

July 31, 1940
TMIS 00113

Ray Burns

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

	1980 SAF	Acres	ha	1966 K	Acres	ha
	23	1644	665.3	97	2063	834.9
	25	19	7.7			
	60	400	161.9			
	28	50	20.2	94	50	20.2
TOTAL		2113	855.1		2113	855.1

Commercial
Forest Land
? acres

ESTABLISHMENT REPORT FOR
TIONESTA RESEARCH NATURAL AREA



Within the Allegheny National Forest
McKean County, Pennsylvania

June 12, 1940

REPORT RECOMMENDING THE ESTABLISHMENT OF THE TIONESTA
NATURAL AREA AND THE TIONESTA SCIENTIFIC AREA
ALLEGHENY NATIONAL FOREST

On November 23, 1934, the National Forest Reservation Commission approved the purchase of the surface rights on a tract of land on the headwaters of Tionesta Creek from the Central Pennsylvania Lumber Company. The purchase was completed July 23, 1936, and the area of 4,080 acres within the boundaries of Allegheny National Forest is now in Federal ownership.

Purchase of this tract, advocated by the Pennsylvania Forestry Association, was approved by the National Forest Reservation Commission after thorough consideration of the scientific and aesthetic value of the Tionesta tract and the need for preserving it, the last remaining large area of virgin forest in the middle Atlantic region. The Commission was convinced, after careful consideration of opposing opinions, that permanent preservation represented the highest public use.

In order that the public may enjoy the educational and inspirational qualities inherent in unmolested virgin forests without destroying the usefulness of the tract for scientific research, it is necessary that the area be given special designation and that appropriate plans of management be instituted.

Description of Tract

Location

This virgin area is located in Sheffield and Wetmore Townships, Warren and McKean Counties, Pennsylvania, within the boundaries of the Allegheny National Forest, as shown on the attached map^{1/}. Political subdivisions and the exact location of each unit are shown by attached base map^{2/} redrafted from acquisition surveys with the addition of drainage and culture. Tributaries of the South Branch of Tionesta Creek, a branch of the Allegheny River, drain the tract.

The tract of 4,080 acres outlined on the base map includes all of Lots 392, 411, 412, 413, 414, 430, 431, 432, and 433; and portions of Lots 372, 373, 391, 393, 415, 3759, 2445, and 2453. An area of 336 acres in parts of Lots 372, 373, and 393, which was cut over in 1934, completes the total area of 4,416 acres purchased in this tract. The tract is in one contiguous block surrounded by Government-owned land, with the exception of a west facing cutting edge between Lots 394 and 393 and adjacent privately owned land in Lots 390, 415, and Warrant 3759 on the east. The 50-acre tract in the northeast corner of Lot 391 has recently been approved for purchase.

Physical Conditions

The tract lies on the Allegheny Plateau within the beech-birch-maple-hemlock forest region, at elevations ranging from 1,500 feet in the stream valleys to 1,980 feet above sea-level on the ridges or plateau. The topographic map^{3/} shows it to consist of steep-sided, narrow, lower stream valleys cut into a plateau, with relatively shallow dissection at the heads of drainages.

Forest Description and Value

Timber values are indicated by the volume of merchantable hemlock and hardwoods present on the tract when cruised in 1932, as follows:

Species	Average Stand per acre, B. F.	Total Stand* M Ft., B. M.
Eastern hemlock	11,173	48,501
Beech	2,284	9,913
Sugar maple	403	1,750
Yellow and sweet birch	364	1,579
Black cherry	311	1,351
Red maple	236	1,026
White ash	104	453
Yellowpoplar, basswood	46	200
	14,921	64,773

* Scribner Decimal C Rule

Hemlock is the chief species, making up 72% of the merchantable volume on the tract as a whole. Beech is second in importance, and is the chief understorey species, reproducing both by seedlings and root suckers to hold its own with the longer-lived hemlock. The intolerant black cherry, yellowpoplar, basswood, and white ash owe their presence chiefly to local catastrophes, such as windthrow, insects, drought, etc., which have opened the dominant hemlock-beech canopy in the past and allowed reproduction of these rapid-growing species to become dominant.

While there are no recent burns and no barren, brush, grass, or cultivated areas on the tract, it is worthy of note that a severe windthrow, followed by fire, occurred about 65 years ago on the ridge between Cherry Run and the heads of Roek and the west branch of Fork Run. (See base map for exact location.) About 375 acres have reproduced to a stand of merchantable cordwood, chiefly red maple, black cherry, yellow birch, sugar maple and beech, with occasional scarred veterans which survived the wind and fire.

Logging of hemlock in 1934, and of hardwoods in 1935 and 1936, has been completed^{4/} on approximately 336 acres in Lots 372, 373, and 393. This adjacent clear-cut area is expected to reproduce to young growth, which will eventually protect the now exposed north boundary of the virgin forest.

The remainder of the tract, or approximately 3,700 acres, is forested with virgin timber of good quality. Studies by the Allegheny Forest Experiment Station show that hemlock on well-watered stream bottom sites is represented in all age classes from a few trees over 500 years of age to young reproduction a year or two old. Mature hemlock contain five or six 16-foot logs, of which one or two are surface clear; according to the acquisition examination, the average log run is six 16-foot logs per thousand board feet. The sugar maple and black cherry are of forest grown form and so are of excellent quality, while the beech and other species are of fair quality.

^{1/} Appendix: Map of Allegheny National Forest.
^{2/} Appendix: Base map of proposed natural and scenic areas designated East Tionesta virgin forest and adjacent second growth. 1935.
^{3/} Appendix: Topographic map of East Tionesta tract.
^{4/} The purchase agreement between the Forest Service and the Central Pennsylvania Lumber Company reserved to the latter the right to remove all forest products from approximately 336 acres at the northern end of the tract for a period ending three years after title to the tract passed to the United States. This three years' period was completed on July 23, 1939.

Reasons for Classification

1. Monesta tract is believed to be the largest single block of undisturbed virgin forest between the Great Smokies on the south and the Adirondacks on the north, and as such is an irreplaceable remnant of the original hemlock-beech forest of the Allegheny Plateau.

2. The tract was purchased for the specific purpose of preserving the forest in its natural state, a commitment thoroughly understood and agreed to by the Forest Service at the time the land was acquired.

Present occupancy residence and improvements

There are no permanent residences on the tract, the few buildings shown on the map being oil pump shanties with the exception of a camp owned by the Pennsylvania Gas Company in Lot 413, which is called the Fork Run Camp. During the hunting season this camp has been used by employees of the gas company as a hunting camp. It is also used as a base for work on company-owned gas wells and pipe lines. The tract is not adapted to settlement for any purpose.

Mineral Value

During the past 30 years a number of gas and oil wells have been developed at points shown on the attached base map. These wells are for the most part concentrated on the plateau between the Cherry Run and the Fork Run drainages and admittedly have damaged this portion of the tract from the point of view of its completely undisturbed character. At the present writing, one new well is being sunk in this large group. Approximately 98 wells are found on the tract, but it is important to note that about 45 of these are in portions designated as "young-growth" or old "windthrow" and so do not damage the best of the virgin forest. In areas these well openings and the usual pull lines for pumping, pipe lines, etc., cover a very small percentage of the total tract and do not debar the tract from serving the major scientific and educational uses to which it should be put. According to G. H. Ashley, State Geologist of Pennsylvania, the deeper sands, such as the Oriskany, do not seem to be very promising in this area for future gas and oil development.

Present Transportation Facilities

The general locality of the tract may be reached by automobile over Forest Service truck trail #33, extending southward from the town of Ludlow. The tract itself may be readily reached by foot from Forest Service truck trail #33, using the pipe line of the National Transit Company as a trail into Lot 391, or the cleared right-of-way, leaving truck trail #33 at a point near the line between Lots 374 and 375. Certain oil and gas lease roads from the vicinity of Brookston shown on the map are passable in dry weather.

Fire Control Situation

The tract is located immediately south of a 2,000 acre cutting, logged in 1934, which is classed as a highly inflammable fuel type. No further wood cutting operations for the removal of chemical wood are possible, except by truck haul, since the logging railroad steel has been removed. Employees of the oil and gas companies are very careful with fire and extremely cooperative in aiding in fire suppression. No major roads traverse this slashing and hence risks are low, except for lightning-caused fires.

As a precautionary measure, a fire line was constructed along the entire northern boundary between the virgin timber and cut-over land in Lots 373, 372, and 393, with CCC help in 1934-1935. Hemlock snags along this boundary were also removed. The tract is within 3 to 6 miles of the Sheffield fire tower in Lot 315 and thus has excellent detection service from this State-operated tower.

A transportation planning study for the Allegheny National Forest revealed that roads through this area are unnecessary to attain adequate hour control for the fuel types present.

The designation of the tract as a non-commodity forest will perpetuate the practically fire-proof character of this original forest type, and the danger of fire starting within the virgin portion of the area, despite the presence of fire risks, will be very low.

Value for Special Purpose Versus Value for Other Uses

Timber value to be obtained by salvage of the mature timber in this tract must be carefully weighed against the loss of those intangible values, dependent on the undisturbed nature of this forest, which may be realized through its dedication to scientific research and education as a non-commodity forest.

This forest has an intangible value for watershed protection as such, but a far greater value as an example of the normal or undisturbed soil, erosion, and streamflow conditions under a virgin native vegetation cover developed over a period of many centuries. From it the forester, soil scientist, erosion control expert, and student of the influence of forests on streamflow may draw conclusions of importance in the management of our second-growth stands for water conservation purposes. As with the other scientific values, this use is contingent on a preservation of the natural conditions in this entire tract, which is none too large for self-perpetuation of the forest and biotic environment.

As a practical forest management area, this tract is too small to serve as other than a minor part of a sustained yield unit.

Agricultural Value

The rocky and steep character of much of the area, its distance from markets, and short growing season all combine to make this type of land very low in agricultural value. None of the tract purchased has ever been farmed, and it is at least a mile from the farms in the valley at Brookston, Pennsylvania.

Grazing Value

In general the grazing of livestock is confined to fenced enclosures near the few farms in this locality. The forage-producing value of the area for cattle or other domestic stock is low. There has been no grazing use in the past and requests for such use have not been received by the Allegheny National Forest.

Value for Hydro-electric Power or Reservoir Sites

The drainage basins of the streams on this area are relatively small and could not supply sufficient water for hydro-electric power development or serve as reservoir sites. Small weirs for the measurement of streamflow from this virgin forest area are planned as part of the research program.

Wildlife Value

A survey listing the plants and animals to be found on this tract was made by Theodora K. Cope and Arthur S. Hawkins of Cornell University during part of June, July, and August, 1933^{5/}. This report illustrates the value of the undisturbed virgin forest as a source of information of use to the plant and animal ecologist. The area is valuable for the production of game and fur-bearing animals of benefit to the sportsman and trapper, but far more valuable are the facts it can furnish concerning the balance of wildlife species and their interrelations with each other and with their environment - facts directly applicable to the problems of the game and wildlife manager. The entire area should be preserved in its natural state as an environment within which animals as well as plants may pass through their life cycle undisturbed by man-caused catastrophes.

Recreational Value

Areas of virgin timber, representative of original forest conditions in any forest region, offer attractive recreational possibilities for public development. This area is potentially a valuable recreational asset to the Allegheny National Forest, and as such alone deserves adequate protection against possible spoilage of this value by unwise administration or excessive public use. The use to which such areas may be subjected by public demand is illustrated by the fact that the Cook State Forest Park, an area of virgin white pine on the Clarion River, was visited by 500,000 persons during the 1936 season^{6/}. In the metropolitan areas of seven large cities within a day's drive by automobile from the tract are 19 million people, many of whom are able to employ leisure or vacation time in visiting natural wonders. However, because of its relative isolation and the proposed simplicity of its recreational facilities, extremely heavy use is not anticipated.

Scientific and Educational Values Dominant

In view of the facts that the Tionesta tract area is the last large area of undisturbed forest of its kind, and that once disturbed by logging or intensive recreational use, its value as an example of natural plant and animal communities is forever destroyed, permanent reservation in its natural state emerges as the highest possible use. For only in such a tract can the forester study the true long time interactions among tree species, the relation of trees to lesser vegetation and to native animal life, the conditions under which virgin forests grow, reach maturity, decline and rejuvenate. Answers to thousands of perplexing forest management questions may remain obscure indefinitely without an opportunity to learn how these problems are met in the undisturbed forest. Foresters, as well as animal and plant ecologists, have long recognized the inestimable value of maintaining virgin areas as standards of comparison and objects for emulation by forest managers. To allow this last remaining example of virgin Allegheny hardwoods to become forever lost would be as serious to scientific endeavor and forest practice as the loss of a nation to world culture.

Public Sentiment

There is a strong local sentiment among the people of Sheffield, Pennsylvania, in favor of logging this tract in order to maintain the life

of the Central Pennsylvania Lumber Company mill for an additional two years. Citizens of Kane, Warren, and other nearby towns have given no concrete expression of opinion, but probably they sympathize with Sheffield. Of course, the closing of large sawmills due to final removal of all remaining timber has caused serious loss of income to many towns of the Plateau; Sheffield is unique only in being the last to face this inevitable adjustment. The general reaction toward non-commodity use of this forest is favorable throughout the rest of the State and in adjacent New York State. Influential groups, such as the Pennsylvania Forestry Association and the Parks Association, are strongly in favor of retaining this tract as an undisturbed example of primeval forest.

Recommended Management Policy and Administrative Requirements

To assure the protection and wise use of the unusual values existing in this area, policies for its conservative development and use are recommended and made a part of this report. Any plan must recognize the need for safeguarding the scientific, educational and inspirational values, the preservation of which was the basic justification for the expenditure of about \$700,000 of public funds to purchase it. At the same time, it must also recognize the public's inherent right to enjoy it. Because of the beauty and the popular appeal of virgin forest, considerable public use may be expected, provision for which must be made preferably in the form of the simplest facilities that will meet the need and at the same time cause a minimum disturbance of natural conditions. These facilities should be so designed and located that visitors to the area may enjoy the inspirational and recreational stimulus that the area has to offer, but at the same time use should be directed so that disturbance of sections dedicated to purely scientific pursuits will be minimized.

To accomplish these purposes, an entrance road shown on the map and the other simple but necessary facilities will be provided at the northern end of the tract. This point of entrance avoids the considerable disturbances brought about by intensive oil and gas developments along the ridge between Cherry Run and West Branch of Fork Run. The southern half will be reserved for scientific purposes. This does not necessarily mean that occasional visitors will be arbitrarily excluded from the southern portion, nor that scientific use will be barred from the northern half. Nevertheless, it appears to be good planning to recognize increasing public use and to provide for it in such a way that the scientific and educational values may be conserved by seeing to it that human disturbance of the area is kept to a minimum.

This plan is based on the principle of a division of the area between these two forms of use which will best serve to clarify the problems of administration, safeguard that portion dedicated to scientific research to be known as a Natural Area, and provide for the rights of the public to enjoy the educational and inspirational values of a large and representative tract to be designated a Scenic Area.

The recommended division of the area between these two forms of use is as shown on the attached base map. The area dedicated primarily to scientific purposes through minimized public use contains 2,113 acres; that dedicated primarily to public use contains 1,967 acres.

As provided in this plan, the administration of scientific and other use of the Natural Area shall be the responsibility of the Director of the Allegheny Forest Experiment Station, except that protection from fire and trespass will be

^{5/} Cope, T. M. and Hawkins, A. S. 1933. A preliminary survey of the flora and fauna of the East Tionesta virgin forest, Pennsylvania. Forest Leaves. 24:23-27.
^{6/} Peters, George. 1936. Ten years' progress in Cook Forest State Park. Service Letter Pennsylvania Department of Forests and Waters. Series 7, No. 33, December 31, 1936.

assumed by the Regional Forester. Administration, use, and development of the Scenic Area shall be the responsibility of the Regional Forester, Eastern Region. It is, however, agreed that the Regional Forester and the Director shall mutually agree on the desirability of any improvements or treatments to be made in either area, since both portions of the tract are interdependent and not separate biologic units.

That both the Natural and Scenic Areas may serve effectively the purposes of field laboratory for both animal and plant ecology and the enjoyment by the public of living examples of wildlife in their native haunts, the Forest Service will take up with the Pennsylvania Game Commission the possibilities of having the entire tract designated a special wildlife preserve in which all forms will be allowed to develop in accordance with natural biologic laws. However, it is recognized that the area is too small to allow a complete biologic balance to become established; hence, some degree of control may be necessary to prevent the development of excessive populations that might damage severely the vegetation to the detriment of all plant and animal life.

Use of the Natural Area

The Allegheny Forest Experiment Station will take definite steps to ensure the fullest practicable scientific use of this area consistent with its preservation as an example of undisturbed vegetation. Scientists, irrespective of their affiliations, will be encouraged to use the area, subject to such restrictions as the Director may prescribe to safeguard the values involved and ensure public benefit from the results. The presence of well developed second-growth as well as recently clear cut lands adjacent to the tract makes possible the study of contrasting conditions.

Research workers in any field shall be definitely restricted to the use of such techniques as will prevent permanent modification of existing conditions and will cause a minimum of temporary disturbance of either plant or animal life or their environment. No buildings, roads, telephone, or other improvements shall be constructed in or across the Natural Area, except as provided legally through the exercise of existing mineral rights. Low standard foot trails, other than the existing oil and gas lines, shall be permitted where necessary to the conduct of scientific research. Camping and use of fire on the area shall be allowed only upon permission from the Director.

The Allegheny Forest Experiment Station shall keep the Regional Forester informed as to plans and research in progress on the Natural Area.

Use of Scenic Area

Considerable disturbance of absolute naturalness has already occurred through the operations of oil and gas developments. However, the cleared rights-of-way of the pipe lines are usable as trails and, by and large, present an attractive appearance and are easily negotiated. It is planned that these shall form the basis of the trail system, thereby reducing the necessity for cutting or digging new trails.

Development calls for the construction of a stub road leading from truck trail #33 through handsome, 50-year old second growth into the edge of the virgin timber, with a parking space for 10-20 cars near the common corner of Lots 373, 374, 391, and 392. At this point the timber is rather scattered with considerable of it dead or dying and little sacrifice of old growth is necessary. From the parking space a short trail about 1/4 mile in length can be built on an easy gradient to drinking water beside the pipe line of the National Transit Company. The timber along this proposed trail and the pipe line is very fine. In order to provide sanitary facilities,

simple toilets will be constructed near the parking area and a few picnic tables, with either refuse cans or pits, will be provided at suitable locations. For the time being and until a better idea of public needs for additional facilities is obtained, no fire places will be built, or facilities for camping provided in this area.

In the event that public use grows to such an extent as to cause dying of trees, all picnicking inside the Scenic Area will be removed and a suitable development provided in the second-growth timber outside. It is not expected that parking facilities inside will be expanded beyond accommodations for 20 cars.

The planned location of the parking area and the short trail to water will make excellent samples of virgin conditions available to older persons and those not physically able to walk longer distances. No attempt at this time is being made to lay out the ultimate trail system over and above that provided by the pipelines.

It is probable that the trail system should provide for access into portions of Lots 372, 373, 393, and 412 not now easily reached from the pipelines. Suggested locations for future consideration, dependent upon use, are sketched on the map. "The Boulders", a unique rock formation of considerable interest, should be an objective for trampers.

The area will be carefully but unobtrusively signed, giving the public such directional and educational information as is appropriate.

The Allegheny National Forest will continue to protect the entire tract from fire and trespass as it has in the past. In the event of insect or tree disease outbreaks, the advice of the Bureau of Entomology and Plant Quarantine and of the Bureau of Plant Industry shall be sought and control measures necessary to protect both the Scenic and Natural Areas shall be under the technical direction of the above Bureaus concerned. Such control, if it involves cutting of timber or widespread use of poisons, shall be subject to approval by the Regional Forester and the Director.

Inspection

The Regional Forester and the Director will require that qualified representatives of each make at least two inspections of both Scenic and Natural Areas annually to determine the adequacy of existing facilities and whether the unique educational and scientific values are being jeopardized by over use or trespass.

Revision of Policy

Revisions of this policy may be made from time to time as needed to safeguard this area for the purposes for which it is set aside. Such revisions must be concurred in by the Regional Forester and Director and approved by the Chief Forester before they become operative.

Approved:

Regional Forester, Region 7

Director, Allegheny Forest Experiment Station

AN ORDER ESTABLISHING THE TIONESTA NATURAL
AREA AND THE TIONESTA SCENIC AREA
OUT OF CERTAIN LANDS WITHIN ALLEGHENY NATIONAL FOREST

By virtue of the authority vested in me by Regulations U-3 and U-4 of the Secretary of Agriculture, I do hereby designate:

(1) As the Tionesta Natural Area the following described lands in Allegheny National Forest, in order that said lands shall be dedicated to and used for scientific research and education.

All of Lots 430, 431, 432, and portions of Lots 414, 415, and Warrants 2445, 2453, 3759, totaling 2,113 acres, previously described and outlined on the attached map, comprising lands purchased by the Federal Government from the Central Pennsylvania Lumber Company.

Jurisdiction, occupancy and use will be governed by the respective provisions of Regulation U-4, the Manual instructions thereunder, and the report accompanying this order.

(2) As the Tionesta Scenic Area the following described lands in Allegheny National Forest, in order that said lands shall be dedicated to and used by the public for inspiration and education.

All of Lots 392, 411, 412, 413, 433, and parts of Lots 372, 373, 391, 393, and 414, totaling 1,967 acres, previously described and outlined on the attached map, comprising lands purchased by the Federal Government from the Central Pennsylvania Lumber Company.

Jurisdiction, occupancy and use will be governed by the respective provisions of Regulation U-3, the Manual instructions thereunder, and the report accompanying this order.

Signed this 31 day of July, 1940.

C. M. Stranger

Acting Chief, Forest Service

Original signed with letter of instruction

NATURAL AREA NOMINATION FORM

Instructions: Complete and forward to Committee along with a sketch type map of the area and a location map (highway map) indicating general location of proposed area. Information on past ownership and management, scientific or educational use, hydrologic features, rare plants or animals or other pertinent facts should be included. Please type. Photos, if available, will be welcomed.

Name of Proposed Natural Area: Tionesta Natural Area

Location: State: Pennsylvania County: Mckean Total Area: 2,113 Acres

Nearest Town and Distance: Kane, Pa. 8
Name Miles

Agency/Owner: USDA Forest Service

Administrative Unit: Allegheny National Forest
Natl. Forest, Natl. Park, Wildlife Refuge, State, Univ., etc.

Address: P.O. Box 847 Warren, PA 16365

Permanence Afforded How: U-4 (36 CFR 251.23)
Laws, Regulation, Will, Endowment, Letter of Agreement, etc.

Primary Forest Type:

SAF: SAF-23 Hemlock 1644 Acres
Type Number Type Name Type Area

Dominant Trees: D.B.H. _____ Hgt. _____ Age _____

Other Important Types or Vegetation:

Dominant Trees:		Name	D.B.H.	Hgt.	Age	Area
SAF Type, Number and Name:	<u>SAF 25</u>	<u>Sugar maple-beech</u>				<u>19</u>
		<u>yellow birch</u>				
	<u>SAF 60</u>	<u>Beech-sugar maple</u>				<u>400</u>
	<u>SAF 28</u>	<u>Black cherry-sugar maple</u>				<u>50</u>

Barren, Water, Buffer Zone, etc: none Acres
Area and Nature

Description of Vegetation and Other Distinguishing Characteristics: This together with the Tionesta Scenic Area, is the largest tract of virgin forest between North Carolina & Northern New York. It contains many no. plant and animal species that are uncommon at this latitude.

Elevation: 1,550 - 1,980 Feet Topography: steep
Range and Average Level, Rolling, Steep, etc.

Geology and Soils G-17, shale & sandstone
Alluvial, Volcanic, Moraine, Podsol, Serpentine, Etc.

Tionesta

Justification Briefly outline why this tract should be designed an SAF natural area:

In order that the public may enjoy the educational and inspirational qualities inherent in unmolested virgin forests without destroying the usefulness of the tract for scientific research, it is necessary that the area be given special designation and that appropriate plans of management be instituted.

Submitted by: Russell M. Burns Title: Forest Service RNA Coordinator Date: _____
Mailing Address: USDA Forest Service P.O. Box 2417
Washington, D.C. 20013

Approved: _____
Section Natural Area Chairman or
Natural Area Liaison Officer

Approved for Listing in Register of SAF Natural Areas: _____
Chairman, _____
Committee on Natural Areas Date

Committee on Natural Areas, Society of American Foresters,

5400 Grosvenor Lane, Washington, D.C. 20014

TO Dr. Russell Burns.
→ Timber Mgmt Research
W.O.

1

4/11/77

FROM John Kuhn; Land Mgmt Planning
R-9 Milwaukee

SUBJECT

4060-

Tconista Establishment Report
your ref. 3/7/77.

MESSAGE (WRITE CONCISE MESSAGE. SIGN AND FORWARD PARTS 1 AND 2 TO ADDRESSEE. RETAIN PART 3)

Russ -

In your letter of March 4 you indicated you had no Establishment Report for Tconista RNA. The only record we have of its establishment is the attached Report dated June 12-40. As far as we know this is it.

In addition we have a "Statement of Mgmt.;" approved 10/14/57. Hope this sheds some light on Tconista.

John Kuhn

SIGNATURE

REPLY (USE THIS SPACE FOR REPLY. SIGN AND DATE. RETURN PART 2 TO SENDER. RETAIN PART 1)

RECEIVED
APR 8 1977
TIMBER MANAGEMENT RESEARCH

SIGNATURE

DATE

UNITED STATES GOVERNMENT

Department of Agriculture—Forest Service --NEFES,
6816 Market St., Upper Darby, Pa. 19082

Memorandum

~~REB~~ - ~~for action~~
on records

TO : Chief
Attn: Carl E. Ostrom

File No. 4060 (4100)

FROM : W. T. Doolittle, Asst. Director
Timber and Watershed Management Research

Date: December 16, 1968

SUBJECT:

Your reference:

In your report of the 1968 TMR General Functional Inspection, you suggested that we obtain acreage estimates by SAF forest types for the Tionesta Natural Area in the Allegheny National Forest. We have now located this data from the survey made by the ANF at the time of land acquisition. After checking and updating of the type names, we feel that the following information should be added to both the Forest Service and the Society of American Foresters natural area listings.

TIONESTA NATURAL AREA

<u>Type</u> ^{1/}		<u>Acreage</u>
23	Hemlock	1644
25	Sugar maple-beech-yellow birch	19
60	Beech-sugar maple	400
28	Black cherry-sugar maple	50
	Total	2113

^{1/} From SAF Forest Cover Types of North America, 1954.

W. T. Doolittle

UNITED STATES GOVERNMENT

Department of Agriculture—Forest Service
Warren, Pa. 16365**Memorandum**

TO : R. D. Lane, Director

File No. 4000 7060
~~4000~~

FROM : T. J. Grisez, Project Leader

Date: May 10, 1968

SUBJECT: Research (Natural Areas)

Your reference:

This is in reply to Marquis's telephone request for information for Carl Ostrom on areas by forest types in the Tionesta Natural Area.

Apparently no survey of forest types was ever made in the Tionesta Natural and Scenic Area. According to a timber cruise in 1932, 75 percent of the sawtimber volume was hemlock and 15 percent was beech. I don't know whether this was the entire tract, the old growth timber in it, or all the then uncut old growth. Anyhow, hemlock is well distributed through most of the natural area, so this is probably why it was all classified hemlock type for the S.A.F. list of natural areas.

I examined the aerial photos and roughly delineated the larger areas where hemlock is absent, or nearly so. There are five areas from 12 to 55 acres in size in the natural area. They total about 146 acres.

The scenic area has some large areas of younger stands that are mostly hardwoods, as well as some old-growth hardwoods. These hardwood types total about 930 acres.

These hardwood forest types may be any of several defined by the Society of American Foresters, including No. 25, sugar maple-beech, yellow birch; 27, sugar maple; 28, black cherry-sugar maple; 29, black cherry; or 60, beech-sugar maple. From my recollection of several stands I have been in, I would guess that the black cherry-sugar maple type exceeds any other hardwood type in area, at least in the natural area. Numbers 27 and 29 would probably account for most of the remainder.

The total area is 4,131 acres. Of this, 2,018 acres is in the scenic area, and 2113 is in the natural area.

cc: Wm. Kickbusch

Ted Grisez

STATEMENT

of

MANAGEMENT POLICY AND ADMINISTRATIVE DIRECTION GOVERNING THE
TIONESTA NATURAL AREA AND THE TIONESTA SCENIC AREA

Approved

10-14-57

Joseph W. Margine
Director, N. E. Station

Approved

10/14/57

Samuel H. [Signature]
Regional Forester, R-7

MANAGEMENT POLICY AND ADMINISTRATIVE DIRECTION GOVERNING THE
TIONESTA NATURAL AREA AND THE TIONESTA SCENIC AREA

Introduction

This statement supercedes the "Report Recommending the Establishment of the Tionesta Natural Area and the Tionesta Scenic Area--Allegheny National Forest" dated June 12, 1940 signed by R. M. Evans, Regional Forester and Hardy L. Shirley, Director, and approved by C. M. Cranger, Acting Chief on July 31, 1940 dealing with the administration and use of the Tionesta Natural Area and the Tionesta Scenic Area. It becomes effective upon approval by the Regional Forester, Eastern Region and the Director of the Northeastern Station and simultaneously with the Regional Forester's order modifying the scenic area under the authority delegated to him under Regulation 4-3. The modifying order to the scenic area adds/approximately 51 acres of virgin forest land situated in the northeast corner of lot 391, Allegheny National Forest.

General Policy Direction

The Tionesta Natural Area and the Tionesta Scenic Area as described on the attached map has been set aside to assure protection and wise use of the unique values existing in these areas. Policies for conservative development and use are hereby established. Their purpose is to safeguard the scientific research, educational, recreational and inspirational values of the areas for studious use and enjoyment of the natural environment by the public. To accomplish these purposes an entrance road is provided to the scenic area. Provision for simple facilities designed to minimize adverse public use impacts on the scenic area and to further safeguard the natural area are proposed. It is further recognized that activities within either area may have an effect upon the other. To prevent adverse impacts a general plan of development and use of both areas and revisions of the plan will be prepared and approved in advance by the Director of the Northeastern Station and The Regional Forester.

Administration of the Natural Area

The Northeastern Forest Experiment Station is fully responsible for the administration and scientific use of the natural area and will prescribe conditions of use and the safeguards to perpetuate the values inherent in the natural area. Protection of the natural area from fire and from timber trespass will be provided by the Allegheny National Forest. The Regional Forester will be kept informed of activities within the Natural Area.

Management of the Scenic Area

The Regional Forester is responsible for the development administration and protection of the scenic area. Road, trail, and public use facilities including signs will be designed to enhance scenic values, permit public use with minimum adverse impact on the scenic area. To the extent practical, public use facilities will be located adjacent to and outside of the designated area. The Northeastern Station may be called upon for technical advice as necessary and will be kept informed of developmental activities within the scenic area.

Publicizing and reporting on the Areas

Publications of a general public interest nature will be the responsibility of the Regional Forester in collaboration with the Director of the Northeastern Station. Scientific publications will be the responsibility of the Director in collaboration with the Regional Forester.

Revision of Policy

Policy and administrative guidelines needed to further develop, use, protect and perpetuate these areas will be jointly approved by the Regional Forester and the Director.

Technical and Supporting Data

Technical and supporting data of the Scenic Area and the Natural Area are included in the appendix.

APPENDIX

On November 23, 1934, the National Forest Reservation Commission approved the purchase of the surface rights on a tract of land on the headwaters of Tionesta Creek from the Central Pennsylvania Lumber Company. The purchase was completed July 23, 1936, and an area of 4,080 acres within the boundaries of the Allegheny National Forest was acquired (excluding 336 acres not now within the tract). In consequence of the modified order there has since been an area of 51 acres added to the tract. This consists of virgin forest land situated in the northeast corner of Lot 391. The total area within the boundaries of the tract is now 4,131 acres.

Original purchase of the tract was advocated by the Pennsylvania Forestry Association and approved by the National Forest Reservation Commission after thorough consideration of the scientific and aesthetic value of the Tionesta tract and the need for preserving the tract; the last remaining large area of virgin forest in the Middle Atlantic region.

Location

This virgin timber area is located in Sheffield and Wetmore Townships, Warren and McKean Counties, Pennsylvania, within the boundaries of the Allegheny National Forest as shown on the attached map. Political subdivisions and the exact location of each unit are shown on the attached base map revised and redrafted from acquisition surveys with the addition of drainage and culture. Tributaries of the South Branch of Tionesta Creek, a branch of the Allegheny River, drain the tract.

The tract of 4,131 acres outlined on the base map includes all of Lots 392, 411, 412, 413, 414, 430, 431, 432 and 433; and portions of Lots 372, 373, 391, 393, 415, 3759, 2455 and 2453. An area of 336 acres in parts of Lots 372, 373, 393, which was cut over in 1934, completes the total area in the original purchase. However, the latter acreage is not included within the natural and scenic area. The tract is in one contiguous block surrounded by government-owned land with the exception of privately owned land in Lots 390 and 415, and part of Warrant 3759 on the east.

Physical Conditions

The tract lies on the Allegheny plateau within the beech, birch, maple, hemlock forest type at elevations ranging from 1,500 feet in the stream valleys to 1,980 feet above sea level on the ridges or plateau. The topographic map shows it to consist of steep sided, narrow lower stream valleys cut into a plateau with relatively shallow dissection at the heads of drainages.

Forest Description and Timber Volumes

A cruise of the tract at the time of the initial acquisition in 1932 indicated the following volume of merchantable hemlock and hardwood timber:

<u>Species</u>	<u>Average Stand per acre, B. F.</u>	<u>Total Stand* M Ft., B. M.</u>
Eastern Hemlock	11,173	48,501
Beech	2,284	9,913
Sugar Maple	403	1,750
Yellow and Sweet Birch	364	1,579
Black Cherry	311	1,351
Red Maple	236	1,026
White Ash	104	453
Yellow Poplar, Basswood	46	200
	14,921	64,773

*Scribner Decimal C Rule

Volume estimates are not available for the 51 acre tract in Lot 391 which is being added to the natural and scenic area. Even if these estimates were available it would not be significant to add up to date cruise estimates to timber estimates dating back to 1932. General knowledge of the area indicates there has been a significant loss in old growth hemlock particularly, which has not been replaced by additions of second growth reaching merchantable sizes. No estimates of net losses due to wind and other mortality are available.

Despite losses in hemlock, this species remains the most important, both in number of stems and volume, although relative percentages have certainly declined materially since the time of the initial cruise. Beech remains second in importance and is the chief understory species, reproducing both by seedings and root suckers to hold its own with the longer lived hemlock. The intolerant black cherry, yellow poplar, basswood and white ash owe their presence chiefly to local catastrophes such as windthrow, insects, drought, etc., which have opened up the dominant hemlock-beech canopy in the past and allowed reproduction of these rapid-growing species to become dominant.

While there are no recent burns and no barren, brush, grass or cultivated areas on the tract, it is worthy of note that a severe windthrow, followed by fire, occurred about 1875 on the ridge between Cherry Run and the heads of Rock Run and the west branch of Fork Run. About 375 acres have reproduced to a stand of merchantable second growth hardwood, chiefly red maple, black cherry, yellow birch, sugar maple and beech, with occasional scarred veterans which survived the wind and fire but have now practically disappeared from the stand.

Approximately 3700 acres of the tract is forested with typical old growth virgin timber. Studies by the Allegheny Forest Experiment Station show that hemlock on well watered stream bottom sites is represented in all age classes from a few trees over 500 years of age to young reproduction a year or two old. Mature hemlock contain five or six 16 foot logs of which one or two are surface clear; according to the acquisition examination the average log run is six 16 foot logs per thousand board feet. The sugar maple and black cherry are of forest grown form and so are of excellent quality, while the beech and other species are of fair quality.

Any description of the existing stand is not complete without reference to the marked impact which a deer herd out of balance with the food supply is having on this area. Over most of the tract, hemlock in seedling and sapling sizes is not adequately represented to maintain the composition which is now found in the overstory. The effect of the deer browsing will inevitably show itself in the composition of the future stand in the tract. Certainly it was well that at the time of establishment the tract was not closed to hunting. Had this occurred, the above described situation would have been far more serious even than it is today.

Present Occupancy, Residence and Improvements

There are no permanent residences on the tract. The few buildings shown on the map are old pump shanties which are rapidly falling into disuse with a reduction in the oil potential of the sub-surface. The tract is not adapted to settlement for any purpose. However, probably of more serious concern is the continued use which is

being made of the area in connection with the exercise of the subsurface rights. With legal authority to do so, lease holders are travelling into and out of both the natural and scenic areas in motor vehicles as a common practice. In the face of these activities, it is difficult to maintain the fiction of non-disturbance and also to prevent similar use by others who travel the rutted roads in jeeps and other vehicles for purposes of hunting or other recreation.

Present Transportation Facilities

The general locality of the tract may be reached by automobile over Forest Service Truck Trail No. 33 extending southward from the town of Ludlow and thence to the west through the small community of JoJo to Kane. This road is being reconstructed and graveled to acceptable standards in 1957. The tract itself may be readily reached by a foot trail from the loop road which extends from Truck Trail No. 33.

Fire Control Situation

In the present stage of use and the condition of the timber type excessive fire hazards and risks do not presently exist. However, with continuing increase in use which is anticipated for the area, attention to fire prevention and increased fire suppression activities will be needed. The tract is within a short distance of the Sheffield Fire Tower and is for the most part within the seen area from that tower.

**NATIONAL AREAS
Tionesta**

79
Reg. Off.
June 12, 1946

**REPORT RECOMMENDING THE ESTABLISHMENT OF THE TIONESTA
NATURAL AREA AND THE TIONESTA SCENIC AREA.**

ALLEGHENY NATIONAL FOREST

On November 23, 1934, the National Forest Reservation Commission approved the purchase of the surface rights on a tract of land on the headwaters of Tionesta Creek from the Central Pennsylvania Lumber Company. The purchase was completed July 23, 1936, and the area of 4,080 acres within the boundaries of Allegheny National Forest is now in Federal ownership. *Add 517 - add 1946*

Purchase of this tract, advocated by the Pennsylvania Forestry Association, was approved by the National Forest Reservation Commission after thorough consideration of the scientific and aesthetic value of the Tionesta tract and the need for preserving it, the last remaining large area of virgin forest in the middle Atlantic region. The Commission was convinced, after careful consideration of opposing opinions, that permanent preservation represented the highest public use.

In order that the public may enjoy the educational and inspirational qualities inherent in uncollected virgin forests without destroying the usefulness of the tract for scientific research, it is necessary that the area be given special designation and that appropriate plans of management be instituted.

Description of Tract

Location

Revised
This tract area is located in Sheffield and Wetmore Townships, Warren and McKean Counties, Pennsylvania, within the boundaries of the Allegheny National Forest, as shown on the attached map 1/. Political subdivisions and the exact location of each unit are shown by attached base map 2/ *Revised* redrafted from acquisition surveys with the addition of drainage and culture. Tributaries of the South Branch of Tionesta Creek, a branch of the Allegheny River, drain the tract.

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The tract of ^{4 30}4,080 acres outlined on the base map includes all of Lots 392, 411, 412, 413, 414, 430, 431, 432, and 433; and portions of Lots 372, 373, 391, 393, 415, 3759, 2445, and 2453. An area of 336 acres in parts of Lots 372, 373, and 393, which was cut-over in 1934, completes the total area of ^{4 166}4,416 acres purchased in this tract. The tract is in one contiguous block surrounded by Government-owned land, with the exception of a west facing cutting edge between Lots 394 and 395 and adjacent privately owned land in Lots 390, 415, and Warrant 3759 on the east. [The 50-acre tract in the northeast corner of Lot 391 has recently been approved for purchase.]

Physical Conditions

The tract lies on the Allegheny Plateau within the beech-birch-

- 1/ Appendix: Map of Allegheny National Forest.
Map prepared by
- 2/ Appendix: Base map of proposed/natural and scenic areas designated East Tionesta virgin forest and adjacent second growth. 1935.

maple-hemlock forest region, at elevations ranging from 1,500 feet in the stream valleys to 1,900 feet above sea-level on the ridges or plateaus. The topographic map ^{8.5.37} 3/ shows it to consist of steep-sided, narrow, lower stream valleys cut into a plateau, with relatively shallow dissection at the heads of drainages.

Forest Description and Value

Timber values are indicated by the volume of merchantable hemlock and hardwoods present on the tract when cruised in 1932, as follows:

Species	Average Stand per acre, B. F.	Total Stand* M Ft., B. M.
Eastern hemlock	11,173	48,501
Beech	2,284	9,913
Sugar maple	403	1,750
Yellow and sweet birch	364	1,579
Black cherry	311	1,351
Red maple	236	1,026
White ash	104	453
Yellow poplar, basswood	46	200
	14,921	64,773

*Scribner Decimal C Rule

3/ Appendix: Topographic map of East Tienesta tract.

Revised

Hemlock is the chief species, making up 72% of the merchantable volume on the tract as a whole. Beech is second in importance, and is the chief understorey species, reproducing both by seedlings and root suckers to hold its own with the longer-lived hemlock. The intolerant black cherry, yellow poplar, basswood, and white ash owe their presence chiefly to local catastrophes, such as windthrow, insects, drought, etc., which have opened the dominant hemlock-beech canopy in the past and allowed reproduction of these rapid-growing species to become dominant.

While there are no recent burns and no barren, brush, grass, or cultivated areas on the tract, it is worthy of note that a severe windthrow, followed by fire, occurred about 65 years ago on the ridge between Cherry Run and the heads of Rock and the west branch of Fork Runs. (See base map for exact location). About 375 acres have reproduced to a stand of merchantable cordwood, chiefly red maple, black cherry, yellow birch, sugar maple and beech, with occasional scarred veterans which survived the wind and fire.

Logging of hemlock in 1934, and of hardwoods in 1935 and 1936, has been completed ^{4/} on approximately 336 acres in Lots 372, 373, and 393. This adjacent clear-cut area is expected to reproduce to young growth, which will eventually protect the now exposed north boundary of the virgin forest.

^{4/} The purchase agreement between the Forest Service and the Central Pennsylvania Lumber Company reserved to the latter the right to remove all forest products from approximately 336 acres at the northern end of the tract for a period ending three years after title to the tract passed to the United States. This three years' period was completed on July 23, 1939.

The remainder of the tract, or approximately 3,700 acres, is forested with virgin timber of good quality. Studies by the Allegheny Forest Experiment Station show that hemlock on well-watered stream bottom sites is represented in all age classes from a few trees over 500 years of age to young reproduction a year or two old. Mature hemlock contain five or six 16-foot logs, of which one or two are surface clear; according to the acquisition examination, the average log run is six 16-foot logs per thousand board feet. The sugar maple and black cherry are of forest grown form and so are of excellent quality, while the beech and other species are of fair quality.

Reasons for Classification

1. Fincesta tract is believed to be the largest single block of undisturbed virgin forest between the Great Smokies on the south and the Adirondacks on the north, and as such is an irreplaceable remnant of the original hemlock-beech forest of the Allegheny Plateau.

2. The tract was purchased for the specific purpose of preserving the forest in its natural state, a commitment thoroughly understood and agreed to by the Forest Service at the time the land was acquired.

Present occupancy, residence and improvements

There are no permanent residences on the tract, the few buildings shown on the map being oil pump shanties with the exception of a camp owned by the Pennsylvania Gas Company in Lot 413, which is

called the Fork Run Camp. During the hunting season this camp has been used by employees of the gas company as a hunting camp. It is also used as a base for work on company-owned gas wells and pipe lines. The tract is not adapted to settlement for any purpose.

Mineral Value

Since 1910
During the past 30 years a number of gas and oil wells have been developed at points shown on the attached base map. These wells are for the most part concentrated on the plateau between the Cherry Run and the Fork Run drainages and admittedly have damaged this portion of the tract from the point of view of its completely undisturbed character. At the present writing, one new well is being sunk in this large group. Approximately 98 wells are found on the tract, but it is important to note that about 45 of these are in portions designated as "young-growth" or old "windthrow" and so do not damage the best of the virgin forest. In area these well openings and the usual pull lines for pumping, pipe lines, etc., cover a very small percentage of the total tract and do not debar the tract from serving the major scientific and educational uses to which it should be put. According to G. H. Ashley, State Geologist of Pennsylvania, the deeper sands, such as the Oriskany, do not seem to be very promising in this area for future gas and oil development.

Present Transportation Facilities

The general locality of the tract may be reached by automobile over Forest Service truck trail #33, extending southward from the town of Ludlow. The tract itself may be readily reached by foot

from Forest Service truck trail #33, using the pipe line of the National Transit Company as a trail into Lot 391, or the cleared right-of-way, leaving truck trail #33 at a point near the line between Lots 374 and 375. Certain oil and gas lease roads from the vicinity of Brookston shown on the map are passable in dry weather.

Fire Control Situation

The tract is located immediately south of a 2,000 acre cutting, logged in 1934, which is classed as a highly inflammable fuel type. No further wood cutting operations for the removal of chemical wood are possible, except by truck haul, since the logging railroad steel has been removed. Employees of the oil and gas companies are very careful with fire and extremely cooperative in aiding in fire suppression. No major roads traverse this slashing and hence risks are low, except for lightning-caused fires.

As a precautionary measure, a fire line was constructed along the entire northern boundary between the virgin timber and cut-over land in Lots 373, 372, and 393, with CCC help in 1934-1935. Hemlock snags along this boundary were also removed. The tract is within 3 to 6 miles of the Sheffield fire tower in Lot 315 and thus has excellent detection service from this State-operated tower.

A transportation planning study for the Allegheny National Forest revealed that roads through this area are unnecessary to attain adequate hour control for the fuel types present.

The designation of the tract as a non-commodity forest will perpetuate the practically fire-proof character of this original forest type, and the danger of fire starting within the virgin portion of the area, despite the presence of fire risks, will be very low.

Value for Special Purpose Versus Value for Other Uses

Timber value to be obtained by salvage of the mature timber in this tract must be carefully weighed against the loss of those intangible values, dependent on the undisturbed nature of this forest, which may be realized through its dedication to scientific research and education as a non-commodity forest.

This forest has an intangible value for watershed protection as such, but a far greater value as an example of the normal or undisturbed soil, erosion, and streamflow conditions under a virgin native vegetation cover developed over a period of many centuries. From it the forester, soil scientist, erosion control expert, and student of the influence of forests on streamflow may draw conclusions of importance in the management of our second-growth stands for water conservation purposes. As with the other scientific values, this use is contingent on a preservation of the natural conditions in this entire tract, which is none too large for self-perpetuation of the forest and biotic environment.

As a practical forest management area, this tract is too small to serve as other than a minor part of a sustained yield unit.

Agricultural Value

The rocky and steep character of much of the area, its distance from markets, and short growing season all combine to make this type of land very low in agricultural value. None of the tract purchased has ever been farmed, and it is at least a mile from the farms in the valley at Brockton, Pennsylvania.

Grazing Value

In general the grazing of livestock is confined to fenced enclosures near the few farms in this locality. The forage producing value of the area for cattle or other domestic stock is low. There has been no grazing use in the past and requests for such use have not been received by the Allegheny National Forest.

Value for Hydro-electric Power or Reservoir Sites

The drainage basins of the streams on this area are relatively small and could not supply sufficient water for hydro-electric power development or serve as reservoir sites. Small weirs for the measurement of streamflow from this virgin forest area are planned as part of the research program.

Wildlife Value

A survey listing the plants and animals to be found on this tract was made by Theodora M. Cope and Arthur S. Hawkins of Cornell University during part of June, July, and August, 1933. ^{5/} This

^{5/} Cope, T. M. and Hawkins, A. S. 1933. A preliminary survey of the flora and fauna of the East Tionesta virgin forest, Pennsylvania. Forest Leaves. 24:23-27.

support illustrating the value of the undisturbed virgin forest as a source of information of use to the plant and animal ecologist. The area is valuable for the production of game and fur-bearing animals of benefit to the sportsman and trapper, but far more valuable are the facts it can furnish concerning the balance of wildlife species and their interrelations with each other and with their environment - facts directly applicable to the problems of the game and wildlife manager. The entire area should be preserved in its natural state as an environment within which animals as well as plants may pass through their life cycle undisturbed by man-caused catastrophes.

Recreational Value

Areas of virgin timber, representative of original forest conditions in any forest region, offer attractive recreational possibilities for public development. This area is potentially a valuable recreational asset to the Allegheny National Forest, and as such alone deserves adequate protection against possible spoilage of this value by unwise administration or excessive public use. The use to which such areas may be subjected by public demand is illustrated by the fact that the Cook State Forest Park, an area of virgin white pine on the Clarion River, was visited by 500,000 persons during the 1936 season. ^{6/} In the metropolitan areas of seven large

^{6/} Peters, George. 1936. Ten years' progress in Cook Forest State Park. Service Letter Pennsylvania Department of Forests and Waters. Series 7, No. 53, December 31, 1936.

sitting within a day's drive by automobile from the tract are 19 million people, many of whom are able to employ leisure or vacation time in visiting natural wonders. However, because of its relative isolation and the proposed simplicity of its recreational facilities, extremely heavy use is not anticipated.

Scientific and Educational Values Dominant

In view of the facts that the Fionesta tract area is the last large area of undisturbed forest of its kind, and that once disturbed by logging or intensive recreational use, its value as an example of natural plant and animal communities is forever destroyed, permanent preservation in its natural state emerges as the highest possible use. { For only in such a tract can the forester study the true long time interactions among tree species, the relation of trees to lesser vegetation and to native animal life, the conditions under which virgin forests grow, reach maturity, decline and rejuvenate. Answers to thousands of perplexing forest management questions may remain obscure indefinitely without an opportunity to learn how these problems are met in the undisturbed forest. Foresters, as well as animal and plant ecologists, have long recognized the inestimable value of maintaining virgin areas as standards of comparison and objects for emulation by forest managers. } To allow this last remaining example of virgin Allegheny hardwoods to become forever lost would be as serious to scientific endeavor and forest practice as the loss of a nation to world culture.

Public Sentiment

[There is a strong local sentiment among the people of Sheffield, Pennsylvania, in favor of logging this tract in order to maintain the life of the Central Pennsylvania Lumber Company mill for an additional two years. Citizens of Kane, Warren, and other nearby towns have given no concrete expression of opinion, but probably they sympathize with Sheffield. Of course, the closing of large sawmills due to final removal of all remaining timber has caused serious loss of income to many towns of the Plateau; Sheffield is unique only in being the last to face this inevitable adjustment. The general reaction toward non-commodity use of this forest is favorable throughout the rest of the State and in adjacent New York State. Influential groups, such as the Pennsylvania Forestry Association and the Parks Association, are strongly in favor of retaining this tract as an undisturbed example of primeval forest.]

Recommended Management Policy and Administrative Requirements

To assure the protection and wise use of the ^{UNIQUE} unusual values existing in this area, policies for its conservative development and use are ^{hereby established} recommended and made a part of this report. ^{It's purpose is to} [any plan must recognize the need for] safeguarding the scientific, educational and inspirational values, the preservation of which was the basic justification for the expenditure of about \$700,000 of public funds ^{to purchase it.} [At the same time,] it must also recognize the public's inherent right to enjoy it. Because of the beauty and the

popular appeal of virgin forest, considerable public use [may be
must be provided for
expected, provision for which must be made] preferably in the form
of the simplest facilities that will meet the need and at the same
time cause a minimum disturbance of natural conditions. These
facilities should be so designed and located that visitors to the
area may enjoy the inspirational and recreational stimulus that the
area has to offer, but at the same time use should be directed so
that disturbance of sections dedicated to purely scientific pursuits
will be minimized.

To accomplish these purposes, an entrance road shown on the
map and the other simple but necessary facilities will be provided
at the northern end of the tract. This point of entrance avoids
the considerable disturbances brought about by intensive oil and gas
developments along the ridge between Cherry Run and West Branch of
Park Run. The southern half will be reserved for scientific pur-
poses. This does not necessarily mean that occasional visitors will
be arbitrarily excluded from the southern portion, nor that scientific
use will be barred from the northern half. Nevertheless, it appears
to be good planning to recognize increasing public use and to provide
for it in such a way that the scientific and educational values may
be conserved by seeing to it that human disturbance of the area is
kept to a minimum.

This plan is based on the principle of a division of the area
between these two forms of use which will best serve to clarify the
problems of administration, safeguard that portion dedicated to

scientific research to be known as a Natural Area, and provide for the rights of the public to enjoy the educational and inspirational values of a large and representative tract to be designated a Scenic Area.

The recommended division of the area between these two forms of use is as shown on the attached base map. The area dedicated primarily to scientific purposes through minimized public use contains 2,113 acres; that dedicated primarily to public use contains 1,967 acres.

As provided in this plan, the administration of scientific and other use of the Natural Area shall be the responsibility of the Director of the Allegheny Forest Experiment Station, except that protection from fire and trespass will be assumed by the Regional Forester. Administration, use, and development of the Scenic Area shall be the responsibility of the Regional Forester, Eastern Region. It is, however, agreed that the Regional Forester and the Director shall mutually agree on the desirability of any improvements or treatments to be made in either area, since both portions of the tract are interdependent and not separate biologic units.

That both the Natural and Scenic Areas may serve effectively the purposes of field laboratory for both animal and plant ecology and the enjoyment by the public of living examples of wildlife in their native haunts, the Forest Service will take up with the Pennsylvania Game Commission the possibilities of having the entire tract designated a special wildlife preserve in which all forms will be

allowed to develop in accordance with natural biologic laws. However, it is recognized that the area is too small to allow a complete biologic balance to become established; hence, some degree of control may be necessary to prevent the development of excessive populations that might damage severely the vegetation to the detriment of all plant and animal life.

Use of the Natural Area

The Allegheny Forest Experiment Station will take definite steps to ensure the fullest practicable scientific use of this area consistent with its preservation as an example of undisturbed vegetation. Scientists, irrespective of their affiliations, will be encouraged to use the area, subject to such restrictions as the Director may prescribe to safeguard the values involved and ensure public benefit from the results. The presence of well developed second-growth as well as recently clear cut lands adjacent to the tract makes possible the study of contrasting conditions.

Research workers in any field shall be definitely restricted to the use of such techniques as will prevent permanent modification of existing conditions and will cause a minimum of temporary disturbance of either plant or animal life or their environment. No buildings, roads, telephones, or other improvements shall be constructed in or across the Natural Area, except as provided legally through the exercise of existing mineral rights. Low standard foot trails, other than the existing oil and gas lines, shall be permitted where necessary to the conduct of scientific research. Camping and

use of fire on the area shall be allowed only upon permission from the Director.

The Allegheny Forest Experiment Station shall keep the Regional Forester informed as to plans and research in progress on the Natural Area.

Use of Scenic Area

Considerable disturbance of absolute naturalness has already occurred through the operations of oil and gas developments. However, the cleared rights-of-way of the pipe lines are usable as trails and, by and large, present an attractive appearance and are easily negotiated. It is planned that these shall form the basis of the trail system, thereby reducing the necessity for cutting or digging new trails.

Development calls for the construction of a stub road leading from truck trail #33 through handsome, 50-year old second growth into the edge of the virgin timber, with a parking space for 10-20 cars near the common corner of Lots 373, 374, 391, and 392. At this point the timber is rather scattered with considerable of it dead or dying and little sacrifice of old growth is necessary. From the parking space a short trail about 1/4 mile in length can be built on an easy gradient to drinking water beside the pipe line of the National Transit Company. The timber along this proposed trail and the pipe line is very fine. In order to provide sanitary facilities, simple toilets will be constructed near the parking

area and a few picnic tables, with either refuse cans or pits, will be provided at suitable locations. For the time being and until a better idea of public needs for additional facilities is obtained, no fire places will be built, or facilities for camping provided in this area.

In the event that public use grows to such an extent as to cause dying of trees, all picnicking inside the Scenic Area will be removed and a suitable development provided in the second-growth timber outside. It is not expected that parking facilities inside will be expanded beyond accommodations for 20 cars.

The planned location of the parking area and the short trail to water will make excellent samples of virgin conditions available to older persons and those not physically able to walk longer distances. No attempt at this time is being made to lay out the ultimate trail system over and above that provided by the pipelines.

It is probable that the trail system should provide for access into portions of Lots 372, 373, 393, and 412 not now easily reached from the pipelines. Suggested locations for future consideration, dependent upon use, are sketched on the map. "The Boulders", a unique rock formation of considerable interest, should be an objective for trampers.

The area will be carefully but unobtrusively signed, giving the public such directional and educational information as is appropriate.

The Allegheny National Forest will continue to protect the entire tract from fire and trespass as it has in the past. In the event of insect or tree disease outbreaks, the advice of the Bureau of Entomology and Plant Quarantine and of the Bureau of Plant Industry shall be sought and control measures necessary to protect both the Scenic and Natural Areas shall be under the technical direction of the above Bureaus concerned. Such control, if it involves cutting of timber or widespread use of poisons, shall be subject to approval by the Regional Forester and the Director.

Inspection

The Regional Forester and the Director will require that qualified representatives of each make at least two inspections of both Scenic and Natural Areas annually to determine the adequacy of existing facilities and whether the unique educational and scientific values are being jeopardized by over use or trespass.

Revision of Policy

Revisions of this policy may be made from time to time as needed to safeguard this area for the purposes for which it is set aside. Such revisions must be concurred in by the Regional Forester and Director and approved by the Chief Forester before they become operative.

Approved:

B. M. Evans, Regional Forester, Region 7

Hardy R. Shirley, Director, Allegheny Forest Experiment Station

**AN ORDER ESTABLISHING THE TIONESTA NATURAL
AREA AND THE TIONESTA SCENIC AREA
OUT OF CERTAIN LANDS WITHIN ALLEGHENY NATIONAL FOREST**

By virtue of the authority vested in me by Regulations U-3 and U-4 of the Secretary of Agriculture, I do hereby designate:

(1) As the Tionesta Natural Area the following described lands in Allegheny National Forest, in order that said lands shall be dedicated to and used for scientific research and education.

All of Lots 430, 431, 432, and portions of Lots 414, 415, and Warrants 2445, 2453, 3759, totalling 2,113 acres, previously described and outlined on the attached map, comprising lands purchased by the Federal Government from the Central Pennsylvania Lumber Company.

Jurisdiction, occupancy and use will be governed by the respective provisions of Regulation U-4, the Manual instructions thereunder, and the report accompanying this order.

(2) As the Tionesta Scenic Area the following described lands in Allegheny National Forest, in order that said lands shall be dedicated to and used by the public for inspiration and education.

All of Lots 392, 411, 412, 413, 433, and parts of Lots 372, 373, 391, 393, and 414, totalling 1,967 acres, previously described and outlined on the attached map comprising lands purchased by the Federal Government from the Central Pennsylvania Lumber Company.

Regulation, occupancy and use will be governed by the respective provisions of Regulation U-3, the Manual instructions thereunder, and the report accompanying this order.

Signed this 31 day of July, 1940.

151 C. M. Granger
Acting Chief, Forest Service



**Commodity Use of Virgin Hemlock
in East Tionesta**



**Hemlock About 380 Years Old,
On An Upper Slope**



Virgin Grown Beech



All-Aged Hemlock on Lower Slope



The Boulders, Scenic Area



Dense Stand of Hemlock in
Fork Run, Natural Area

INTERNATIONAL BIOLOGICAL PROGRAMME
SECTION CT: CONSERVATION OF TERRESTRIAL BIOLOGICAL COMMUNITIES

CHECK SHEET (Mark VII) FOR SURVEY OF IBP AREAS*
To be completed with reference to the GUIDE TO THE CHECK SHEET

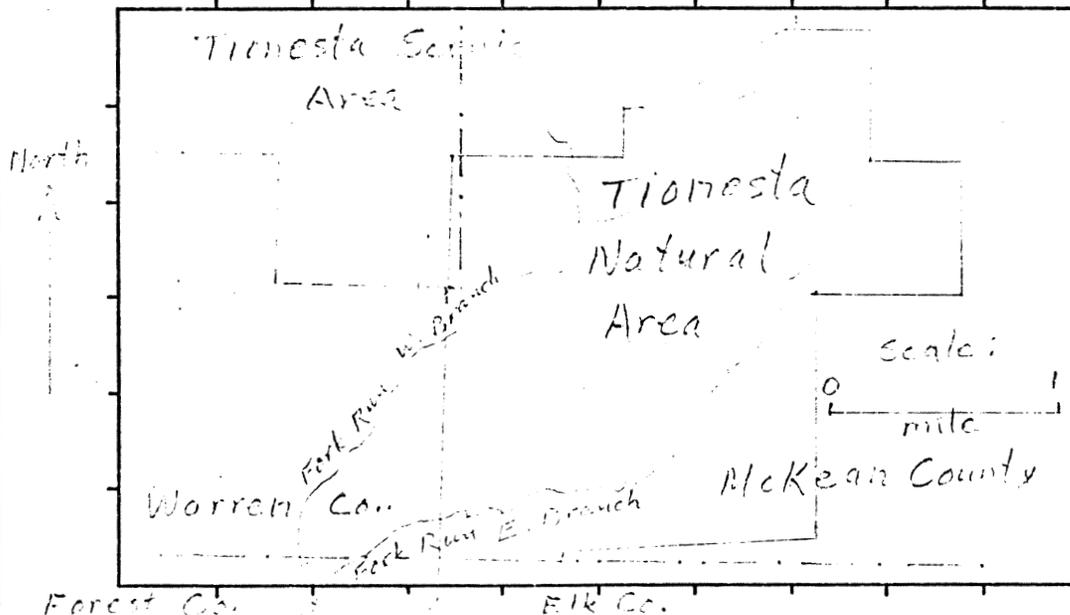
Serial Number

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For Data Centre Use only

1. 1. Name of surveyor *Ted J. Griseo*
2. Address of surveyor *Forestry Sciences Laboratory*
- *Box 928*
- *Warren, Pa. 16365*
3. Check Sheet completed (a) on site (b) from records
4. Date Check Sheet completed *9/16/69*

2. 1. Name of IBP Area *Tionesta Natural Area*
2. Name of IBP Subdivision (or serial letter)
3. Map of IBP Area* showing boundaries attached? Yes No
4. Sketch map of IBP Area*. Please mark direction of north, the scale and grid numbers where applicable.



* For "IBP Area", read IBP Area and/or IBP Subdivision.

3. Location of IBP Area*

1. Latitude 41° 37' N/S Longitude 78° 57' E/W
 2. Country U.S.A.
 State or Province Pennsylvania County McKean
 (State or Province County Warren*)
 * insignificant fraction of the area

4. Administration

National 1. Official category Natural Area
 2. Address of administration Northeastern Forest Experiment Station
U.S.D.A. Forest Service
6816 Market Street
Upper Darby, Pa.

International Class

3.	Included in U.N. List	Rejected from U.N. List	Area with formal conservation status	No formal cons. status
	(A)	(B)	(C) ✓	(D)

5. Characteristics of IBP Area*

1. Surface area (state units of measurement) 2113 acres
 2. Altitude (state units of measurement) Maximum 4500 feet 1925
 Minimum 1500 feet

6. Climate

Nearest climatological station :

1. Name Kane, Pa.
 2. Climatological station on IBP Area*? Yes No ✓
 3. If (2) not, distance from edge of IBP Area* (state units) 8 miles
 4. Direction from IBP Area* ENE
 5. Additional data sheet attached? Yes No ✓

See Kauffman, N.M., Climates of the states - Pennsylvania. U.S. Dept. of Commerce Weather Bur. Climates

7. Vegetation and Soil

1 Vegetation

Community Reference Number	Vegetation Code					Plant communities (give usual name using full Latin names of a species where applicable)	Area (state units)
	Primary Structural Group	Class	Group	Formation	Sub-Formation		
						Forest types as defined in Forest cover types of North America. Society of Am. Foresters, 1954.	Acres
1	1	A	1	7		Hemlock (<i>Tsuga canadensis</i>)	1644
2						This community has a strong component of beech and may be classed 1A/2	
2.3	1	A	2	1		Sugar maple - beech - yellow birch	19
4						(<i>Acer saccharum</i> - <i>Fagus grandifolia</i> - <i>Betula alleghaniensis</i>)	
5							
3.6	1	A	2	1		Black cherry - sugar maple	50
7						(<i>Prunus serotina</i> - <i>Acer saccharum</i>)	
4.8	1	A	2	1	e	Beech - sugar maple	400
9						(<i>Fagus grandifolia</i> - <i>Acer saccharum</i>)	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

7.
(cont.)

2

Soil

Community Reference Number	Soil type	Other notes
1		
2		the soils in this region are non-glaciated, mostly residual, derived from acid sandstone and shale.
3		the major soil types in adjacent, formerly virgin forest are Cockport silt loam, Lactonia stony loam, and DeKalb stony silt loam. All three types supported
4		hemlock-beech forest and a study showed no
5		statistical difference between average basal areas,
6		species composition between any two of the three
7		soil types.
8		
9		Soil categories F ₁ , F ₂ , and P ₂ probably cover
10		all of the soil in the natural area and would
11		be intimately mixed in the plant communities.
12		The deciduous forest areas may tend to have more
13		of the well drained soils, but this has not
14		been investigated.
15		
16		
17		
18		
19		
20		

9.

Landscape

1. General Landscape (give brief description) *a plateau dissected by broad stream valleys*

2. Relief Type

	Flat	Undulating (0)-200 m.	Hilly 200-1000 m.	Mountainous > 1000 m.	%
Sharply dissected					
Gently dissected		50			
Incised					
Skeletonised					
%	50 ±	50 ±			100%

3. Special landscape features (list)
None

10.

Coastline of IBP Area* *None*

1. Protected bays and/or inlets Many Few None

2. Substratum. % of coast

Rock	Boulder Beach	Shingle Beach	Sand Beach	Shell Beach	Mud	Coral	Ice
<input type="checkbox"/>							

3. Physiography. % of coast

Cliffed	Sloping	Flat
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Special Coastal Features (list)

5. Tide. Maximum range (state units of measurement)

6. Total length of coastline :

Less than 1 km. 1-10 km. Above 10 km.

11. Freshwater within IBP Area*

1.

	Permanent	Intermittent
General		
Standing		rare
Running	many	many

2. Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps		one		
Ponds				
Lakes				

3. Running Water

	Permanent	Intermittent
Springs, cold	many	?
Springs, hot	none	
Streams	many	many?
Rivers	none	

4. Special freshwater features *None*

.....

12. Salt and Brackish Water within IBP Area* *None*

Salt Lakes	<input type="checkbox"/>	Lagoon	<input type="checkbox"/>	<input type="checkbox"/>
Estuaries	<input type="checkbox"/>	Salt pools	<input type="checkbox"/>	<input type="checkbox"/>

13. Adjacent Water Bodies (not within IBP Area*) *None*

1. Fresh Lake River Stream

2. Salt and Brackish

Estuary	Salt lake	Salt pool	Lagoon	Ocean		

14. Outstanding Floral and Faunal Features

1. None
2. Fauna

	Species diversity	Abundance of individuals	Superabundance of individuals	Rare species	Threatened/Relict species	Spp. of biogeographical interest	Exceptional Associations	Breeding or Nesting Populations	Migrating Populations	Wintering Populations		
Mammalia				✓								
Aves						✓						
Reptilia												
Amphibia												
Pisces												
Insecta												

3. Names of main threatened, endemic, relict and rare species

Lynx rufus (present status unknown)

.....

.....

.....

.....

.....

.....

.....

4. Flora

	Species diversity	Abundance of particular species	Rare species	Threatened/relict species	Spp. of biogeographical interest	Exceptional associations	Outstanding specimens					
Angiospermae :												
trees							✓					
shrubs												
herbs												
grass												
Gymnospermae												
Pteridophyta												
Bryophyta												
Lichens and Algae												

5. Names of main threatened, endemic, relict and rare species

.....

15. Exceptional Interest of IBP Area*

This, together with the Timoneta Scenic Area, is the largest tract of virgin forest between North Carolina and northern New York (Adirondacks). It contains many northern plant and animal species that are uncommon at this latitude.

.....

16. Significant Human Impact

1. General : None in entire IBP Area*
 None in part of IBP Area* ✓ (oil drilling)
 Impact on entire IBP Area* ✓ (predator control)

2. Particular

	Past impact	Present impact	Trend			
			Increasing	Decreasing	No change	No information
Cultivation						
Drainage						
Other soil disturbance		✓	✓			
Grazing						
Selective flora disturbance						
Logging						
Plantation						
Hunting						
Removal of predators	✓	✓			✓	
Pesticides						
Introductions — plants						
Introductions — animals						
Fire						
Permanent habitation						
Recreation and tourism						
Research						
oil drilling		✓	✓			
Gas pipeline		✓			✓	

3. Additional details on each type of impact attached?

Yes No

17.

Conservation Status

	Protection			Utilisation			Conservation Management			Permitted Research		
	none	partial	total	none	controlled	uncontrolled	none	to alter status	to maintain status	experimental	observational	prohibited
Flora		✓			✓		✓			✓		
Fauna		✓			✓				✓	✓		
Non-living	✓			✓			✓			✓		

18.

References

1. List major biological/geographical references for the IBP Area.

Sheet attached? Yes No

2. List main maps available for the IBP Area.

List attached? Yes No

3. Aerial photographs for the IBP Area available?

For whole area For part of area None

19.

Other Relevant Information

1/ Hunting is permitted

2/ Experimental research on a small scale is permitted; each case to be decided separately

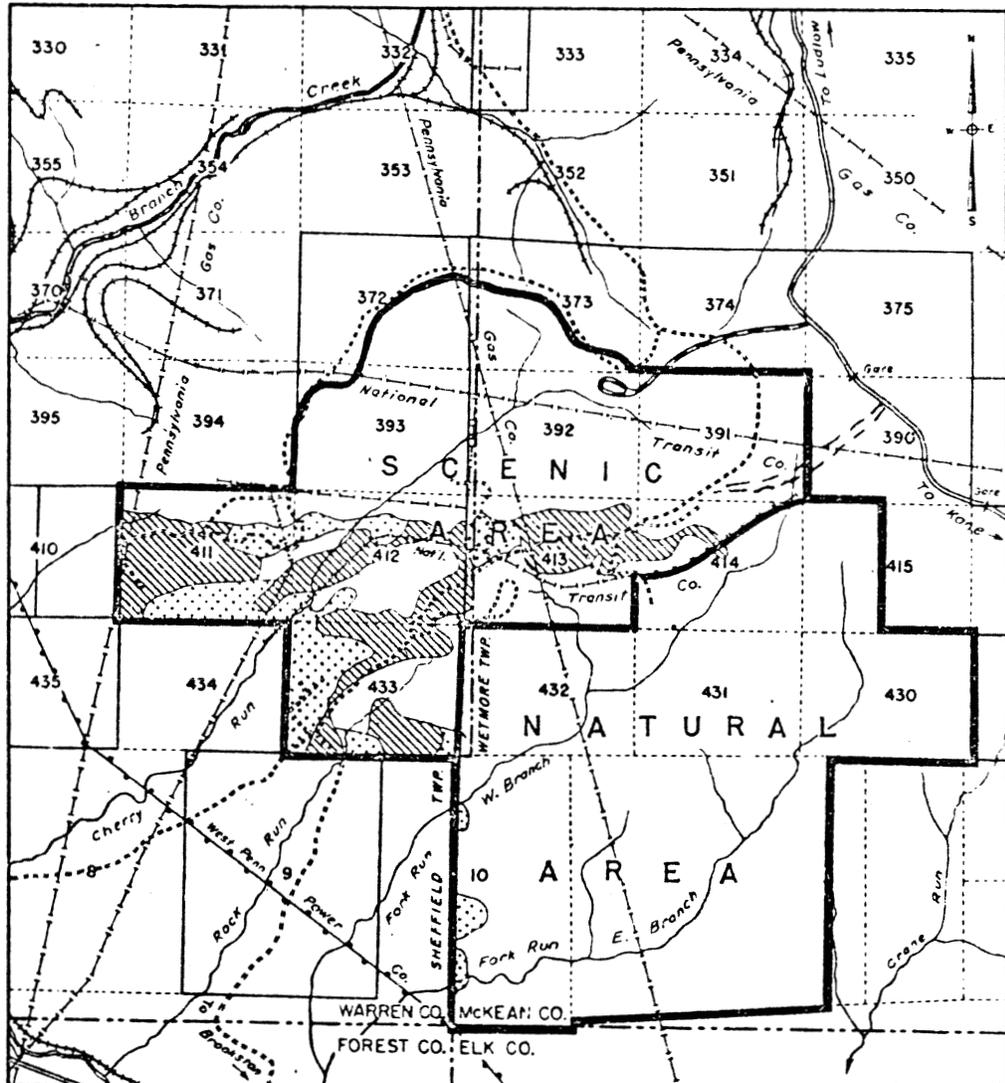
Signed Ted J. G. [Signature]
(Surveyor)

TIONESTA NATURAL AND SCENIC AREAS

ALLEGHENY NATIONAL FOREST

PENNSYLVANIA

1940



- | | | |
|--|-----------------------------------|---------------------------------|
| ----- Lot Line | — Government Owned Land | — Proposed Entrance Road |
| — Boundary of Natural and Scenic Areas | ▨ Old Windthrow | == Finished Road |
| ▤ Young Growth | ▩ Virgin Timber (within boundary) | ==== Oil Lease or Logging Roads |
| | | — Transmission Line |
| | | — Pipe Line |
| | | — Abandoned Logging R.R. |

REFERENCES ON THE TIONESTA SCENIC AND NATURAL AREAS

- Hough, A. F.
1933. Virgin forest in Pennsylvania yields research results. Forest Worker 9(2):11.
- Cope, Theodora M., and Hawkins, Arthur S.
1934. A preliminary survey of the flora and fauna of the East Tionesta virgin forest, Pennsylvania (Pa.) Forest Leaves 24(2-4):23-27.
- Cope, Theodora Morris
1936. Observations on the vertebrate ecology of some Pennsylvania virgin forests. Thesis for Ph.D. at Cornell Univ., Ithaca, N.Y.
- Hough, A. F.
1936. The dying of hemlock and other species on the Allegheny National Forest. U. S. Forest Serv. Allegheny Forest Exp. Sta. Tech. Note 9, 2pp.
- Hough, A. F.
1936. A climax forest community on East Tionesta Creek in northwestern Pennsylvania. Ecology 17:9-28.
- Hough, A. F.
1936. Height growth of hemlock and hardwood seedlings in a virgin stand on East Tionesta Creek. U. S. Forest Serv. Allegheny Forest Exp. Sta. Tech. Note 12, 2 pp.
- Hough, A. F.
1940. Tionesta Forest formally set aside. Am. Forests 46:565.
- Hough, A. F.
1941. Natural area established in northwestern Pennsylvania virgin forest. Ecology 22:85-86.
- Hough, A. F.
1942. Soils in a virgin hemlock-beech forest on the northern Allegheny Plateau. Soil Science 54:335-341.
- Hough, A. F.
1943. Soil factors and stand history in a virgin forest valley on the northern Allegheny Plateau. Soil Sci. 56:19-28.
- Hough, A. F., and Forbes, R. D.
1943. The ecology and silvics of forests in the high plateaus of Pennsylvania. Ecological Monographs 13:299-320.

Meyer, H. Arthur

1943. The structure and growth of virgin beech-birch-maple-hemlock forests in northern Pennsylvania. J. Agric. Res. 67: 465-484, illus.

U.S.D.A., Forest Service

1956. The Tionesta Natural and Scenic Areas in the Allegheny National Forest. U.S.D.A. Forest Serv., 22 pp.

Hough, Ashbel F.

1965. A twenty-year record of understory vegetation change in a virgin Pennsylvania forest. Ecology 46:370-373.

16. Significant Human Impact

"Other soil disturbance"--This includes road building and site clearing for oil drilling and extraction.

"Hunting" occurs but has a positive impact. It helps, but does not fully, offset "predator control".

"Oil drilling"--The beginning date is unknown, but the activity increased about four years ago.

"Gas pipeline"--A pipeline, built about 1910 and widened in 1947, crosses the area. Replacement or enlargement of the line is always a threat.

"Recreation and tourism"--There is some recreational travel by four-wheel drive vehicles and motor bikes, but this is a result of oil extraction roads and pipelines. More effort is being made to stop it.

NATURAL AREA INFORMATION FORM

1. Name of Natural Area Tionesta Natural Area
2. Administering Agency U. S. Forest Service 7/31/40
3. Supervising Field Unit Allegheny National Forest
4. State and County Pennsylvania, McKean County
5. Latitude and Longitude 41° 37' N; 78° 55' W
(This information will not be given to the general public)
6. Primary type on areas SAF-23, 2, 113 Acres
(112 1/2)
7. Other important types represented on area:
 - 7a. Botanic The 2,113 acres includes small but undetermined areas of SAF 25, 29, and 29
 - 7b. Zoologic Z-17, white-tailed deer, black bear, bobcat
Z-16, wild turkey, selected woodcock
Z-13, grouse
 - 7c. Geologic G-17, Complex of shale and sandstone, strata of Mississippi and Pennsylvania ages; non-glacial;
 - 7d. Aquatic #12 - about 5 miles (branches of Fork River)
8. Acreage 2,113 Acres
9. Elevation and Topography Max. 1,980'; Min. 1,550'; Steep sided, narrow lower stream valleys cut into plateau with shallow dissection at the heads of drainage and broad flat ridges.
10. For information contact: Director
NE FOREST EXPERIMENT STATION
6816 Market Street
Upper Darby, Pennsylvania 19082

This form should be filled out in accordance with the instructions on the accompanying information sheet.