

# **A Conservation Management Plan for Vestal Town Parks**

prepared by the

Town of Vestal Conservation Advisory Commission

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## **A. Executive Summary**

This document consists of three sections: (1) a rationale and goals for a parks conservation plan, (2) detailed descriptions of twenty Town parks based on repeated visits to assess the natural features, paying special attention to rare and endangered species, invasive plant species, trees acutely threatened by insects and fungal pathogens, and streambank erosion; recommendations specific to particular parks follow the individual park description, and (3) a proposal for the CAC to apply for grants that would allow enable collaboration with the Upper Susquehanna Coalition on stream corridor restoration in select Town parks.

Prominent among the plan's recommendations are the following. Specific areas of Middendorf Park and Jones Park should be designated as nature preserves and managed to best preserve the special features of these exceptional natural communities. The natural areas within parks should be allowed to develop into mature native forests wherever possible, with the exception of certain areas in Jones Park that would be maintained in a successional state to provide a greater diversity of habitat. Unmowed, revegetated stream corridor buffers, ideally set off by split rail fences, should be developed wherever possible in the parks. Areas of parks with a high density of ash and hemlock, and therefore vulnerable to emerald ash borers and the hemlock woolly adelgid, respectively, should be monitored. Stakeholders should contribute to management of user features, such as trails, within the parks so that enjoyment of the parks can occur with a minimum of damage. The CAC is prepared to play a role in the continued development the conservation plan and in the implementation of its recommendations.

## **B. Rationale and goals for a parks conservation management plan**

This report represents the foundation of what we hope will become a conservation management plan for Vestal's Town parks. The parks within the Vestal system are extremely diverse: they range in size from a fraction of an acre to over 300 acres, they are located in urban neighborhoods and on the rural outskirts of the Town, and they are used for organized recreation on ball fields and tennis courts, as well as hiking in woodlands that support rich native communities of plants and animals.

The Town has a recreational management plan prepared by the Parks Department and a forestry management plan that addresses five parks from a timber harvesting perspective. Most of the Town's parks contain undeveloped natural areas, which fall within the particular interests of the Conservation Advisory Commission. Neither of the existing plans address park land conservation as a goal, and it is for this reason that we took the initiative to begin developing a conservation management plan for natural areas within Town parks.

A comprehensive parks management plan should clearly articulate specific objectives for which each park or particular areas within a park is to be managed and the means by which each objective can be reached. We hope that this document lays the foundation for this effort.

The forester's report addresses natural areas in the parks but it is a plan for managing woodlots for timber yield – not for the very different missions of a public parkland. Use of the parks as woodlots to raise revenue runs afoul of state alienation regulations and violates the intended purpose of public parkland, much of which was purchased with funds provided by the State. It is also ecologically unsound. The forester's report recommends removing many species, such as red maple and aspen, for no reason other than they are not commercially valuable. By reducing the species diversity of the forest, the resiliency of the forest community is reduced, which is ill-advised at a time when our forests are challenged by fungal disease of beech trees and insect threats to ash and hemlock, possible recurrent outbreaks of gypsy moth, and damaging levels of deer browse. In addition, the forester's report did not address any component of the forest community other than trees and shrubby invasive species; wildflowers and threatened or endangered species were not mentioned.

The natural areas in Vestal's parks are assets greater than just their recreational use. Healthy natural communities provide a number of ecosystem services, such as wildlife habitat, scenic value, carbon retention, and water retention and infiltration, both of which reduce downstream flooding, promote recharging of aquifers, and retard erosion, thus protecting soils and reducing stream sediment and nutrient loads. Intact native communities also provide a barrier against penetration by invasive species.

The approach of our efforts is to consider each park individually and identify management goals for each park or natural areas within a park, with conservation goals in mind. We have attempted to define the boundaries of these natural areas, characterize their contents, and consider their value for both recreation and preservation. We took special note of tree species, such as ash and hemlock, that are vulnerable to pest infestations which could cause mortality, and also black (Austrian) pine, a widely planted horticultural species that might have been planted in urban parks; it is currently being eradicated by a fungus. We have also commented on the presence of invasive plant species. Where appropriate, we have tried to identify native species and communities that should be protected.

Some of the parks occupy only a portion of a Town-owned parcel. In our evaluations, we considered the full parcels, as well as any adjacent Town-owned parcels. We depended heavily on the Broome County GIS Basic Parcel Viewer. The ownership listed for some the parcels may need to be reviewed; apparent anomalies in ownership records are noted in the park descriptions.

## **C. Park Descriptions and Recommendations**

### **African Road Park**

The parcel containing the park is about 4 acres. A quarter to a third of the parcel is taken up by tennis courts, a playground, a parking lot, and lawn. These active-use areas are in the southern half of the park and occupy most of the area between African Road and Willow Run Creek. The west side of the creek is forested and rises up a steep slope. The northern half of the park is forested and the creek meanders through it. A short path descends to the stream near the intersection of Charleston Ave and African Road.

Toward the north end of the park is a nice natural area with large trees and an extensive patch of trout lilies (dog-tooth violets). Some large ashes are present, as are white pine, elm, maple, basswood, birch, and beech saplings. Ashes are one of the more common trees, perhaps 20% of the trees in the park, and some are quite large, with diameters of more than 50 inches. Large hemlocks, with diameters up to 60 inches are present from below the tennis courts to the north end of the park. The invasive species Japanese knotweed and multiflora roses are present in small numbers. The stream bank is slumping on both sides. Opposite the lawn area, small hemlocks on the west side of the creek are leaning over the streambed and could pull out chunks of stream bank. On the lawn side, slumping of the stream bank north of the tennis courts is significant. Flooding has caused extensive damage to the stream bank and to what must have been a very fine stand of large hemlocks near the north end of the park. Branches from the large number of fallen trees could dam the stream flow if they are swept downstream and trapped where Willow Run passes under the Vestal Parkway. The boundary on the west side of the parcel is difficult to determine owing to steep slopes and an irregular property line. One clear landmark is that the western boundary of the park extends to the terminus of Donna Drive. Runoff from Donna Drive is eroding the slope below and is probably contributing to the impoverished vegetation cover on the forest floor. What may have been a rich bottomland at one time is relatively barren with only scattered skunk cabbage and some May apples.

This park faces significant loss of large trees from erosion of the stream bank and from insect pests of both the ashes and hemlocks.

**Recommendations:** An unmowed strip of streambank vegetation, perhaps set off by a split rail fence, should be allowed to develop on the east side of the creek. Careful removal of fallen and leaning trees should be attempted.

### **Arnold Park**

In many ways, the 99 acre Arnold Park is the most complete Town park. It has a volleyball court, several pavilions, lighted ball fields, a large playground, a shallow depression formerly flooded in the winter and used for skating, extensive lawns for play and for sledding in the winter, and it also has forest trails that are used for walking, running, and cross-county skiing. A fitness course with exercise stations was once present along the trail but the exercise structures and signs are now just debris and should be removed.

The outline of the park is highly irregular, with projections of the park between two private residences on the northern edge to Pierce Hill Road and on the south side to Andrews Road. To the east, the northern park boundary extends nearly to the base of the hill along Pierce Hill Road. The eastern boundary extends south from Pierce Hill Road about 0.2 miles; then the property line turns west for 0.2 miles, much of the distance following an old stone wall, before turning south again, going 0.2 miles to Andrews Road. This projecting plot on the northeastern corner of the park is almost 20 acres. A power line right-of-way touches the southern edge of the park on Andrews Road and diagonally crosses the southeastern corner of the projecting northeastern plot.

Forest covers about a two-thirds of the park and consists of several growths of different ages and composition. The most distinctive is the red pine and spruce plantation immediately east of the large, sparsely treed lawn. The alignment and high density of the trees gives somewhat of an appearance of being more like a corn field than a forest, but the sloping contours offset this artificiality somewhat, so this conifer stand is a nice feature.

The two largest and most mature forest stands are dominated by several species of oak. The more mature woods are found on the steep slope descending down to Pierce Hill Road to the north and also to the east. This stand also has a significant fraction of white pine and hemlock. Red and sugar maples also present in lesser amount, and the remaining small fraction consists of birch and ash, with some beech saplings. The integrity of this forest is critical to the stability of the steep slope that they cover. Increased runoff on these slopes would likely cause significant and frequent damage to Pierce Hill Road. The steepness of the slope in this forest is not conducive for hiking trails.

The northern part of the woodland trail roughly follows the contours around the cresting hill, with the more mature stand lower down and the younger forest above. The younger, higher forest is also dominated by oak species. White pine, hickory, red maple, sugar maple, and ash are present.

South of the conifer plantation and bordered by the southern access road on the west and a trail on the east, is a 4.4 acres patch of forest that is distinguishable from the oak-dominated forest to the east in being younger and especially rich in red maple.

On the south end of the park, a narrow corridor between two private lots provides restricted service vehicle access to the park. The corridor is lined by a stone wall that runs along the western property line and continues beyond the corridor, finally fading away behind the uppermost pavilion. The forest to the west of the access road, downslope of the wall, and south of the equipment garage is clearly different in composition than that to the east of the access lane. This 3 acre plot contains the highest density of ash in the park. Most of the ashes are young; only a few are large trees. Cherry and aspen are also common in this stand. Regeneration of cherry is especially notable, and maple saplings are also abundant. A few large oaks along the fence and some scattered within the forest patch may date to when this area was an open field. The area around the garage has a dogwood but also some invasive honeysuckle. A few sassafras trees were observed. Given the small stature of many of the ashes and the strong regrowth of cherry and maple, the loss of the ashes will make this forest patch look ragged for a few years, but recovery should be speedy. To the west of this forest patch, on the edge of a treeless lawn, is a row of planted larch trees, perhaps the only representatives of this species in any Town park.

Immediately north of the volleyball court is a forested patch of about 1.2 acres that projects between two private properties all the way to Pierce Hill Road. This corridor contains a small intermittent stream that drains towards the road. The two shallow basins sometimes used for ice skating in winter are west of this patch. At least one of these basins functions as a detention pond. The basins drain into this forest patch. This piece of forest is dominated by maple, but ashes are common, especially in the southern part of the patch. A few of the ashes are quite large. Also present in this patch are white pine, some cherry, and a few dogwoods. The forest edge has multiflora rose and autumn olive, and the interior of the patch has a great deal of barberry. Except for perhaps a few trees on the edge of the woods near the lawn, the loss of the ashes in this patch is not a concern.

The large lawn mostly enclosed by the paved internal park roadway has some good sized trees. Most trees are maples with a few white pines, a poplar, and a white oak; there are no ashes or hemlocks except for a small ash or two planted just east of the large parking lot. Other than a few ashes on the edge of forests, including a large one just west of the paved loop at the

trailhead and another north of the volleyball court, ashes are not a serious concern in Arnold. Of more immediate concern, a number of the maple trees in the lawn areas are in poor condition and may need to be removed soon.

**Recommendations:** The remains of the fitness trail should be removed. Control of invasive shrubs, such as the barberry and autumn olive near the looped drive and trailhead and elsewhere, should be considered. The condition of the trees in the lawn should be assessed and some may need to be removed. Ashes on the forest edges next to lawn areas should be monitored and removed as necessary, but owing to their low number, they present no greater problem than any other tree species.

### **Barlow Park**

The 5.1 acre parcel is listed on the Broome County GIS as being owned by Grace Lutheran Church, which is across the street from Barlow Park. The park has a paved parking lot that is also used as access to the residence on the north side of the park.

This park has two distinct components: a flat lawn area bordered by fences and containing a pavilion, and the untended forested slopes that continue down to the banks of Choconut Creek and spread behind the two houses that flank the lawn. A row of large Norway spruces screens the house to the north of the park. The trees in the lawn area are mostly ashes, including a very large individual just north of the pavilion. There is also a box elder, an unhealthy elm, a few maples, and a small cherry. A single maple tree and about half a dozen small ashes are on the street side of the metal fence.

The top of the thickly forested slope is separated from the lawn by a wooden fence. A broad path leads from the northwest corner of the lawn, behind the nearby house, along part of the base of the slope, and down to the stream bank. The forest contains some large ashes, cherry, maples, walnut/butternut, basswood, elm, sycamore, hickory, and locust. There is an abundance of non-native shrubs, especially honeysuckles, and a patch of periwinkle. Native herbaceous plants were not noted but a return visit in spring would be appropriate to better assess spring ephemerals. Large trash piles, including large metal items, were present in at least two places on the forested slope.

**Recommendations:** The lawn area will be altered considerably by the loss of the ashes, especially the large individual that provides a centerpiece to the park. The large ash could be labeled to serve as an example for those residents who would like assistance in identifying ashes out of concerns about the emerald ash borer affecting their own trees. Replacement of the small ashes with other species could be a first step. The eventual death of the largest ashes highest up on the slopes may require some attention, but the main focus needs to be on the lawn area.

### **Castle Gardens Park, pond, and associated parcels**

Castle Gardens Park proper is located on Garden Lane. It is about 3.2 acres, which is mostly mowed playing fields. Playground equipment and a pavilion are located near the entrance, which has no paved parking lot. The park itself has little river frontage; the frontage is the only part of the park that is forested.

The Town now owns all the parcels neighboring the park, the largest of which has the address of 1848 Castle Gardens Road, although it has only a narrow corridor with road frontage. This

parcel covers almost 38 acres, most of which is occupied by a pond created by gravel mining. We understand that a parcel of 4.43 acres with the address of 1804 Castle Gardens Road has also been deeded to the Town, but it is still listed on Broome County GIS as being owed by Sarkids Ltd. This parcel has much more road frontage, and a gated and signed path leads to the pond. We considered these two parcels together in our account.

The only natural vegetation of any note on the pair of parcels is the fringe of forest covering the riverbank. A gap in this line of trees is associated with an easement for high-tension electrical lines over the western part of the quarry parcel. The river bank trees are typical for this kind of locality, and are dominated by silver maple, sycamore, and cottonwood. Many of the trees are of substantial size, and they serve to stabilize the riverbank. The vegetation around the quarry is poorly developed and, as the forester reported, the trees are of no commercial value, being both small and consisting of species without market value. We noted cottonwood, aspen, Scots pine, box elder, sycamore, willow, silver maple, black locust, apple, elm, and a lone large oak. The site is rich in non-native invasive shrubs and herbs, including buckthorn, honeysuckles, autumn olive, multiflora rose, Japanese knotweed, and garlic mustard. Eurasian milfoil, an invasive aquatic plant, has been found growing in the quarry pond.

A variety of built structures and abandoned equipment remain from the quarry activity. Some items may have been brought to the site as a means of disposal; the most interesting of which is an antique pull-behind road grader. Aerial photos taken at different times variously show one or two ponds. The pond's water level can change significantly, as evidenced by different episodes of beaver damage over a two-meter vertical range on individual tree trunks near the edge of the pond. The pond is periodically inundated by river flooding, but the absence of significant stream inflows or an outflow to the river suggests that the pond is also hydrologically connected to the river. The pond is reported to be a good fishing site and well-worn paths indicate that it is commonly used for this purpose.

The pond and its environs are an interesting feature. Cleaning up the site will require substantial efforts, the costs of which might be partially offset by the value of the metal that can be sold for recycling. The recreational potential would be greatest if the area surrounding the pond was substantially regraded and designed for that purpose. A clear understanding of the variation of the water level in the pond is important to any development plans.

The *Four Rivers Intermunicipal Public Access Plan* for waterfront, completed in 2011, describes the total Castle Gardens property as 40 acres with 1,600 feet of shoreline and states that a boat ramp is planned to be built on the property. The Castle Gardens properties might also be integrated into the riverfront trail system, should that initiative be pursued. Given the number of parcels in the Castle Gardens area that are now owned by the Town, a great number of options are available.

Numerous lots in the Castle Gardens area have been cleared of flood-damaged homes and will be required to remain 'forever green'. It is not clear what management practices are most appropriate for such properties. Should they be forever mowed, reforested by design, or just left to revegetate on their own, which might allow invasive species to take hold?

**Recommendations:** Whether the quarry pond and the surrounding area is incorporated into the Town park system or not, the remains of the quarrying structures and equipment left on the site should be removed. Some regrading to provide more stable and natural contours around the pond would be necessary to develop the area into a park, and should be considered in any case.

The poor soils and dominance of non-native species on the site suggests that stable revegetation will be a very long-term process. If the pond area is to be made into a park, a set of clear objectives should be identified and regulations for use should be specified.

If a boat ramp is built in accordance to the Four Rivers Plan, it should be located and built in a way that minimizes loss of trees that screen and stabilize the river bank.

While the 'forever green' properties are not part of the park system, the management of these parcels should be considered with the value of restoring natural communities in mind.

### **David Avenue Park**

David Avenue Park is a small neighborhood park bounded on the southwest by Choconut Creek and on the northwest by a tributary of the Choconut. Most of the park is occupied by lawn and tennis and basketball courts. The south and east portions of the park has only a few trees, including some big maples, a box elder, and a locust.

A pavilion surrounded by trees is near the tributary's stream bank, and the principal concern for this park is the erosion caused by the tributary. Large sycamores and a variety of smaller trees near the stream's edge are being undercut. This park will not be affected by the emerald ash borer or other pests; however, loss of trees to erosion of the tributary stream bank would significantly and adversely change the character of the park and place some of the facilities uncomfortably close to the edge of the precipitous stream bank.

**Recommendations:** Means of protecting the stream bank on the north side of the park should be considered.

### **Ethel Place Park**

The park consists of two adjacent parcels on the north side of the street, one of which is a lawn and the other is a basketball court. The park is fringed by Norway maples and walnuts/butternuts on adjacent properties, but no conservation issues were noted.

### **Ford Tract**

According to the sign on the Glenwood Road entry gate, the land for Ford Park was purchased with funds from the 1996 Clean Water/ Clear Air Bond Act. The Broome County Basic Parcel Viewer lists two parcels of 82.2 acres and 4.8 acres as belonging to the Town, but no owner is identified for parcel #173.39-1-?, a 25.1 acre plot between the creek and the larger of the other two parcels. We assume that this parcel is also part of the Ford tract, because the total size of the tract was given as 112 acres in the media.

A path (maintenance road) from the entry gate follows a sewer line across flat ground in the western portion of the park. At the present time, there is no recreational development or facilities on the property.

The tract is geographically complex; Choconut Creek is the eastern boundary of much of the park, but a broad crescent of land is located on the eastern side of the creek. It is also noteworthy that Barlow Park is on the eastern shore of the creek, directly opposite the most northeastern corner of Ford Park. From the flat bottomland, the land rises steeply to the property line on the western park boundary.

The forest is unevenly developed, with some areas still showing early successional stages of reforestation of open farm fields. White pines are particularly abundant in these less densely forested areas. Although the pines are of substantial size now, their multi-stem form, caused by pine weevil damage to young growing apices, is an indicator of early growth in an open field. Sugar and red maples are common, followed in abundance by cherry and ash. Sycamore, basswood, oak, poplar, butternut/ walnut, hemlock, shagbark hickory, and black locust are each only a few percent of the forest cover. Apple trees are scattered through the park. The tract has not been extensively examined for spring wildflowers, but spring beauty, Dutchman's breeches, bloodroot, cut-leaved toothwort, wood anemone, and white trillium have been noted in the northern part of the park.

Invasive plant species were abundant, especially honeysuckle, but also Japanese knotweed, multiflora rose, and barberry. A deer-hunting platform and two campsites were observed, but it was not clear whether they were on Town property.

**Recommendations:** The acquisition of the land was driven by a plan to develop playing fields. Should this plan ever be resurrected, it should make provisions to preserve a wide, forested corridor along the creek. The park should be surveyed more closely for the presence of spring wildflowers.

#### **Four Corners Park**

This small park contains no ash or hemlock or Austrian pine trees, so there are no concerns for this park.

#### **Fuller Hollow Park**

Fuller Hollow Park consists of a small, poorly drained playing field and an old playground area with a pavilion, swings, and a few other pieces of equipment. The park occupies a small portion of the western end of a 15-acre parcel. The south side of the playing field is lined by young ash, poplar, and autumn olive. The fringe of trees to the west has poplar but also oak, maple, and beech. To the north, along Fuller Hollow Creek, is a thin strand of much more mature trees, including oak, maple, basswood, hemlock, and ash. The mowed lawn continues from the field into an area with scattered trees and down the slope to the playground. The trees within the lawn are mostly ash and are generally spindly and unhealthy; eventually these will have to be removed. The playground is surrounded by more substantial trees of a variety of species: white pine, maple, and oak, many of them multi-trunked. What may have been a play area that was open and easily accessed from the surrounding neighborhood, is now largely out of sight. Severe downcutting of drainage channels east of the park has occurred and the channels are flanked by dense thickets of invasive shrubs.

Aside from the park, the parcel constitutes a large part of the stormwater drainage system that forms a network throughout the Upper Stair Tract; this system includes Fuller Hollow Creek and its tributaries and two retention ponds on lots adjacent to the park parcel. A large retention pond is present on private land just upstream of the Fuller Hollow Park parcel, and at about the half-way point of the course of the creek through the park parcel, a Town-owned detention pond is present north of the creek with frontage at 1308 Cameron Lane.

The creek passes under Fuller Hollow Road and through a pair of Town-owned parcels; Stair Park is located on the northern end of this pair. At one time, it would have been easy to walk from Stair Park to Fuller Hollow Park by following Fuller Hollow Creek, all on Town land, but

now the stream channel and its tributaries are deeply eroded and the banks are highly unstable throughout the Fuller Hollow Park parcel. The principal vegetation on the banks consists of dense thickets of honeysuckles and other invasive shrubs. The relatively straight route of the channel provides little opportunity to slow the speed and erosive power of the water cascading through the system. Removal of forest cover by landholders and the original builders probably added to the erosion problem, and some of the recent construction seems to show the same lack of concern for runoff management.

**Recommendations:** Relocation of the playground to make it more visible from the street should be considered. Means of reducing flow and stabilizing the banks of the Fuller Hollow Creek throughout its course should be considered. Planting willow trees would be one means of reducing continued bank erosion.

### **Harold Moore Park**

Harold Moore Park has many playing fields, a concession stand, basketball courts, and a boat ramp. The park itself is of little concern from a conservation perspective in that the thin edge of trees around the mowed fields are not species under threat. In addition to the park itself, the parcel map shows that the Town also owns the wetland west of the park and the forested corridor on both sides of the stream that flows from under Vestal Road in a straight line between the wetland and the park and into the Susquehanna River. These areas do have some issues that should be addressed.

The artificial wetland is lined on its south and west sides by locust and a few aspen. The stream corridor east of wetland is flanked by small silver maples and box elders. Between the wetland and the river is higher ground topped by a narrow strip of forest. In this area north of the wetland, both sides of the stream are covered by silver maple and box elder, with a mix of a few elms and willows. Invasive Japanese knotweed is abundant near the boat ramp and along part of the stream.

The stream is downcutting its bed and bank erosion could eventually encroach upon the roadway within the park. The downcutting of the streambed below the level of the wetland will reduce water flow into the wetland, and the diminished continuity of stream and wetland will leave the wetland isolated and dry during times of low rainfall. During heavy flow, the rush of water down the straight stream channel erodes the banks, causing stream bank slumping.

**Recommendations:** A much broader unmowed vegetation buffer should be allowed to develop on the stream bank, although the natural vegetation will have compete with the spread of Japanese knotweed. Consideration should be given to means of protecting the streambanks along the roadway, perhaps planting with willows. Diverting the stream so that it meanders through the wetland is another possibility that could be studied. This could improve the functioning of the wetland, retain more water, reduce the energy of the water flowing down the stream to the river, and prevent the eventual encroachment of the stream on the roadway into the park; however, it could also cause water to pool during high flow, maybe even causing it to back up to Vestal Road.

### **Jones Park**

At 305 acres, Jones Park is by far the largest park in the Town and it presents the greatest variety of management issues to be addressed. It has an extensive trail system used by hikers, joggers, cross-country skiers, and mountain bikers. It has pine and spruce plantations, and a

variety of other remnants of past land use. It has intermittent streams within the park, a former firearms firing range, protected plant species, recently constructed wetlands, and significant amounts of insect-threatened ash and hemlock. About 45 acres are covered by lawn and mowed or abandoned fields, a graveled parking lot, and a petroleum pipeline easement; the rest is forested. There is substantial geographic relief: the park ranges from about 1100 to almost 1500 feet of altitude and captures rainwater flow from surrounding hills that rise to 1600 feet to the north and 1800 feet to the east. The amount of runoff affects the stability of the stream corridors and the associated plant communities that together constitute the most attractive and biologically important features of the park. Given the complexity of the park, individual issues and particular areas of the park will be considered separately.

#### *The watershed and stream corridors*

An intermittent stream arcs east to west across the width of the park. Two tributaries flow into the stream, one draining a steep-sided valley to the north and another is fed by a more expansive drainage basin to the northeast (some topographic maps show this, rather than the southeast branch, to be the main stream course). The water from Jones Park flows into Choconut Creek. The lower end of the stream within the park is crossed by a bridge near the parking lot and the mid-reach of the stream within the park flows through several culverts in the area where multiple trails join. An area in the south-central part of the park has a separate drainage outlet, flowing parallel to the State Line Road spur and the service road that extends from it.

Erosion of the stream banks is a particular concern because the stream corridors are the most aesthetically appealing and interesting parts of the park. These rich, moist soils are home to many species of spring wildflowers and rare ferns. The main stream corridor in Jones Park may be the richest botanical community in the Town. No area of any park is in greater need of monitoring and protection. Given the sensitive nature of this irreplaceable area, attention should be given to two long-term concerns that have the potential of causing damage: erosion caused by watershed changes and damage caused by heavy or improper use. The parcels north of the park are owned by a lumber company and flow from them drains through the park. Harvesting of timber in higher contours of the watershed would likely result in increased runoff, which would flow into the park streams and increase erosion. Means of mitigating erosion should be considered.

Motorized vehicles could cause rapid and extensive damage to the stream corridor. ATVs and snowmobiles are not permitted in the park, but not all users are observant of such rules. Trail bikes have been permitted in the park and appear to have been used responsibly, but their use in this area, in particular, is cause for concern. The frequent stream-crossings of the foot/bike trails causes localized damage to stream banks.

#### *Created wetlands*

The Upper Susquehanna Coalition (USC) built six ponds in Jones Park: three in the red pine plantation, one north of the Main Street Trail spruce plantation, and two others between these two plantations. The ponds provide wetland habitats, and they were quickly colonized by frogs. They also capture some runoff, attenuating stormwater flow, but probably not a significant amount.

#### *Roadways associated with the park*

A maintenance road, also called the Main Street Trail, starts in the parking lot area and climbs east along the edge of the mowed field, then into the forest and to the stream culverts, a distance of a half a mile. A large open area was created near the culvert to serve as a turn-around for emergency vehicles. A second access road extends north from Stiles Road past a few houses and into the park, joining the Main Street Trail after 0.1 mile.

#### *Trail system*

An extensive system of trails has been developed in the eastern two thirds of the park. Some of the trails were probably logging roads and are quite broad; numerous narrower trails have also been developed. Our understanding is that mountain bike riders have been involved in building and mapping trails. The eastern half of the park is now saturated with trails; none should be added, and perhaps some should be abandoned.

The Jones Park trail map shows no trails in the western portion of the park. However, the western edge of the steep-sided, north-south valley has a trail marked by red blazes painted on tree trunks. Presumably the trail was marked some time ago and is little used and not maintained. Its full extent was not explored.

Concerns about the trail system are threefold: the trail system in the eastern part of the park may be overbuilt; any broadening of the Creek Trail from increased use will cause a reduction in the size of the habitat for uncommon and rare plants; trails that cross the streams can cause streambank damage.

#### *Native trees of Jones Park*

The native trees in Jones Park are diverse. Canopy species include red maple, sugar maple, beech, red oak, chestnut oak, white oak, basswood, white ash, white pine, hemlock, quaking aspen, large-toothed aspen, grey birch, yellow birch, black cherry, hickory, and American elm. Understory and edge species include hophornbeam, muscledwood, pin cherry, striped maple, witchhazel, grey dogwood, and hobblebush. The distribution of species is partly a function of soil quality, drainage, and slope. White pines and hardwoods dominate the higher slopes and hemlock is most abundant along the stream corridors and in the valley floor area around the culvert.

The forest is being affected by beech bark disease, a disease caused by the dual actions of beech scale insect which creates bark lesions that allow entry of a pathogenic fungus. The fungus causes bark cankers and eventually tree death. Beech remains a significant component of the Jones Park forest. Beech reproduces by suckers, as well as by seed, and young and disease-resistant trees persist. In some parts of the park, young beeches form a substantial understory.

The hemlock woolly adelgid is now present in our region and eventually will impair the growth of the hemlocks. Mortality is likely to be gradual and in the range of five to ten or more years. Hemlocks cast a deep shade and loss of hemlocks will allow more light and heat to reach the forest floor. Erosion caused by treefalls in the stream corridors will be a concern.

White ash is also unevenly distributed through the park. The southeastern quadrant of the park is covered by a medium age forest with a relatively high abundance of ash. The Outer Limits trail traverses this north-facing slope. The emerald ash borer will probably become established in the Town along the river before spreading to higher elevations. It may be five or more years

before evidence of infestation is apparent in Jones Park. This part of the park will see the greatest effect.

#### *Conifer plantations*

Jones Park contains four areas that were densely planted in conifer trees, one in red pine, one in Scots pine, and two in white spruce. Other Scots pines and some spruces are in scattered locations. For example, a double row of Scots pines was planted along the south side of the Main Street Trail in the open field, but many have died. The parking lot is surrounded by two kinds of planted spruce trees.

The red pines are a mature stand north of the culvert. Some trees have been harvested, so those remaining are sparsely spread over about 7.5 acres. The remaining trees are in conspicuous rows, producing an appearance more like a corn field than a forest. Some recruitment of red pine and white pine is occurring, which could eventually give the area a more natural look, but generally forest regrowth is poor and the ground is covered by invasive brambles and scrub, including multiflora rose and autumn olive. Selective removal of more trees from the red pine plantation to provide a more natural-looking community is worth considering. The possibility of planting native trees in places where regeneration of native forest is not occurring might also be explored.

A small grove of Scots pines is present just north of the firing range (see below). They form a dense stand, but because they do not appear to have been planted in rows, the stand looks relatively natural. Judging from the size of the largest individuals, the grove is relatively young, but young pines are seeding in on the edge of the stand, establishing a more mixed age structure and adding to a natural look.

The more conspicuous white spruce plantation is 3.5 acre rectangular plot north of the Main Street Trail and it is roughly bisected in a north-south direction by the Rock n Roll Trail and old fence line. The spruce stand is dense and regular enough in outline to be easily identifiable in aerial photographs. The trees are not very large and the lower branches are largely dead from self-shading, presenting at the eye level an unattractive thicket of naked branches. Many trees have fallen around the edges and in the eastern section. Selective thinning of the stand would allow a more diverse and natural community to develop.

A second white spruce plantation, this one mixed with white pines, is present in the northwestern sector of the park. This plantation is also identifiable in aerial photographs as a dense rectangular plot about 3.0 acres in size. The pines appear to be overtopping the spruces. The edge of the plantation has numerous small fallen spruces. The grove is very dense and the persistent lower branches make the patch dark and nearly impenetrable. Given that this is a little visited part of the park, thinning the stand to create for a more natural appearance would be desirable but a low priority.

#### *Herbaceous flora of Jones Park*

Jones Park has the most diverse wildflower flora of any Town Park; only Middendorf Park is anywhere close in the variety of species. Among the flowers observed were purple trillium, painted trillium, dogtooth violet, wild sarsaparilla, doll's eyes, barren strawberry, waterleaf, blue-bead lily, wood sorrel, Solomon's seal, Canadian mayflower, Indian cucumber root, rue anemone, partridge berry, sweet cicely, foam flower, miterwort, rose twisted stalk, shin-leaf pyrola, jack-in-the-pulpit, downy yellow violet, Canadian white violet, dog violet, and lesser roundleaved orchid (vegetative only).

A workshop on the fern genus *Botrychium* held at Cornell included a field trip to Jones Park, where five species of this unusual fern were found. One species, *Botrychium oneidense*, is considered endangered in New York State and is protected under Environmental Conservation Law. It is listed under the following heading: “The following are endangered native plants in danger of extirpation throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction.” The locations of the endangered species, *B. oneidense*, should be mapped and monitored.

*Former firearms range west of the creek*

Near Stateline Road, west of the parking lot, is an acre of mowed lawn on flat ground. A flag pole is present on the south side of the lawn. The lawn contains a gridwork of pavement. The slopes to the north and west of this area have been excavated to a produce steep slope, giving the appearance of an amphitheatre. We understand that this area was formerly used as a weapons firing range. If that history is accurate, the slopes may contain a substantial amount of lead from discharged bullets. As long as the ground is not disturbed and there are no issues with contamination of groundwater, posting the area and restricting uses that could increase exposure could be sufficient to address the possibility of lead contamination.

*Old field north of the firing range*

Directly north of the firing range is a steep 10-acre plot. At the bottom edge, just upslope of the firing range, is the planted grove of Scots pine. The rest of the field is undergoing slow old-field succession with hawthorn and other shrubs coming in but no trees. A few small patches of multiflora rose and autumn olive are getting established and should be removed. Some apple trees border the northern edge of the field.

*Mowed field on the slope east of the parking lot*

This 10 acre grassy field appears to be mowed annually. This area has a gentle slope and is easily accessible. It could be allowed to reforest naturally, but it could also be managed to allow the development of various states of ecological succession, thus providing diverse habitats for birds and other wildlife. A trail could be created that would wander through the field, with closer mowing on the edges of the trail for tick control. If succession is allowed to occur, monitoring and removal of invasive species such as multiflora rose and autumn olive should be performed.

*Miscellaneous noteworthy features*

Scattered throughout the park are large white pines that show the multi-stemmed growth that is indicative of growth in an open field. Remnants of fencing and plantings of apple trees persist in a few places. These features could be used as part of an educational program that would present information about evidence of past human activity and changes in land use.

The Chimney Trail gets its name from a brick chimney that is the only obvious sign of a dwelling that once existed in this area. The chimney could also be an interpretative feature used to describe the history of past land use in Vestal, or it could be viewed as an unnatural feature that should eventually be removed. Very wide discussions, involving a variety of stakeholders and possible resources (for example, the Town Historian) would be essential.

One of the most notable trees in the park is a very old and large-diameter sugar maple tree that clearly predates the forest that has grown up around it. It is shown on the trail maps under the name the Grand Old Man and is found on the Rock n’ Roll Trail.

**Recommendations:** Jones Park is spread across hilly terrain remote from the centers of population of the Town; therefore, it is not an appropriate place to build playing fields for organized recreation. The principal management goal for Jones Park should be to provide a place where residents can go to see both a diverse, mature forest and areas of successional habitats that together will support a great variety of plants, birds, and other wildlife. Specific steps should be taken to protect the principal stream corridor downstream of the culvert because this area may be the richest wildflower habitat in the Town. Because of the size and variety of features in the park, the management plan requires numerous individual components that address each of the particular parts and features of the park: the stream corridor, the spruce and pine plantations, the mowed slope, the old field, the former firing range, the area containing the endangered fern species, etc. All these separate components then need to be united in an overall plan.

Specific recommendations:

1. The stream corridors and other botanically rich sites in the park should be managed to protect the habitat and the associated plants. This could entail erecting signage, mapping the locations of rare and protected species, considering means to protect against stream bank erosion and damage from widening trails or trail abuse, and perhaps designating the area as a nature preserve.
2. Plans should be developed to minimize stream erosion should logging occur on adjacent properties whose runoff drains through the park.
3. Allowing managed succession to occur on the slope to the east of the parking lot should be considered. This might be coupled with the development of a trail that would wind down the slope.
4. The history, present use, and future of the former firing range area should be studied.
5. The condition and number of trails in the park should be examined and then reviewed annually.
6. Consideration should be given to selective felling or removal of trees from the red pine plantation to provide more natural-looking communities. If recruitment of native tree species continues to be poor in this area, plantings might be appropriate. Thinning of the white spruce plantations might also be studied.
7. The distribution of ash and hemlock within the park should be examined more carefully and the condition of these species monitored.
8. Invasive species are not yet a serious problem in Jones Park, so now is the best time to remove barberry, multiflora rose, and autumn olive when they are found.
9. Discussion should be fostered about whether evidence of past human activity should be developed as a means of providing information about local history and changes in land use.

### **Magnolia Drive Park**

Magnolia Drive Park is a 5.4 acre lot on sloping land that is about 80 percent forested. The terminus of Magnolia Drive provides a narrow entrance to the northern corner of this triangular park. This entry is flanked by poison ivy. We understand that a pavilion and playground were once present near the entrance, but they have been removed. What appears to be a detention

pond has been created near the entrance, and the surrounding raised area is covered in high grasses. From this feature, the park widens as it continues up the slope. Discerning the boundaries of a triangular park on a continuously forested hillside is difficult. We noted indications of vehicle transit from adjoining properties across the park between the grassy area and the forest.

The forest is well-developed secondary growth of white pine, red maple, red oak, cherry, ash, hickory, birch, a few small hemlocks, and an understory of witchhazel, a few dogwoods, musclewood, and hophornbeam. Invasive plants were present: scattered barberry bushes, multiflora rose, and garlic mustard. Native wildflowers included May apple, partridge berry, northern starflower, and early meadow rue.

The principal value of the park may be to preserve forest cover so as to minimize stormwater runoff into the subdivisions below. Recreational value is limited to hiking, birding, and similar low impact activities. The possible loss of ash or hemlock to invasive insect pests will have little effect given the low abundance of these two species.

### **Middendorf Park**

Middendorf Park is comprised of five parcels for a total of 33 acres, of which 25 are forested. Access to the park by road is from West Sheedy Road, through a corridor the width of the roadway. The short driveway leads to a small parking area and a pavilion. The eastern edge of this parcel continues northward from the roadway. To the east is a privately held 5.8 acre parcel that extends almost to Choconut Creek. The parcel map shows the creek and both of its banks in this area as Town property; therefore, the private parcel is surrounded on all but its southern edge by Town lands. The narrow entry parcel of the park is lined by forest on the west but is mostly covered by coarse lawn. Grass covers the center of the parcel to the north, but the remainder of the park is well forested.

Most of the park occupies flat bottomland, but the park's western boundary follows a steep slope, at the top of which, is the rear of many residential properties. A main sewage line runs the length of the park in a north/south direction and a branch line comes in from the west; access to these lines by heavy equipment has to be maintained. Scattered piles of trash were observed on the valley floor and more on the slopes behind the residential properties. An active campsite with tents and a fire was encountered on one visit. Mountain bikers use the park and have constructed ramps and jumps.

The forest in Middendorf Park is dominated by maple, hemlock, and sycamore. Ash is sparse, and their loss will have little effect, but loss of the hemlocks, which cast a deep shade year-round will cause significant changes to both the forest canopy and the forest floor. Also present but in low abundance are basswood, oak, cherry, and elm. The rich bottomland soils support an impressive variety of perennial spring wildflowers; about two dozen species were identified, several of which are locally uncommon. Species observed include: purple trillium, dog-tooth violet, spring beauty, Dutchman's breeches, squirrel corn, Virginia bluebell, rue anemone, toothwort, foam flower, miterwort, jack-in-the-pulpit, yellow, white, and purple violets, false hellebore, wild garlic, coltsfoot, May-apple, white baneberry, northern starflower, Solomon's seal, wild sarsaparilla, barren strawberry, wild ginger, hepatica, blue cohosh, wild oats, and bloodroot. Several aggressive invasive plant species are present, including multiflora rose, autumn olive, Japanese knotweed, barberry, and garlic mustard.

**Recommendations:** The management plan for the park must balance access for sewer line maintenance balance and public use with preservation of the exceptional living natural features. Much of the wooded portion of the park should be designated as a nature preserve and managed to preserve the spring wildflower flora, in particular. Other needed actions include removal of invasive species, monitoring of wildflower populations, limitation of use of the preserve area to foot traffic, signage to indicate the boundaries of the preserve and regulations for the preserve, and enforcement of the regulations.

### **Richards Avenue Park**

This park consists of two parcels of 1.5 and 0.3 acres. It contains a pavilion, playground, and mowed playing field. The small parcel south of the pavilion has an ash tree in the middle of the lawn. The south side of the park is lined mostly by locusts and oaks, but closer to the creek, there is some beech, a maple and a butternut, and invasive multiflora rose. A return visit to assess the possible presence of spring ephemerals should be made.

The western boundary of the park is Choconut Creek. The stream bank west of the playing field is nearly barren of large vegetation. A red maple and a sycamore are the only living trees present in this area. There are a couple of standing dead trees, which may have died as of result of the exposed roots caused by undercutting of the stream bank during times of high water flow. The strip of streambank vegetation is only a few feet wide.

On the north side of the field is a strip of young forest that contains basswood, hophornbeam, butternuts, and ashes ranging from saplings to a foot in diameter. The locations of the ash trees are such that they are of little concern. This patch contains some debris and invasive honeysuckles.

**Recommendations:** The ash in the lawn should be monitored and eventually removed, but the ashes in the woods on the north side will be an issue only if they fall onto the field. The standing deadwood along the stream should be taken down. As recommended for Vestal Center Park, planting of a 30-50 foot scrub and tree buffer along the creek would help stabilize the bank, shade the creek, and provide wildlife habitat. A split-rail fence is not suggested for Richards Avenue Park at this time because the greater danger of flooding, which could make the capital investment in the fence a waste of money. Just north of the park on private land a stream flows into Choconut Creek. The tributary stream bed has been straightened and berms, more than six feet tall, have been erected on both banks, burying the bases of trees lining the stream. The added weight of the berm material on the rootstocks of the trees is likely to eventually cause their death and destabilize the stream banks. The accumulation of gravel within the confines of the berm has resulted in the streambed becoming an elevated structure: the bed is now higher than the land on either side of the berms; during low flow conditions, water emerges south of the berm along what was probably the original stream course. A significant concern is that during flood conditions, the berm lining the tributary where it joins the Choconut will act as a partial dike on the swollen Choconut, backing up water to the south behind the confluence, and possibly flooding the Town park and low-lying private properties nearby. Because the flooding would be a transitory event, the vegetation, once established, would not be greatly affected, but structures, such as a split-rail fence, could incur significant damage. Removal or significant perforation of both sides of the berm would help alleviate this potential situation.

### **Ross Corners Park**

Ross Corners Park is located on two parcels owned by the Vestal Central School District. Together, the two parcels have an area of about 11 acres. Most of the park is covered by playing fields and tennis courts. A line of mature hickory, sugar maple, and black cherry trees, with a few small ashes, separates the playing fields into eastern and western areas. This line follows the boundary between the two parcels, the eastern one of which continues farther to the south and contains a forested area of about 3 acres. The forest edge has large hickories, maples, black cherries, and ash; some of these may have been planted. A narrow strip of flat ground gives way to a slope that rises to the southeast. The woods beyond the forest edge is of medium age and is relatively open. It consists mostly of red maple, black cherry, and ash trees, with some white pines and beeches.

The park has frontage on Owego Road at three locations: near the tennis courts and two places between private parcels. A large number of Norway spruces that were planted along property lines have attained large size but are now dead or dying.

**Recommendations:** If the dying spruce trees near the residential properties are on public property, they represent significant liability and prompt removal would be advised. No other issues were noted.

### **Stair Park**

The Town owns two contiguous parcels that run from the end of Lehigh Avenue to Fuller Hollow Road. Stair Park is on the northern edge of these properties and has entrances on Murray Hill Road and Lehigh Ave. The park has a playground, pavilion, and mowed lawn, part of which is open and part is shaded by large trees. Fuller Hollow Creek flows through both parcels and a bridge spans the stream and provides access from Lehigh Avenue. Summer programs are often held here, and children and university students often go down the stream bank and into the creek. Two waterfalls are found in the park, a tall cascade under the bridge and a sheer drop just upstream. The streambed itself is being downcut and these waterfalls are moving upstream. Erosion of the stream banks is a severe problem, especially below the lower waterfall. The banks along the short scenic reach of the stream between the two waterfalls are also eroding: on the lawn side from foot traffic of those going to the streambed and by the installation of drains from the playground, and on the far side by the undercutting of trees on the steep slope by high water. The western bank slope is rich in hemlocks, which contribute to both the stability of the slope and the shaded, scenic value of the area. South (upstream) of the playground and lawn area, the creek bed crosses the valley floor and cuts into the eastern slope of the valley. Riprap has been installed to protect against further erosion of this bank. The stream course loops back west and then follows a relatively straight course upstream to the culvert under Fuller Hollow Road.

The southern parcel is entirely forested. White pine is common throughout, but it is especially abundant in the southern half of this parcel. Also present are basswood, sugar maple, ash, birch, cherry, beech, and a few hemlocks and sassafras. A patchy understory of hophornbeam and witchhazel is present in some places. A few native wildflowers were observed. The non-native invasive hedge plant, barberry, is abundant in some areas.

The northern parcel contains much less bottomland forest, but the composition is similar to that of the southern parcel. Half of the bottomland is occupied by the lawn and playground. The trees within the lawn and around the actively used part of the park include ash, maple,

basswood, hemlock, birch, tulip poplar, some young white pines and spruces. One of the ash trees is sickly and its double trunk is likely to split in the near future. This tree and a few other ashes may eventually need to be removed from the lawn.

The majority of the northern parcel is west of the stream, where the forest continues up the slope and is continuous on its northern edge with the university's nature preserve. The corners of the western boundary of the parcels are marked by three-foot high concrete posts. Although the lower part of the slope next to the creek is rich in hemlock, that is the only hemlock in this part of the parcel. The rest is forested by maple, cherry, birch, and beech on the slope with chestnut and red oak and hickory toward the crest of the hill. There is a well-developed understory of witchhazel, striped maple, and hornbeam with a few sassafras.

**Recommendations:** The trees near to lawn area should be monitored. The unhealthy ash tree is likely to split. The other half dozen ashes in the lawn will eventually be attacked by the ash borer and should be removed after they show clear symptoms. Great care should be used to distinguish the ashes from the tulip poplars, which have similar bark; both species in the lawn area are tall and the foliage is so high that they are not easily distinguished. The ash in the forested area is not a concern.

A strip of natural vegetation should be allowed to develop by not mowing close to the edge of the stream. A split rail fence to set off the streambank buffer might be a possibility. The installation of the pipe draining water from the playground area has caused damage to the stream bank and some bank stabilization work may be needed. The banks of the creek just below the bridge are eroding badly and may require attention. The greatest concern is erosion, which is occurring despite the presence of two retention ponds in the Upper Stair Park. Any increase in the amount of impervious surface in the upper part of the watershed adds to the volume and speed of the runoff, exacerbating the problem.

### **Stratford Park**

This is a small parcel with a pavilion, a playground, and lawn. There are no obvious concerns.

### **Twin Orchards Park**

The park is an extensive mowed lawn area fringed by a young forest on the west and a few large trees on the east. A playground is next to a young forested area that contains hickory, cherry, walnuts/ butternuts, and some poison ivy. Several standing dead cherry trees behind the baseball backstop are somewhat of a hazard. A single very large barberry bush is present but it seems to have had little opportunity to spread and become a nuisance. From a conservation perspective, the most valuable feature of the park is the presence of the very large hickory trees on the eastern side of the park, and except for the standing dead wood, which could come down in a windstorm, there are no issues of conservation management.

### **Vestal Center Park**

This park consists of two parcels: a 2.4 acre piece owned by the Town and a 10.1 acre parcel listed on Broome County GIS as belonging to Vestal Fire Company 2, Inc. The park features playing fields, basketball court, tennis courts, a shallow depression that can be flooded for ice skating in winter, a pavilion, playground, and a building for social events. The western boundary of the park is Choconut Creek. Creek flooding in 2006 inundated the park, and the uneven topography in the northwestern part of the park is partly the result of material deposited

during the flood event. The streambank is higher than some of the land behind it, and in high flow conditions the creek will again overtop the bank. Erosive incision of the streambank is occurring, and when the bank is breached in a future flood, a new stream course could be cut across the northwest corner of the park and the adjacent private property to the north. A meandering intermittent tributary of Choconut Creek traverses the northwest quarter of the park. Presumably, the dumping of sediment by the tributary during heavy rainfall events has also contributed to the uneven ground. A couple of small wetland pools with cattails are present in this area.

Some maples and cherries are present in the lawn, but most of the forested area is on the south and north sides of the park. The thinly forested south side has several ashes about one foot in diameter and some hophornbeams. In addition to two standing dead trees, close to the stream, there are a few sycamores, maples, basswoods, and several walnuts. Extensive areas of the invasive species Japanese knotweed and multiflora rose are present between the mowed lawn and Choconut Creek in the southwestern quarter of the park. Two large dead pines are present on stream bank. Two or three hemlocks are present along the northern boundary of the park.

On the north side of the park just west of the ball field, there is a triangular grove of trees containing a nice stand of beech, a few maples, ashes, oaks, cherries, butternuts, and witchhazels. Piles of wood debris have been dumped in the open field on the west side of this grove.

**Recommendations:** An unmowed scrub and tree buffer set off by a split-rail fence should be created to revegetate and stabilize the streambank, shade the creek, and provide wildlife habitat. Consideration should be given to filling the incision in the streambank to retard the creek from changing its course and lopping off part of the park. The northwest corner of the park is a potential site for the construction of a wetland. This could be developed into an attractive natural feature while also serving to better manage water flow, and with appropriate signage, it could serve an educational function. The ash and hemlocks in the bordering forests are of little concern.

### **Willow Point Park**

This park on Gates Road is located on property owned by the Vestal Central School District (VCSD) and WSKG. Half of the mowed lawn area used for recreation is on the Vestal Central School District parcel and the other half is on the WSKG parcel. We understand that the lawn is mowed by the Town. A pavilion under the tree canopy and playground are present on the south edge of the lawn, which also has three ball backstops on the west side next to the forest.

The forested part of the park is nearly all on VCSD property and has informal trails. Numbered stakes were found along the trails, but their function was not apparent. Some appear to have been painted recently. The forest is especially rich in maple and cherry, but it has a diverse composition, including poplar, white pine, ash, white oak, birch, basswood, walnut, hickory, and some sassafras. Invasive shrubs are abundant. Some May apples are present, but the mid-summer herbaceous flora is largely non-native. The park should be revisited in spring to assess the abundance of spring ephemerals.

The forested part of the parcel area is bisected by a deep gully that eventually empties into a storm drain on Commercial Drive. A small wooden bridge crosses the gully. The gully was

created and continues to be enlarged by runoff emerging from a storm drain that lies under the playing field and collects water from the lawn and probably Gates Road.

**Recommendations:** The expanding gully in the forest needs to be addressed. Installation of a storm drain would halt the continuing loss of large volumes of soil and would eliminate the hazards posed by this deep and unstable ravine. Ash and hemlock are not concerns in this park.

#### **D. Developing an action plan for stream corridors in Town parks**

The CAC is attempting to develop a working relationship with the Upper Susquehanna Coalition (USC). The USC has grant funding for a program to create non-agricultural stream corridor buffers. The information we have compiled in our report provides a survey of streambank issues across our park system, making Vestal an ideal place for the USC to begin developing plans to work with municipalities on buffer programs.

The buffer initiative stems from the need for New York State to reach federally mandated targets for the total maximum daily load of phosphorus going into the Susquehanna River, with the goal of reducing excess nutrients flowing into the Chesapeake Bay. Streambank erosion is a major non-point source of phosphorus in our watershed. If designed and planted properly, revegetated buffers can reduce erosion. They can also have a variety of other benefits. Shrubs and trees can provide a source of food and cover for migratory birds and other wildlife. Trees shade the stream, which significantly decreases water temperatures, making the stream a more favorable environment for fish and the invertebrates on which they feed. A dense cover of native vegetation provides a barrier against non-native species, including Japanese knotweed, a particularly aggressive streambank invader.

Our draft park conservation management plan calls for revegetated streambank buffers along Choconut Creek in Vestal Center Park and Richards Avenue Park. USC's grant meshes extremely well with our recommendations. They would be able to provide technical assistance for buffer design and species selection, as well as follow-up monitoring. USC expects to fill a three-year position for a buffer coordinator/monitor this spring.

The goal of this first project is to provide a densely vegetated streambank buffer perhaps 50 feet wide in two parks. A split rail fence, such as that present on the edge of the lawn area of Barlow Park, would provide clear separation of the buffer from the playing fields. Signs could be posted as part of educational outreach, describing how the buffers are part of an effort to improve water quality and aid in the recovery of the Chesapeake Bay. USC would be willing to talk to landholders of adjacent properties about extending the buffers onto their land. The plant species used would all be natives and ideally would be of mixed age classes. The first step is the simplest one: simply marking the buffer and cease mowing in this area.

We believe that the streambank revegetation project would be a productive starting place and would help us develop the experience and expertise needed to pursue DEC grants. The 'Trees for Tribes Program', for example, would fit extremely well with the goals of establishing streambank-stabilizing buffers along Choconut Creek. With Town approval, we would like to move forward with building a relationship with the USC, explore grant opportunities, and begin to marshal resources, such as in-kind contributions of volunteer labor.

18 March 2015