occurrences of patch communities in the Central Appalachian Forest ecoregion based on the methodology described in the *Terrestrial Ecosystems and Communities Methods* chapter.

* Anderson, M.G. and S.L. Bernstein (editors). 2003. Results for terrestrial communities and systems. Based on Thorne, J. et al. 2001. Central Appalachian Forest Ecoregional Plan; First Iteration. The Nature Conservancy, Conservation Science Support, Northeast & Caribbean Division, Boston, MA.

Table 1: Acceptable criteria combinations for community occurrences in the Central Appalachian Forest Ecoregion.

Viability Criteria Combination	Current Condition (1-3)	Landscape Context (1-4)	Size: Large Patch		Size: Small Patch (acres)			
			Forest / Woodland	Shrub / Herb.	Forest	Woodland	Shrub	Herb
Comb. 1	1	1	100	50	20	10	5	>0
Comb. 2	2	1	100	50	20	10	5	>0
Comb. 3	1	2	100	50	20	10	5	>0
Comb. 4	1	3	200	100	50	50	10	>5

Distribution and Numerical Goals

To make the US Forest Service subsections (Keys et al. 1995) more useful as a stratification tool we partitioned the ecoregion into increasingly finer units. In general, the ecoregions, subregions and sections represent statistical clusters of USFS subsections, that are more related to each other in terms of community types than to other subsections.¹

Table 2: Stepwise stratification of the USFS subsections.

Central Appalachian Ecoregion						
Allegheny Mountains				Ridge and Valley/Northern Blue Ridge		
High Allegheny Mountains		Low Allegheny Mt and Valley.		Ridge and Valley		Northern Blue ridge
N Allegheny Mts. M221Bb M221Bf	S/Central Allegheny Mts. M221Ba M221Bc	Western low Mts M221Be	Eastern Low Mts. M221Bd	N Ridge and valley M221Ac M221Ad	S. ridge and valley M221Aa M221Ab	N Blue ridge M221Da

Table 3 shows the minimum number of terrestrial community examples desired for the Central Appalachian Forest portfolio as a function of patch size and distribution based on the methodology described in the *Terrestrial Ecosystems and Communities Methods* chapter.

Table 3: Minimum conservation benchmarks for communities as a function of patch size and restrictedness.

Minimum stratification level	Patch Size	
	Large Patch	Small Patch
Restricted 4	16	30
Limited 2	8	10
Widespread 1	4	5
Peripheral 1	4	5

¹ This was based on community/subsection intersection tables developed by TNC and Heritage ecologists for the US Forest Service.

Portfolio Results

Numerical goals for 45 out of the 142 targeted terrestrial plant communities were met. We reached our goals most often for rare plant communities, like shale barrens and cedar glades, or for wetland plant communities. Goals were met less often for common plant communities where less data was typically available. See Appendix VIII for goals set for each community and the extent to which goals were met.