

PANDAPAS POND

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NATIONAL FOREST, VIRGINIA

BACKGROUND

Pandapas Pond is an eight acre impoundment located in Montgomery County, Virginia. The existing impoundment was planned and constructed in 1950 by Mr. James Pandapas, then president of one of Blacksburg's few industries -- Electro-Tech. Concerned that Montgomery County offered limited recreational opportunities, Mr. Pandapas decided to create his own recreational retreat as a way of recruiting skilled workers to the region. We can say that the original purpose of Pandapas Pond was to carry out an economic development mission.

Mr. Pandapas sold the property to the United States Forest Service in the early seventies for a fraction of its market value. Both parties agreed that a condition of sale was that the Forest Service would enhance the pond area as a recreational community amenity. The Poverty Creek Watershed Plan of 1971 indicated that "picnic and camping facilities could be developed in the vicinity of Pandapas Pond." The first round of improvements were undertaken in 1976 by the VPI & SU Wildlife Society as an ecology trail. The Forest Service followed with fish stocking and the installation of benches, bridges, and parking barriers. In 1983 the Jefferson National Forest Land and Resource Management Plan identified Pandapas Pond as a facility needing toilets and a well that would accommodate 50 people.

Community interest in improving the area has oscillated over the years. Efforts to make cooperative agreements between USFS, Montgomery County and the Town of Blacksburg were made in 1978-79 and again in 1984-86. These proposed partnerships emerged in response to funding programs. Both efforts ran into administrative obstacles. Interest waned as eligibility requirements became clear or as funding sources dried up.

In 1991, the Forest Service worked with the Montgomery County Parks and Recreation Department, the Virginia Department of Game and Inland Fisheries, and a number of other interested groups to develop a set of proposed projects for the Pandapas Pond/Brush Mountain area. This proposal included a small recreation facility near the pond, drinking water, a group shelter building, and flush toilets. Also planned would be 5 to 10 additional picnic sites. The parking lot would be expanded and upgraded. Trails around Pandapas Pond would be improved with emphasis on increasing access for the disabled. A fishing platform suitable for the disabled would also be constructed at the pond.

In addition, the Forest Service would work with the Montgomery County Department of Parks and Recreation, Virginia Tech and other interested groups to develop an interpretive plan for Pandapas Pond.

This list of projects was mailed out to interested parties. Comments in response to the proposed projects were diverse. Some of the more frequent responses included

1. Support Proposal of Developed Recreation
2. Minimal Development at the Pond
3. Support Recreation Development
4. Support General Purpose Trails
5. Segregate Trail Use (Bikes/Hikers/Horses)
6. Support Environmental Education
7. Support Disabled Access

If we compare the two proposals we can note that several activities have been displaced. Swimming, for example, is no longer considered to be a viable use of the pond. Since 1979, higher quality swimming opportunities have been provided by both Montgomery County and the Town of Blacksburg. In addition year round community swimming opportunities became available with the opening of the Blacksburg Aquatic Center in 1992.

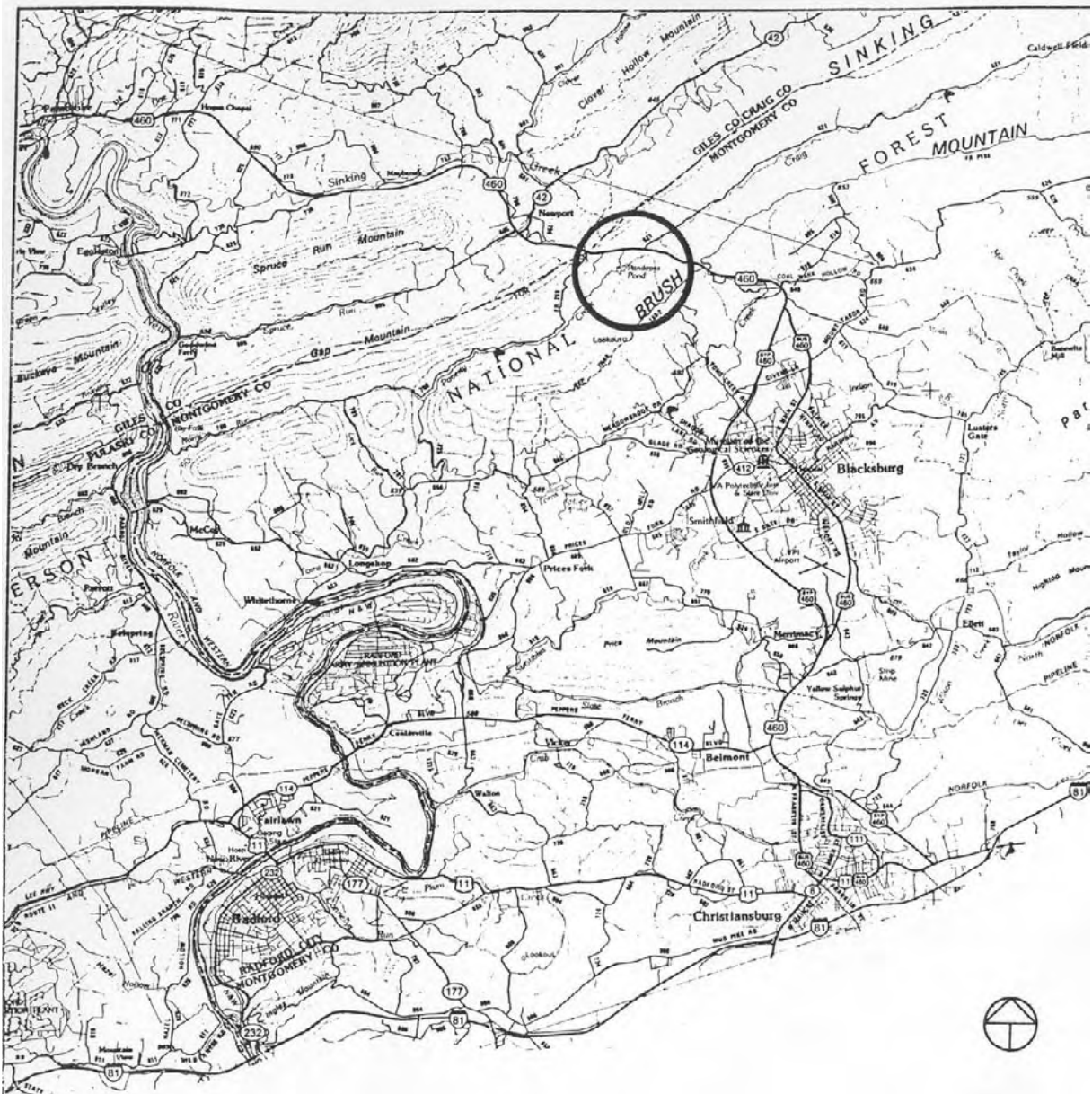
By 1994 Forest Service camping opportunities will be expanded in adjacent locations. Caldwell Fields and Boley Fields are both scheduled for camping facility improvements. These improvements should eliminate the need to accommodate camping activities at Pandapas Pond. Eliminating camping at Pandapas Pond would have the desirable effect of relieving pressure on the Lake, cutting down on litter, reducing fire scarred rack, and decreasing damage to vegetation and facilities due to firewood scavenging, vandalism and weekend 'party' camping. This would convert Pandapas Pond into a day use facility and thus allow the pond to take on the character of a community park rather than a national campground.

Looking back, it may seem odd that one of Montgomery County's most frequented 'natural' areas was created in the 1950's as a component of a commercial structure. Pandapas Pond was originally designed to advance an 'industrial' purpose; the recruitment and targeting of a special population -- skilled employees.

In the 1980's patterns of use, proposals and partnerships emerged to alter the identity of the pond as a local community facility. By 1990 recreational improvements within the region had expanded to a point where activities formerly accommodated at Pandapas Pond could be accommodated elsewhere.

Changes in the Evaluation of Activities: 1979 & 1991 (by activity and plan)

Activity	Considered Appropriate in 1979	Considered Appropriate in 1991
Swimming	x	
Ice Skating	x	
Canoeing	x	x
Boating	x	
Picnicking	x	x
Camping	x	x
Fishing	x	x
Hiking	x	x
Horse Trail Riding		x
Nature Study		x



LOCATION

The Pandapas Pond Recreation Area is located in Montgomery County which had a 1991 population of **some** 70,000 citizens. The three major population centers are Blacksburg (35,000) Christiansburg (15,000) and Radford (16,000). Blacksburg is the home of Virginia Tech with a student body of 23,000. Radford University has a student body of 9,500. A total population of 300,000 is within one hour of Pandapas Pond. The pond, however, is not expected to attract **users** outside of a 15 mile radius.

Pandapas Pond lies at the headwaters of Poverty Creek along the continental divide between the New River and the James River watersheds. The pond lies at the low point in the valley between Sinking Creek Mountain and Brush Mountain and is fed by stream drainage and springs in the valley bottom.

PANDAPAS POND LOCATION

GOALS OBJECTIVES VISION

As we have seen, Pandapas Pond is a human artifact designed to support human activities. The evolution of the area is therefore a matter of human purpose. The purposes that any artifact ought to serve is always up to other people to decide.

Defining the purpose and structure of Pandapas Pond, like defining the purpose and structure of any manmade facility, is always contestable. Numerous purposes speak and can be made to speak on behalf of the pond.

As with any object installed in the human environment, Pandapas Pond has both a purpose and a structure. It supports, and we would argue ought to support, some activities rather than others.

The incremental improvements undertaken in the last twenty years, the implicit design program, and our own normative commitments lead us to the organizing concept of a community day use facility. A facility designed, structured and managed to support local activities for local community purposes.

We argue that the structure of the design ought to reflect a programmatic concern which enhances and augments the capabilities of those members of the community who have traditionally been marginally represented in the design of outdoor recreational facilities. In addition we argue that the management of the area is the responsibility of those served by the area.

The following recreational, interpretive and administrative goals have been developed to serve these ends.

1. RECREATION

To support local recreational opportunities

To provide equality of opportunity, full participation options and independent living for those who may be constrained in their pursuit of outdoor activities

To offer solutions that will enhance the recreation experience that this area provides

To identify the need to provide facilities including restroom, drinking water and parking in order to accommodate visitor demands

2. INTERPRETATION

To serve as a local resource for environmental education and appreciation

To serve as a resource for community based activities

3. ADMINISTRATION

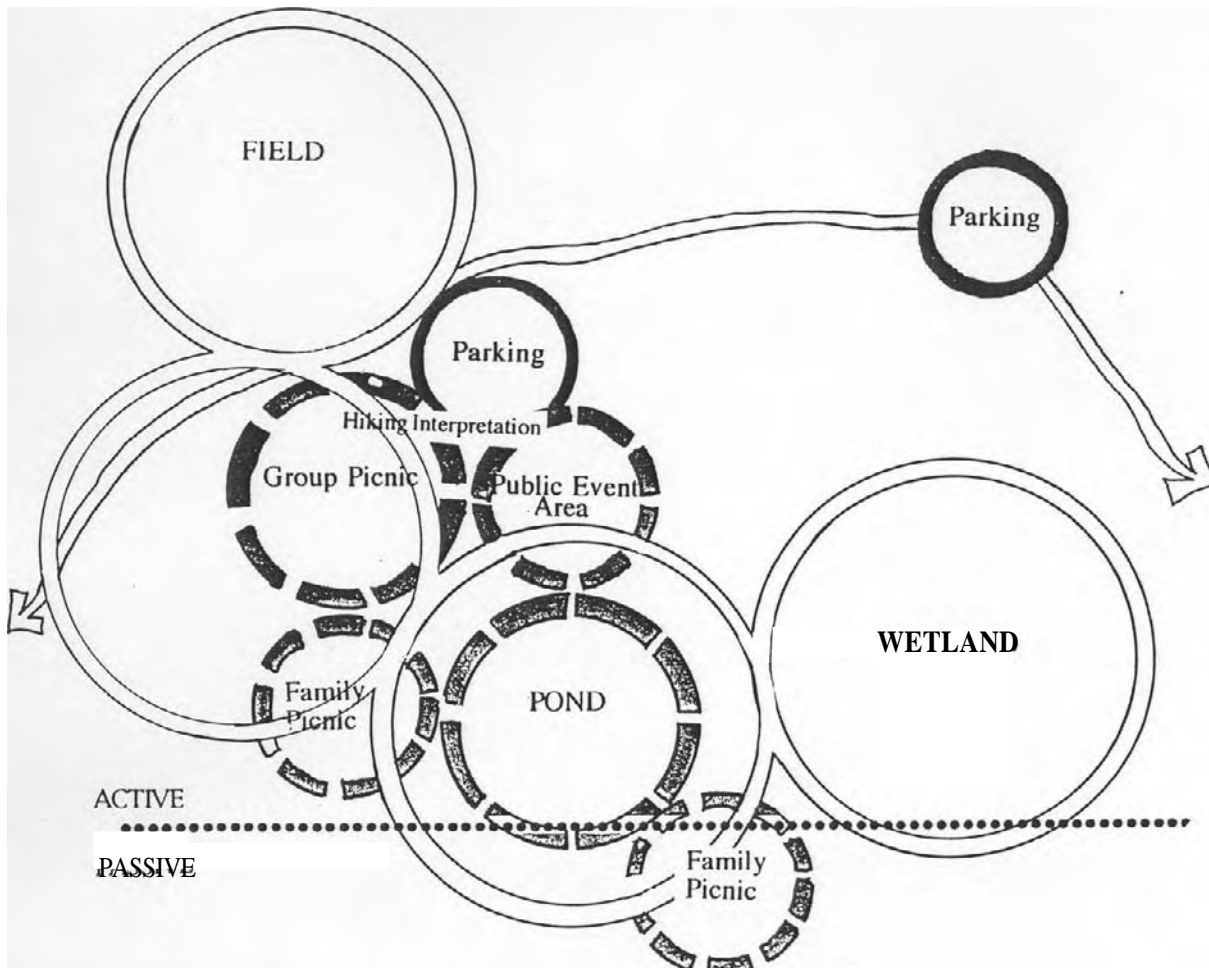
To protect the environment from damage due to visitor impact and erosion

To restore the integrity of the pond, creek and wetlands and protect their resources from the effects of human use

To determine the appropriate level of development that will not adversely affect the quality of the natural landscape and its resources

To develop an adopt-a-spot program for areas and facilities of the pond

To provide for public safety



CIVILIAN PERSONS AGES 16 TO 64 YEARS
(by county and % limitation, 1990 census)

County	Total Population (16-64)	% with a Mobility Limitation	% with a Work Disability	% Prevented from Working
Bland County	3,867	10.5	10.6	7.0
Craig County	2,842	9.1	8.7	3.9
Giles County	10,455	9.7	9.7	5.9
Montgomery County	55,455	5.5	5.6	2.9
Roanoke County	52,774	6.1	6.0	2.8
Five County Region	125,902	7,975	7,972	6,144

RECREATION

The US Forest Service "new forestry" approach encourages partnerships with **local** communities and businesses for the mutual benefit of Forest Service recreation programs and community well-being.

In addition, the Forest Service's *National Recreation Strategy* and New *Perspectives* program places increased emphasis upon meeting the needs of its recreation customers. In 1990 The Americans with Disabilities Act stated:

The nations proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for (persons with disabilities).

As the largest single provider of outdoor recreation opportunities in America, the Forest Service wishes also to be the leading provider of accessible recreation opportunities in America.

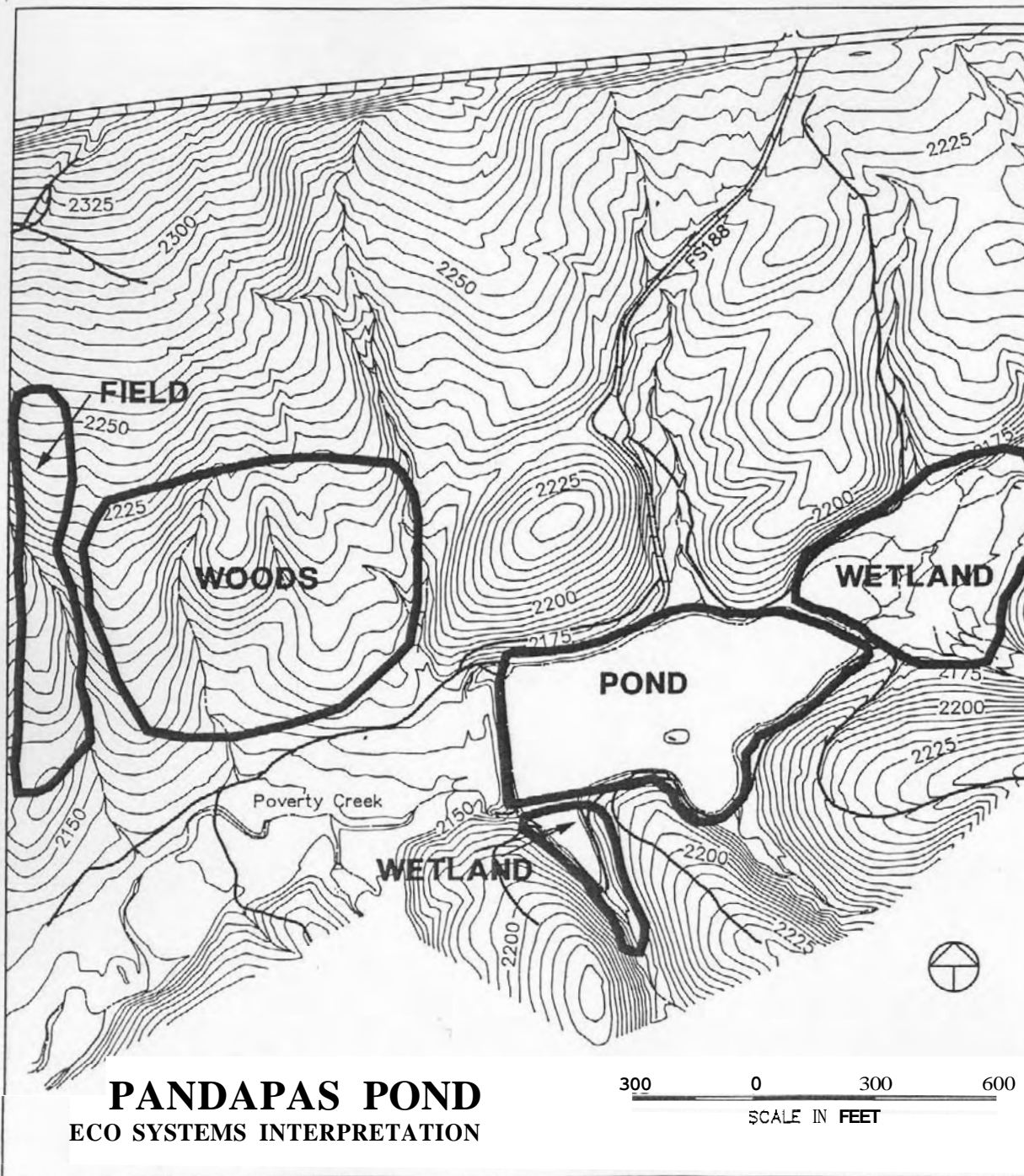
Pandapas Pond's close proximity to the town of Blackburg provides an opportunity to provide for these special populations for whom travel distance is a main obstacle.

Recreational improvements within the region have expanded to a point where activities traditionally accommodated or tolerated at Pandapas Pond can be more adequately managed or accommodated elsewhere. We need to pay more attention to special populations, especially those who are encumbered by age, disability, small children or limited resources.

Facilities for group events, public events and educational outings are unavailable in this area of the Jefferson National Forest. The development of these facilities would not only provide for community well-being, but also promote the goal of full participation as well for persons with disabilities, along side family members, friends and other outdoor enthusiasts.

The question of developing Pandapas Pond is not an issue of whether or not it should be developed but one of where and in what way it should be developed.

Comments from the Forest Service scoping letter, indicated that some people preferred a more primitive level of development for the pond. The main objective of the pond's development is to protect the area from the heavy use it sees. Some areas of the recreation area were left in a more dispersed and primitive level while others were expanded to accommodate the population and activities that Pandapas Pond experiences.



ECOSYSTEMS INTERPRETATION

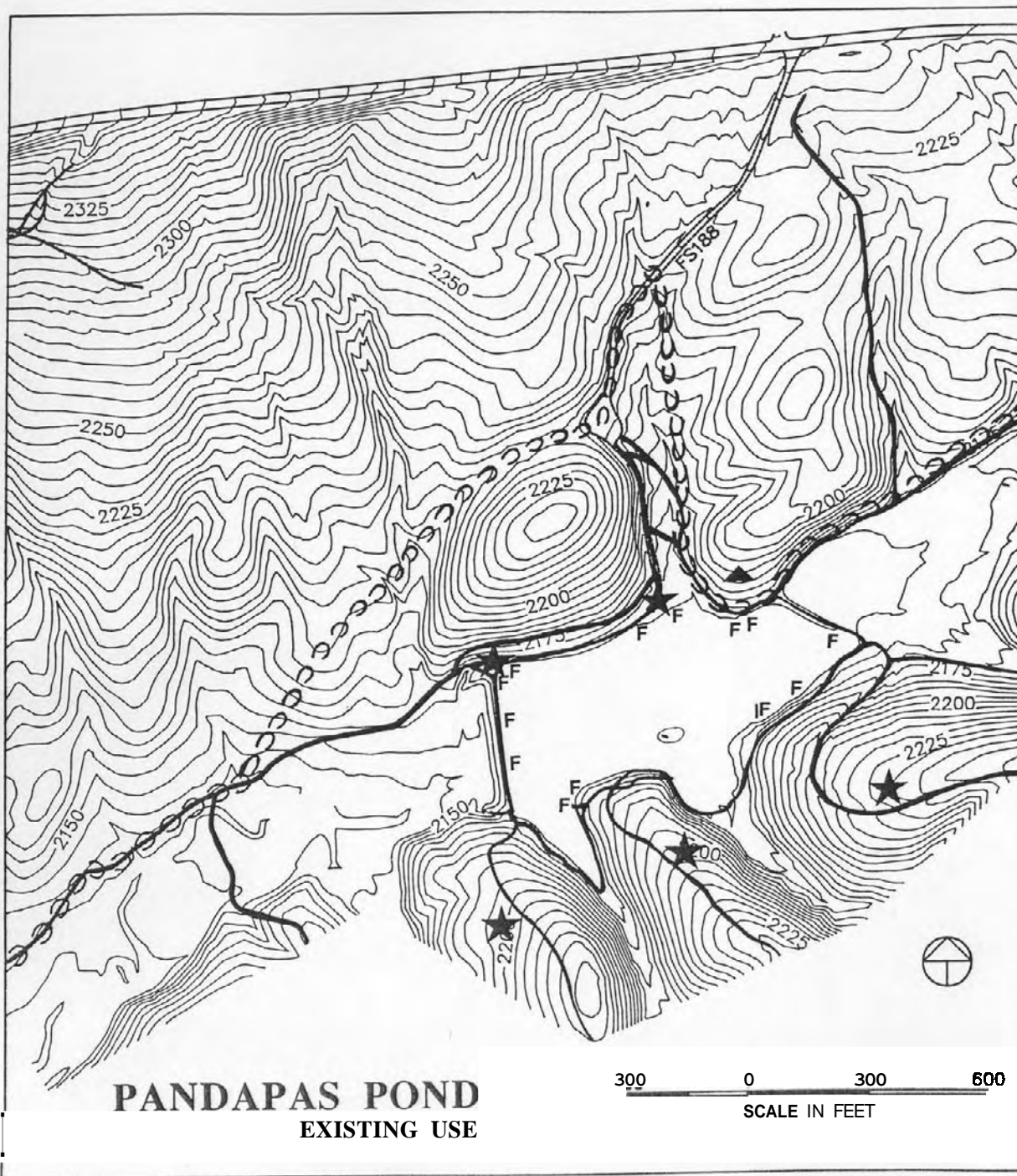
Pandapas Pond offers a great opportunity for environmental education. Its close proximity to Blacksburg and Virginia Tech makes it a prime location for a short outing for those who wish to pursue programs of educational, scientific, cultural and recreational value.

Pandapas Pond can represent four unique environments: Field, Woods, Pond and Wetland. These distinctive environments can all be experienced within a short walking distance. Seen in relationship to one another, these eco systems' similarities and dramatic differences can easily be demonstrated to the public. This allows the visitor to see features in their natural settings and provides an experience more memorable than interpretation in an indoor facility

Montgomery County Parks and Recreation, Blacksburg Parks and Recreation, The Virginia Museum of Natural History, the Blacksburg Ranger Station (along with others in the local community) currently have fishing events, wildflower, mushroom and butterfly walks, etc. These events are sporadic and their locations are scattered throughout the area. Once initiated Pandapas Pond Day Use Area can serve as a constant location for regularly scheduled public outdoor educational activities. These four unique environments need to be established and protected from user impact in order that they may be enjoyed by all.

CULTURAL RESOURCES

An archeological survey was done on Pandapas Pond. No cultural or heritage resources were discovered. No further cultural resource work is needed in this area.



USE






Present **use** of Pandapas Pond is primarily from the Blacksburg area. **Over 60%** of the users are from Virginia Tech. Pandapas Pond may be the single most popular destination in the Blacksburg Ranger District. Trail counter data indicate that, at the **level** of daily use, Pandapas Pond is even more popular than the Cascades Recreation Area. The popularity of both areas for student use is clearly evident in the late spring and early fall peak use periods. In addition trail counters only **log** trips from a single source. This may be a good measure for the Cascades. Access to the Cascades is primarily through the single entrance. Unlike the Cascades, numerous trails lead into and out of the Pandapas Pond area. Trail countermeasures are therefore conservative for Pandapas Pond.

Average 1992 Daily Total Trips to Pandapas Pond and Cascades Recreation Areas
(averages by month from raw trail counter data)

	Pandapas	Cascades
January	60	54
February	118	45
March	137	82
April	231	144
May	290	147
June	114	60
July	114	60
August	77	70
September	77	70
October	270	314
November	91	47
December	83	44

The popularity of the pond is attributable to its proximity. The area is within a ten minute drive from downtown Blacksburg. Pandapas Pond is not only a place to go from Blacksburg it is a destination within the Jefferson National Forest.

LEGEND

-  PICNIC AREA
-  EQUSTRIAN AND BIKE TRAIL
-  HIKING TRAIL
-  CAMPING AREA
-  FISHING SPOT

USERS

A investigation conducted by Blair, et al (1992) compared patterns of **use** and visitation among **three** popular recreational sites in the Blacksburg area, including Pandapas Pond. All three sites **were** dominated by student users, especially students from VPI&SU. The dominate user group is single young and primarily from a suburban background.

User Groups in Selected Recreational Sites
site and user characteristic

	(N=90)	(N= 90)	(N=90)
% Student Population			
% Nan-student Population			
% under 26	171.3	68.2	69.8
% Single	175.6	177.3	176.2

The essentially local and community based character of Pandapas Pond is also evident. Pandapas Pond draws most of its **users** from within a ten mile service area.

Service Areas for Selected Recreational Sites
(by site and origin of users)

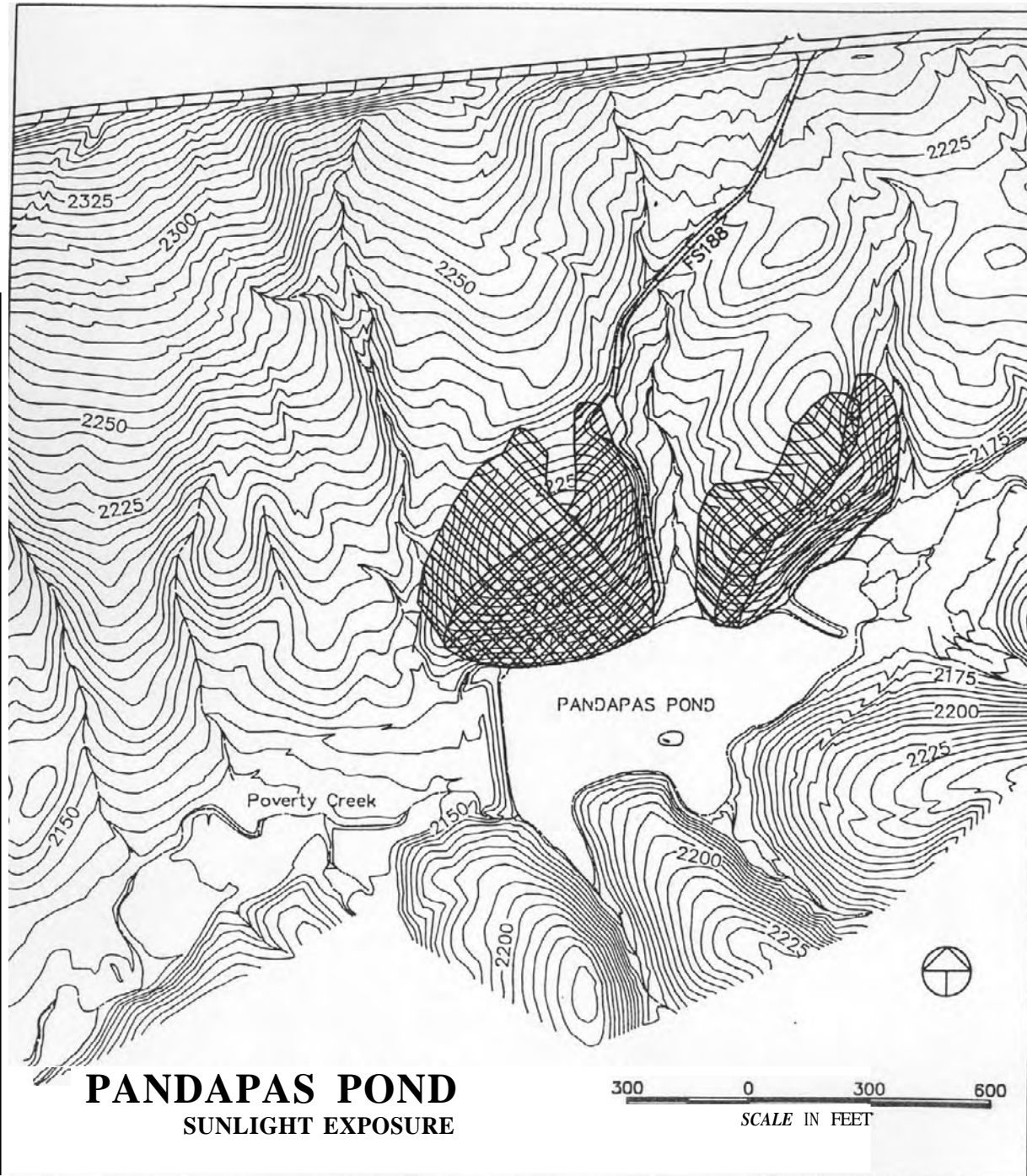
	Duck Pond (N=62)	Pandapas Pond (N=69)	Cascades (N=54)
Modal Distance	0-10 Miles	0-10 Miles	20-30 Miles
Mean Max Distance	20.0 Miles	30.0 Miles	40.0 Miles
% Visits ¹ within 20 Miles	99.0	97.0	1.0

Frequency of visitation **was also** tied to the proximity of the site to the adjacent community. **Users** within a ten mile service area were much **more** likely to make several repeat visits during the course of a year.

Repeated Visitation for Selected Recreation Sites

	Duck Pond (N=78)		Pandapas Pond (N=44)		Cascades (N=63)	
Distance (Miles)	1-10	11+	1-10	11+	1-10	11+
1 or 2 Visits	12	5	12	11	20	19
3+ Visits	48	13	16	5	19	5

¹ Frequency samples for visits were as follows: Pandapas (N=245), Cascades (N=192), Duck Pond (N=926). The combined table was included for graphic consistancy. --R.K.



TEMPERATURE

Temperatures are moderate year round. Temperatures average in the low 30's during the winter and 70's during the summer. Ice has not been present on the pond since 1982.

PRECIPITATION

Precipitation is uniformly distributed throughout the year with an average of 42 inches of rainfall. Snowfall averages about 15 inches during the winter. Summertime precipitation is primarily from thunder storms coming out of the west. Tropical depressions may cause long-term rainfall lasting 3-5 days in August and September.

EXPOSURE

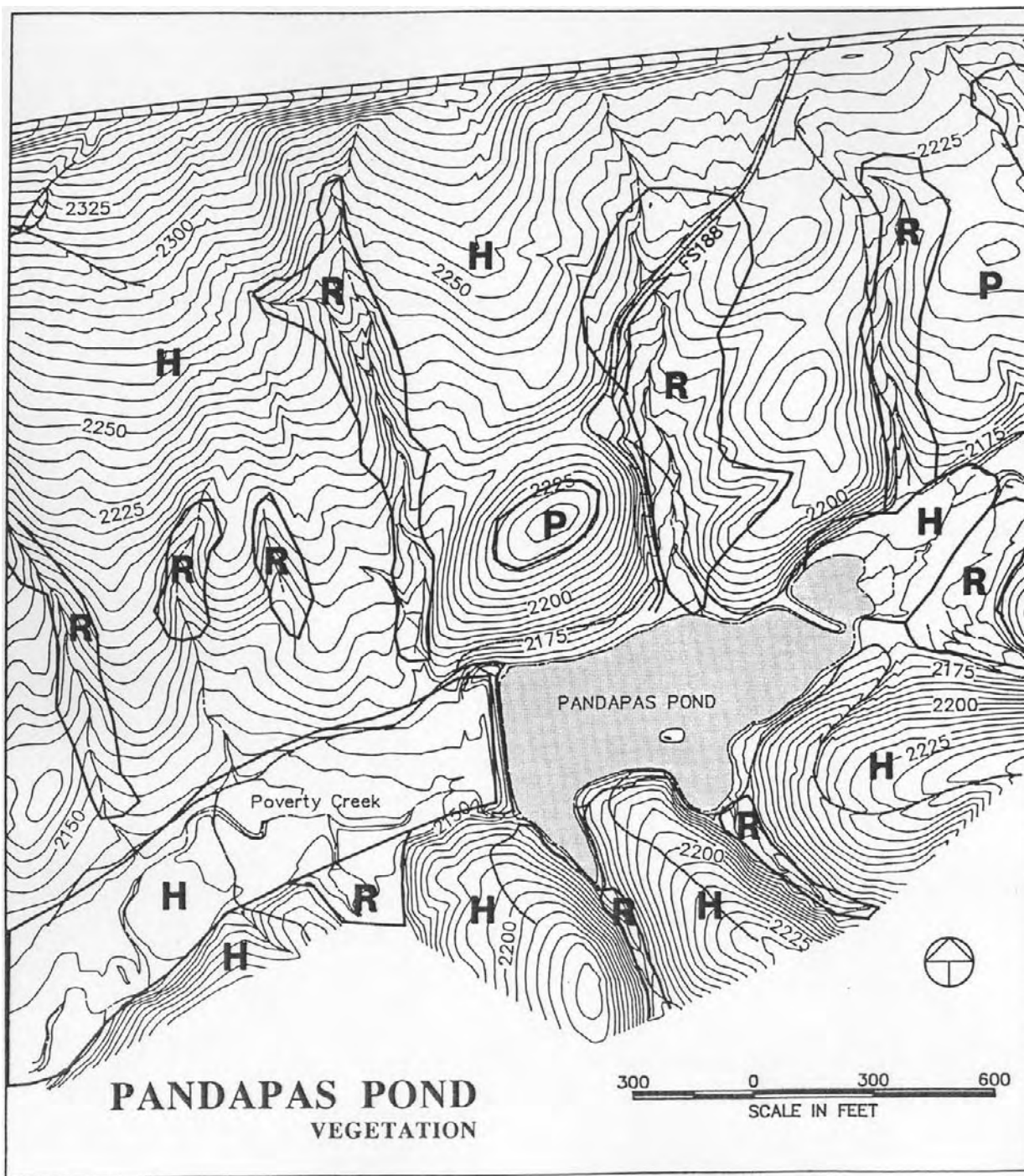
The study area drainage runs in a northeast-southwest direction. Height and closeness of the surrounding ridge tops protect the area from adverse effects of wind and sun exposure. The south facing slopes open to the pond receive the most sunlight, while north facing slopes tend to be shaded for larger portions of the day.

LEGEND



A.M. EXPOSURE

P.M. EXPOSURE



**PANDAPAS POND
VEGETATION**

VEGETATION

The drainage basin that **this recreation area** lies in is primarily Table and Pitch Pine mixed with hardwoods, including: chesnut oak, scarlet oak, hickory, buckeye, maple, ash, hemlock, and some white pine. Trees **on the elongated spur slopes are** squat appearing with thick boles in relation to **their** height.

The understory of the **stream beds** feeding the pond **area** typically consist of rhododendron, mountain laurel, dogwood and redbud. Steepsided drainways also contain **tulip poplar**, black gum and red **oak**.

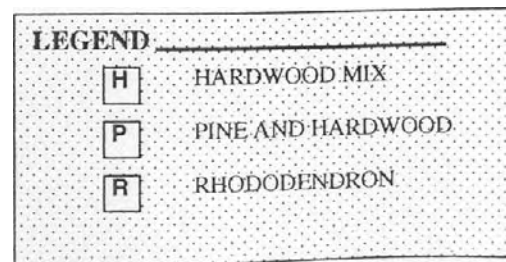
The forest floor is covered with mosses, ferns and **wildflowers**.

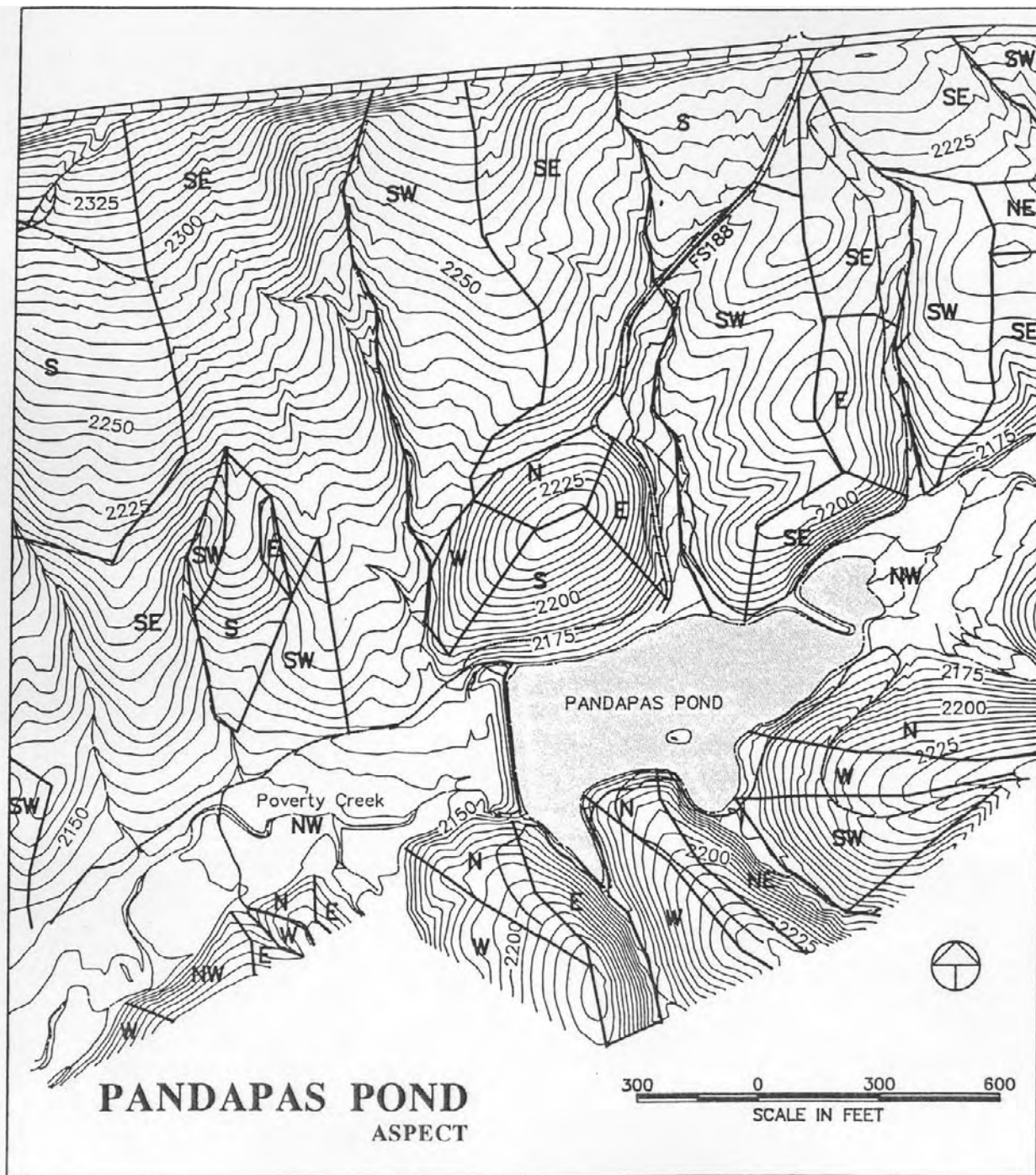
WILDLIFE

According to the records maintained by the Virginia Natural Heritage Program, **no** known Threatened, Endangered or Sensitive **species are** found within the **area**.

Generally the forests support healthy populations of wildlife. In wooded habitats whitetailed deer, gray squirrels, squirrels, opossums, skunks, foxes and **various** rodents are the **most** common **mammals**.

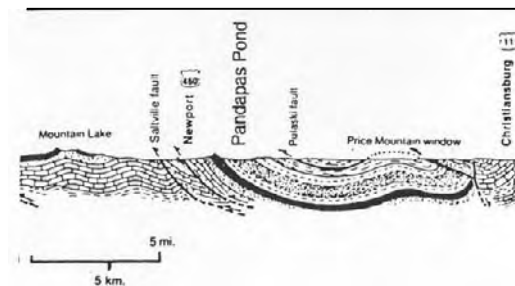
The **stream** sides and wetland **areas** provide habitat for many **species** including: beaver, turtles, **snakes**, frogs, toads, waterstriders and butterflies.





SOILS

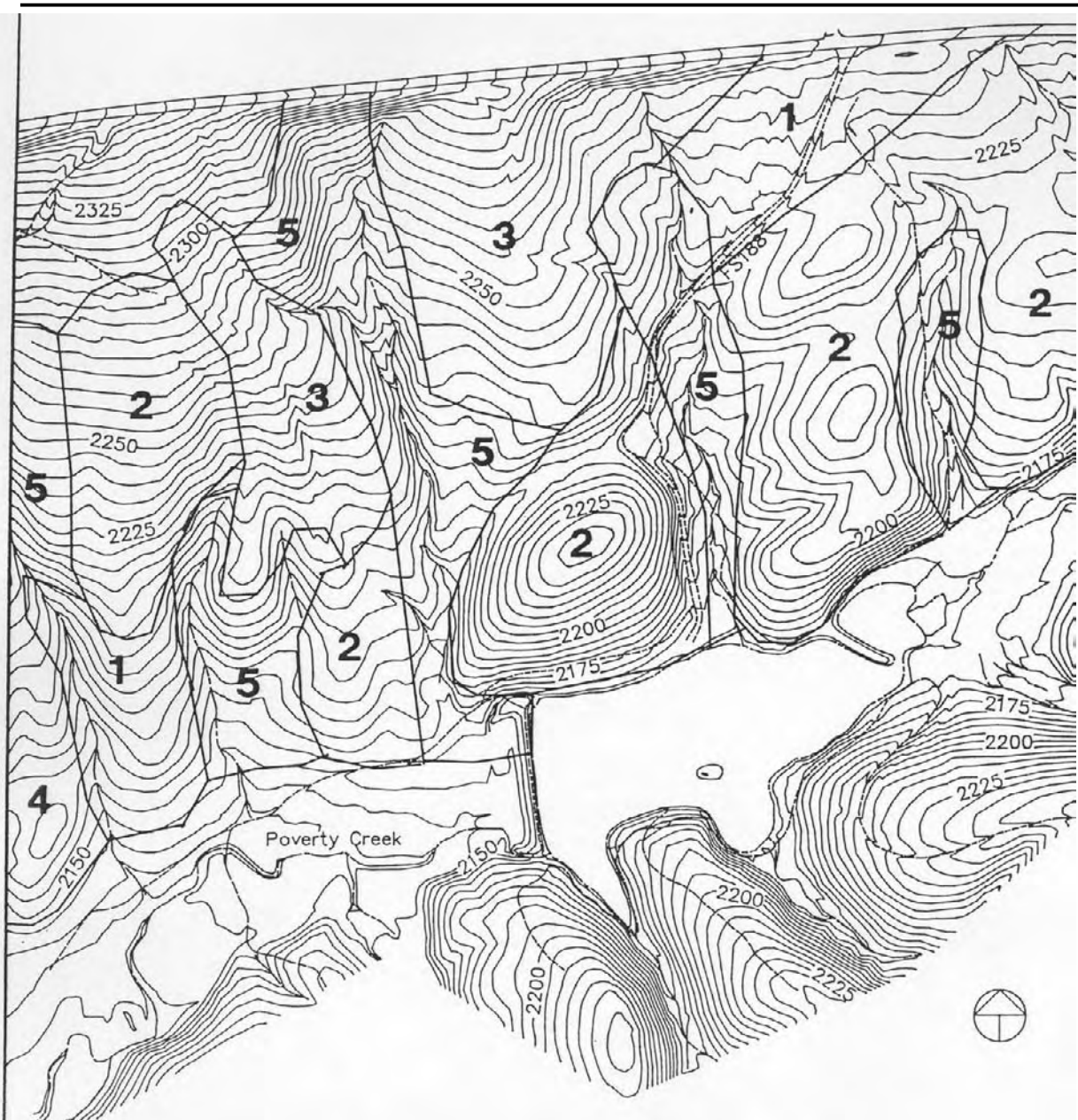
The Pandapas Pond area is located in the Ridge and Valley physiographic province of the Appalachian region.



The Pond is located in the valley between Brush and Sinking Creek mountains. This valley is etched into easily erodible Devonian shales, mudslides, and sandstones. The topography is well dissected with a dendric drainage pattern; having soft rounded undulating hills. The hills, running perpendicular to the northeast / southwest mountains define many eastern and western facing slopes.

Soils of the area are developing on the lower northwest facing slope of Brush Mountain and the lower southwest facing slope of Sinking Creek Mountain along Poverty Creek. The Brailer formation is the major geologic unit. Berks, Weikerk and Rushtown are the major soil series developed from this parent formation. Generally development should be restricted above the 2200 foot contour as the regeneration potential of these soils is limited. These soils require protection from excessive use to prevent erosion and loss of forest litter layers

The soils in the Pandapas Pond area are both diverse and similar. They are diverse in terms of depth, texture and permeability. With the exception of colluvial (drainageway) soils they are similar in color (yellowish-brown) pH (4-5) and depth to rooting (12-18 inches). Development that is located below the 2200 foot contour and above the major drainage ways is generally suitable for the construction of structures without basements. The greatest constraint on facility development is the availability of suitable soils for subsurface sewage disposal.



**PANDAPAS POND
SOILS**

High water tables are evident in these soils and vary between **9** and **36** inches from soil surface. This makes soil suitability for subsurface sewage disposal problematic. Two considerations – soil texture and depth to bedrock – are of particular importance in this regard

1) Clayey Soils: These soils **have** high clay content and slow permeability. Seasonally high water tables are apparent in these soils at **9** to **36** inches from the soil surface. Soil depths are greater than **5** feet. These factors contribute to poor suitability for subsurface sewage disposal on soils in this map unit. These soils are rated fair for roads, buildings and trail construction.

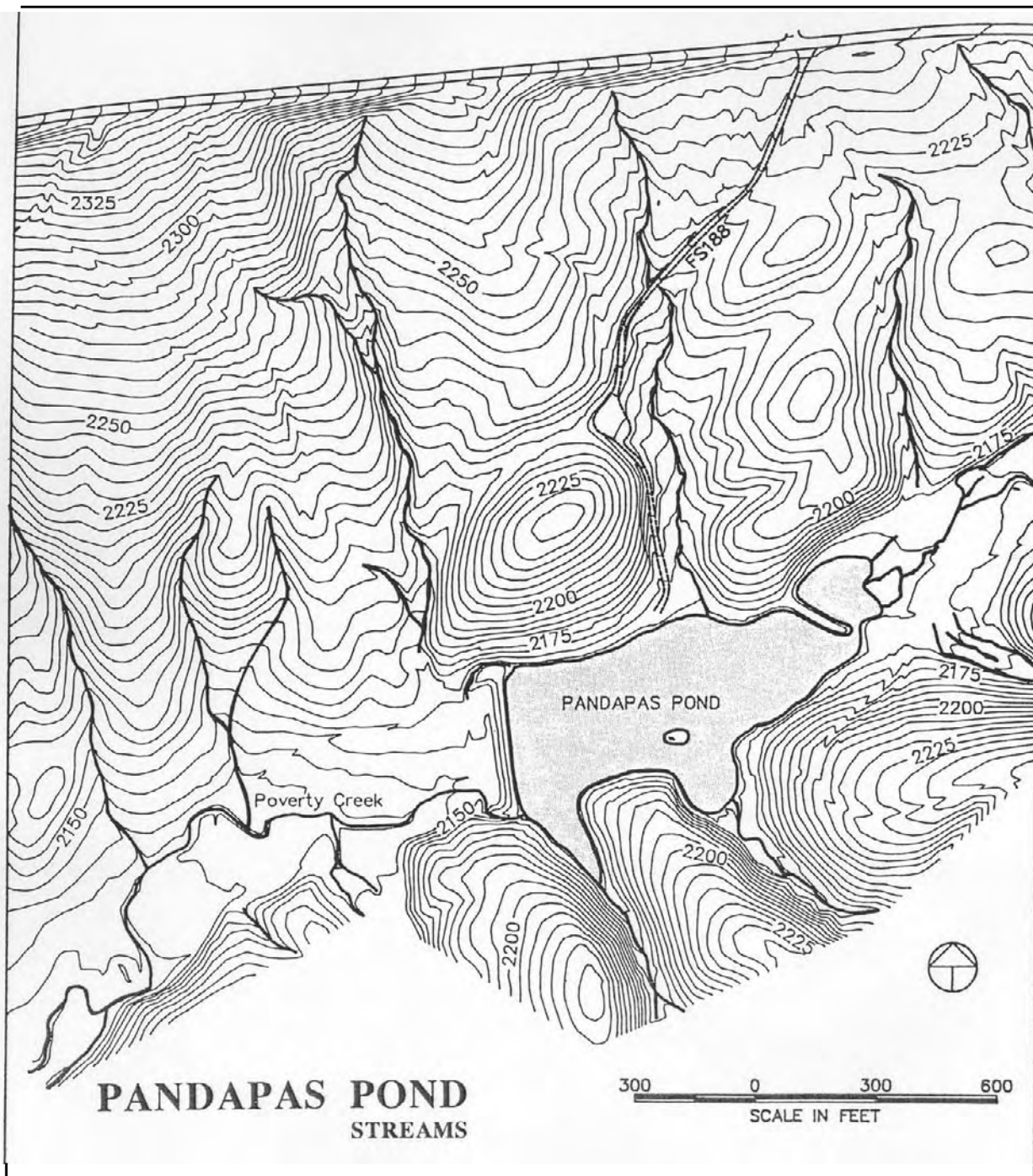
2) Shale Soils: These soils are **10** to **30** inches deep over shale **rock**. The shale is rippable. Because of shallow soil depth, these soils are not suitable for subsurface sewage disposal. Suitability for buildings and roads for these soils is good.

3) Well Drained Soils: These soils offer no limitations for any of the rated uses. Soil depth is at least **43** inches to **rock** and textures are sandy loam to sandy clay loam. Permeability is very suitable for filter fields.

4) Colluvium with Mottles: These soils show evidence of a seasonally high water table at about **21** inches from the soil surface with a fragipan at **33** inches. The fragipan is a compacted layer which holds up water from passing through due to its slow permeability. The result is a perched water table during wet seasons of the year. The soils are deeper than **5** feet. Suitability for subsurface sewage disposal is rated only fair due to these conditions. Seasonal high water table and **slow** permeability result in fair ratings for roads and buildings for this map unit.

5) Alluvial/Colluvial/Drains: These soils are mostly located on concave landforms in the area. High water tables, poor drainage and flooding are restrictions in this unit. All uses are rated poor except for roads and trails. Landscape position, drainage and intermittent flooding make these soils unsuitable for filter field locations and buildings. Suitability for roads and trails is rated fair since most restrictions can be mitigated.

General recommendations for the area are to limit filter fields to map unit #3 and buildings locations to map units #1, #2, and #3.



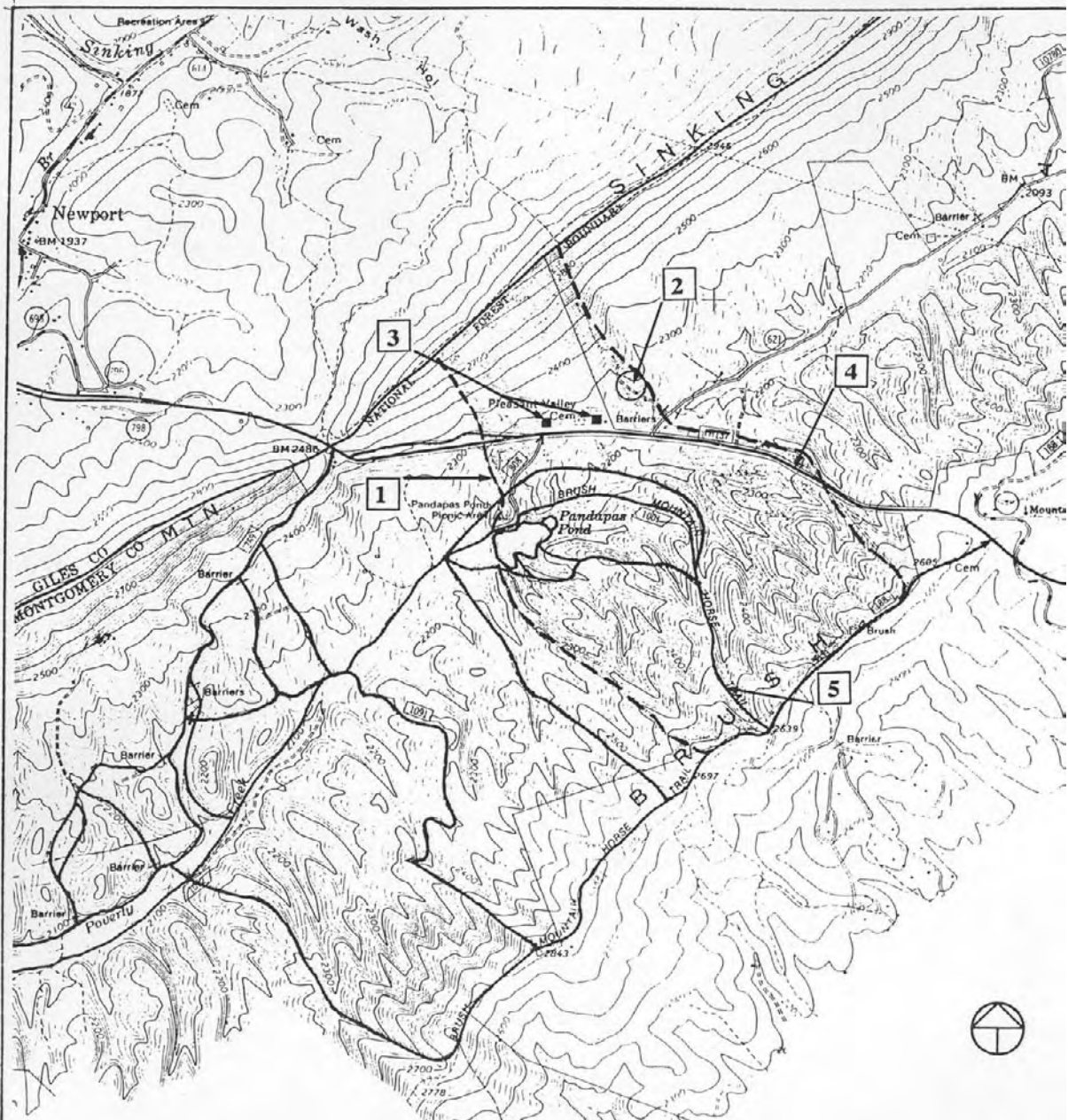
FISHING AND FISH HABITAT

Public warm water fishing opportunities are extremely limited in the Blacksburg area. Claytor Lake State Park offers such opportunities but these opportunities are fairly remote. Claytor Lake lies 25 miles to the southwest and requires a boat to search out the best fishing sites. Not everyone has the time, resources or capabilities to fish Claytor Lake. Pandapas Pond is a unique local fishing resource. Insuring the viability of easily available local warm water fishing opportunities is a matter of protecting, managing and improving the pond as a fish habitat.

Currently, the pond is too silty and shallow (14 ft at the deepest point) to support a viable bass population. Bluegill and Pumpkin seeds are abundant but stunted due to over population from a lack of the predacious bass. Two measures would improve the bass habitat immensely: (1) dredging and (2) regulated bass fishing. In Since its creation forty years ago the pond has never been dredged. It is long overdue. Dredgings could be used to expand and rebuild the small island on the lake as a nesting habitat.



Fishing opportunities could be expanded by improving shoreline access and fishing platforms. Upstream sediment trapping measures could greatly assist in controlling the amount of sediment entering the pond.

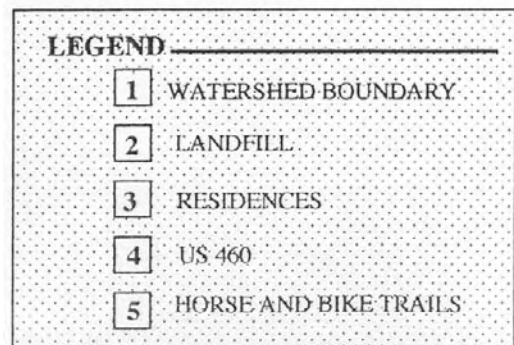


**PANDAPAS POND,,,,,,
POTENTIAL POLLUTANTS**

The Pandapas Pond watershed contains **uses** and activities that need to be monitored to insure that pollution risks are minimized. Truck traffic along US 460 always contains an element of risk with regard to fuel and chemical spills. Similarly, residential sites --while not threatening in themselves-- always harbor uncertainties regarding domestic waste disposal practices.

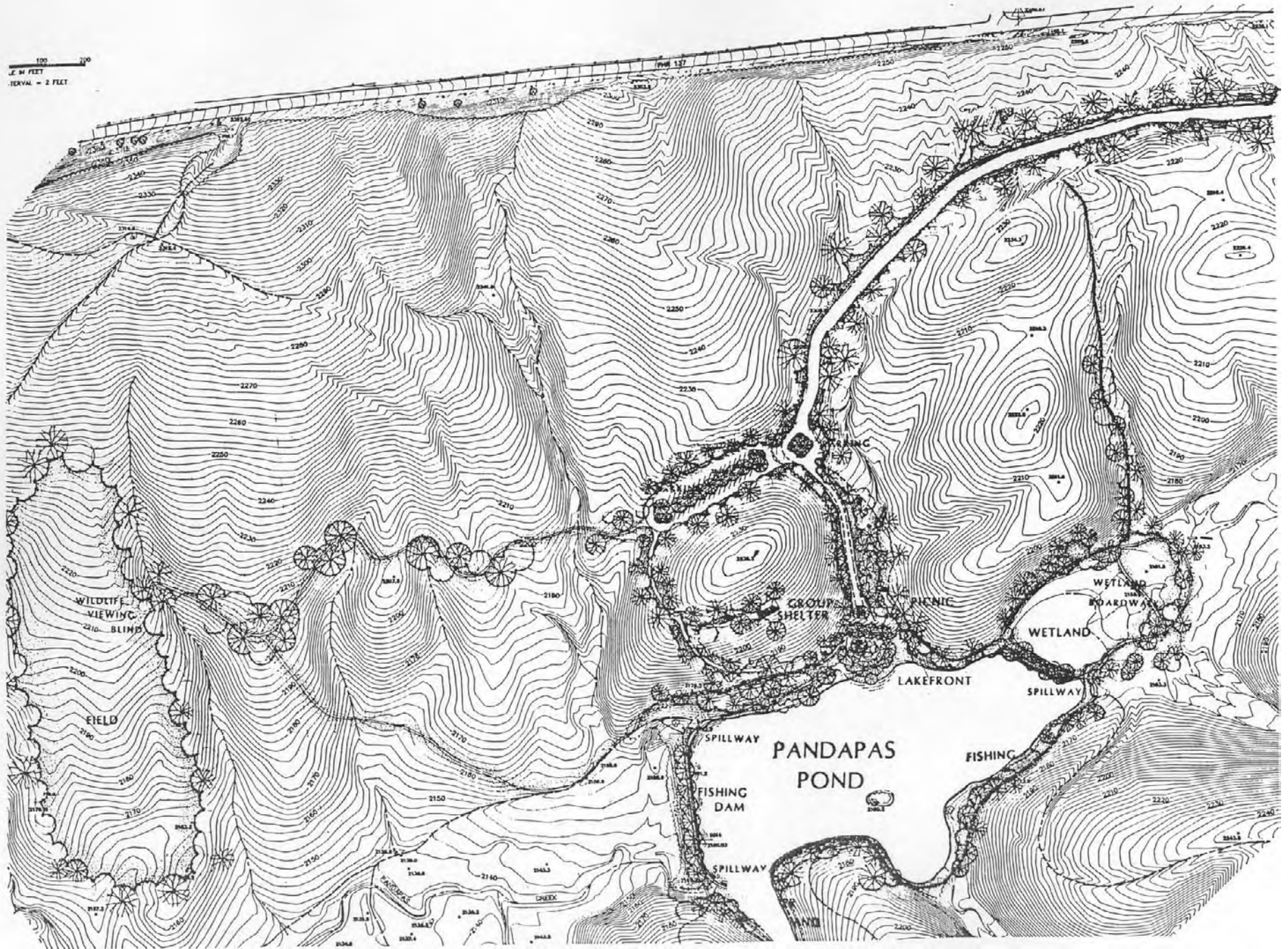
From **1970 to 1974** Montgomery County operated a sanitary landfill within the Pandapas Pond watershed. Shortly before closing the facility leaching problems became evident. In 1981 consultants concluded that while leaching was an issue immediately adjacent to the site, all **serious pollutants** were diluted by the time they entered **Craig Creek**. In 1982 remedial measures --**revegetation, liming, gully plugs and surface flow interceptors**-- were installed to control leaching. While the impact of the former landfill on the pond has never been investigated, it does not appear that state surface water standards are currently violated. The 'seasoning' of the facility, the installation of containment measures, the distance of the facility from Pandapas and the presence of moderately permeable soils between the two sites, would appear to make land fill pollutants a rapidly diminishing threat. Nevertheless, **as** the migration of pollutants into the pond has never been investigated and as high runoff periods may circumvent remedial measures, a watchful attitude is prudent.

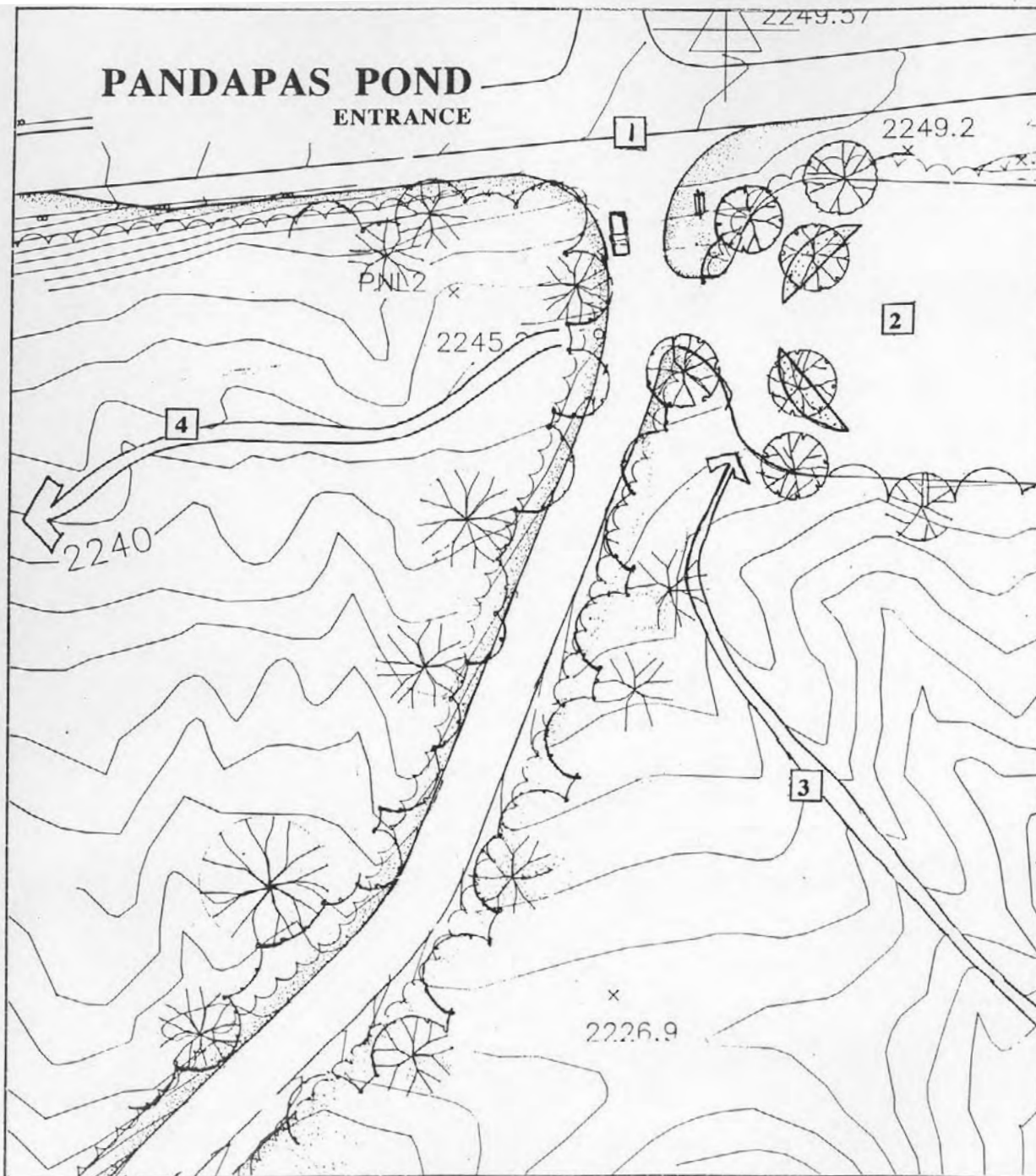
Poorly sited landfills, overturned trucks and chemical spills are high consequence low probability events. Such events, while dramatic, are rare. The more pervasive threat to the quality of the pond is more mundane and hence less visible. The greatest resource impact on Pandapas Pond **arises** from erosion and sedimentation: the routine consequences of heavy and in some **cases** inappropriate use. Horseback riding generally and mountain biking in particular need to be carefully managed. Resource damage and **conflicts** arising from the competing demands of users are often difficult to separate.



PROPOSALS

100 200
1/4 MI FEET
INTERVAL = 2 FEET





ENTRANCE

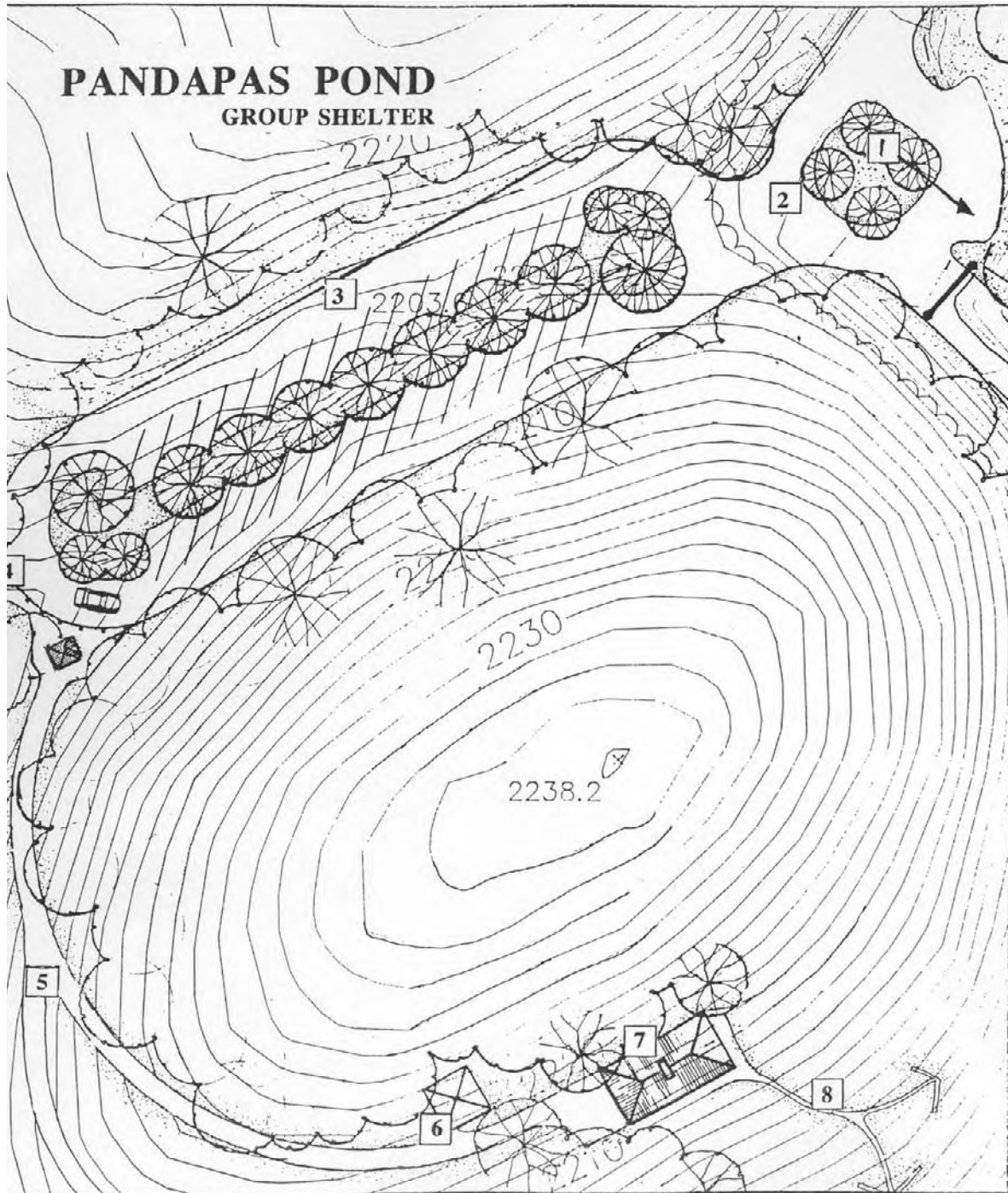
The entrance to Pandapas Pond is difficult to spot and even more difficult to enter. The entrance road to the pond should be realigned with the median crossing at Rt. 621. (1) The entrance sight lines need to be increased and a deceleration lane provided for the west bound traffic.

A parking lot for bikers and horse back riders will be located near the entrance to Pandapas Pond. (2) This parking lot will separate the multiple use trail visitors from those that are using the foot trails around the pond.

The Brush Mountain Trail (3) and the Gap Mountain Trail (4) will be realigned to terminate in the new parking lot. This separation of conflicting uses will help to protect Pandapas Pond from further erosion.

The new entrance road to the pond will be twice as long as the existing one. Adding distance and curves to the entrance will slow traffic speed.

PANDAPAS POND GROUP SHELTER



GROUP SHELTER

Bus and RV parking (1) will be provided in the central turnaround. (2)

The main parking lot will accommodate 50 cars, including handicap parking. (3)

A kiosk will be located at the parking lot. (9) This kiosk will orient the visitor to the interpretive trails of the day use area as well as provide distances of this trails. It will also contain interpretive information on the relationships of the different ecosystems that can be experienced in the area.

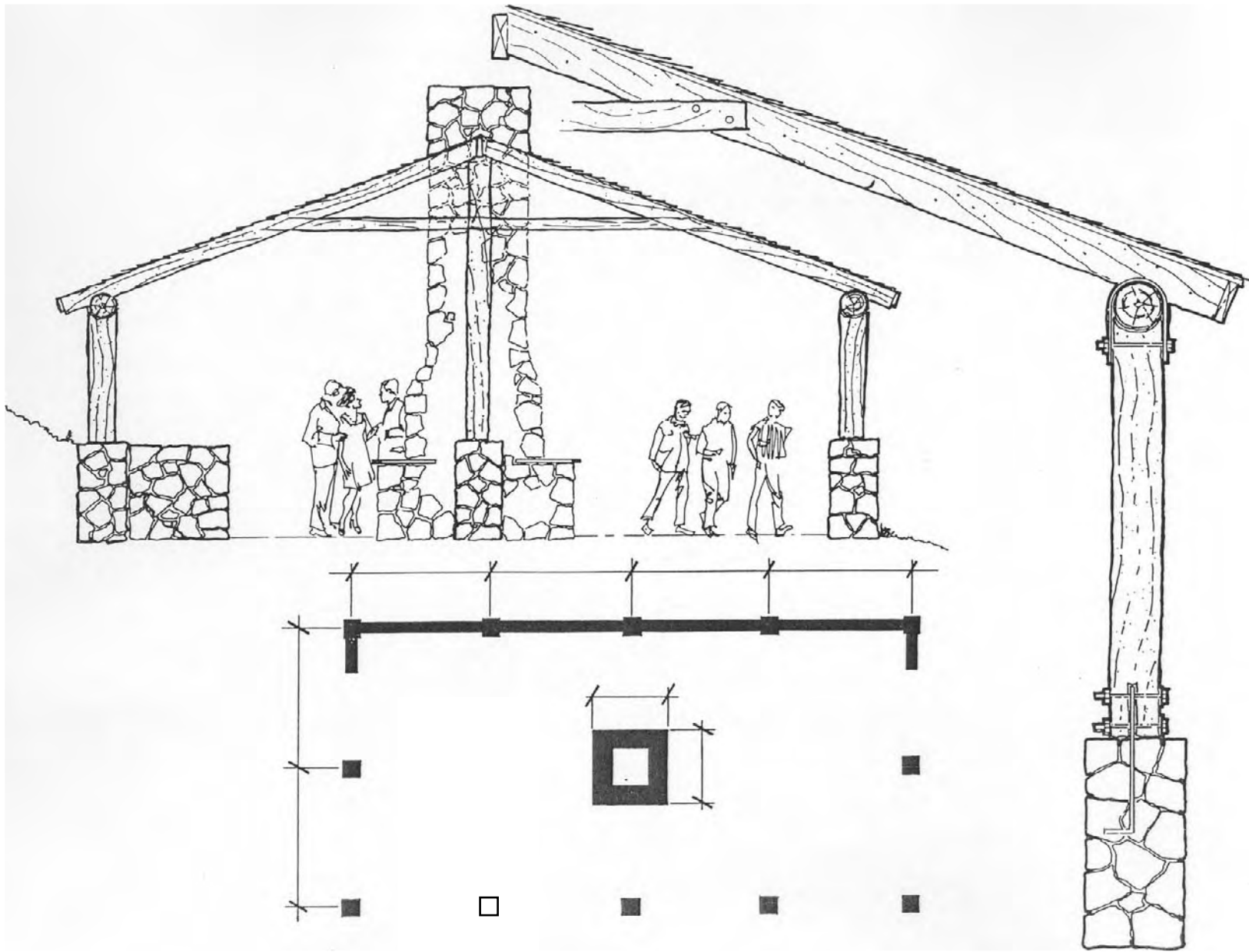
A trail from the parking lot will lead to the woods and field interpretive areas. (4) This level path is accessible to people with disabilities and small children. The interpretive trail traverses the woods ecosystem and leads to a wildlife viewing blind at the field's edge. It is a two mile loop that ends at the pond.

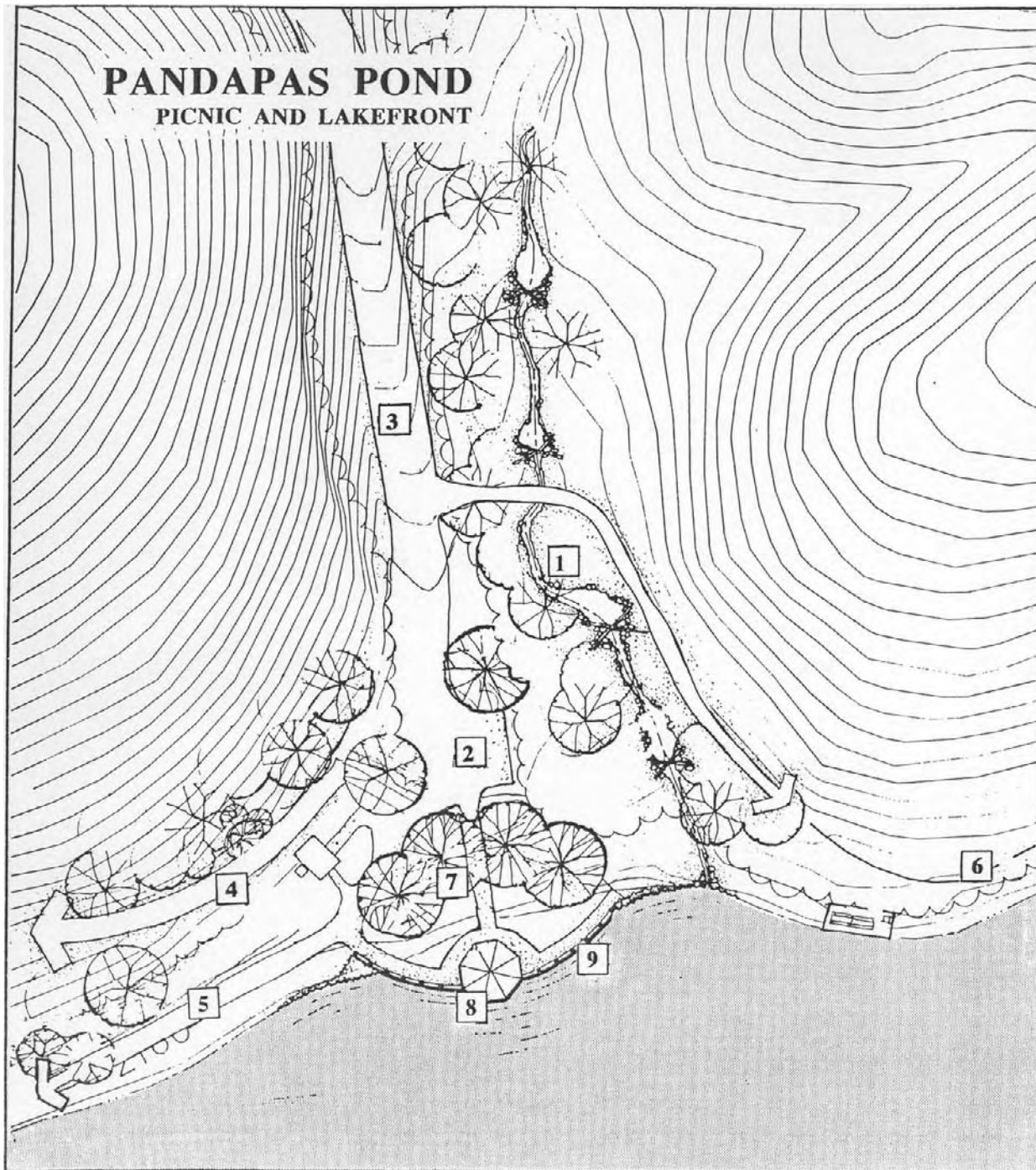
A path (5) will lead from the parking lot to the pond and a group shelter. This eight foot path will be accessible to people with disabilities and also serve as maintenance vehicle access. A removable bollard system will be used to prevent unauthorized vehicles from driving to the facilities.

A group shelter shall be located on the knoll overlooking the pond. (7) This area receives sunlight for most of the day. Located here the shelter will provide views of the pond and surrounding mountains without dominating the activities of the shoreline.

The group picnic shelter will have group grills and a serving table and will accommodate 75 people. A restroom facility will be located between the group shelter and the parking lot. (6) The water system for the restroom will be winterized and open year round. This facility will also be wheel chair accessible.

Paths from the shelter will step down the hillside to the pond interpretive trail and public events area. (8)





PICNIC AND LAKEFRONT

The stream in the area near the access road will be channelized and small wedge dams will be installed along its course. Wedge dams will not only serve as silt catchment devices, they will also create a series of pools and splash falls along the stream. (1)

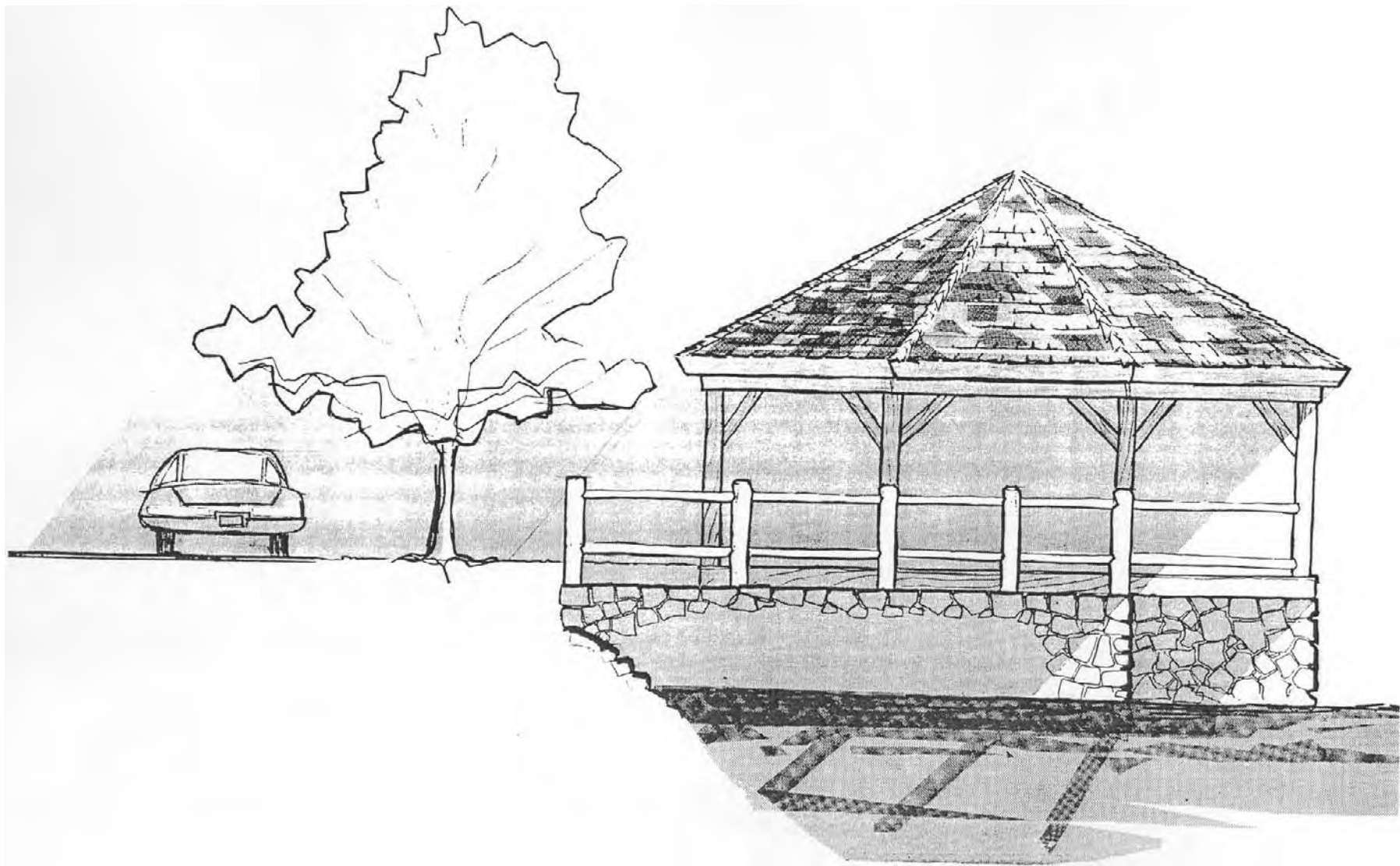
The access road will remain as a secondary entrance to the pond. It will give vehicular access to the public events area for drop off or unloading. (2) and also provide administrative access to the restroom and well. (3)

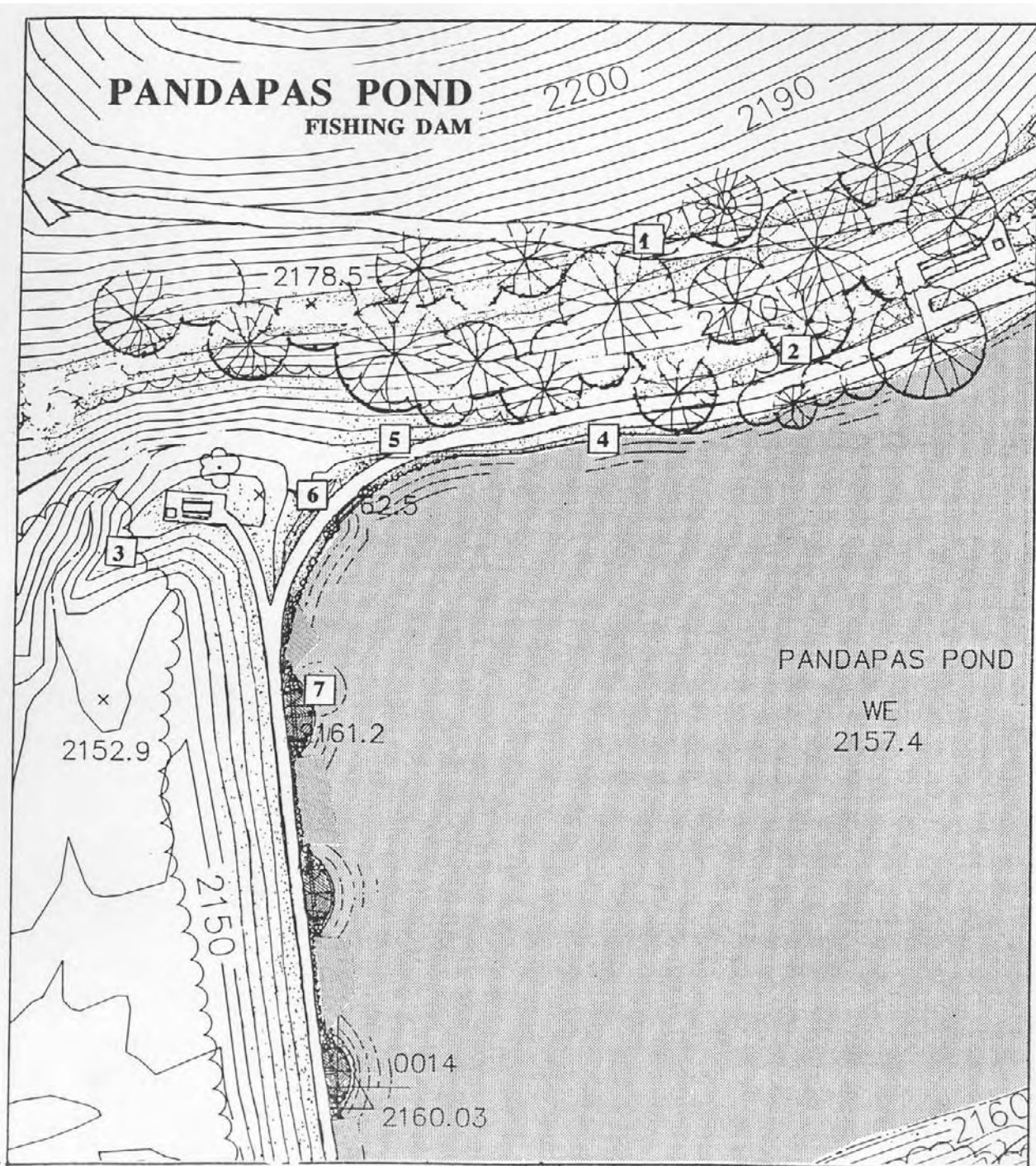
The main entrance (4), pond loop (5), and wetlands walk (6) all converge in the public events area.

The lawn terrace (7) and a gazebo (8) are the focal points of this public events area. The facilities will accommodate outdoor concerts, speakers, outdoor classroom activities, ceremonies and other community events that may wish to gather here. The lawn terrace overlooks the pond and mountains. The gazebo is a visual trademark that can be seen from most locations in the pond area and will give those wandering the trails a reference to their location.

As you enter the area, the gazebo frames the island located on the other side of the pond. The lawn terrace extends into a fishing patio (9) on either side of the gazebo. This allows the terrace and gazebo, when not being used for public events to be utilized as accessible fishing facilities.

A universally accessible restroom facility will be located in conjunction with the public events area.





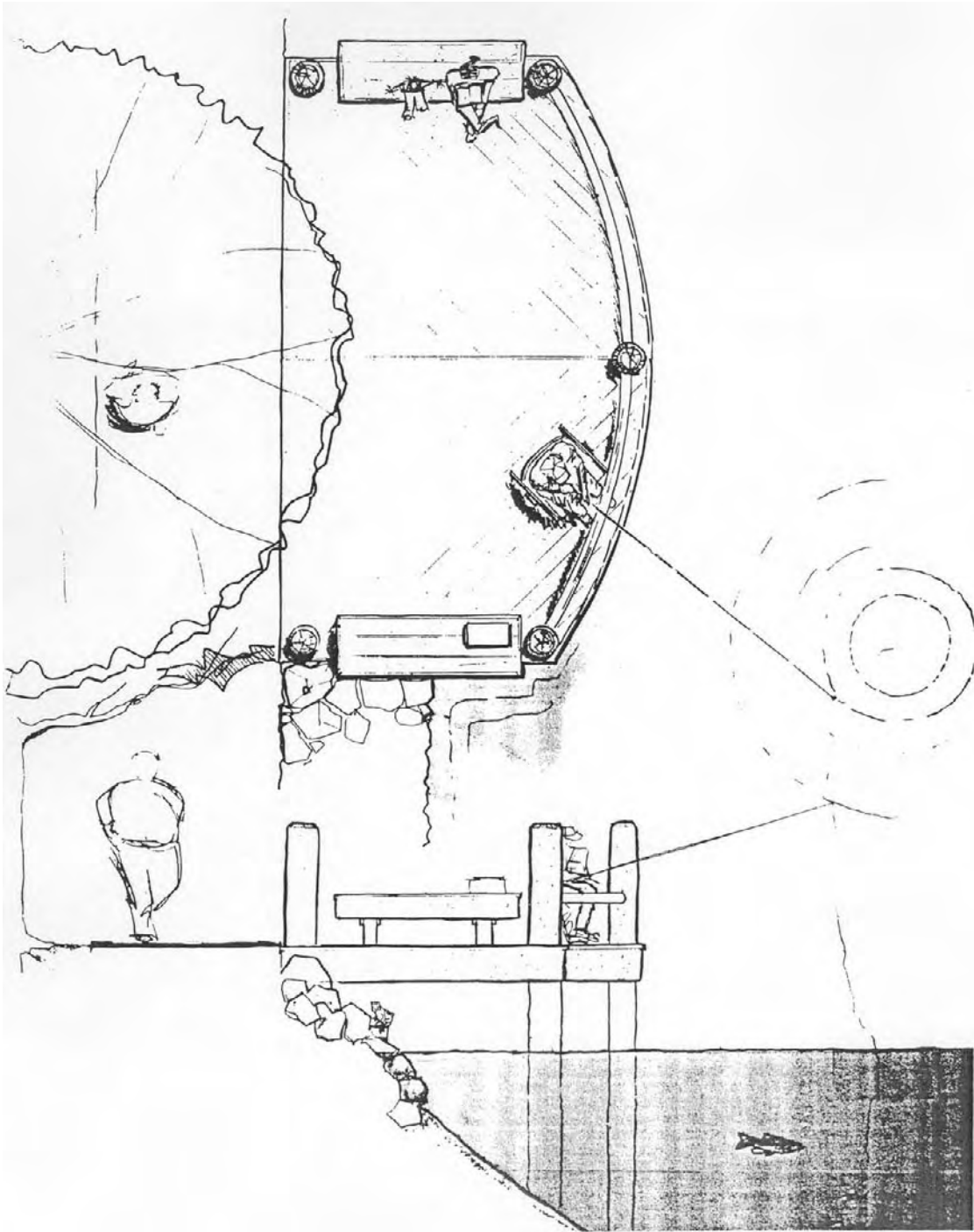
FISHING DAM

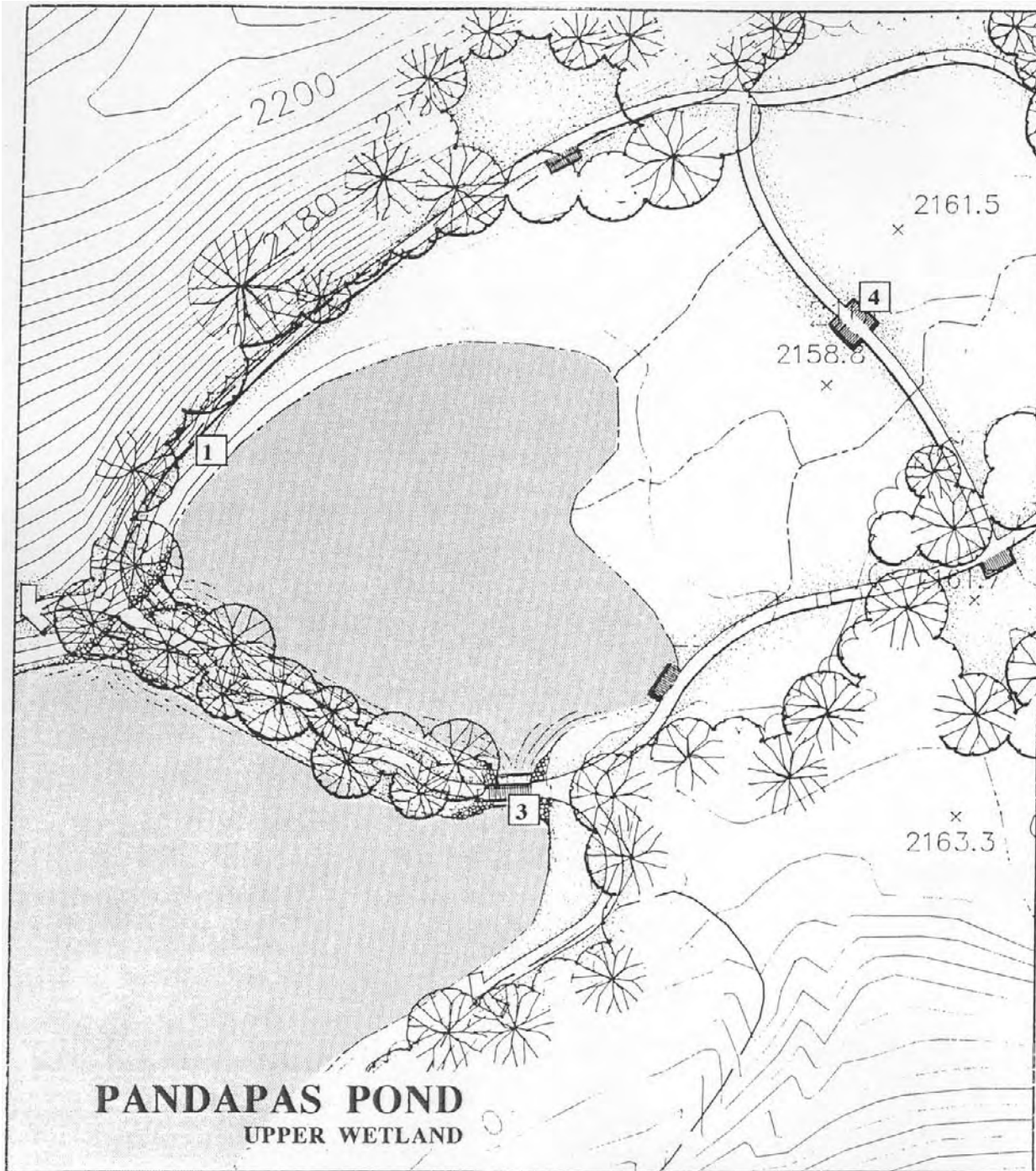
The path from the parking lot connects to an old fire road. (1) The path is universally accessible and is staged above the pond for a scenic over view. The Pond loop of the pedestrian system is also universally accessible and is ret at varying distances from the waters edge. (2)

Along the trail picnic/viewing tables will be placed. (3) Selective thinning and clearing of the intermediate overstory and underbrush will enhance the view from both of the paths as well as the tables. (4)

The construction of a low water crossing will allow the pond trail to be accessible all the way around. (6). The bank behind the spillway needs to be revegetated. (5)

Since the deepest waters are located at the dam side of the pond, three fishing platforms are located here. (7) They are universally accessible. Built in benches on the sites can serve as both seating or table tope. An 18" rail allows both wheel chair user and the able bodied fishing access, seated or standing.





UPPER WETLAND

The elevation of the wetland area should be raised. Existing culverts will be removed so that these higher elevations can be established. Increasing the elevation of the wetland will enlarge the habitat area as well as increase the natural filtering processes that wetlands provide.

Aquatic plants that wild birds require grow in water between 6 and 36 inches. Higher water will increase the number of aquatic plants. In turn, this habitat improvement will attract birds and other wetland species as well as help oxygenate the water and provide cover for fish.

A boardwalk will traverse the wetland area. (1) Interpretive stops will be provided along the inner loop of the wetland boardwalk. (4) A larger wetland loop will remain unsigned.

The continuation of the earth dam and construction of a spillway will allow maximum control of water levels as seasonal concerns are raised. Continuing the earth dam would elevate the pathway, necessitating only a short bridge over the spillway connecting the two sides. (3)

CONCLUSION

Pandapas Pond, like other recreational sites in the region, draws most of its use from the Blacksburg area. The pond's user profile, seasonal use profile and visitation frequency all reflect patterns of use driven by the local community, especially Virginia Tech. It seems likely that this pattern of use will persist not only among existing recreational sites but for planned and future sites as well.

From our perspective the range of activities supported by Pandapas Pond ought to reflect the broadest interests of this local clientele. As Pandapas Pond represents a popular and easily accessible recreation site, the pond ought to accommodate users and activities that are --for one reason or another-- currently 'out of reach' for some members of the community. Conversely, populations and activities that are currently supported elsewhere or planned for, ought to 'make room' for supporting special activities and special populations at Pandapas Pond. The Jefferson National Forest is a big place. It is, at the same time, a much smaller place for those who are not prosperous, single, young and fully able.

