Dolly Sods

West Virginia University
Extension Service

Written by
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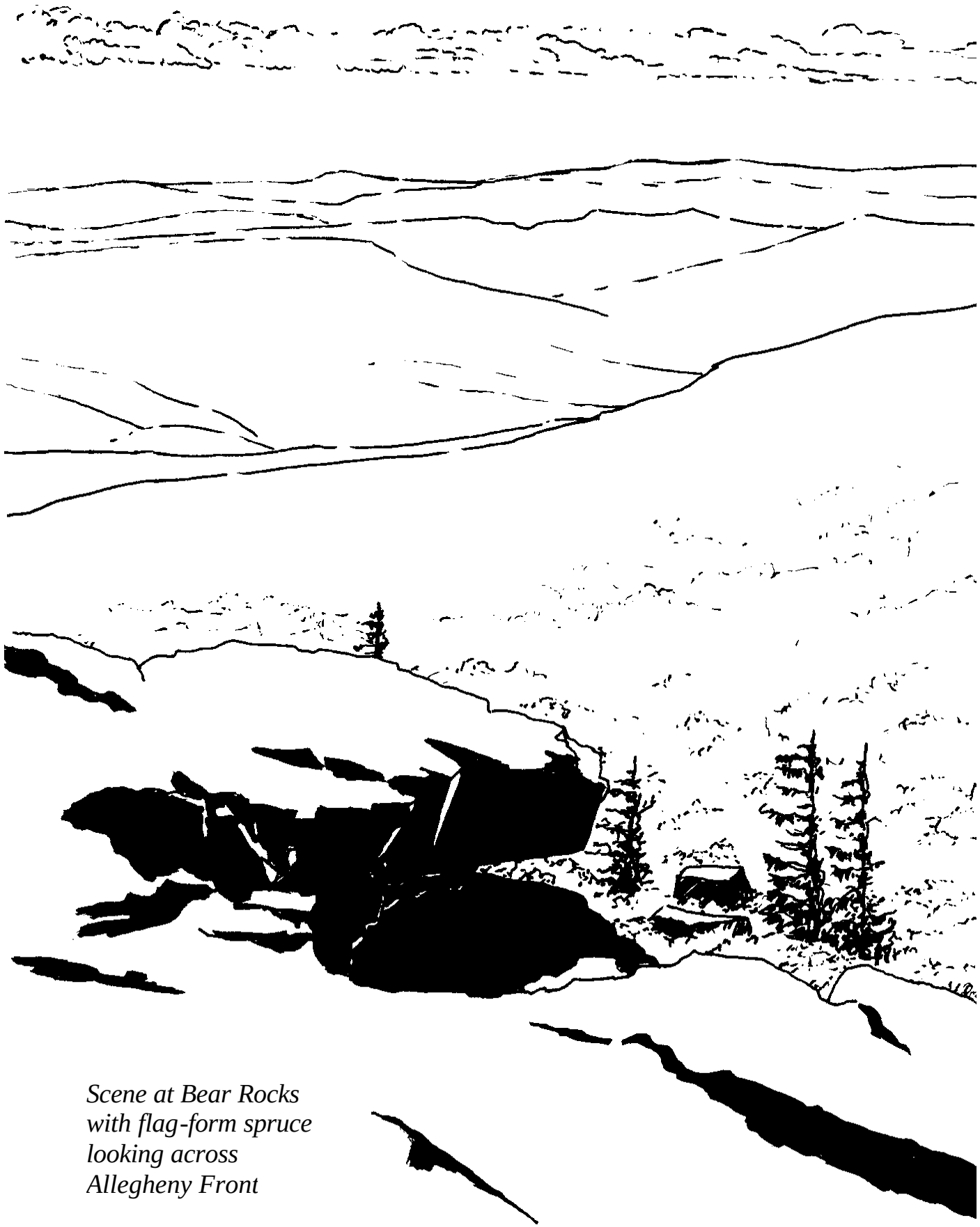
Illustrated by
Ann Payne

West Virginia
Renewable
Resources
Unique Areas
Series 813



Scene at Bear Rocks with flag-form spruce looking across Allegheny Front

Dolly Sods

. . . one of West Virginia's most unusal wilderness areas

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Acknowledgments

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Material in this publication is designed to contribute to the understanding and appreciation of West Virginia's natural resources. Additional information beyond the scope of this work can be found in publications listed in the reference section.

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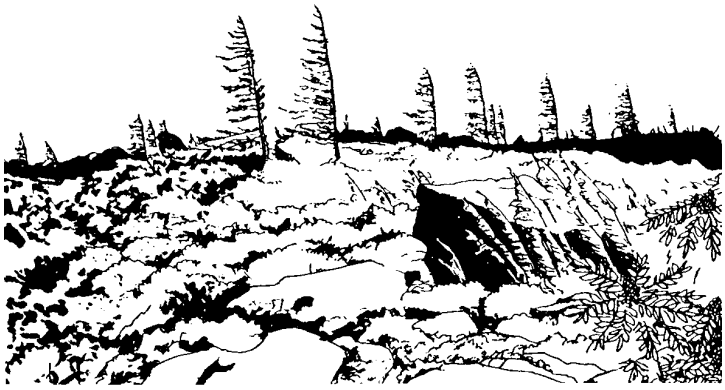
Contents

Dolly Sods

Boulders that glisten
as white as snow,
spruce trees with wind-blasted,
one-sided branches,
landscapes that resemble
the arctic tundra -
this is Dolly Sods,
one of West Virginia's
most unusual wilderness areas.



The Dolly Sods Wilderness and Scenic Area is located in West Virginia's Monongahela National Forest in Tucker and Randolph counties. Elevation of the area, situated on the rugged Allegheny Plateau, ranges from 2,600 feet to more than 4,000 feet. Chilly weather and the rugged mountain topography produce distinctive features, including high mountain bogs that resemble northern muskegs, heath-like areas covered with blueberry bushes, and boulder-strewn meadows with such names as Roaring Plains. The area's distinctive plants and wildlife are characteristic of more northern places in the United States and Canada.

Trails through or near hardwood forests, conifers, rocks, bogs, cascading streams, and beaver dams make rugged and remote Dolly Sods a favored hiking spot. In addition, more than 35 species of mammals, at least 1 00 species of nesting birds, many unusual migrating songbirds and birds of prey, an impressive list of plants, and interesting geological and scenic features also make Dolly Sods a popular place for nature study and relatiad outdoor recreation.
Recognizing its unique aspects, Congress in 1975 set aside the 10,215-acre Dolly Sods Wilderness to be maintained with minimal disturbance from human activities. Adjoining the eastern boundary of the wilderness is the 2,400-acre Dolly Sods Scenic Area.
Access to this area is from State Route 32 south of Canaan Valley State Park.
(See map in the Scenic and Wildlife section.)

History

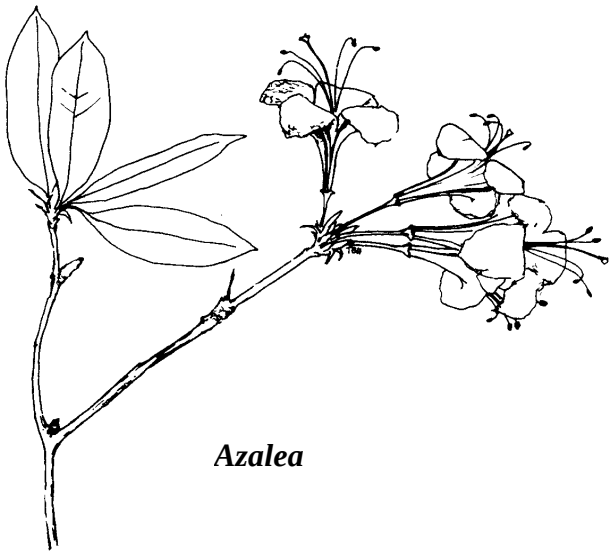
When white settlers arrived, the land that now comprises Dolly Sods and surrounding areas was covered mostly by a magnificent red spruce forest. Other conifers included hemlocks, which probably were the largest trees in the original forest, and balsam fir, which grew in wet places. Hardwoods included sugar maple, American beech, black cherry, basswood, and yellow birch. In many areas there were extensive and impenetrable patches of loral or rhododendron thickets.

Although most of the region was forested, there were also open places such as bogs or glades. In these wet, marshy areas, luxurious bluejoint grass grew to 4 feet high. Early settlers cut the grass for hay.

On some mountaintops, there are grass baids or treeless areas which may have resulted from naturally occurring fires or other factors, or from fires set by American Indians, who hunted in the area. Whatever their origin, the grass baids or sods, as they were also called, were used by the early settlers for grazing stock. A pioneer family named Dahle used the sods for pastureland. In time, the German name became the present-day Dolly Sods.
(See Canaan Valiey by Norma Jean Venable for additional details on the area's culture and history.)

Lumbering

Through the early 1800s, the magnificent red spruce forest that covered Dolly Sods remained intact. The forest was impressive; individual trees grew to 90 feet tall with a 4-foot diameter. However, from the 1880s to the 1920s, the entire area was logged and the original red spruce forest was exploited by lumbering. Fires associated with lumbering and deliberate burning to create more grazing land continued. Fires repeatedly swept through the land, even burning the 2 to 4 feet of accumulated humus soil down to the bare rock. The fires created more open areas in Dolly Sods than were present during pioneer times. Today in such places as Dobbin Slashing (across from Bear Rocks), the old charred stumps of burned trees still can be seen, indicating that much of the area's now open land was forested at one time.
Because the original forest was removed by lumbering, vegetation present in the Dolly Sods Wilderness Area is second growth and does not resemble the original magnificent spruce forest. Except in a few places in Canaan Valley and Dolly Sods, the red spruce did not grow back and has been replaced by such hardwoods as sugar maple, yellow and black birch, and American beech. Visitors interested in seeing what the original forest looked like can visit the Gaudineer Scenic Area in Pocahontas County where old-growth red spruce has been preserved, or Cathedral State Park not far from Canaan Valley where there is a stand of old-growth hemlock.



Azalea

Management

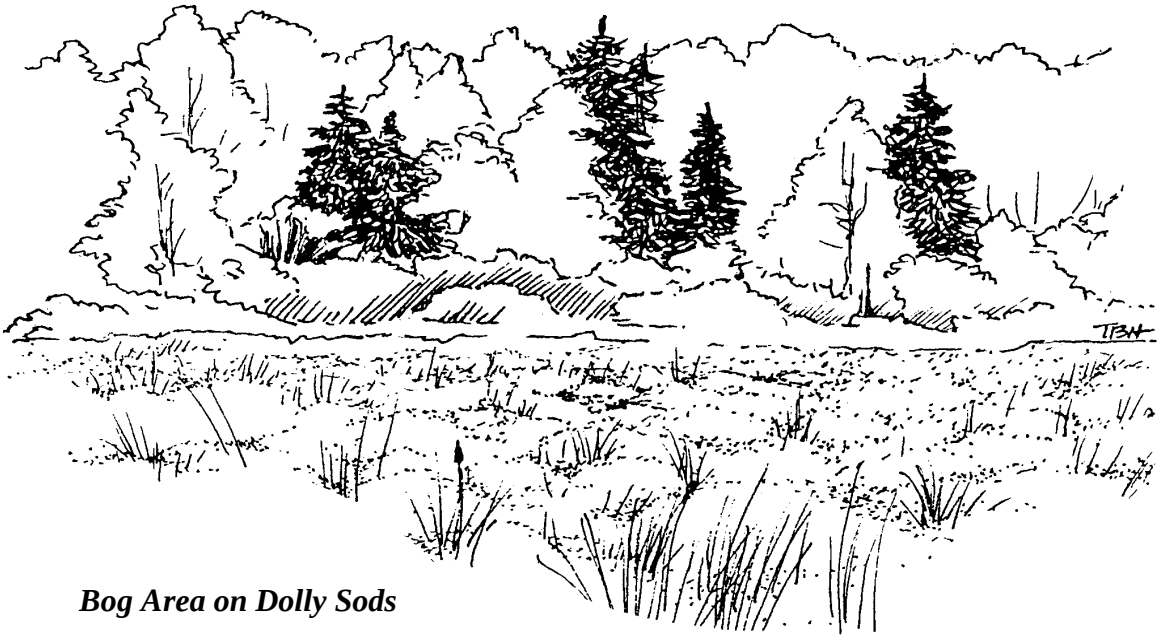
In the 1930s the Civilian Conservation Corps helped to construct the gravel road (Forest Route 75) that traverses the scenic area of Dolly Sods and planted red pine and other conifers. The Nature Conservancy, a private organization formed to protect and preserve unique natural habitats, purchased the coal mining rights in the Dolly Sods Wilderness. The mineral rights were resold to the U.S. Forest Service, thus protecting the area from the deleterious effects of strip mining by designating it for wilderness and recreational usage. The Nature Conservancy is in process of acquiring the land north of the wilderness area which may become part of the National Forest System later.
The Dolly Sods Wilderness and Scenic Area is under the jurisdiction of the Forest Service. Current Forest Service regulations govern certain practices in specified places. Hunting is permitted in wilderness areas. Horses and pack animals are not allowed in the scenic area. Forest Service regulations regarding camping and other activities should be checked before using the wilderness area.
Open areas in Dolly Sods including bogs and heaths are growing up in hardwoods and climax red spruce forest. In order to preserve these open areas, which are a unique feature of Dolly Sods, controlled burning of the second-growth vegetation would be necessary. However, since Dolly Sods was designated as a wilderness with the intent to replicate the natural area prior to human interference, controlled burning for forest management and habitat improvement is not allowed. It is possible that some open areas will revert to woodlands if current management practices are continued.
The Forest Service is seeking public input into management plans for wilderness areas including the Cranberry Backcountry and Otter Creek Wilderness. Suggestions on appropriate land use for Dolly Sods also may be considered.
Dolly Sods has one of the highest use rates of any wilderness site in the East. Thousands of people visit every year to enjoy its scenic views and participate in outdoor recreational activities. Every attempt should be made to maintain this lovely area so all can enjoy its unique aspects. Current issues in land usage that affect the area are the possibility of strip mining on private land bordering the Dolly Sods Scenic Area, destruction of habitat and land caused by excessive and unregulated use of all-terrain vehicles on private land, and use of the area for military training operations.

A Wilderness Area

Visitors and hikers should keep in mind that Dolly Sods is a wilderness exposed to the natural hazards associated with a remote and rugged land. For example, Red Creek is subject to flashflooding. The piles of rocks massed along the creek banks have been cast there by raging flood waters and attest to the power and force of sudden flooding. Hiking here in heavy rainfall is dangerous. Fog and mist can enshroud the mountain and obliterate landmarks in a matter of minutes and even experienced hikers can become lost. Using maps and a compass is recommended. Snow, rain, cold weather, high winds, and storms are frequent so adequate gear is a must. Serious hikers are advised to use topographic maps available from the U.S. Geological Survey. Further information is available from the nearby Seneca Rocks Visitor Center, the Forest Service District Office at Petersburg, or the Supervisor of the Monongahela National Forest in Elkins.

Climate

Dolly Sods is well known for its vigorous and "quick change' climate. Sun, rain, snow, and fog are all possible within an hour. Cool, wet weather prevails throughout the year. Although summer temperatures can reach the 80s or higher, frost is possible at any time of the year in higher elevations (above 4,000 feet) and winter temperatures can dip below zero. Yearly precipitation is more than 55 inches. Precipitation is heavy because rising air masses cool as they hit the higher mountains and deposit moisture. Snowfall is impressive and may reach 150 inches in a year. This heavy snow breaks down trees and shrubs. Heavy glazes of ice and deposits of rime frost also break down trees and shrubs, giving them their characteristic forms and gnarled appearance. Prevailing winds are from the west and blow almost constantly. The effect of these winds can be seen in the flag-form red spruce trees; their branches grow on one side, away from the wind. Frost and snow effects also contribute to the flag-form shape of the trees. Because of the drying influence of the wind, no branches are produced on the west side of the tree above the protective shrub layer. Stunted branches on the east side give the trees a twisted appearance. Where spruce are protected by a shrub layer, luxuriant webs of branches extend for a radius of a dozen feet, giving a mat-like look to vegetation.



Bog Area on Dolly Sods

Geology

The Allegheny Front

The Allegheny Front is a high and imposing escarpment or cliff winding along the Dolly Sods Scenic Route. A conspicuous feature, the front marks the boundary between the ridge and valley physiographic province to the east and the Allegheny Plateau to the west. The Allegheny Front is an erosional remnant of the Stony River syncline. (See Fig.l.)

The Allegheny Front and the physiographic provinces to the east and west can be viewed from both the scenic overlookand Bear Rocks. The view is breathtaking and unforgettable. Toward the east are the distinctive folded structures of the valley and ridge mountains; six or seven ridges are visible. The town of Petersburg can be seen on a clear day. The uplifted, highly eroded and dissected Allegheny Plateau extends westward.

Rocks in the Dolly Sods and Canaan Valley region were formed during Pennsylvanian and Mississippian geologic eras more than 300 million years ago. The uppermost rock stratum of the Allegheny Front is Pottsville sandstone. Pottsville sandstone contains silica (quartz), which is very hard, and these rocks tend to resist erosion. Because underlying rock strata are not as erosion-resistant, differential erosion occurs and its distinctive patterns can be observed. The sandstone along the front is embedded with white quartz pebbles and is called the Pottsville conglomerates.

This rock forms coarse, sandy soil that drains easily. The white soil around Bear Rocks has a sugar-like texture. As a result of the extensive burning of the humus soil, the present soil is quite young, very shallow and stony. Other rock strata include the red Mauch Chunk and the gray Greenbrier limestone, which underlies Canaan Valley. (Refer to Canaan Valley for details of the area's geology.)

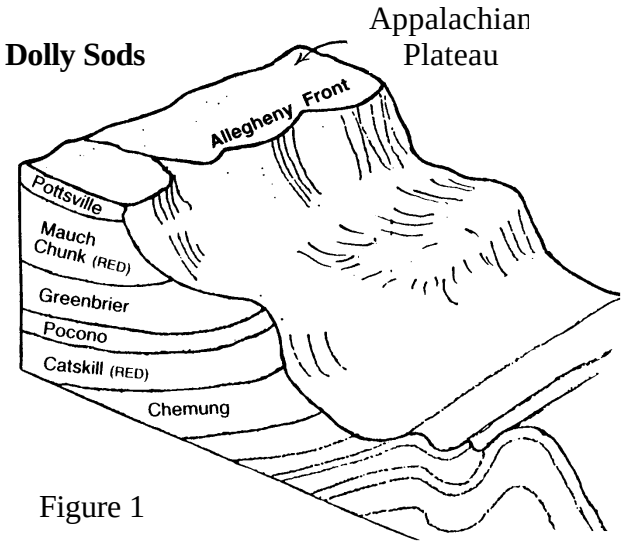


Figure 1

Patterned Ground

At many places along the gravel road at Dolly Sods, stretches of rocks that look like "rock streams" are very prominent. It is speculated that these rock streams were formed during glacial times. Although glaciers did not reach West Virginia, the climate was colder then due to the chilling effects of nearby glaciers, and Dolly Sods especially must have been very cold. Certain rock patterns, including stripes, polygons, and circles, called "patterned ground," are associated with a cold weather influence. During glacial times, these geometric patterns were produced by freeze-thaw cycles that heaved and split the rocks. Rock streams are considered a type of patterned ground. The streams can be hundreds of feet long and 50 feet wide.

The geological features of Dolly Sods, including the Allegheny Front, patterned ground, and the striking array of wind-sculpted boulders at Bear Rocks, help form the unusual and spectacular scenery that is one of Dolly Sods' unique attractions.

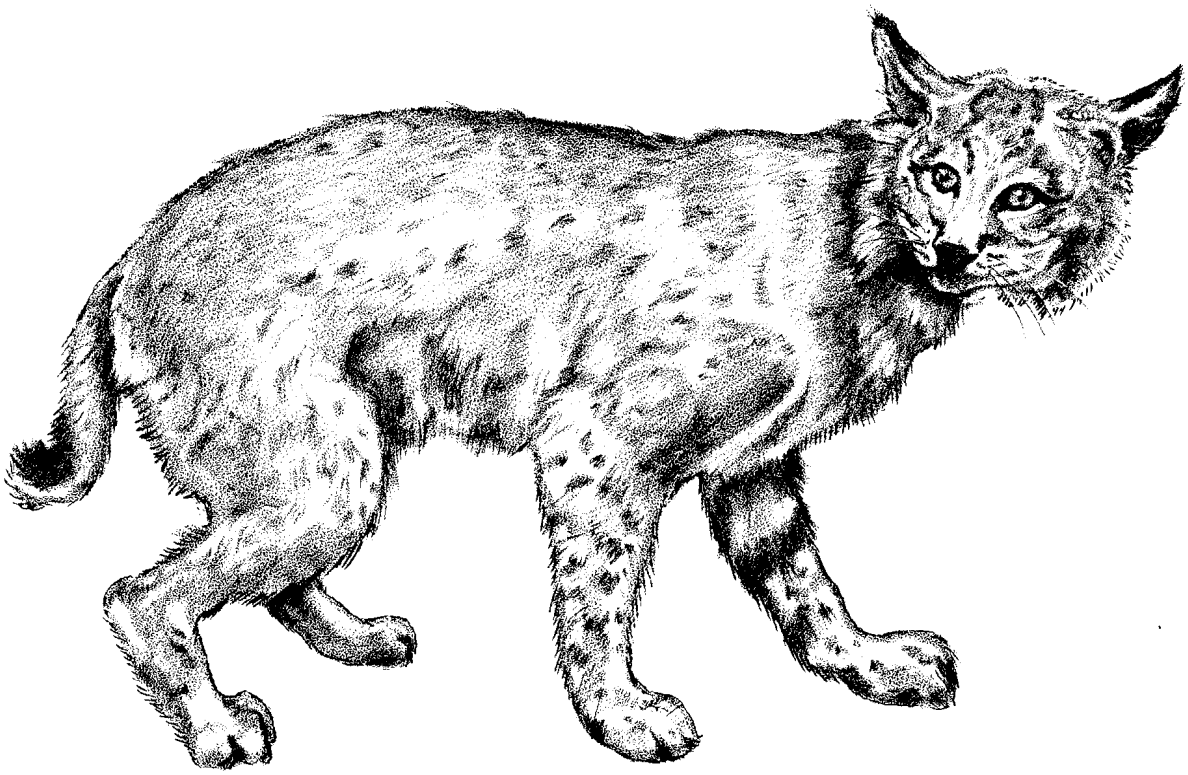
The Northern Forest

West **V**irginia is a land of geologic, geographic, climatic, and floristic diversity. From towering cliffs to mountain bogs, from caves and plunging waterfalls to heathland and shale barrens, West Virginia offers a rich panoply of natural resource attractions and scenic splendor.

Classified as a transition zone between northern and southern zones, West Virginia has habitats typical of both areas. The state has three general physiographic regions: the western hills region, which includes the Ohio River and high Appalachians (vegetation is central hardwood forest), the Allegheny Mountains, which includes the Dolly Sods area and Spruce Knob, at 4,860 feet the highest point in the state (vegetation is northern hardwood forest), and the eastern ridge and valley section, where vegetation is the oak-pine replacement of the original American chestnut forest.

Dolly Sods and surrounding areas, including Blackwater Falls, Spruce Knob, Cathedral State Park, Seneca Rocks, and the entire Monongahela National Forest, offer opportunities to explore these regions and their interesting natural areas. Caves, waterfalls, mountain bogs, towering rock formations, and pastoral hill farms are found in the Dolly Sods/Canaan area. For forest lovers, the area offers many examples of eastern forest types, including boreal forest, boreal bog, beech-maple, maple-basswood, oak-hickory, and northern pine-oak, all having a fascinating array of wildlife.

Caving, white water rafting, horseback riding, rock climbing, wilderness hiking, and both cross-country and downhill skiing are good ways to enjoy the treasures of this great outdoor area and to learn more about wilderness habitats and animals.



Bobcat

Wildlife

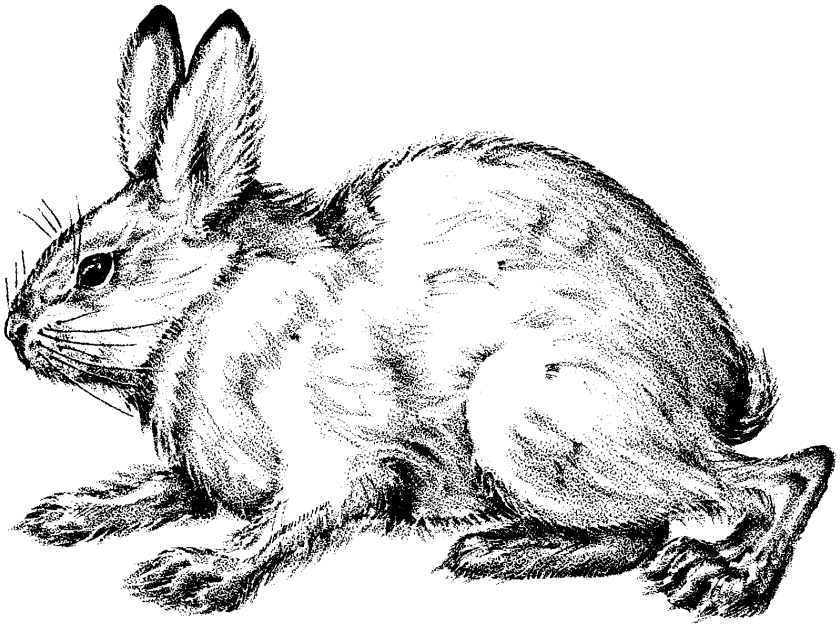
Mammals

Many of West Virginia's 67 mammal species can be found in the Canaan Valley and Dolly Sods area, including several species of shrews, moles, bats, mice, jumping mice, voles, and other small mammals such as the eastern chipmunk. Larger mammals include opossum, raccoon, woodchuck, striped skunk, beaver, muskrat, mink, and several kinds of squirrels, rabbits, and weasels. The higher elevation areas are specific home to more northern mammals, including the snowshoe hare, New England cottontail, fisher (a member of the weasel family), and possibly the rare and endangered northern flying squirrel. Larger mammals include red and gray foxes, bobcat, bear, and white-tailed deer. There are reports of sightings of mountain lions. No one is certain whether this elusive animal still exists in the wild in West Virginia.

An interesting animal found on Dolly Sods is the snowshoe hare, a northern mammal whose range extends from Canada to Alaska. This hare is in the southern part of its range in this area. Adaptations for a snowbound existence include its hairy, big feet, which act as a cushion and allow snowshoes to race across the snow without sinking in. During winter, its coat color changes to white so the hare blends with its snowy surroundings. In summer, the hare is gray-brown.

Several wildlife research projects have been conducted on Dolly Sods, including a study on the occurrence of the New England cottontail, normally found farther north, and the possible presence of the northern flying squirrel, an endangered species in West Virginia.

Deer, beavers, bears, squirrels, minks, rabbits, and sometimes bobcats are the wild animals the visitor is most likely to see. (*West Virginia Wildlife* by Norma Jean Venable contains illustrations and life histories of the state's mammals.)



Snowshow Hare

Birds

At least 100 species of birds and probably more nest around Dolly Sods and the nearby lowlands between Laneville and Route 32. Nesting birds tend to be higher elevation species such as purple finch, bobolink, and dark-eyed junco. The most common nesting species are red-eyed vireo, American robin, common crow, dark-eyed junco, indigo bunting, American goldfinch, and rufous-sided towhee. Other nesting species include such game birds as ruffed grouse and turkey. Wetiand birds such as woodcock also nest here. Other nesting birds include several kinds of woodpeckers, flycatchers, and swallows. Nesting thrushes include wood, hermit, veery, eastern bluebird, and robin. There are many warblers, including black and white, yellow, magnolia, black-throated blue and green, chestnut-sided, prairie, hooded, and American redstart. Blackbirds include bobolink and northern oriole. Other nesting species include scarlet tanager, cardinal, and winter wren. Nesting birds of prey include Cooper's, sharp-shinned, red-shouldered, and red-tailed hawks and screech, horned, and barred owls. Saw-whet owls, the smallest owl in the East, are apparently rare but do nest on Dolly Sods. Elevation and resulting climatic and vegetational changes influence where birds nest. For example, dark-eyed junco and towhee nest on top of Dolly Sods, but bobolinks are found at lower elevations.

Winter is usually very cold on Dolly Sods and many resident birds such as the dark-eyed junco may move to lower elevations of Canaan Valley or other places where the snow is not so deep and the food supply is more plentiful. However, other northern species of birds can be found on Dolly Sods during migration times, and snow buntings have been seen at Bear Rocks in late fall. (See *Canaan Valley* for occurrence and status of birds in the area.)

During the fall, the Allegheny Front serves as a flyway for birds migrating from northern breeding grounds to more southern wintering places. Migrating birds can be observed from August to November. Different species of birds migrate in different months. For instance, barn swallows migrate very early, usually in late August, while kinglets pass through around the first of October. Thrushes, including Swainson's, wood, hermit, and gray-cheeked, come through in September and October. Time of day also affects migrating birds. Many songbirds tend to migrate at night and often have a postnight flight for two to four hours in the morning. This may be an orientational flight by some if they have been blown off course during the night.

Woodcock

Raptors

During the autumn (prime time is mid-September) the Allegheny Front is known for its many migrating raptors. Bear Rocks is sometimes a good place to watch for raptors. Members of the Brooks Bird Club, Audubon Society, and others interested in birding often visit Bear Rocks for raptor counts. In good weather the birds can be seen from around 1 0 in the morning, when they take advantage of thermals (rising pockets of warm air) to facilitate flying, to late afternoon when the thermals cease. On a good day, hundreds of broad-winged hawks sweep across the sky on their southern journey. Many kinds of raptors have been seen, including golden eagles; peregrine, kestrel, and merlin falcons; and osprey, harrier, red-tailed, red-shouldered, broad-winged (very common at Bear Rocks), Cooper's, and sharp-shinned hawks.
(For a description of hawks, their flying behavior, and thermals, see *West Virginia Hawks* by Norma Joan Venable and Kathleen Leo.)

Broad-winged Hawk

Bird Banding Station

The Allegheny Front Migratory Observatory (Bird Banding Station) is located at the overlook across the road from the Red Creek Campground. Established in 1958, the station is open from August to October depending on weather. It is the only cooperative banding station is West Virginia, although banders, who must be licensed, do band from their yards. Banders are volunteers, usually members of the Brooks Bird Club, who cooperate with staff from the Monongahela National Forest and the West Virginia Division of Natural Resources.

In the fall, songbirds are most likely to migrate after the passing of a cold front, and the migration usually is along a broad front. Many birds fly along the Allegheny Front in the fall and often are funneled through the dip in the ridge to keep on a southwest course.

Birds banded at the station are mainly songbirds, and about one-third of the species banded are warblers. Most birds that fly down the Allegheny Front during their migration do not nest in West Virginia but in Canada and farther north; they winter in the tropics, the Caribbean, and Central and South America.

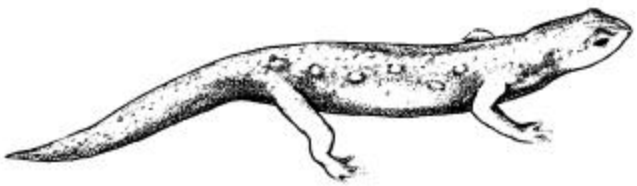
In order to secure the birds for banding, as many as 20 nylon nets are set up in 'net lanes." After birds fly into the nets they are removed carefully to avoid injury. The birds then are placed in a canvas sack and taken to the banding station, which is a plywood shelter where the bands are kept. The birds are identified for species, sex, and age, and then banded. Some are weighed and checked for fat. Migrating birds usually put on fat just before migrating. The fat is used for fuel for what may be a 200-mile night flight. After this information is recorded, the birds are released. This type of data is used to determine status and distribution of bird populations.

The information is very important because birds serve as a kind of ecological indicator of the health of the earth which all species must share. Destruction and fragmentation of North American forests due to urban development and agriculture have caused a serious loss of habitat for many woodland birds, especially warblers. Destruction of the rain forest in South America has meant loss of habitat for some birds that winter in the tropics. Banding stations such as the one at Dolly Sods provide information to help monitor the number of birds and keep track of fluctuations in populations. It appears that numbers of woodland bird species are declining.

Approximately 1 15 bird species have been banded at the Allegheny Front station. Not all species are banded. Because of their small size, hummingbirds are not banded but notes on their occurrence are kept. Species most often banded include Tennessee warbler, blackpoll warbler, Cape May warbler, black-throated blue warbler, black-throated green warbler, blackburnian warbler, bay-breasted warbler, ovenbird, dark-eyed junco, golden-crowned kinglet, and Swainson's thrush. Other birds that have been banded include merlin, sharp-shinned hawk, yellow-bellied sapsucker, and several flycatchers including yellow-bellied and least flycatcher. The station bands over 6,000 birds in an average year. (For complete lists of birds banded and dates, refer to the *Redstart* which has annual updates of bird banding activity.)

Amphibians and Reptiles

Dolly Sods' cold climate is not favorable to some of these cold-blooded animals that prefer to abide in warmer places. The rare and endangered Cheat Mountain salamander is found in red spruce forests. Wehrle's salamander, red spotted newt, redback, northern two-lined, and northern dusky salamanders can be found. Among reptiles, water snakes and snapping turtles are common. Rattlesnakes and copperheads, both poisonous, are present. Hikers in snake country are advised to wear heavy, high-topped boots and to keep a wary eye on the trail.



Red Spotted Newt

Two-lined Salamander

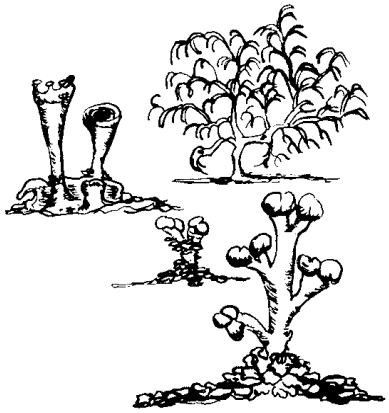
Trees and Vegetation

The northern forest, as it occurs in the more than 14,000-acre Dolly Sods Wilderness and Scenic Area, has many habitats and ecotones where habitats intergrade. Altitude varies from 3,200 feet to over 4,000 feet. Because of the high altitude and cold climate, Dolly Sods is similar to places 1,600 miles farther north. At lower elevations, hardwood species such as yellow birch, sugar maple, basswood, and black birch are dominant. Balsam fir grows in wetter areas. Vegetational patterns vary. For instance, one site may have oak, maple, and basswood hardwoods, while maple, birch, American beech, or beech/birch may be dominant at another. Going up to Dolly Sods there are transition zones with aspen groves, and at higher elevations the trees are predominantly the climax red spruce.

To help visitors identify various habitats and the representative plant species associated with them, some typical or conspicuous plants are described and illustrated. Plant illustrations and names are from Flora of West Virginia, by P. D. Strausbaugh and Earl Core. Illustrations are in the order in which they occur in that work.

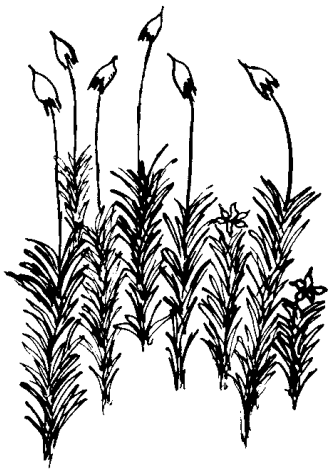
Non-Vascular Plants

ROCK TRIPE (lichen) – grows attached to rocks, brown and leathery, may cover most of rock surface



REINDEER MOSS (lichen) – light gray color, grows on the ground

SPHAGNUM MOSS – may grow in thick mounds, green, spongy texture when wet, grows in bogs



HAIR-CAP MOSS – small plant, often grows with sphagnum moss

Primitive Vascular Plants

Ferns and Fern Allies

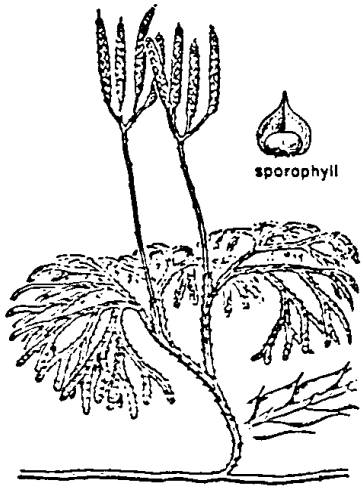
CLUBMOSS or GROUNDPINE: These plants sometimes resemble small pine trees–usually not over 6 inches tall. Several clubmoss species occur at Dolly Sods.

TREE CLUBMOSS – resembles small tree

COMMON CLUBMOSS

Vascular Plants

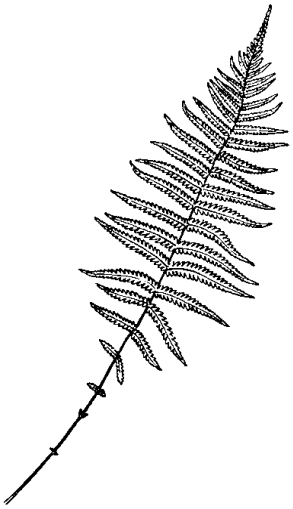
Grasses and Sedges



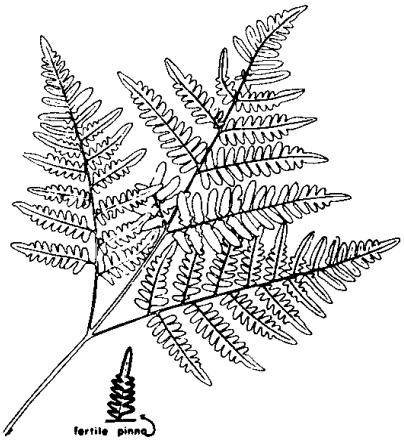
GROUNDPINE –

HAY-SCENTED FERN –
has pleasant fragrance when crushed, grows in full sunlight

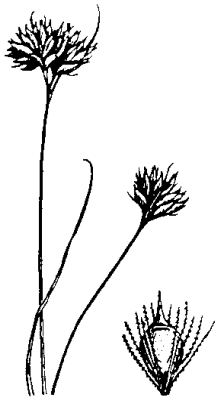
MOUNTAIN OAT-GRASS or ALLEGHENY FLY-BACK – most common grass found on grass balds, appears pale yellow or white in fall



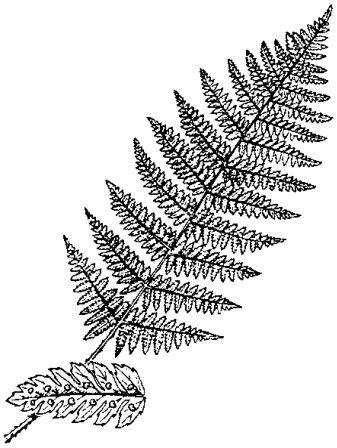
NEW YORK FERN –
tapered at both ends



BRACKEN – grows to 7 feet tall, coarse, grows in full sun

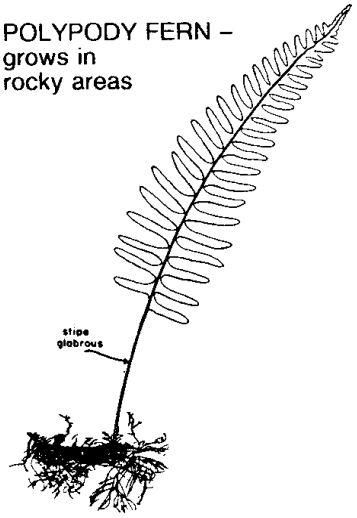


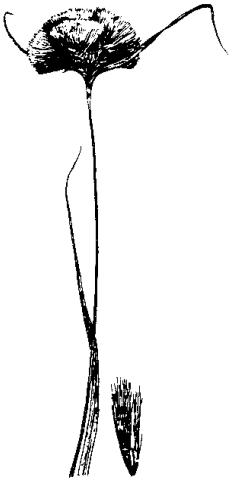
WHITE BEAKRUSH – occurs in sphagnum bogs, spiklets are white



SPINULOSE SHIELD FERN –
has feathery look, grows in woods

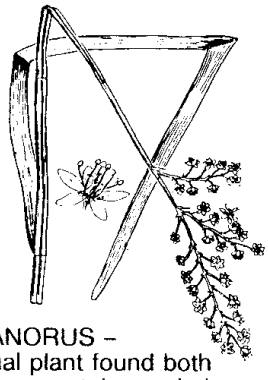
POLYPODY FERN –
grows in rocky areas



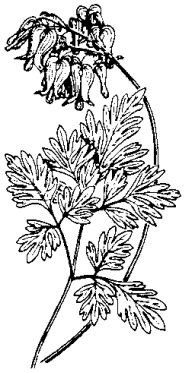


COTTONGRASS (sedge) –
has white cottony "fruit heads" in late summer, grows in bogs and wet areas

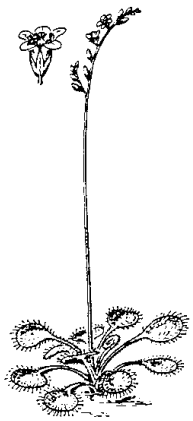
Wildflowers



OCEANORUS – unusual plant found both in high mountains and along Atlantic coast, greenish flowers



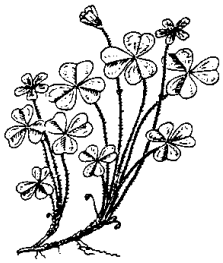
BLEEDING HEART attractive purple flowers, fairly common on Dolly Sods in spring



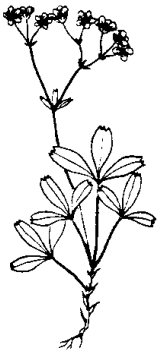
SUNDEW – carnivorous plant, tiny round leaves ½ inch across, grows in bogs

FIREWEED – flowers are pink-purple, on "spikes," blooms late summer, roadsides, clearings

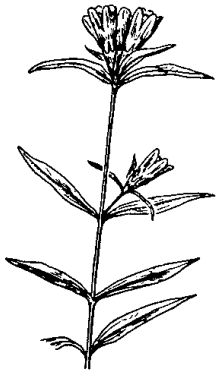
RAMPS – wide leaves, grow in damp woods, about 6 inches high; bulbs have strong onion flavor



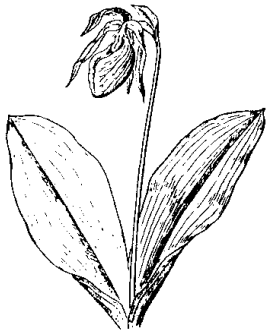
WHITE WOOD SORREL – grows several inches high, blooms in spring, sometimes called shamrock



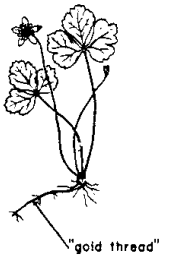
THREE-TOOTHED CINQUEFOIL a circumpolar plant



NARROWLEAF GENTIAN – showy flowers are purple, blooms late summer, grows in wet places



PINK LADY'S SLIPPER – rare and beautiful orchid

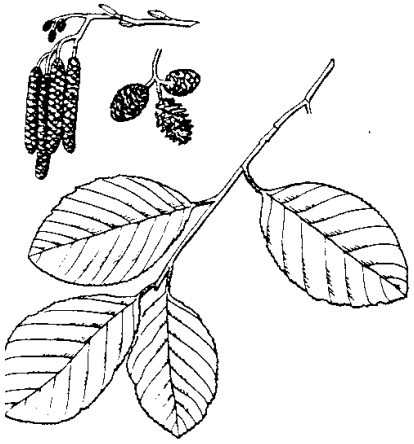


GOLDTHREAD – small low-growing plant with gold-colored roots, grows in high elevation bogs

JEWELWEED – grows several feet high, may have yellow or orange flowers, blooms in late summer

CRANBERRY – low-growing, trailing plant, red berries in fall, grows in mountain bogs

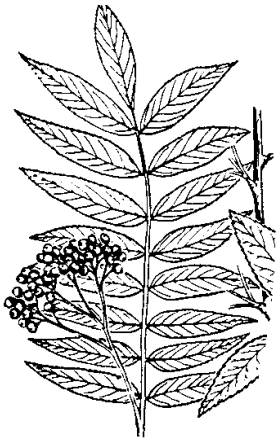
Shrubs and Small Trees
grow to about 30 feet tall.
(Vegetation on exposed areas on Dolly Sods is stunted.)



SPECKLED ALDER (shrub) – common around bogs, has cone-like structures on branches

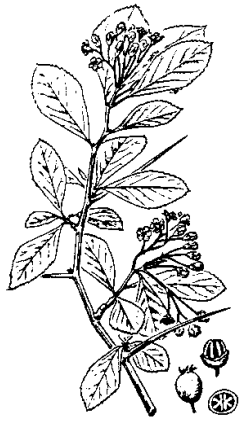
WITCH HAZEL (shrub) – has yellow flowers in fall

BLACK CHOKEBERRY (shrub) – flowers white or purplish, fruit purple-black and bitter, common in and around bogs and heath area



MOUNTAIN ASH (small tree) – flowers white, in fall has clusters of conspicuous red-orange berries, fairly common at Bear Rocks and heath area

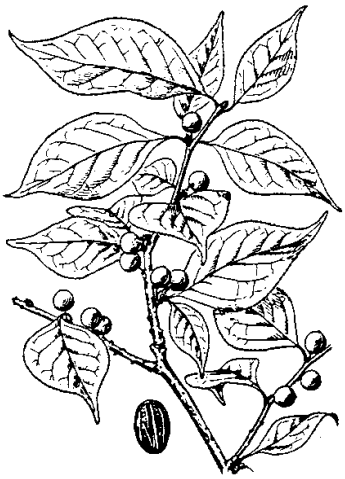
SERVICEBERRY, SARVIS (small tree) – tree trunks slender, gray, often multiple trunks, white spring flowers, berries ripe in summer, sweet, edible; several species



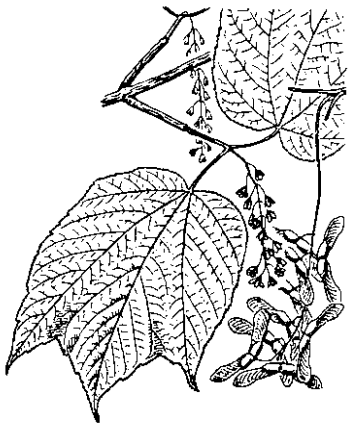
HAWTHORN (shrub or small tree) – easily recognized by sharp thorns; has white flowers in spring and red fruit in fall; several species

WINTERBERRY, BLACK ALDER (shrub or small tree) – 3 species of deciduous hollies (lose their leaves in winter) occur; lovely red berries very showy in fall and winter

LONG-STEMMED HOLLY (shrub) – fruit has long stems, with red fruit



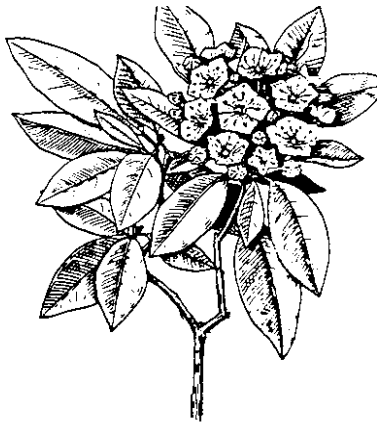
MOUNTAIN HOLLY (shrub or small tree) – fruits red, leaves not as leathery as winterberry



STRIPED MAPLE, MOOSEWOOD (small tree) – easily recognized by green and white vertically striped bark, buds are red

FLAME AZALEA (shrub) – flowers are orange, blooms in May and June, grows in dry places

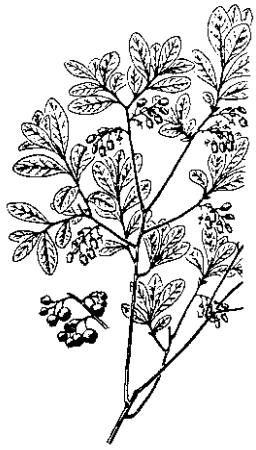
ROSE AZALEA – blooms in May and June



MOUNTAIN LAUREL (shrub) – purplish flowers bloom in May and June, leaves bright green on both sides

ST. JOHN'S-WORT (shrub) – common in some open areas, easily recognized by yellow flowers with multiple stamens, blooms in summer

PINXTER FLOWER, PINK HONEYSUCKLE (shrub) – showy pink, fragrant flowers, May and June blooming, common on Dolly Sods in open areas



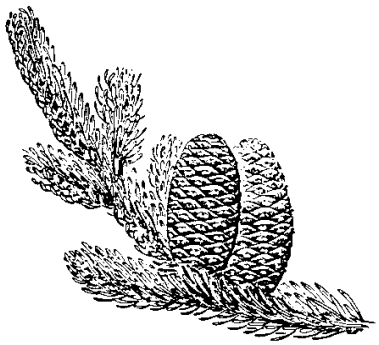
BLACK HUCKLEBERRY (shrub) – fruit sweet but seedy (blueberries not as seedy), common on the heath barrens

RHODODENDRON or GREAT LAUREL (shrub or small tree) – large, leathery, evergreen leaves, flowers white to rose color, blooms in June and July

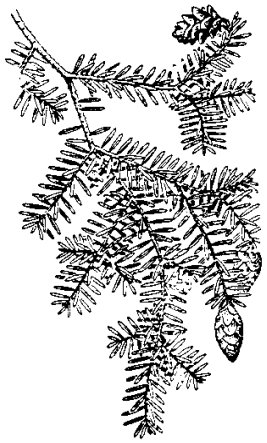
ALLEGHENY MENZIESIA, MINNIE-BUSH (shrub) – greenish-purple flowers in May and June, flowers slender, twigs have stiff hairs

SOURTOP, VELVETLEAF BLUEBERRY (shrub) – berries are blue and ripen in July and August, common on the heath area

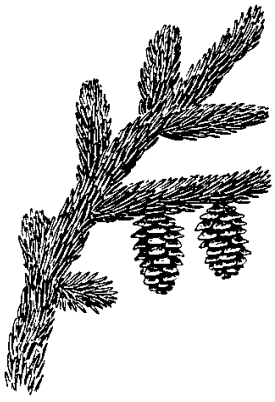
Trees – Conifers



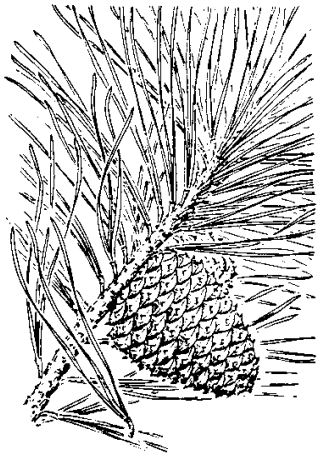
BALSAM FIR – needles are soft, grows in wet places



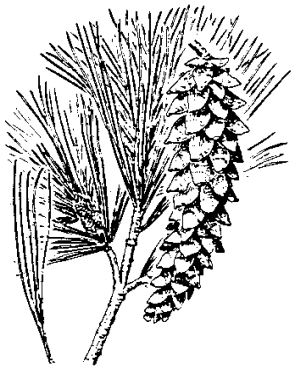
HEMLOCK – needles are flat, with 2 white lines on underside of needle



RED SPRUCE – needles are sharp, common on Dolly Sods, may be flag-form



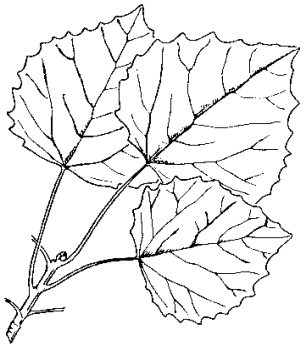
PITCH PINE – has 3 needles per bundle (red pine has 2 needles per bundle)



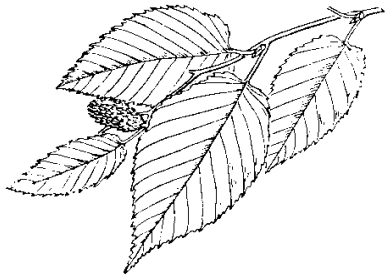
WHITE PINE – has 5 needles per bundle, needles have whitish cast

Trees – Hardwoods

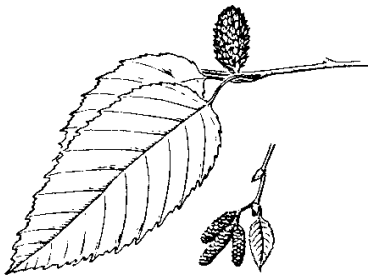
QUAKING ASPEN – yellow fall foliage, leaves "quake" in the wind



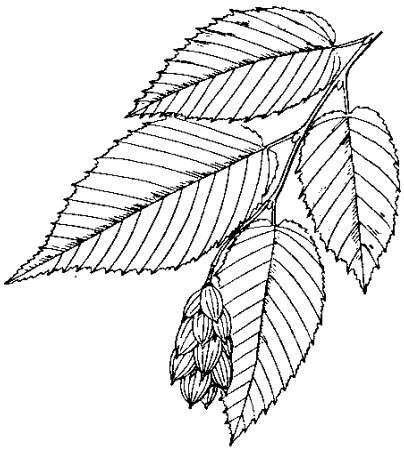
BIGTOOTH ASPEN – leaves have large "teeth"



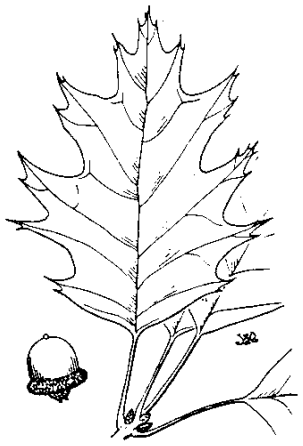
BLACK or SWEET BIRCH – twigs have wintergreen taste



YELLOW BIRCH – bark is very shaggy



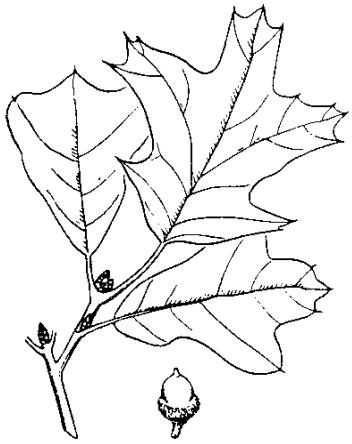
IRONWOOD – has hop-like fruits in fall



NORTHERN RED OAK – leaves have bristles at tip

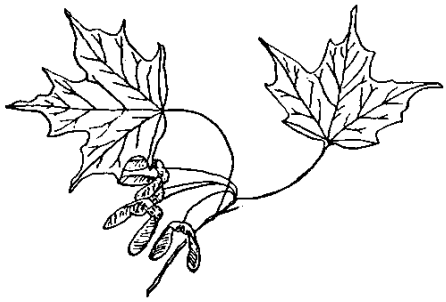
TULIP TREE, YELLOW POPLAR – yellow fall foliage, spring flowers resemble tulips

AMERICAN BEECH – has smooth gray bark

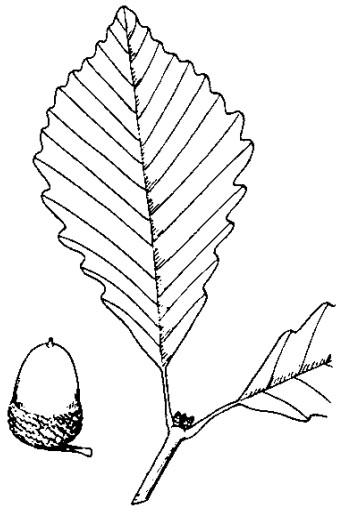


SCRUB, BEAR or TURKEY OAK – may form thickets, low-growing, acorns eaten by bear and turkey

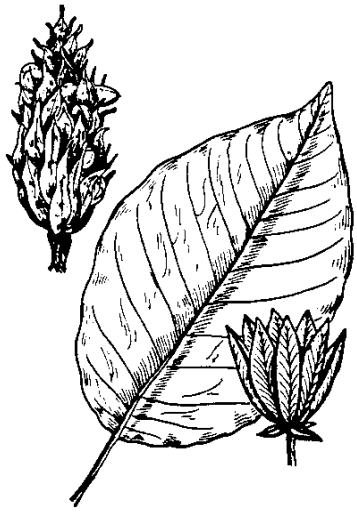
RED MAPLE – common on Dolly Sods, may be very stunted, gray bark, leaf margin toothed



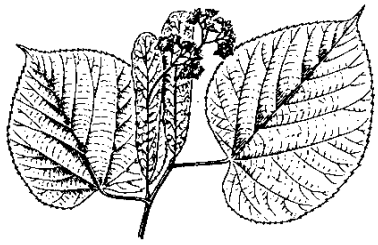
SUGAR MAPLE – leaf edges smooth, common tree in hardwood forests



CHESTNUT OAK – leaf lobes rounded, grows on dry hillsides



CUCUMBER MAGNOLIA – large leaves, pink fruits



BASSWOOD – flowers fragrant, fruit on long stems

Scenic and Wildlife Areas

First-time visitors to the Dolly Sods Scenic rea will realize that it is vastly different from ther places in the state. The vista down the long, straight road extending along the Alleheny Front is impressive and seems forbiding with its tundra-like appearance. Masses of strangely shaped boulders, stunted and twisted bushes and trees, one-sided spruce trees, and treeless heathland convey a feeling of strangeness and foreboding.

Dolly Sods is indeed different and the visitor can explore several unique habitats, including mountain bogs, blueberry heaths, grass balds, and spruce and hardwood forests. (For location of scenic areas and trails, refer to map on page 17.)

Scenic Overlook

A good place to get a perspective on Dolly Sods is at the Scenic Overlook. The short trail to the overlook is a 5-minute walk from the parking area. Vegetation along the rocky trail is typical of the area. Red spruce and hemlock are prominent. Other trees, which at this high altitude are stunted and barely resemble lower elevation trees, include yellow birch, American beech, red maple, fire or pin cherry, mountain ash, red oak, and striped maple. Shrubs include witch hazel, laurel, rhododendron, blueberry, and winterberry.

Wildflowers include bleeding heart, a spring wildflower that is one of Dolly Sod's most allractive plants, and fireweed, which blooms in late summer. Other plants include tree clubmoss and rock tripe. Rock tripe is a lichen (composed of an alga and a fungus) and grows on the rocks. When wet it is leathery, and when dry it is brittle. Lichens are indicator plants for air pollution levels because they are sensitive to air pollution and die where air quality is poor. Fortunately, lichens seem to thrive around Dolly Sods.

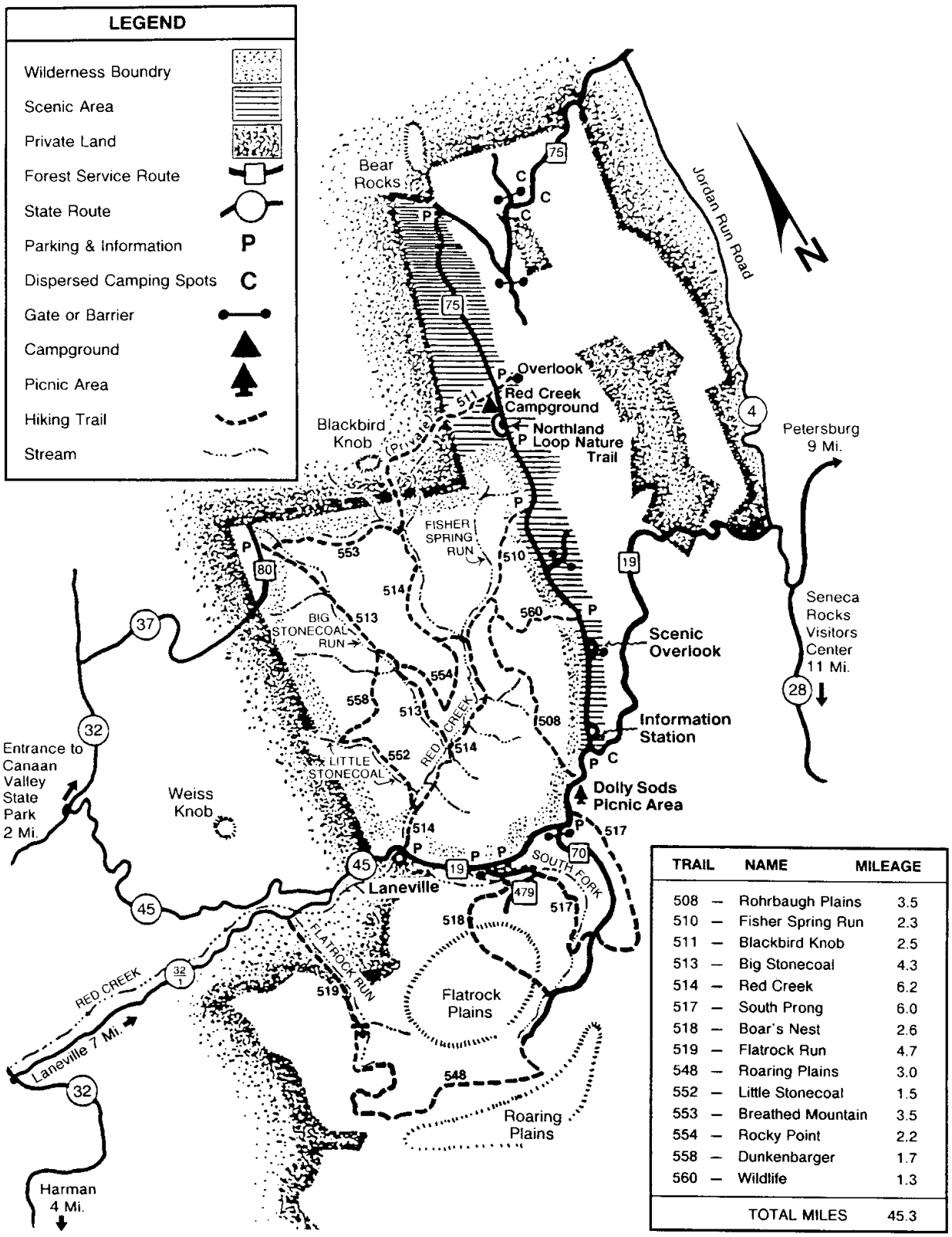
Northland Loop Trail and Mountain Bog

Hiking time is about 30 minutes for this 1/3-mile rocky trail that leads to the mountain bog. The trees and shrubs are tangled and gnarled. The species here are a good representation of high-elevation Dolly Sods vegetation. Trees include the shaggy-barked yellow birch, black birch, red Maple (sugar maple usually does not grow here because the soil is too acid), serviceberry, fire or pin cherry, and mountain ash. Shrubs include rhododendron, mountain laurel, mountain azalea or pinkster, blueberry, huckleberry, elderberry, winterberry, long-stemmed holly, wild raisin, and minnie-bush. Wildflowers include trailing arbutus , which blooms in the spring; teaberry or wintergreen, which has bright red berries; fireweed, and ox-eye daisy. The bracken fern, which grows several feet tall, turns brown and dies back during winter. A conspicuous groundplant is reindeer moss. Actually a lichen, reindeer moss is light gray. When wet it has a spongy texture, and when dry it is brittle.

At the bog, there is a short boardwalk from which the visitor can observe bog plants and the surrounding area. This very unusual area is also called a glade or muskeg. (Muskeg is an Indian word meaning "trembling earth.") The bog usually is saturated with water and does indeed tremble if walked on. The slowly decaying mosses form peat that gives the water a brown tinge. Unlike similar-looking but more northern muskegs formed when a glacial lake filled in, this West Virginia mountain cranberry bog formed because of poor drainage. The open bog is characterized by mats of sphagnum moss, mounds of polytrichum or hair-cap moss, and couon grass, which is actually a sedge having cottony fruiting heads in the fall. The cranberry can be hard to see as it grows and intertwines with sphagnum moss. Sometimes the red berries help observers locate this small plant with its feathery appearance. In spring, cranberries have pink flowers. Another unusual species is the sundew plant which can be seen from the boardwalk. This tiny, insect-devouring plant cannot get sufficient nourishment from the nutrient-poor acid soil, and so traps insects on its sticky leaf blades to supplement its diet. Another plant is the low-growing and invasive dewberry, which has edible berries.

Evidence of plant succession is noticeable throughout the expanse of the bog. First, there are the mats of sphagnum moss where it is very wet, then the shrubs such as alders and chokeberry, and finally the climax red spruce. Eventually, this bog may fill in and become red spruce forest.

Dolly Sods Wilderness/Scenic Area & Trails



TRAIL	NAME	MILEAGE
508	Rohrbaugh Plains	3.5
510	Fisher Spring Run	2.3
511	Blackbird Knob	2.5
513	Big Stonecoal	4.3
514	Red Creek	6.2
517	South Prong	6.0
518	Boar's Nest	2.6
519	Flatrock Run	4.7
548	Roaring Plains	3.0
552	Little Stonecoal	1.5
553	Breathed Mountain	3.5
554	Rocky Point	2.2
558	Dunkenbarger	1.7
560	Wildlife	1.3
	TOTAL MILES	45.3

Red Creek and Fisher Spring Run Trails

The Red Creek Trail and Fisher Spring Run Trail merge to provide miles of wilderness hiking. Access to this trail network can be from the Dolly Sods Scenic Area (Trail #510) or from the lowest portion of the wilderness area behind Laneville Cabin.

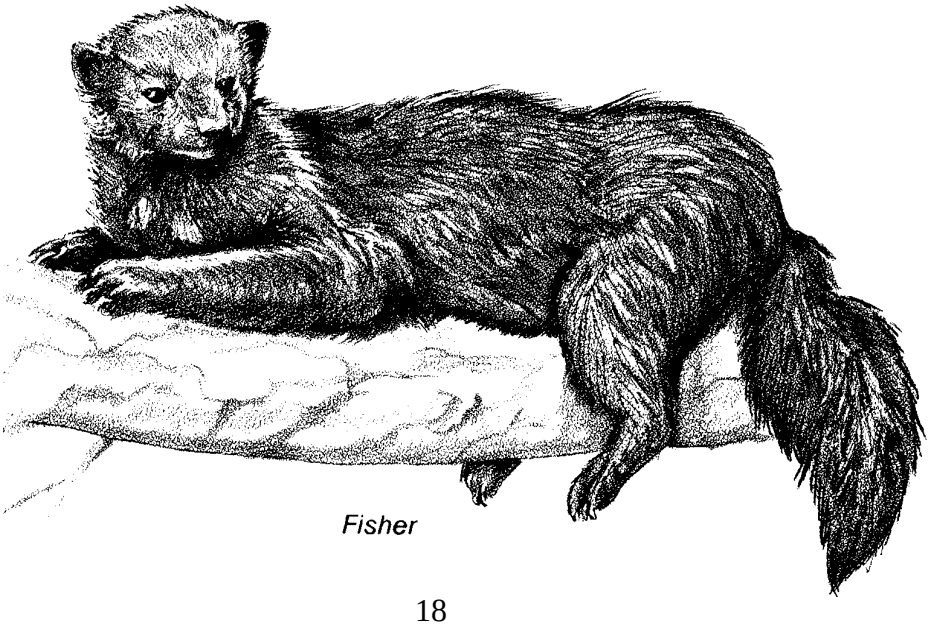
Laneville's elevation is some 2,000 feet lower than the scenic area's and there are more vegetational species than at the higher altitudes. Trees around Laneville include sugar maple, iron-wood, hemlock, red oak, yellow birch, cucumber magnolia, America beech, and black cherry. Shrubs include winterberry and witch hazel. Groundcovers include polypody fern, Christmas fern, and woodferns.

The trail ascends through several transition zones into the scenic area. It is possible to see deer, bear, fox, bobcat, squirrels, rabbits, and other wildlife. At the head of the trail the forest is northern hardwood with hemlock, yellow birch, rhododendron, red maple, American beech, black cherry, witch hazel, striped maple, and winterberry. Here the trees are relatively tall and the forest is quite open. The rocks are moss-covered with patches of hay-scented fern, and there is the impression of a primeval forest. Visitors with limited time might want to explore this trail by walking for a few minutes at the Red Creek location where the creek splashes over rocks and there are imposing cliffs, and then spend a few minutes at the top of the trail to notice changes in vegetation caused by the higher elevation and harsher climatic conditions.

Bear Rocks and Heath Area

The boulders at Bear Rocks project from the stony earth as if placed by the hands of some ancient race of neolithic people. The striking white rocks with their wind-sculpted shapes imbue Bear Rocks with an aura of mystery and strange beauty. Plants growing in this exposed environment have contorted branches and twisted shapes. Mountain ash with its writhing branches and fall red berries silhouetted against the pale rocks is an eerie sight. Polypody ferns and reindeer moss grow in the rock fissures. Bear or turkey oak with its small, leathery, green leaves twines round the rocks. Not very tree-like in appearance, bear oak is shrubby.

Some of the rocks "create" their own ecosystems. Erosion has carved cavities in the massive boulders, and some of the water-filled crevices contain a red alga similar to that found in snow in the Rocky Mountains.



Fisher

Heathland

The adjacent area west of Bear Rocks is known as heathiand. The soil is very acid and there are boggy wet areas. Plants growing here can tolerate acid soil conditions. These plants, including blueberries, huckleberries, rhododendrons, azaleas, cranberries, and trailing arbutus, are members of the heath family, so this type of area is often called heathland or heath barrens. Blueberries ripen in the fall and are excellent eating. In addition to blueberries and huckleberries, other shrubs are black chokeberry which has an astringent fruit, and one known as minnie-bush. Mountain azalea is spectacular in the spring with its pink flowers. Other azaleas including flame azalea grow here and their display can be beautiful in June and July.

The area stretching north from the heathiands is known as Dobbin Slashing, perhaps named for the Dobbins family. Not part of the Dolly Sods wilderness, this area is primarily a bog. Among the many interesting plants here are the velvetleaf blueberry, black huckleberry, goidthread, 3-toothed cinquefoil (a circum-polar plant), bog goldenrod, cranberry, stiff clubmoss, chokeberry, closed gentian, wild raisin, and Virginia St. John's-wort. The area known as Dobbin Slashing was at one time a red spruce forest, and in some places the stumps of the burned out red spruce protrude, blackened and ghostly looking in the boulder-strewn

Grass Bald

On the upland area back of Dobbin Slashing is a treeless area known as a grass bald. Why trees do not grow here is uncertain but it may be due to previous burning by Indians and/or climatic conditions. The grass that grows here has a whitish cast in the fall and is known as mountain oak grass or Allegheny fly-back. The grass is called Allegheny fly-back because of the way the lightweight stems "fly back" from the scythe in mowing.

Conclusion

The ecological relationships of the Dolly Sods area are complex. While standing on Bear Rocks and looking over the immense mountain vista, the visitor can ponder how the rocks were formed millions of years ago, how they affect present-day soils, how the soil and climate together affect the plants, and how vegetation and wildlife interact with each other.

But the most important ecological consideration is the role human activities have played and will play in shaping the landscape and use of Dolly Sods.

Black Bear

Your Checklist for Mammals, Plants and Birds of Dolly Sods

NOTE: These lists do not contain all species that could occur. The three categories listed – mammals, plants and birds – are guides to the variety and types of each that can be found in Dolly Sods.

Mammals

Common names in this list are those used in *Mammals of West Virginia, A Field Checklist*, published by the West Virginia Division of Natural Resources Nongame Wildlife Program.

OPOSSUMS
- ☐ Opossum

SHREWS
- ☐ Masked Shrew
- ☐ Smoky Shrew
- ☐ Least Shrew
- ☐ Short-tailed Shrew

MOLES
- ☐ Hairy-tailed Mole

BATS
- ☐ Little Brown Bat
- ☐ Eastern Pipistrelle
- ☐ Big Brown Bat

HARES AND RABBITS
- ☐ Showshoe Hare
- ☐ Eastern Cottontail
- ☐ New England Cottontail

BEAVERS
- ☐ Beaver

SQUIRRELS
- ☐ Eastern Chipmunk
- ☐ Woodchuck
- ☐ Eastern Gray Squirrel
- ☐ Fox Squirrel
- ☐ Red Squirrel
- ☐ Southern Flying Squirrel

MICE AND VOLES
- ☐ Deer Mouse
- ☐ White-footed Mouse
- ☐ Southern Red-backed Vole
- ☐ Meadow Vole
- ☐ Muskrat

FOXES
- ☐ Red Fox
- ☐ Gray Fox

JUMPING MICE
- ☐ Meadow Jumping Mouse
- ☐ Woodland Jumping Mouse

BEARS
- ☐ Black Bear

RACCOONS
- ☐ Raccoon

WEASELS
- ☐ Fisher
- ☐ Long-tailed Weasel
- ☐ Mink
- ☐ Striped Skunk

CATS
- ☐ Bobcat
- ☐ Mountain Lion (?)

DEER
- ☐ White-tailed Deer

Other Species:

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Plants

Common names of plants follow listings in *Flora of West Virginia*, by P. D. Strausbaugh and Earl Core. Plants are listed systematically as they occur in the *Flora*. Plant lists do not include all species of plants occurring in the Dolly Sods area but are guides to the variety and types that do occur.

NON-VASCULAR PLANTS

- ☐ Rock Tripe (lichen)
- ☐ Reindeer Moss (lichen)
- ☐ Sphagnum Moss
- ☐ Hair-cap Moss

FERNS AND FERN ALLIES
(Primitive Vascular Plants)

- ☐ Common Horsetail
- ☐ Shining Clubmoss
- ☐ Stiff Clubmoss
- ☐ Running Clubmoss
- ☐ Slender Groundpine
- ☐ Groundpine, Tree Clubmoss
- ☐ Rattlesnake Fern
- ☐ Cinnamon Fern
- ☐ Interrupted Fern
- ☐ Blunt-lobed Wodsia
- ☐ Brittle Fern
- ☐ Broad Beech Fern
- ☐ Marsh Fern
- ☐ New York Fern
- ☐ Crested Shield Fern
- ☐ Marginal Wood Fern
- ☐ Spinulose Wood Fern
- ☐ Intermediate Wood Fern
- ☐ Christmas Fern
- ☐ Hay-scented Fern
- ☐ Silvery Athyrium
- ☐ Southern Lady Fern
- ☐ Ebony Spleenwort
- ☐ Bracken
- ☐ Common Polypody

VASCULAR PLANTS

- ☐ Mountain Oat Grass
- ☐ Cottongrass
- ☐ White Beakrush
- ☐ Sedge sp.
- ☐ Common Rush
- ☐ Oceanorus
- ☐ Ramp
- ☐ Pink Lady's Slipper
- ☐ Nodding Ladies' Tresses
- ☐ Goldthread
- ☐ Bleeding Heart
- ☐ Pale Corydalis
- ☐ Sundew
- ☐ Three-toothed Cinquefoil
- ☐ White Wood Sorrel
- ☐ Jewelweed
- ☐ Marsh Blue Violet
- ☐ Fireweed
- ☐ Wild Sarsaparilla
- ☐ Dwarf Cornel
- ☐ Trailing Arbutus
- ☐ Teaberry
- ☐ Narrowleaf Gentian
- ☐ Indian Hemp
- ☐ Grass-leaved Aster
- ☐ Bog Goldenrod

SHRUBS

- ☐ Hazelnut
- ☐ Speckled Alder
- ☐ Prickly Gooseberry
- ☐ Ninebark
- ☐ Witch Hazel
- ☐ Black Chokeberry
- ☐ St. John's-wort
- ☐ Rhododendron
- ☐ Flame Azalea
- ☐ Rose Azalea
- ☐ Pinxter Flower
- ☐ Mountain Laurel
- ☐ Minnie-bush
- ☐ Squaw Huckleberry or Deerberry
- ☐ Velvetleaf Blueberry or Sourtop
- ☐ Wild Raisin
- ☐ Red Elderberry

SMALL TREES

- ☐ Hawthorn
- ☐ Bear Oak
- ☐ Mountainash
- ☐ Serviceberry
- ☐ Mountain Holly
- ☐ Winterberry
- ☐ Long-stemmed Holly
- ☐ Striped Maple
- ☐ Mountain Maple

TREES (deciduous)

- ☐ Bigtooth Aspen
- ☐ Quaking Aspen
- ☐ Black Birch
- ☐ Yellow Birch
- ☐ American Beech
- ☐ Chestnut Oak
- ☐ Northern Red Oak
- ☐ Cucumber Magnolia
- ☐ Black Cherry
- ☐ Red Maple
- ☐ Sugar Maple

CONIFERS

- ☐ Balsam Fir
- ☐ Hemlock
- ☐ Red Spruce
- ☐ Pitch Pine
- ☐ Red Pine
- ☐ White Pine

Other Species:

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Nesting Birds

This list is based on material in "Dolly Sods Breeding Bird Surveys," 1984, Ann Pyle, *The Redstart*, Wheeling, West Virginia. Birds are listed in the order they appear in *West Virginia Birds*, George A. Hall, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, 1983. Birds in this list occur in the summer from lower elevations at Laneville to higher elevations at Dolly Sods. An asterisk (*) indicates the bird has been recorded since 1980 on Dolly Sods' higher elevations.

- ☐ American Black Duck
- ☐ Mallard
- ☐ Turkey Vulture*
- ☐ Northern Harrier*
- ☐ Sharp-shinned Hawk*
- ☐ Cooper's Hawk
- ☐ Red-shouldered Hawk
- ☐ Broad-winged Hawk*
- ☐ Red Tailed Hawk*
- ☐ American Kestrel*
- ☐ Ruffed Grouse*
- ☐ Wild Turkey
- ☐ American Woodcock*
- ☐ Mourning Dove
- ☐ Screech Owl
- ☐ Great Horned Owl*
- ☐ Barred Owl*
- ☐ Northern Saw-whet Owl*
- ☐ Common Night Hawk*
- ☐ Whip-poor-will
- ☐ Chimney Swift
- ☐ Ruby-throated Hummingbird
- ☐ Belted Kingfisher
- ☐ Yellow-bellied Sapsucker*
- ☐ Downy Woodpecker*
- ☐ Hairy Woodpecker*
- ☐ Northern Flicker
- ☐ Pileated Woodpecker
- ☐ Eastern Wood-Pewee*
- ☐ Acadian Flycatcher
- ☐ Alder Flycatcher*
- ☐ Least Flycatcher
- ☐ Eastern Phoebe
- ☐ Great Crested Flycatcher*
- ☐ Eastern Kingbird
- ☐ Tree Swallow
- ☐ Rough-winged Swallow
- ☐ Barn Swallow*
- ☐ Blue Jay*
- ☐ American Crow
- ☐ Common Raven*
- ☐ Black-capped Chickadee*
- ☐ Tufted Titmouse*
- ☐ Red-breasted Nuthatch*
- ☐ White-breasted Nuthatch*
- ☐ House Wren*
- ☐ Winter Wren*
- ☐ Golden-crowned Kinglet*
- ☐ Blue-gray-gnatcatcher
- ☐ Eastern Bluebird*
- ☐ Veery*
- ☐ Hermit Thrush*
- ☐ Wood Thrush*
- ☐ American Robin*
- ☐ Gray Catbird*
- ☐ Brown Thrasher*
- ☐ Cedar Waxwing*
- ☐ Starling*
- ☐ Solitary Vireo*
- ☐ Yellow-throated Vireo
- ☐ Red-eyed Vireo*
- ☐ Golden-winged Warbler
- ☐ Northern Parula
- ☐ Yellow Warbler*
- ☐ Chestnut-sided Warbler*
- ☐ Magnolia Warbler*
- ☐ Black-throated Blue Warbler*
- ☐ Yellow-rumped Warbler*
- ☐ Black-throated Green Warbler*
- ☐ Prairie Warbler*
- ☐ Cerulean Warbler
- ☐ Black and White Warbler
- ☐ American Redstart
- ☐ Ovenbird*
- ☐ Northern Waterthrush*
- ☐ Louisiana Waterthrush
- ☐ Common Yellow-throat*
- ☐ Hooded Warbler*
- ☐ Canada Warbler*
- ☐ Yellow-breasted Chat
- ☐ Northern Cardinal
- ☐ Scarlet Tanager*
- ☐ Rose-breasted Grosbeak*
- ☐ Indigo Bunting*
- ☐ Rufous-sided Towhee*
- ☐ Chipping Sparrow
- ☐ Field Sparrow*
- ☐ Vesper Sparrow*
- ☐ Savannah Sparrow*
- ☐ Song Sparrow*
- ☐ Swamp Sparrow*
- ☐ Dark-eyed Junco*
- ☐ Bobolink
- ☐ Eastern Meadowlark
- ☐ Red-winged Blackbird*
- ☐ Common Grackle
- ☐ Brown-headed Cowbird*
- ☐ Northern Oriole
- ☐ Purple Finch*
- ☐ House Finch
- ☐ American Goldfinch*
- ☐ House Sparrow

Other Species:

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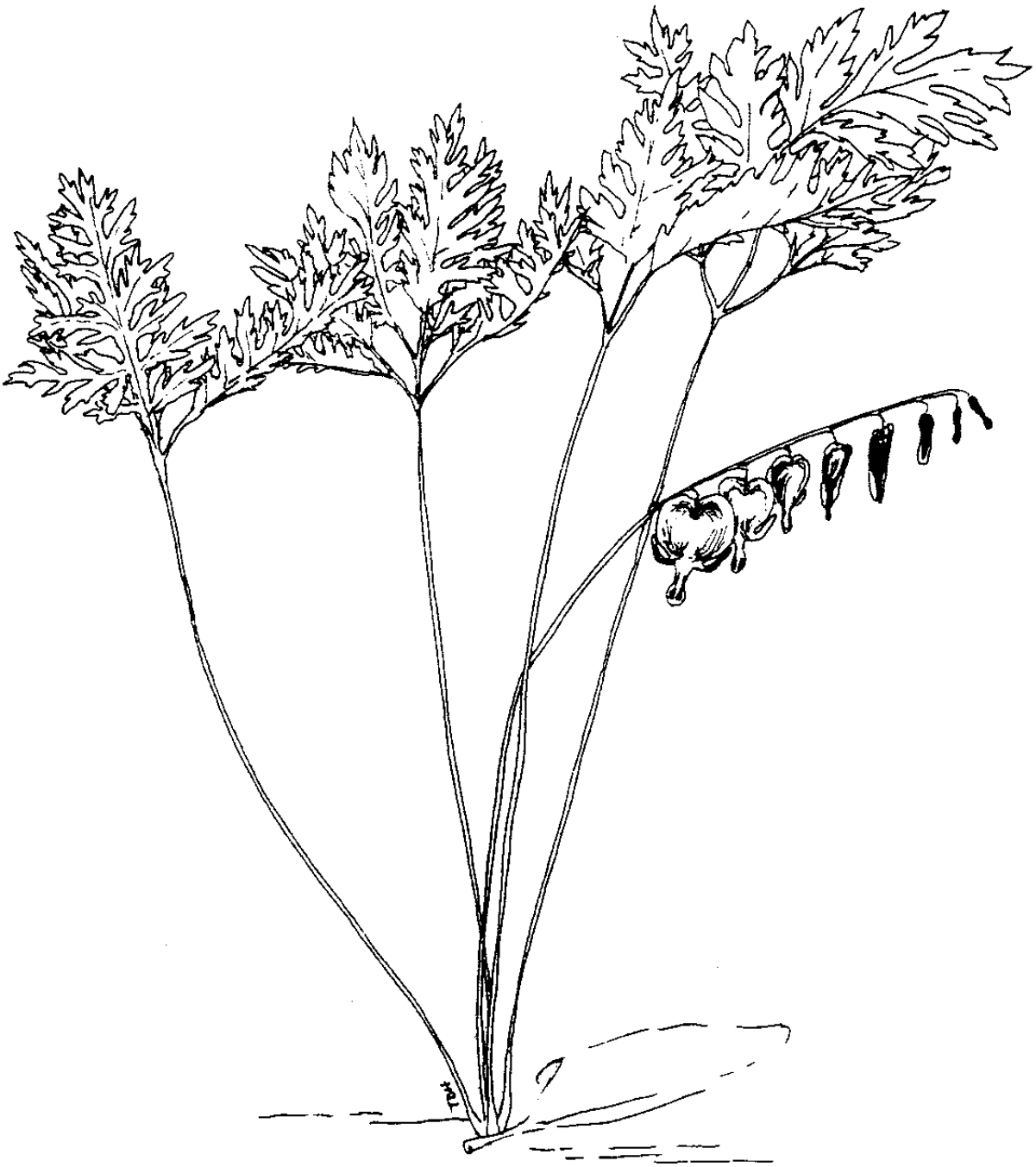
Cottongrass



Bleeding Heard