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MARYLAND

The Maryland Department of Natural Resources (DNR), in cooperation with the Wildlife and Heritage Service, the State Forest and Parks Service, and the Forest Service began an inventory of Maryland old growth in the summer of 2002. The inventory was expected to last about three years. A DNR Old Growth Committee has established a definition for the inventory: “an old growth forest is a minimum of five acres in size with a preponderance of old trees, of which the oldest trees exceed at least half of the projected maximum attainable age for that species, and exhibits most of the following characteristics”: presence of shade tolerant species in all age/size classes, random distribution of canopy gaps, structural diversity, presence of snags and an accumulation of dead wood, and, if soil conditions permit, pit and mound topography (Therres 2002).

Sites already believed to include small areas old growth include **Headwaters of the Potomac River** (Garrett County): a few remote patches (Boone 1993); **Finzel Swamp** (Garrett County): more than 15 acres of old-growth larch in a peat bog, part of a 326-acre preserve owned by The Nature Conservancy (Hotopp 2002; Bailey 1992); **Plummers Island** (Montgomery County) in the Potomac River National Park: possibly 12 acres of old growth on an island owned by the National Park Service (Long 1957, Perry 1993); **Swallow Falls State Park** (Garrett County): variously described as probably 20 to 30 acres of forest with old-growth characteristics, though lightly cut (Boone 1993) and 37 acres of hemlock-White Pine within the 300-acre State Park Robinowitz 1993); ****Smithsonian Environmental Research Center** (Anne Arundel County): some ten acres of old growth characterized as a Tulip Poplar association, possibly grazed 60 to 70 years ago and surrounded by younger forest within a 2800-acre campus belonging to the federal government (Parker 2007); **Cranesville Swamp Preserve** (Garrett County): five acres of Eastern Hemlock/Red Spruce in a 1600-acre preserve belonging to The Nature Conservancy (Hotopp 2002); **Ravine systems along Broad Creek*** (Harford County): areas of old-growth Eastern Hemlock “in two of the three primary ravines” (Farr and Tyndall 1992). One or more small, possibly old-growth, populations of southern disjunct Northern White-cedar occur along the Potomac River near Sheperdstown, West Virginia, and Sharpsburg, Maryland (Washington County) (Walker 1987, Larson et al. 2000).

Patuxent Wildlife Research Center, east of Washington, DC (Anne Arundel County)

Old-growth bottomland forest of uncertain acreage, some of it probably virgin. A road was cut through the forest 50 years ago. Most of the trees felled were around 70 years of age at that time. The Center's Matthew Perry estimates that more than 500 acres of uncut floodplain forest may remain in the 4700-acre main parcel at the federal Research Center, largely on some of the islands in the Patuxent River. Lumber would have been difficult to remove from these islands, as the river was not suited either to fording by horses or to the floating of logs. The trees are enormous, with an American Sycamore 6 feet in diameter, a Tulip Tree over 5 feet in diameter, a Willow Oak 5 feet in diameter, and a Swamp Chestnut Oak more than 4 feet in diameter (Perry [nd], Perry

1993). Biologist Dan Boone estimates that there are over 100 acres of old growth in the floodplain (1993).

The Research Center acquired 8000 acres that used to be part of Fort Meade. Bill Harmire believes that there may be 200 to 300 acres of old growth on this tract in the form of a beech-oak climax forest along the steep north bank of the Little Patuxent River (1993). He also is familiar with three smaller stands that are mature climax forest if not old growth: 50 or 60 acres of floodplain hardwoods with Overcup Oak, Black Gum, and a little sycamore on some of the swales toward the north end of the Patuxent side of the river; 35 or 40 acres of big oak and beech on an east-west ridge; and a 50- to 60-acre stand with mature beech, next to a former homesite (1993).

Chesapeake and Ohio Canal National Historical Park, between Washington, DC and Cumberland, Maryland

Uncut areas within the 20,000-acre Park. The acreage undisrupted by Euro-Americans is not known, because most, if not all, signs of cutting over a hundred years ago would have disappeared and because research in historical records of the area has not yet been done. A twenty-foot-wide strip of land between the towpath and the river was probably cleared. Areas that were not cut would be in three types of forest:

Floodplain forest: some 11,000 acres of floodplain with sycamore, cottonwood, Green Ash, American Elm, Silver Maple, and Black Walnut, likely to include original forest tracts. Few trees in these areas would be very old, because flooding kills trees, and the floodplain forest is inundated every one to five years. The floods destroy many trees while they are still young. Blocks of intact floodplain forest are widely scattered throughout the Park, and some are visible to visitors walking the C&O Canal towpath.

Upland forest: small patches of Northern Red Oak and Chestnut Oak. Of unknown size but definitely less than 40 acres each, these primary remnants are on steep, inaccessible slopes.

Bedrock river terrace forest: approximately 200 acres. The bedrock river terrace is pre-Pleistocene floodplain and river bed left high above the river when, during the last ice age, the river rapidly dug a deep and narrow channel through rock. The terraces are flooded only every 20 years to hundreds of years, but these rare floods scour the land. The soil is poor and the vegetation stunted. Some areas resemble savanna, with low trees and grassland. White Oak, Post Oak, Northern Red Oak, and Virginia Pine are the predominant species.

Olmsted Island and **Falls Island** (together 35 acres), **Sherwin Island** (20 acres), and almost all of **Bear Island** (140 acres) have not been cut by humans, although they experience severe flooding. The dominant vegetation is bedrock terrace forest (oak-hickory-Virginia Pine), but Sherwin Island and south Bear Island also have some floodplain forest (sycamore-ash-elm).

The bedrock terrace forest has one of the highest concentrations of rare species east of the Mississippi (Lea 1993). Bear Island harbors Yellow Nailwort (*Paronychia virginica* var. *virginica*) and Rock Skullcap (*Scutellaria saxatilis*), candidates for federal listing as Endangered. At least twenty species on the island are listed by the Maryland Department of Natural Resources as endangered. They include Yellow Water-crowfoot (*Ranunculus flabellaris*), Narrow-leaved Horse-gentian (*Triosteum angustifolium*),

Rough rushgrass (*Sporobolus clandestinus*), and Rustling wild-petunia (*Ruellia strepens*) (Ingram 2002).

Crabtree Woods, in Potomac State Forest, western Maryland (Garrett County)

More than 500 acres of old-growth mixed Appalachian hardwood on the northwest side of Backbone Mountain. Probably the stand was salvage cut for American Chestnut. Indicators are that any logging has been selective. McCarthy and Bailey write that whatever its past disturbance history, it is Maryland's "best example, compositionally and structurally, of natural hardwood vegetation on the Allegheny Plateau." Sugar Maple, Northern Red Oak, and American Basswood dominate the overstory. However, Red Oak is not among the seedlings and saplings, and does not seem to be regenerating (McCarthy and Bailey 1996). A Chestnut Oak that recently fell across a road and was cut had 275 growth rings, 40 feet from the roots (Boone 1993). The site supports at least 39 species of herbs, including *Dicentra canadensis*, *Impatiens pallida*, and *Urtica dioica* (McCarthy and Bailey 1996). The site stretches for a couple miles along a ridgetop and slope, at the base of which a railroad line was constructed in the mid-nineteenth century (Boone 1993).

Savage River State Forest, western Maryland (Garrett County)

--**South Savage Wildland Area**. A total of more than 100 acres of type B old growth, within a Wildland composed of 2427 acres in the Savage Ravines and 1934 acres on South Savage. As of mid-2002, researchers were continuing to search for old growth in the Wildland Area. The known old growth consists of scattered mixed oak stands, White Oak stands, Sweet Birch stands, and one diverse mesic stand. It is located on the southern end, southern and eastern aspects, of Big Savage Mountain (known as South Savage), mostly among sandstone outcrops and screes. Ed Thompson discovered the initial stand in this region, Coleman Hollow; Ken Hotopp discovered additional areas (Hotopp 2002). Coleman Hollow is a 74-acre (30 ha) area with two distinct forest types. A Chestnut Oak association thrives on the upper slopes, which represent about a third of the total area. The upper slopes do not appear to have been logged (Dodds and Smallidge).

In March 2002 the Maryland State Legislature passed a bill creating the South Savage Wildland; the governor signed it in May 2002. Savage Ravines now has true wilderness status; on South Savage, research and educational activities are allowed. Mark Diehl and the Western Maryland Group of the Sierra Club led the fight to save the wild land (Hotopp 2002; Diehl 2002).

--**Poplar Lick**. Probably more than 15 acres of type B old growth with Chestnut Oak, White Oak, Northern Red Oak, and hickory. The old growth runs from the ridge top to north of the mouth of Poplar Lick on southern and eastern aspects. As of mid-2002, the stand was unstudied, undocumented, and unprotected (Hotopp 2002).

Sherwood Forest, in east-central Maryland (Anne Arundel County)

A private community with as much as 75 acres of original beech, Tulip Tree, and Red and Black Oak forest near Severna Park (Sweeney 2002).

Belt Woods, southeastern Maryland (Prince George's County)

A 624-acre preserve owned by the state of Maryland, in which are approximately 40 acres of old-growth mesic upland hardwood forest. The dominant canopy trees are Tulip Tree and White Oak. Flowering Dogwood, Spicebush, Sweet Haw, and Ironwood are prominent in the understory. The herbaceous layer, which is dense in the spring, includes *Collinsonia*, *Dioscorea*, and Broad Beechfern. As far as is known, the only possible disruption of the 40 acres has been the removal of dead trees. As the outcome of an eighteen-year battle between conservationists and the Episcopal Diocese of Washington (to whom the land's owner, Seton Belt, had willed the property), Belt Woods is now protected under Maryland's Wildlands Preservation system. Access is limited and by permit only (Waggoner 1973, Boone 1993, Horton 1997, Rucker 2001). The planned Intercounty Connector, Interstate 370, would pass within a quarter of a mile of Belt Woods and would destroy buffering forests and wetlands (Connector 2002).

Fort Hill Preserve, western Maryland (Allegany County)

--At the south end of the 332-acre preserve, Grade B old growth probably exceeding 30 acres in extent on limestone slopes. The old growth faces the North Branch of the Potomac River. Chinquapin Oak, with the largest trees greater than 400 years in age, dominates.

--A ribbon of old growth, totaling more than 10 acres, on the ridge top. The old growth includes Eastern Red-cedar and Chestnut Oak.

The old growth was discovered by Ken Hotopp. The preserve, which is owned by the Maryland/District of Columbia Chapter of The Nature Conservancy is open only to researchers and only by permission (Hotopp 2002).

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