STREAM ASSESSMENT OVERVIEW, SAWKILL CREEK

(Survey Dates: March 2002; April 2002; September 2002)

General Land Characteristics

Slope/Terrain:

Headwaters: Variable; generally hilly but locally with gentle slopes.

Middle reaches: Gentle slopes.

Lower reaches: Steep valley walls both sides; narrow valley 15-40 ft deep indicative of geologically recent (postglacial), rapid downcutting of stream.

Usage:

Headwaters: Mostly private, undeveloped land, with enclaves of low- to medium-density residential areas.

Middle reaches: Mostly private, undeveloped land, some of it protected as the Milford Experimental Forest.

Lower reaches: High-density residential/commercial development on northeast side of stream as it flows through Borough of Milford.

Ownership, Access:

Headwaters: Private land. Only public access to Sawkill Creek is at road crossings except for two short stretches of state forest land.

Middle reaches: Private land. Public access to stream at Pinchot Falls near Grey Towers; otherwise only at road crossings.

Lower reaches: Public access to "The Glen" on west side of Sawkill north of Mott St. bridge, and thence to informal trails on state lands farther west and north, and federal recreational lands to the south.

General Stream Characteristics

Active channel width: 2-5 ft in headwaters, increasing to 25-50 ft downstream. Maximum channel width is in low-gradient portions of middle reaches.

Dominant substrate(s): Boulder/cobble substrates common along entire length of stream; local pebbly to muddy bottom in headwaters.

Water clarity: Generally clear; slightly turbid in lower reaches after storms.

Obstructions: Dam at Lily Pond on tributary (Craft Brook). Dam at small pond west of Sawkill Road. Dam below Mott St. bridge in Milford.

Bank Stability: Generally poor to very poor in the middle to lower reaches south of Interstate 84, where steep banks with exposed roots are common and where undercutting is visible locally. Bank stability greatly increases toward the calmer, lower-gradient headwaters on the plateau several miles west of Milford.

In-Stream Habitat: Generally fair to good, and locally excellent. Cobble/boulder substrate along nearly the entire length of the stream provides good habitat, and in most places this rubbly substrate is clean and not silted over. The main limiting factor to good habitat is the uniformly shallow water in some stretches of the stream, where gradients are low and the stream spreads out in width. No pools or runs exist in such areas.

Width of Riparian Zone: Moderately good to excellent in most places, but locally poor. In lower reaches, in and near Milford, some residential lawns extend to the bank edge and paved roads are within 50 ft of the stream.

Vegetation

In-stream vegetation: Little noted; most of survey was done early in the season (March, April). Even in September the stream ran clean, with little rooted vegetation within the wetted perimeter. Exceptions are in wetlands, where a variety of thickly growing grasses locally obscures the stream channel.

Canopy cover over stream channel: Mostly mixed deciduous/conifer trees; locally hemlock is major component. Canopy cover of more than 80% is common along much of the stream and its tributaries.

Riparian overstory: Mixed deciduous/conifer forest. Oak, maple, and hemlock are common; also shagbark hickory.

Riparian understory: Understory commonly sparse; mostly unidentified/unstudied shrubs and grasses, the latter thick in wetland areas.

Adjacent land:

Headwaters and middle reaches: Mixed deciduous/conifer forest in mostly undeveloped lands; lawn grass and ornamental trees/shrubs in local residential enclaves and recreational camps.

L*ower reaches*: Lawn grasses and ornamental trees/shrubs in residential/commercial areas of Milford north of stream; mixed deciduous/conifer forest in undeveloped recreational lands south of stream.

Biota

Macroinvertebrates: Not studied during this assessment.

Animals observed in area (wild and domestic): Deer, gray squirrel, leopard frogs, other unidentified frog species, bluebirds, jays, variety of birds heard but not seen.

Significant Features (describe)

Cultural/historic features:

1. Waterwheel Restaurant is in old mill building with well-preserved water wheel and associated features.
2. Muir House along County Road 2001 west of Milford.
3. Mott St. bridge in Milford, built 1902 by the Penn Bridge Co. of Beaver Falls, Pennsylvania.
4. Metz Ice Plant (vacant) below Route 2001 bridge over Sawkill Creek on south edge of Milford.

Scenic features:

1. "The Glen" in Milford, a beautiful, hemlock-shaded, peaceful stream valley above the Mott St. bridge.
2. "The Knob" southwest of Milford is a high vantage point overlooking the Sawkill Creek valley, Milford, the Delaware River, and points north and east.
3. Pinchot Falls near Grey Towers west of Milford. A wonderfully aesthetic waterfall viewed from a publicly accessible overlook.

Recreational features:

1. Hiking trail through "The Glen" in Milford provides public access to a peaceful, hemlock-lined stream valley. Several informal trails branch off in this area and lead upward to The Knob (a scenic overlook) and northwestward into the forest.
2. Hiking trail leads from bridge over Sloat Brook at Muir House southward into Delaware Water Gap National Recreation Area.

Geological features:

1. Spring-fed streams and associated wetlands just below Milford Water Plant.

Current or Potential Problems

1. Houses within 100 ft of stream in Milford. Some lawns extend to bank edge and probably contribute nutrients and pesticides to stream.
2. Unstable, eroded banks in many areas of downstream reaches. Banks have locally caved. Exposed roots are common, and locally the bouldery/cobbly substrate of the stream is partially silted over.
3. Stormwater discharge from Milford developed areas contribute pollution to stream.
4. Septic fields locally very close to stream.
5. Missing or sparse understory in forested areas; probably due to deer browse.
6. Wooly adelgid noted on hemlock trees in several areas.
7. Graffiti on Route 209 bridge in Milford; scattered litter in areas of road crossings or where stream is otherwise accessible to the public.
8. Rock quarrying/crushing operation along Route 6 about three miles northwest of Milford reportedly has contributed sediment to Sawkill during storm events. During strong events the sediment plume can be traced to the mouth of the Sawkill four miles downstream.

9. Several dams on the Sawkill and its tributaries have created artificial ponds and have cut off the lower from the upper reaches of these streams.

10. Upslope development is occurring along all but the eastern margins of Mud Pond despite the pond's listing in the *Pike County Natural Areas Inventory* as an area highly deserving of protection due to biologic diversity and a good population of a state rare shrub.

STREAM AND RIPARIAN ENVIRONMENT ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __1__
Survey Date(s): 3/11/02

Stream: Sawkill Creek
Stream Segment and Location: Wyckoff Lane bridge over Sawkill, in Milford.
Lat./Long. or UTM: 18T 0516271; 4574490

Weather condition (today): Cold, cloudy, breezy, about 30°.
Weather condition (past 2-5 days): Cool; light rain.

General Land Characteristics

Slope/Terrain: Steep valley walls both sides; valley about 15 ft deep.

Usage: Residential area

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 18 ft.

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Almost none; one 6" felled tree in stream.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): _4_

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _4_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 1

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __6__

Excellent: More than 50% of bottom is rubble, boulder,	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or	**Fair**: About 10-30% of bottom is boulder, rubble, gravel.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or

gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	other suitable habitat. Some deeper areas in pools, riffles, or runs.	Habitat available is less than desirable; mostly shallow, with few deeper areas.	other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _6_ 1

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __4__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _4_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 1

Vegetation

In-stream vegetation (describe types and amounts): None noted (early in season).

Canopy cover over stream channel (estimate percentage): __50___

Riparian overstory (estimate percentages)
__15__ conifer trees __85__ deciduous trees
Most trees in this area of only of sapling size; no large trees.

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative
Ailanthus is local exotic species.

Adjacent land: Lawn grass (residential area).

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: None

Scenic features: None

Recreational features: None

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Houses within 100 ft of stream. Some lawns extend close to stream, up to bank edge.
2. Rocks in stream are covered with a thin layer of silt.
3. Scattered litter.
4. Two stormwater discharge pipes, one on each side, upstream from bridge. Both about 12" diameter. Pipe on stream left (east) is sediment-choked and not flowing at present; pipe on stream right is flowing >5 gpm. Discharge appears clear; no odor noted.

Photographs (describe view direction and significance):

- View looking upstream from bridge.

Additional comments: Vertical retaining wall about 10 ft high and 70 ft long on stream left about 150 ft downstream from bridge.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __2__
Survey Date(s): 3/11/02

Stream: Sawkill Creek
Stream Segment and Location: West of Waterwheel Restaurant, near junction of County Road 2001 and Water Street, in Milford.
Lat./Long. or UTM: 18T 0515887; 4574700

Weather condition (today): Cold, cloudy, breezy
Weather condition (past 2-5 days): Cool; light rain

General Land Characteristics

Slope/Terrain:

Usage: Commercial

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 25 ft.

Dominant substrate(s): boulder _X_ cobble __ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None. No fallen trees in stream; people apparently removing them.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __2__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **2** _ _ _ **1**

Comments: Stream downcut about 10 ft into its floodplain. Tree roots commonly exposed on both banks; banks unstable.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __5__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **5** _ **1**

Vegetation

In-stream vegetation (describe types and amounts): None noted (early in season).

Canopy cover over stream channel (estimate percentage): __70__

Riparian overstory (estimate percentages)
__30__ conifer trees __70__ deciduous trees
Conifers are hemlock/pine mix.

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative
Little understory on west side.

Adjacent land:

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: Waterwheel Restaurant is in old mill building with well-preserved water wheel and associated features.

Scenic features: Pretty area despite being in a commercial zone, but no specific scenic features were noted.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Scattered litter in unpaved open area west of restaurant: beer cans, cigarette packs, etc.
2. Unstable banks; common root exposure on both sides.
3. Numerous flagged trees on floodplain south of stream: to be cut?
4. Stormwater discharge pipe, diameter about 14", on north bank at Waterwheel Restaurant.

Photographs (describe view direction and significance):
Two photographs taken in downstream direction; one upstream. DeNise has.

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __3__
Survey Date(s): 3/11/02

Stream: Sloat Brook
Stream Segment and Location: Muir House, along County Road 2001 at confluence of Sloat Brook and Sawkill Creek west of Milford.
Lat./Long. or UTM: 18T 0515353; 4574632

Weather condition (today): Cold, breezy, cloudy
Weather condition (past 2-5 days): Cool, sparse rain

General Land Characteristics

Slope/Terrain:

Usage:

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 12 ft

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions:

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __2__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **2** _ _ _ _ **1**

Comments: Numerous exposed roots; stream now flowing about 4 ft below level of floodplain.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): _7_

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ _ _ _ _7_ 1

Comment: Some sand/silt between rocks in bed of stream, but not *on* rocks. Good substrate.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): ____

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ 1

Vegetation

In-stream vegetation (describe types and amounts):

Canopy cover over stream channel (estimate percentage): __80__

Riparian overstory (estimate percentages)
__85__ conifer trees __15__ deciduous trees
Mostly hemlock in this area.

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative

Adjacent land: Hemlock forest in DWGNRA land to the south.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): Crazed drivers on Rt. 2001.

Significant Features (describe)

Cultural/historic features: Muir House

Scenic features: None.

Recreational features: Hiking trail leads from bridge over Sloat Brook at Muir House southward into the DWGNRA.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Unstable banks; exposed roots common.
2. Septic drain field adjacent to stream, east side of Muir House.
3. Rt. 2001 is adjacent to stream east of Muir House; no buffer; steep rock-reinforced bank.
4. A 12" cast-iron pipe discharges to the Sawkill about 10 ft downstream from the east abutment of the Rt. 2001 bridge.
5. Grassed lawn area east of Muir House borders stream; no buffer.
6. Scattered litter in stream and on east side near Rt. 2001.

Photographs (describe view direction and significance):

Additional comments:

Manmade shallow pool, 2 ft deep, at Muir House.

Most of flow below Sloat-Sawkill confluence is from the Sawkill, which has a channel width of about 30 ft just south of the bridge.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __4__
Survey Date(s): 3/11/02

Stream: Sawkill Creek
Stream Segment and Location: Near confluence of Sawkill Creek and Sloat Brook, just north of Rt. 2001 bridge over Sawkill, west of Milford.
Lat./Long. or UTM: 18T 0515351, 4574663

Weather condition (today): Cold, breezy, cloudy
Weather condition (past 2-5 days): Cool, light rain.

General Land Characteristics

Slope/Terrain:

Usage:

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 30-45 ft; less under bridge

Dominant substrate(s): boulder __ cobble __ pebble __ sand __ silt __ mud __
Estimated at 5% boulder, 30% cobble, 65% combined pebble through silt.

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: No fallen trees in water; people removing them?

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __2__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **2** _ _ _ _ _ **1**

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __4__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **4** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **1**

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ **8** _ **1**

Comment: Steep bank on east

Vegetation

In-stream vegetation (describe types and amounts):

Canopy cover over stream channel (estimate percentage): _____ (less than 50%)

Riparian overstory (estimate percentages)
__35__ conifer trees __65__ deciduous trees
Conifers = pine, hemlock

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative
Shrubs dominant.

Adjacent land:

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities	Facultative (F) species communities	Tolerant (T) species communities	Very reduced numbers or absent

dominant	dominant	dominant	

10 _ **1**

Comment: Macroinvertebrates observed but not identified.

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: Muir House across road to south.

Scenic features: None.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. Route 2001 closely borders stream east of Muir House; no buffer; steep rock-reinforced slope.
2. Unstable banks.

Photographs (describe view direction and significance):
Three photos of bridge looking downstream.
Two photos of bridge looking upsteam.

Additional comments:
1. Riffles in stream; large one about 150 ft upstream from bridge.
2. Old stone retaining wall on northeast side of bridge; some drainage structures.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __5__
Survey Date(s): 3/11/02

Stream: Sloat Brook
Stream Segment and Location: Along Christian Hill Road east of junction with Rt. 2001, east of Quinns Corner west of Milford.
Lat./Long. or UTM: 18T 0513364; 4574018

Weather condition (today): Cold, breezy, cloudy
Weather condition (past 2-5 days): Cool, light rain

General Land Characteristics

Slope/Terrain:

Usage: None at present; forested land.

Ownership, Access: Public _____ Private __X__ Comment: Quinn Bros. land, both sides.

General Stream Characteristics

Active channel width: 6 ft

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand __ silt __ mud __
Some sandy bottom; mostly rock.

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions:

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __6__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ 6 _ 1

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ 8 _ 1

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ 8 _ 1

Vegetation

In-stream vegetation (describe types and amounts): Some aquatic plants, unidentified, in stream north of road.
Canopy cover over stream channel (estimate percentage): __90__

Riparian overstory (estimate percentages)
__25__ conifer trees __75__ deciduous trees

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative
Little understory; = browse?

Adjacent land: Forested, not yet inspected.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: None.

Scenic features: No outstanding features, but very pretty and unspoiled area.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Sloat Brook is confined to a 4-ft culvert beneath Christian Hill Road. Decreased channel width here.
2. Understory mostly missing; due to deer browse?
3. Some litter in stream: soda bottle, can.

Photographs (describe view direction and significance):

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __6__
Survey Date(s): 3/11/02

Stream: Vantine Brook
Stream Segment and Location: Near Milford Water Plant south of Rt. 6.
Lat./Long. or UTM: 18T 0515230; 4575495

Weather condition (today): Cold, slightly breezy, cloudy.
Weather condition (past 2-5 days): Cool; light rain.

General Land Characteristics

Slope/Terrain:

Usage:

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 8 ft

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions:

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __8__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ _ _ _ _ _ 8 _ 1

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __5__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **5** _ **1**

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Vegetation

In-stream vegetation (describe types and amounts):

Canopy cover over stream channel (estimate percentage): __70__

Riparian overstory (estimate percentages)
__50__ conifer trees __50__ deciduous trees

Riparian understory (estimate percentages)
__80__ shrubs _____ grass/herbaceous _____ nonnative

Adjacent land:

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None.

Recreational features: None.

Geological features: Good area for showing spring-fed streams and associated wetlands.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. Fair amount of deer browse.

Photographs (describe view direction and significance):
Four photographs of Vantine Brook below water plant.

Additional comments:
Two parallel streams here, largely fed from springs. Abundant wetlands.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __7__
Survey Date(s): 3/11/02

Stream: Sawkill Creek
Stream Segment and Location: Just upstream from Rt. 6, northwest of Milford.
Lat./Long. or UTM: 18T 0514633; 4576031

Weather condition (today): Cold, cloudy, breezy.
Weather condition (past 2-5 days): Cool; light rain.

General Land Characteristics

Slope/Terrain:

Usage: Commercial usage southwest of stream on high ground above floodplain.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 20

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions:

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __2__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **2** _ _ _ _ _ **1**

Comment: High, unstable banks; many exposed tree roots; steep slopes; looks awful.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ 8 _ 1

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 7 _ 1

Vegetation

In-stream vegetation (describe types and amounts):

Canopy cover over stream channel (estimate percentage): __70__

Riparian overstory (estimate percentages)
__20__ conifer trees __80__ deciduous trees

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative

Adjacent land:

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. High, unstable banks.

Photographs (describe view direction and significance):
Six photographs; panoramic view. DeNise has.

Additional comments:
Stream viewed only from a distance on 3-11-02.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: DeNise Cooke, Earl Verbeek Station no. __8__
Survey Date(s): 3/11/02

Stream: Sawkill Creek
Stream Segment and Location: Bridge over Sawkill in Milford Experimental Forest south of Woodtown Road.
Lat./Long. or UTM: 18T 0513535, 4577279

Weather condition (today): Cool, partly sunny, mild breeze.
Weather condition (past 2-5 days): Cool; light rain.

General Land Characteristics

Slope/Terrain:

Usage: Rural retreat.

Ownership, Access: Public _____ Private __X__ Comment: Milford Experiment Forest (Pinchot)

General Stream Characteristics

Active channel width:

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __9__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ 9 _ 1

Comment: Mossy banks; stable; looks good.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __9__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ **9** _ **1**

Vegetation

In-stream vegetation (describe types and amounts):

Canopy cover over stream channel (estimate percentage): __60__

Riparian overstory (estimate percentages)
__95__ conifer trees __5__ deciduous trees

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative
Little understory; deer browse?

Adjacent land:

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic):

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None, but very pretty wooded area, quiet and serene.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. Stream flow is restricted by rocks west of bridge to create a broad, shallow pond.
2. Bridge is for pedestrians only. A stream crossing for vehicles exists immediately west of the bridge, where gravel has been dumped in the streambed to provide a driveable surface.

Photographs (describe view direction and significance):
Six photos taken; DeNise has.

Additional comments:
1. Small amounts of foam against stream bank in places downstream from bridge. Water appearance is good.
2. South of stream is a large wooden cabin, probably used as a rural retreat.

STREAM AND RIPARIAN ENVIRONMENT ASSESSMENT FORM

Team Members: ERV, MEV Station no. _9_
Survey Date(s): 4/12/02

Stream: Sawkill Creek, main stem
Stream Segment and Location: Mott Street bridge in Milford

Lat./Long. or UTM:

Weather condition (today): Cool, mostly sunny.
Weather condition (past 2-5 days): Warm days, cool mornings; rain three nights ago (about 1"?).

General Land Characteristics

Slope/Terrain: Steep slopes on both sides; stream valley about 40 ft deep and fairly narrow.

Usage: Undeveloped, forested land on west; residential land on high ground to the east in Milford.

Ownership, Access: Public _____ Private _X_ Public is granted access to "The Glen" north of the Mott St. bridge.

General Stream Characteristics

Active channel width: Variable; commonly 25-40 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Dam about 100 ft downstream from bridge. Several felled trees partly in stream north of bridge.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): _3_

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _**3**_ _ _ _ _ _ _ _ _ _ _ _ **1**

Comments: Exposed roots common. Stream flows 3-6 ft below its floodplain and is incised into it. On west side a former channel segment has been abandoned and is cut off from the main stream.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): _7_

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Comments: Good structure; numerous riffles, some deep runs, several shallow pools.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): _5_

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comments: Width of riparian zone is highly variable, broad on the west and missing in places on the east, where the stream flows along the base of the steep valley wall. The stream is slightly incised into its old floodplain so the "new" riparian zone is quite narrow.

Vegetation

In-stream vegetation (describe types and amounts): None noted (still early in season).

Canopy cover over stream channel (estimate percentage): _50_
Percent cover is variable, from about 20% near bridge to 70-80% farther upstream.

Riparian overstory (estimate percentages)
__95__ conifer trees __5__ deciduous trees
Mostly hemlock with minor white pine. Some sycamore and rhododendron near stream.

Riparian understory (estimate percentages)
_____ shrubs _____ grass/herbaceous _____ nonnative

Understory nearly absent. Scattered tiny patches of grass; skunk cabbage near spring. Otherwise only bare ground and moss.

Adjacent land: Difficult to see beyond confines of stream valley. Adjacent land on west appears to be mixed oak/pine forest. To east is residential area of Milford Borough.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Pair of mallard ducks. Several common mergansers. Scattered deer pellets (no deer sighted).

Significant Features (describe)

Cultural/historic features: Mott St. bridge, built 1902 by the Penn Bridge Company, Beaver Falls, PA. Bridge now closed to vehicles and used as pedestrian bridge only.

Scenic features: "The Glen", a beautiful, hemlock-shaded stream valley.

Recreational features: Hiking trail through The Glen. Several informal hiking trails branch off in this area and lead upward to The Knob (a scenic overlook) and northwestward into the forest.

Geological features: Scattered, mostly small rock outcrops near stream level. Most of the material in this valley is glacial and alluvial sediment, with no geological features of note. The stream, however, offers several good lessons in fluvial geomorphology and shows cutoff channel segments, a cobble bar on the inside of a meander loop, unstable banks due to recent erosional incision, etc.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Wooly adelgid on hemlocks in The Glen.
2. Scattered litter/trash: two tires, wire spools, broken glass, candy wrappers, etc. The Glen has relatively little litter and probably is patrolled regularly to remove it. Litter is more abundant downstream from the Mott St. bridge, but still not much compared to urban standards. However, scattered trash is visible on the steep slopes below the houses/businesses along the east side of the valley downstream from the bridge.

3. Rocky bottom of Sawkill Creek is slightly silted over behind the dam.
4. Still water in south end of abandoned channel segment north of bridge and west of active channel provides mosquito breeding area.
5. The Sawkill flows near or against the base of the eastern valley wall north of the bridge. A flood event of sufficient severity could erode the lower flanks of this slope and cause local collapse.

Photographs (describe view direction and significance):
Photo looking east at exposed tree roots on bank below old floodplain, about 400 ft north of the Mott St. bridge.

Additional comments:
Numerous felled trees on west side of floodplain about 400-500 ft north of bridge.

STREAM AND RIPARIAN ENVIRONMENT ASSESSMENT FORM

Team Members: ERV, MEV Station no. _10_
Survey Date(s): 4/12/02

Stream: Sawkill Creek
Stream Segment and Location: Metz Ice House below U.S. 209 bridge

Lat./Long. or UTM:

Weather condition (today): Cool, mostly cloudy.

Weather condition (past 2-5 days): Warm days, cool mornings; rain three nights ago (about 1"?).

General Land Characteristics

Slope/Terrain: Steep slopes on both the west and east; valley about 40 ft deep.

Usage:

Ownership, Access: Public _____ Private __X__ Comment: Easy access via automobile to Metz Ice House.

General Stream Characteristics

Active channel width: 25 ft.

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None, but the bridge abutment on the west and the rock retaining wall on the east constrain the stream to a width of 30 ft, which might be exceeded by an extreme flood event.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __3__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ 3 _ _ _ _ _ _ _ _ _ _ 1

Comments: Banks are steep and locally caved on the west side (stream right). Recent erosion has removed soil from the lower part of the steep slope and thus has destabilized it. Exposed tree roots are common along this stretch. A broad floodplain is present on the east side, and no bank problems are evident at present.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __6__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _6_ 1

Comments: Abundant riffles and good bottom substrate, but few pools and no submerged logs or fallen trees in stream. Not enough structure for best habitat.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __4__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ 4 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 1

Comments: Riparian zone is locally two channel widths or more on east side and in places is quite wide. Along the west side (stream right), however, the stream is near or at the base of the steep valley wall, and little or no riparian zone is present.

Vegetation

In-stream vegetation (describe types and amounts): Still too early for much in-stream vegetation, but tiny plants are locally common (identity unknown).

Canopy cover over stream channel (estimate percentage): _30_

Riparian overstory (estimate percentages)

__40__ conifer trees __60__ deciduous trees

Hemlock on steep slopes to the west; mostly sycamore and sumac near stream and on floodplain.

Riparian understory (estimate percentages)

__60__ shrubs __40__ grass/herbaceous _____ nonnative
Much rock; not much understory. Wild rose is most common shrub on floodplain.

Adjacent land: Hemlock forest to the west.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Canada geese. Pigeons nesting under bridge.

Significant Features (describe)

Cultural/historic features: Metz ice plant (abandoned).

Scenic features: Pretty valley for strolling upstream toward Mott Street bridge.

Recreational features: None. Stream too shallow for navigation.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. Abundant graffiti on lower part of bridge abutment on east side of stream.
2. Scattered litter, particularly under bridge; mostly soda and beer cans.

Photographs (describe view direction and significance):
Caved bank about 50 ft north of Route 209 bridge. View to west.
Exposed tree roots at north abutment of Route 209 bridge. View to west.
Graffiti on east abutment of Route 209 bridge.
View upstream of Route 209 bridge from small bridge to south.

Additional comments: Along the east side of the stream only cobbles and boulders are exposed on the floodplain surface; all fine sediment has been washed out.

STREAM AND RIPARIAN ENVIRONMENT ASSESSMENT FORM

Team Members: ERV, MEV Station no. __11__
Survey Date(s): 4/12/02

Stream: Sawkill Creek
Stream Segment and Location: East of Victory Drive between U.S. 6 and I-84, about one mile northwest of Milford.

Lat./Long. or UTM:

Weather condition (today): Cool, cloudy.
Weather condition (past 2-5 days): Warm days, cool mornings; rain three nights ago (about 1"?).

General Land Characteristics

Slope/Terrain: Broad, fairly flat floodplain area on both sides.

Usage: Undeveloped area east of stream. To west is dirt access road paralleling stream and leading to several houses farther north, near I-84. Directly behind this station is an electrical equipment storage yard.

Ownership, Access: Public _____ Private __X__ Comment: Easy access via automobile to within 50 ft of the stream; take Victory Drive off Route 6 out of Milford.

General Stream Characteristics

Active channel width: 45-50 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __7__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ _ _ _ _ _ _ _7_ 1

Comments: The stream is currently flowing about 4-5 ft below flood stage. Some minor undercutting of the low stream bank is noted on the east side, but nothing severe; overall the banks look good.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **1**

Comments: Lots of minor riffles but no pools or deep runs. Mostly shallow flow across a broad, flat, rocky bottom.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __6__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **6** _ **1**

Comments: Wide, undisturbed riparian zone on east side. A gravel road has been built on the west side within 50 ft of the stream.

Vegetation

In-stream vegetation (describe types and amounts): Algae common on rocks, but not thick at present.

Canopy cover over stream channel (estimate percentage): 10%, locally increasing to 30.

Riparian overstory (estimate percentages)

__50__ conifer trees __50__ deciduous trees

Shagbark hickory, oak, maple, white pine, hemlock, sumac, black birch. All young growth; no large trees.

Riparian understory (estimate percentages)

__55__ shrubs __40__ grass/herbaceous __5__ nonnative

Common trout lilies. Grasses fairly common. Some sedum, skunk cabbage.

Adjacent land: Can't see from this vantage point

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Chickadees.

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None, but a pretty area when away from road

Recreational features: None. Water too shallow for canoeing or kayaking.

Geological features: Good example of a flat, forested floodplain on east side, descending gently to the stream channel in many places, but with banks slightly eroded in others.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.
1. Wooly adelgid on hemlocks.
2. Scattered litter, but minor.
3. Unprotected electrical equipment enclosure containing numerous wire spools, telephone poles. Strong creosote/oil odor today.

Photographs (describe view direction and significance):
None.

Additional comments: Tiny spring discharges to Sawkill within 10 ft of water's edge on west bank. Skunk cabbage in this area.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: ERV Station no. __12___
Survey Date(s): 9/18/02

Stream: Sawkill Creek
Stream Segment and Location: Raymondskill Road west of Sawkill Pond, in headwaters area of Sawkill Creek.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Hilly, with shallow but incised stream channel. Local relief about 100 ft; channel about 10 ft deep.

Usage: Mostly open land, but residential along Raymondskill Road south of Sawkill Creek.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 4-8 ft; average 6 ft.

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __
(Also minor pebbles and some small sandy patches)

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___
Comment: Water slightly brown from tannins draining from Mud Pond to west.

Obstructions: Stream passes under Raymondskill Road through 6-ft corrugated metal pipe.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __9__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ 9 _ 1

Comment: Boulder to cobble-sized slabs of sandstone provide stable rock-rimmed banks, but the banks are fairly steep.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __9__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ 9 _ 1

Comments: Good pools and riffles; excellent habitat structure; abundant decayed leaf litter in stream; also fallen logs and branches.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ 8 _ 1

Comments: The stream valley is steep and narrow, but with stable, rock-rimmed banks. The stream valley and the land to either side are heavily vegetated.

Vegetation

In-stream vegetation (describe types and amounts): Thick mats of moss on rocks above water level; shaded stream.

Canopy cover over stream channel (estimate percentage): __80-90__

Riparian overstory (estimate percentages)

__20__ conifer trees __80__ deciduous trees (birch, sumac, elm)

Riparian understory (estimate percentages)

__90__ shrubs __10__ grass/herbaceous _____ nonnative

Adjacent land: Mixed deciduous/conifer forest with young to intermediate-age trees and little understory (deer browse). Birch, sumac, elm, oak, maple; also Virginia creeper, wild rose, poison ivy.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): Frogs in stream; leopard frogs on bank. Butterflies, common bird calls, gray squirrel, deer.

Significant Features (describe)

Cultural/historic features: None

Scenic features: No specific features, but very pretty area.

Recreational features: None

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. On east side of road, stream right, the stream bank is oversteepened and unstable near the culvert. The stream banks here have been modified by earth-moving activities during installation of the culvert under Raymondskill Road.

2. Installation of the culvert beneath Raymondskill Road resulted in widening and deepening of the stream immediately east of the road. The outfall of the culvert is above stream level, so a small waterfall pours into a shallow pool about 25 ft long. Fish on the downstream side are cut off by the culvert from the upstream reaches.

Photographs (describe view direction and significance): None this date.

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: ERV Station no. __13__
Survey Date(s): 9/18/02

Stream: Sawkill Creek
Stream Segment and Location: Headwaters of Sawkill Creek, 0.3 mile north of Mud Pond, along path extending eastward from Grindstone Drive.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Hilly to north; local relief about 200 ft. Nearly flat to south, toward Mud Pond and surrounding swamp.

Usage: Mostly open land being converted to low-density residential to the north, east, and west.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 1-2 ft

Dominant substrate(s): boulder __ cobble __ pebble _X_ sand _X_ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None, but topographic map shows a new (post-1963) pond, probably dammed, about ¼ mile farther north.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __7__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ _ _ _ _ _ _ _ 7 _ 1

Comment: The stream is locally incised about 1-1.5 ft, with steep banks on outside meander curves, but the banks are otherwise heavily vegetated and stable.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __10__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **1**

Comments: Trickles alternating with small pools; numerous logs/branches in stream; also abundant leaf litter and vegetation. Excellent headwaters habitat.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __10__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comment: Laterally extensive riparian zone in this area, grading to swamp to south.

Vegetation

In-stream vegetation (describe types and amounts): Thick grasses, ferns, and shrubs border stream where canopy cover is absent. Elsewhere, in wooded areas, grasses and mosses predominate, and some patches of ground are bare; less bank protection in these areas.

Canopy cover over stream channel (estimate percentage): __95-100__

Comment: Dense canopy cover to the north and south, but where path crosses the stream the canopy is missing for a distance of 200 ft or so.

Riparian overstory (estimate percentages)

__40__ conifer trees __60__ deciduous trees

Riparian understory (estimate percentages)

__50__ shrubs __50__ grass/herbaceous _____ nonnative

Adjacent land: Mixed conifer/deciduous forest; some bare patches covered only in needles beneath hemlocks. Black birch, oak, pine in forest; hemlock in stream valley. Note: no wooly adelgid was seen on the hemlocks in this area.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Frogs, water striders in stream. Variety of bird calls. Gray squirrel.

Significant Features (describe)

Cultural/historic features: None

Scenic features: None (attractive area for hiking, but private land now being developed)

Recreational features: None (but naturalists might find the plant community around Mud Pond to south fascinating).

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Mud Pond a few hundred yards to the south is listed in the 1990 *Pike County Natural Areas Inventory* (updated 1995) as an area highly deserving of protection due to biologic diversity. Mud Pond contains a good glacial bog community along its northern edge and a good population of a state rare shrub. Nevertheless, upslope development is occurring along all but the eastern margins of this area, and new houses were being built during our September 2002 visit. Runoff from forest clearings and nutrient input from septic systems threaten to alter the water chemistry of Mud Pond unless measures are taken to protect it.

Photographs (describe view direction and significance):

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __14__
Survey Date(s): 9/18/02

Stream: Sawkill Creek
Stream Segment and Location: Bridge over Sawkill Creek at Sawkill Road, between Route 6 and Interstate 84.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon.

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Gently rolling within 0.1 mile of stream; hilly beyond.

Usage: Recreational land (New Jersey Federation of Y Camps; YMHA and YWHA).

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 5-8 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Pond to west is manmade, with rock-and-concrete dam on east side.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __9__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ **9** _ **1**

Comment: Stream banks are heavily vegetated and stable, but are locally steep.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ **8** _ **1**

Comments: Riffles, some pools, good rocky substrate, abundant logs/branches and leaf litter in stream.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __6__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **6** _ **1**

Comments: Cleared land for recreational camp and for residential lawn extends to within 20 ft of stream on both sides of road in this area; marginal buffer. Much better downstream a short distance away from road.

Vegetation

In-stream vegetation (describe types and amounts): Not recorded.

Canopy cover over stream channel (estimate percentage): __80-90__

Comment: Canopy cover is locally 50% or less where land has been cleared near residential lawn on west and near camp maintenance buildings on east.

Riparian overstory (estimate percentages)

__5__ conifer trees __95__ deciduous trees

Riparian understory (estimate percentages)

__95__ shrubs __5__ grass/herbaceous _____ nonnative

Adjacent land: Mixed: deciduous forest, residential lawn, grassed fields of Jersey Camp.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): Frogs in and near stream; variety of bird calls (inc. blue jay, catbird).

Significant Features (describe)

Cultural/historic features: None

Scenic features: None

Recreational features: Summer camp grounds of The New Jersey Federation of Y Camps.

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Thermal pollution from top-draining dam of pond to the west.

2. Dam and pond cut off travel pathway for upstream and downstream biota.

3. The large grassed field on the south side of the pond, extending to Sawkill Road, is nearly weed-free and lush green, and thus is suspected of contributing fertilizer and pesticides to the stream by runoff during storm events. The narrow (10-20 ft) shrub/tree/vine buffer in this area is probably inadequate to prevent nutrient runoff. The stream banks themselves are vegetated, but the adjacent land that slopes more gently toward the stream valley is not. A similar situation exists where the residential lawn extends to the bank edge west of the road and north of the stream; almost no vegetative buffer exists here.

4. Runoff from Sawkill Road has locally scoured the bank on the south side of the stream (west side of road) and has contributed a minor amount of sediment to the stream.

5. Minor litter, mostly soda cans, is visible where a footbridge crosses Sawkill Creek about 20 ft east of Sawkill Road.

Photographs (describe view direction and significance):

Additional comments: A small pool, about 1.5-2 ft deep, 15-20 ft wide, and about 50 ft long, lies beneath the bridge and extends to either side where the stream was widened for installation of the bridge abutments.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek   Station no. __15__
Survey Date(s): 9/18/02

Stream: Dimmick Meadow Brook (tributary to Sawkill Creek)
Stream Segment and Location: Bridge along Woodtown Road about two miles northwest of Milford and 0.2 miles north of confluence of Dimmick Meadow Brook with Sawkill Creek.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon.

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Steep hills to north, with local relief of 250-300 ft. Gentle, low-relief stream valley of Sawkill Creek to the south; valley in this area is about 0.2 mile wide.

Usage: Undeveloped land of Milford Experimental Forest.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 8-10 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble _X_ sand __ silt __ mud _

Water clarity: Clear _X__ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: The bridge over Woodtown Road, and the boulders placed on the streambank to either side, constrain the stream to a maximum width of about 10 ft.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __9__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ **9** _ **1**

Comments: The banks are well-vegetated and appear stable, but in places they are moderately steep to steep, and locally almost vertical in the lowermost foot above current water level. Erosional scouring during the 1994 flood?

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ 8 _ 1

Comment: Good rocky substrate, with riffles, local small pools, abundant branches and small fallen trees in stream, and abundant leaf litter.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ 1

Comments: The stream valley here is narrow and fairly steep-sided, but it is shallow and bordered by extensive, nearly flat to gently rolling land to either side.

Vegetation

In-stream vegetation (describe types and amounts): Thick coatings of moss on rocks in stream above water line.

Canopy cover over stream channel (estimate percentage): __90-95__

Riparian overstory (estimate percentages)

__30__ conifer trees __70__ deciduous trees

Comment: hemlock, maple, oak are common along and near stream in this area.

Riparian understory (estimate percentages)

__35__ shrubs __65__ grass/herbaceous _____ nonnative

Adjacent land: Mixed deciduous/conifer forest with shagbark hickory, oak, maple. Hemlock common near stream. Understory sparse in most places, though dense shrubs appear locally.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): Gray squirrel; bird calls.

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None, but very pretty area for hiking.

Recreational features: None.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Wooly adelgid on hemlocks.

Photographs (describe view direction and significance):

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __16__
Survey Date(s): 9/18/02

Stream: Pinchot Brook (tributary to Sawkill Creek)
Stream Segment and Location: Bridge along Woodtown Road about three miles northwest of Milford and about 0.15 mile north of confluence of Pinchot Brook with Sawkill Creek.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon.

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Steep hills to north, with local relief of 350-400 ft. Gentle, low-relief stream valley of Sawkill Creek to the south.

Usage: Undeveloped land of Milford Experimental Forest.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 0 ft. (Dry stream at present. Stream valley is about 10 ft wide)

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear ___ Sl. Turbid ___ Mod. Turbid ___ Turbid ___ n.a. _X_

Obstructions: Bridge over road constrains stream to maximum width of about 10 ft.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __7__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Comments: The stream banks are rock-armored and generally stable, though steep. In a few places exposed tree roots point to local erosion, but this is seemingly minor.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __n.a.__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **1**

Comments: No habitat at present; stream is dry. However, the stream valley has a good, rocky bottom with abundant fallen trees and branches.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __10__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comment: Extensive areas of nearly flat, forested land are on both sides of stream.

Vegetation

In-stream vegetation (describe types and amounts): None; rocky substrate at present is bare of vegetation.

Canopy cover over stream channel (estimate percentage): __95__

Riparian overstory (estimate percentages)
__5__ conifer trees __95__ deciduous trees
Comment: Maple and hemlock commo near stream.

Riparian understory (estimate percentages)
__80__ shrubs __20__ grass/herbaceous _____ nonnative

Adjacent land: Deciduous forest with oak, maple, elm, shagbark hickory.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): None seen, but good variety of bird calls.

Significant Features (describe)

Cultural/historic features: None.

Scenic features: None, but very attractive land for hiking.

Recreational features: None (private land).

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

None noted.

Photographs (describe view direction and significance):

Additional comments: Old channel of eastern tributary to Pinchot Brook (see topographic map, Milford quadrangle) has been cut off by Woodtown Road. The stream has been diverted to flow parallel to the road on its north side for about 90 ft to its confluence with Pinchot Brook.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek   Station no. __17___
Survey Date(s): 9/18/02

Stream: Craft Brook (tributary to Sawkill Creek)
Stream Segment and Location: Just below Lily Pond dam, about 3.5 miles northwest of Milford.

Lat./Long. or UTM:

Weather condition (today): Sunny; cool morning, warm afternoon.

Weather condition (past 2-5 days): Mild. Heavy rains three days ago.

General Land Characteristics

Slope/Terrain: Nearly flat to gently rolling.

Usage: County Park area

Ownership, Access: Public __X__ Private _____ Comment:

General Stream Characteristics

Active channel width: 2-4 ft

Dominant substrate(s): boulder _ cobble __ pebble __ sand _X_ silt _X_ mud _X_

Water clarity: Clear ___ Sl. Turbid _X_ Mod. Turbid ___ Turbid ___

Obstructions: Lily Pond dam cuts off headwaters from the lower reaches of Craft Brook.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __10__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **1**

Comments: Lily Pond drains into a nearly flat wetland area. The banks of Craft Brook just below the dam are low and thickly vegetated.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __3-7__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **5** _ **1**

Comments: Stream bottom is mostly silted over immediately below the dam, and the water is slightly turbid. Farther south, in the wetland, the stream runs clear. The bottom here is muddy, as befits the nearly flat topography and low flow velocities. The wetlands provide good habitat for diverse species, but dead, standing trees may signal impounded water due to beaver (not confirmed in field).

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __10__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comments: On both sides of Craft Brook is an extensive, thickly vegetated, nearly flat wetland grading into a mixed deciduous/conifer forest. The wetland is a boreal swamp with standing dead trees.

Vegetation

In-stream vegetation (describe types and amounts): Thick grasses in and near stream below dam in wetland area; stream locally obscured by plant growth.

Canopy cover over stream channel (estimate percentage): __50__ (Increases to 80-90% downstream)

Riparian overstory (estimate percentages)
__15__ conifer trees __85__ deciduous trees

Riparian understory (estimate percentages)
__50__ shrubs __50__ grass/herbaceous _____ nonnative

Adjacent land: Mixed deciduous/conifer forest. Maple, oak, pine, local hemlock.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Abundant red efts in catch basin below dam at outflow pipe. Canada geese on dam (abundant droppings). Hawk, frogs, gray squirrel, bluebirds(!). Small fish (unidentified) in catch basin. Dog in raptor center.

Significant Features (describe)

Cultural/historic features: Pike County Park; raptor center near dam.

Scenic features: Lily Pond, a lovely area for a day stroll.

Recreational features: Lily Pond.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

Silt influx from Lily Pond. Water intake structure and catch basin below dam prevent most silt from flowing downstream, but stream bottom just below dam is silted over and the water is slightly turbid. Controlled outflow from dam prevents storms from flushing the wetland and may result in conversion of wetland to an emergent grassland before this would happen naturally, in the absence of Lily Pond.

Minor litter near stream below pond.

One small area near the stream shows an orange iron precipitate from emerging groundwater.

Photographs (describe view direction and significance):

Additional comments:

STREAM ASSESSMENT OVERVIEW, VANDERMARK CREEK

(Survey Dates: April 2002; September 2002)

General Land Characteristics

Slope/Terrain:

Headwaters: Nearly flat in some places; gently rolling/hilly in others.
Middle reaches: Gentle valley slopes in most places; moderate slopes elsewhere.
Lower reaches: Locally narrow, steep, rock-walled, incised canyon.

Usage: Ranch/recreational land in headwaters; mostly residential elsewhere.

Ownership, Access: Private land borders stream along nearly its entire length. Little public access except near road crossings.

General Stream Characteristics

Active channel width: 5-10 ft in headwaters, increasing to 15-20 ft downstream.

Dominant substrate(s): Boulder/cobble substrates common along entire length of stream; local pebbly bottom in headwaters.

Water clarity: Generally clear; slightly turbid in lower reaches.

Obstructions: Dammed pond near private ranch house in headwaters. Stream constrained to twin 5-ft culverts along Moon Valley Road south of confluence with Deep Creek. Natural restriction to narrow, rock-walled gulch at Broad St. bridge in Milford.

Bank Stability: Fair along much of stream; locally good in headwaters area.

In-Stream Habitat: Generally good to excellent throughout. Boulder/cobble substrate and riffle/pool sequences provide good habitat. Waterfall/plunge pool area in Milford provides additional diversity.

Width of Riparian Zone: Adequate only in undeveloped headwaters area; poor to very poor elsewhere. Riparian buffer is missing in many places where residential lawns extend to the bank edge. Moon Valley Road lies within 50 ft of stream along its middle reaches.

Vegetation

In-stream vegetation: Fairly abundant in headwaters area; generally absent to sparse downstream (but note most surveys were done in April). Local algae growing on rocks due to stable cleanout debris (straw/manure) dumped adjacent to stream and to stormwater discharge from hilly residential area in Milford.

Canopy cover over stream channel: Generally 70-90%. Canopy cover is most variable in residential areas (middle reaches of stream) where lawns extend to bank edge. Here the cover can range from 10% to 90%, but still there are many places where trees in the stream valley itself provide appreciable shade.

Riparian overstory: Highly variable, from 90% conifer-dominant to almost 100% deciduous trees.

Riparian understory: Dominated by shrubs, with grasses locally comprising as much as 50% of the understory species.

Adjacent land:

Headwaters: Mostly open, deciduous forest dominated by saplings and young trees, few of which have a girth of more than 1 ft. Lack of understory may indicate prolonged deer browse.

Middle and lower reaches: Mostly residential lawns with scattered ornamental trees; little natural vegetation.

Biota

Macroinvertebrates: Not studied during this assessment.

Animals observed in area (wild and domestic): Chickadees, blue jays, numerous other birds (mostly heard rather than seen). Chipmunks, gray squirrels, domestic peacock.

Significant Features (describe)

Cultural/historic features:

1. Broad Street bridge, 1867, S.T. Van Auken, chief mason. Stone and concrete bridge capped by bluestone. A functional, "no frills" bridge, sturdy but visually unexciting.
2. Handsome houses of "old Milford" on both sides of stream near Broad Street.

Scenic features: Upper, undeveloped reaches are prime hiking land for those interested in nonstrenuous hikes through a pleasant, peaceful hardwood forest. Middle and lower reaches of stream are mostly developed land, mixed residential/commercial, with no scenic features of note except for the waterfall beneath the Broad Street bridge in Milford.

Recreational features: None except for informal trails in headwaters area.

Geological features:

1. Valley thickly choked with glacial rubble (slabs of sandstone) near headwaters of Vandermark Creek. Where the creek flows through this rubble it is hidden from view, heard underfoot but not seen.

2. Waterfall beneath Broad Street bridge in Milford offers good example of a resistant rock layer causing a waterfall to develop over a "step" in a stream.

Current or Potential Problems

1. Absence of stream buffer in many areas where residential lawns extend to bank edge. Probable influx of fertilizers, pesticides, and herbicides into stream along most of its length.

2. Steep banks, in many places inadequately anchored by vegetation, contribute sediment to stream. Runoff from lawns has locally contributed to bank erosion; banks locally rutted.

3. A 20-inch corrugated pipe discharges stormwater from the Greenwood Hills subdivision above Milford into Vandermark Creek. The diameter of the pipe and the size of the subdivision suggest high intermittent flows and delivery of pollutants from paved surfaces directly into the creek.

4. Appreciable bank erosion has occurred where a lengthy, asphalt-lined ditch parallel to Moon Valley Road drains to a culvert and discharges to Vandermark Creek.

5. Wooly adelgid visible on hemlocks in numerous places. Severe changes to stream dynamics are anticipated in the next decade where hemlocks make up an appreciable part of the stream overstory or nearby forest.

6. Minor litter at road crossings and other places where public has access to the stream.

7. At intersection of Moon Valley and Deep Creek Roads, runoff from Moon Valley Road is washing out soil along the southeast bridge abutment adjacent to the gabion wall.

Photographs (describe view direction and significance):

Additional comments:

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __1__
Survey Date(s): 4/23/02

Stream: Vandermark Creek
Stream Segment and Location: Broad St. bridge over Vandermark Creek, east of East Sarah St., east side of Milford.
Lat./Long. or UTM:

Weather condition (today): Cool, breezy, sunny.

Weather condition (past 2-5 days): Showers past two days; strong storm with rain/hail the day before.

General Land Characteristics

Slope/Terrain: Narrow, steeply incised stream valley, 8-20 ft deep upstream from the bridge and about 35 ft deep downstream. Beyond the stream valley to the west, in Milford, the land is nearly flat. To the east and northeast it is flat for 150-300 ft and then quite hilly, with steep slopes and high peaks 500-600 ft above stream level.

Usage: Residential land north of Broad St.; commercial to the south.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 15-20 ft.

Dominant substrate(s): boulder __ cobble _X_ pebble _X_ sand __ silt __ mud __

Water clarity: Clear ___ Sl. Turbid _X_ Mod. Turbid ___ Turbid ___

Obstructions: Natural restriction to width of stream valley due to steep rock outcrops beneath south side of bridge.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __5__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ 5 _ 1

Steep banks on both sides, 8-20 ft high depending on location. Banks locally eroding, but in other places stabilized by rock placed on slope or (east side) by constructed rock walls.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ 8 _ 1

Beneath bridge and south of it is one high and one low waterfall and two plunge pools. North of bridge stream runs wide and shallow, with numerous minor riffles, over cobble/pebble substrate. Good local structure.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __1__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ 1

Steep banks extend to stream edge on west side and within 10 ft of stream, locally to water's edge, on east side. Banks 8-20 ft high; minor incised stream valley; no riparian zone to speak of. Lawns on west side and locally on east side extend to bank edge; no natural vegetation except locally on steep slope of bank itself.

Vegetation

In-stream vegetation (describe types and amounts): Scattered patches of in-stream vegetation visible from bridge, but viewpoint too far distant to identify.

Canopy cover over stream channel (estimate percentage): __80__

Riparian overstory (estimate percentages)

__0__ conifer trees __100__ deciduous trees

Riparian understory (estimate percentages)

__70__ shrubs __20__ grass/herbaceous __10__ nonnative

(Not much understory exists at present; much of bank is nonvegetated and covered with leaf litter)

Adjacent land: Mostly lawn grass in residential area.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Chickadees. Some other loud bird.

Significant Features (describe)

Cultural/historic features:

1. Broad St. bridge, built 1867; S.T. Van Auken, chief mason. Stone and concrete bridge capped by bluestone. Certainly an historic feature, but nearly devoid of architectural merit.
2. Handsome houses of "old Milford" on both sides of stream.

Scenic features: Waterfall in steep, rock-rimmed stream cut. This waterfall, however, is largely hidden from public view by the road and bridge above.

Recreational features: None. Private property both sides.

Geological features: Good example of resistant rock layers causing a waterfall to develop over a "step" in a stream. Waterfall responsible for habitat diversity in this area: stream is narrow, with deep plunge pool downstream from the waterfall, but is wider and shallow upstream from it.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Runoff from lawn near northwest end of bridge is eroding the streambank and depositing sediment in the stream. A small delta of sediment extends about 30 ft downstream to the top of the waterfall.
2. Lawns of houses on both sides of the Vandermark extend to the bank edge; no buffer. Probable fertilizer, pesticide, herbicide runoff source.
3. Stormwater runoff from the steep, paved access road to the Greenwood Hills subdivision is conveyed to a storm sewer (see photo) and then via a 20-inch (!) corrugated pipe to Vandermark Creek. The discharge point is about 150 ft south of the Broad St. bridge, just north of U.S. 6/209.
4. Banks are steep on both sides and held up in places either by rocks placed on the slope or (east side) by vertical stone walls. Banks are locally eroding where unprotected; e.g., northeast side of bridge where soil is bare and unvegetated.

5. Soil has recently been dumped onto the stream bank near the northwest end of the bridge, perhaps to replace soil lost by erosion. This is loose, unvegetated material, easily erodible, that will contribute sediment to the stream during the next hard rain.
6. Beneath the commercial property on the southwest side of the bridge are two 6" PVC pipes that discharge stormwater(?) onto the steep ground of the stream bank overlooking the plunge pool below the waterfall.
7. Litter/trash is present on the streambank of the commercial property southwest of the bridge, overlooking the plunge pool. Elsewhere litter is minimal and trash absent.

Photographs (describe view direction and significance):
1. View north (upstream) from bridge. Note sediment in stream and eroding bank on left.
2. View northwest of eroding bank (lawn runoff) and sediment in stream.
3. Storm sewer and runoff catchment area; see comment no. 3 above.

Additional comments: None.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __2__
Survey Date(s): 4/23/02

Stream: Vandermark Creek
Stream Segment and Location: Moon Valley Road north of Milford, below confluence with Deep Brook, near mailbox of 130 Moon Valley Road.
Lat./Long. or UTM:

Weather condition (today): Cool, breezy, sunny.

Weather condition (past 2-5 days): Showers past two days; strong storm with rain/hail the day before.

General Land Characteristics

Slope/Terrain: Gently sloping both sides.

Usage: Low-density residential

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 10-12 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Creek flows through twin 5-ft culverts beneath driveway east of this station; see Site Diagram.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __5__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **5** _ **1**

Comment: Although general terrain in this area is gentle, the streambanks are steep and 8-15 ft high. Some bank erosion has occurred by runoff from the lawn on the far (east) side of the stream. Gabions hold up the banks adjacent to the twin 5-ft culverts beneath the driveway nearby.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ **1**

Comment: Good mix of large boulders down to small cobbles. Stream has abundant riffles, a few tiny pools, overall fairly good structure.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __1__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comment: Lawns and road extend to bank edge; no buffer.

Vegetation

In-stream vegetation (describe types and amounts): None seen.

Canopy cover over stream channel (estimate percentage): __80__

Comment: Canopy cover variable, from 10-90%, but probably averages about 80% in this general area

Riparian overstory (estimate percentages)

__0__ conifer trees __100__ deciduous trees

Riparian understory (estimate percentages)

__80__ shrubs __20__ grass/herbaceous _____ nonnative

Adjacent land: Mostly residential lawns; scattered ornamental trees.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): None this visit.

Significant Features (describe)

Cultural/historic features: None

Scenic features: None

Recreational features: None

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. An asphalt-lined ditch along the west side of Moon Valley Road drains to a culvert beneath the road and discharges to Vandermark Creek just south of the mailbox to 130 Moon Valley Road. The steep, 10-ft bank here has been severely eroded by the discharge but is armored by large rocks to reduce further erosion.
2. Lawns extend to bank edge; no buffer. Probable fertilizer, pesticide, herbicide source from runoff. Lawn runoff also causes local bank erosion.
3. Steep banks, in places inadequately anchored by vegetation.
4. Minor litter on banks adjacent to road.

Photographs (describe view direction and significance): None this date.

Additional comments: None.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __3__
Survey Date(s): 4/23/02

Stream: Vandermark Creek
Stream Segment and Location: Intersection of Moon Valley and Deep Creek Roads
Lat./Long. or UTM:

Weather condition (today): Cool, breezy, sunny.
Weather condition (past 2-5 days): Showers past two days; strong storm with rain/hail the day before.

General Land Characteristics

Slope/Terrain: Steep slopes west of Moon Valley Road; gentle slopes to the east.

Usage: Low-density residential

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 8-15 ft; mostly 10-12 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: None

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __4__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ **4** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **1**

Comments Very steep to steep banks. Exposed tree roots common (e.g., east bank just south of Brooks Flat Road). Local undercutting.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): _8

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ _ 8_ 1

Comment: Good structure, with mix of riffles and pools.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __2_

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ 1

Comments: Road is adjacent to stream on the west side; houses with lawns on the east. No buffer.

Vegetation

In-stream vegetation (describe types and amounts): None observed (still early in season)

Canopy cover over stream channel (estimate percentage): __80-90__

Riparian overstory (estimate percentages)

_85_ conifer trees _15_ deciduous trees (Conifers mostly hemlock)

Riparian understory (estimate percentages)

_90_ shrubs _10_ grass/herbaceous ______ nonnative

Shrubs mostly rhododendron.

Adjacent land: Mostly lawn grass with scattered ornamental trees.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): _____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): None observed this visit. Heard one bird.

Significant Features (describe)

Cultural/historic features: None

Scenic features: None

Recreational features: None

Geological features: None

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Between stations 2 and 3 is residential land with lawns commonly extending to the streambank edge. No buffer. Probable source of fertilizer, pesticide, herbicide runoff; local sediment also.
2. Wooly adelgid on hemlocks.
3. Banks very steep to vertical in places at stream edge; often vertical just above stream level. Recent downcutting?
4. Runoff from Brooks Flat Road is washing out soil along the southeast bridge abutment adjacent to the gabions.

Photographs (describe view direction and significance): None this visit.

Additional comments:

1. Banks next to bridge are protected by gabions on both sides.
2. Toppled trees in/across stream: good.
3. Abundant leaf litter on both banks.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __4__
Survey Date(s): 4/23/02

Stream: Vandermark Creek
Stream Segment and Location: Headwaters area, north of Malibu Ranch buildings, at an elevation of about 1,105 ft, where the topographic quadrangle shows two stream channels crossing under the road.
Lat./Long. or UTM:

Weather condition (today): Cool, breezy, sunny
Weather condition (past 2-5 days): Showers past two days; strong storm with rain/hail the day before.

General Land Characteristics

Slope/Terrain: Nearly flat; local relief only about 5 ft.

Usage: Undeveloped forest land

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 8-10 ft

Dominant substrate(s): boulder __ cobble _X_ pebble __ sand _X_ silt __ mud __
Comments: Cobbles and some pebbles from thin veneer of glacial till; sand from weathering of underlying sandstone. In many places the cobbles are absent and one sees only a sandy stream bottom dotted with pebbles.

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Log bridge with stone abutments constrains stream to 9-ft width at road crossing.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __5__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ 5 _ 1

Comments: Banks are steep to very steep and 1-1.5 ft high at water's edge. Exposed tree roots are common. This indicates a fairly recent downcutting event, but banks are now mostly revegetated and only locally unstable. Land owner reports heavy rains of local flooding in this area during a 1994 storm event. Said he was surprised to see flood waters in a nearly flat area near a mountaintop.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __8__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ _ _ _ _ **8** _ **1**

Comment: Stream structure generally good; low riffles, small ponds, some slow, deep stretches. Abundant leaf litter on bottom.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __10__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ **1**

Comments: Nearly flat land; extensive riparian zone both sides.

Vegetation

In-stream vegetation (describe types and amounts): Algae growing on rocks; fairly heavy coating in places. In nearby area horse manure and straw from stable cleanout has been dumped adjacent to road; this is probable source of nutrients for algal growth.

Canopy cover over stream channel (estimate percentage): __70-80__

Riparian overstory (estimate percentages)
__5__ conifer trees __95__ deciduous trees
Comment: Oak, black birch, shagbark hickory, maple

Riparian understory (estimate percentages)
__50__ shrubs __50__ grass/herbaceous _____ nonnative
Comment: Not much understory, = deer browse? Grasses common adjacent to stream.

Adjacent land: Young forest; most trees <1 ft girth. Mostly open forest with little understory.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ **1**

Animals observed in area (wild and domestic): Chipmunks, squirrels, blue jays, other birds. Numerous small (2”–2 ½”), striped minnows in stream. Land owner reports that stream contained trout in the past.

Significant Features (describe)

Cultural/historic features: None

Scenic features: None, but beautiful land for hiking. Peaceful, open, and good for nonstrenuous hikes in a pleasant hardwood forest.

Recreational features: None, but Malibu Ranch nearby offers a host of recreational opportunities, including horseback riding, hiking, and a shooting range.

Geological features: None.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Steep banks = probable source of sediment for large storm events; banks not yet fully revegetated and stabilized.
2. Horse manure and straw from stable cleanout have been dumped next to the road adjacent to a wetland flanking Vandermark Creek. The manure, on the east side of the road about 100 ft south of the bridge, is the probable source of nutrients for algal growth in the stream.
3. Minor litter near bridge over stream.

Photographs (describe view direction and significance):
Three photos of steep banks along Vandermark Creek east of bridge.

Additional comments: None.

STREAM CORRIDOR ASSESSMENT FORM

Team Members: Earl R. Verbeek Station no. __5__
Survey Date(s): 4/23/02

Stream: Vandermark Creek
Stream Segment and Location: Headwaters area, along stretch of northernmost pond shown on map.
Lat./Long. or UTM:

Weather condition (today): Cool, breezy, partly sunny
Weather condition (past 2-5 days): Showers past two days; strong storm with rain/hail the day before.

General Land Characteristics

Slope/Terrain: Nearly flat to east; moderate slopes to west.

Usage: Residential ranch land borders on south; one house and about 2 acres of landscaped grounds. North of this is undeveloped forest land.

Ownership, Access: Public _____ Private __X__ Comment:

General Stream Characteristics

Active channel width: 5-7 ft

Dominant substrate(s): boulder _X_ cobble _X_ pebble __ sand __ silt __ mud __

Water clarity: Clear _X_ Sl. Turbid ___ Mod. Turbid ___ Turbid ___

Obstructions: Dam to create pond near ranch house. Did not inspect dam this visit.

Bank Stability: Grade on scale from 10 (excellent) to 1 (poor): __7__

Stable: Banks generally low, with no signs of erosion. Outside bends protected by roots and vegetation.		**Unstable**: Banks typically high, with signs of slumping. Some erosion in straight reaches and inside bends as well as outside bends. Exposed roots common.

10 _ _ _ _ _ _ _ _ _ _ _ _ **7** _ **1**

Comments: Bank stability is generally OK to good, but there are some local areas of instability/collapse on the outside of meander bends (see photos). Also there is some

slight bank undercutting similar to that noted in the previous station, but not nearly as much because the catchment area for this stretch of the stream is much smaller.

In-Stream Habitat: Grade on scale from 10 (excellent) to 1 (poor): __9__

Excellent: More than 50% of bottom is rubble, boulder, gravel, submerged logs, and undercut banks. Good variety of riffles and deep pools or runs.	**Good**: About 30-50% of bottom is rubble, boulder, gravel, or other suitable habitat. Some deeper areas in pools, riffles, or runs.	**Fair**: About 10-30% of bottom is boulder, rubble, gravel. Habitat available is less than desirable; mostly shallow, with few deeper areas.	**Poor**: Less than 10% of bottom is boulder, rubble, gravel, or other suitable habitat. Mostly wide, shallow, and flat with an obvious lack of good habitat.

10 _ _ _ 9 _ 1

Comments: Rocks and fallen trees provide natural dams for pools. Good riffles are present in the more steeply descending portions of the stream. Overall habitat looks quite good.

Width of Riparian Zone: Grade on scale from 10 (excellent) to 1 (poor): __7__

Excellent: Natural vegetation extends at least 2 active channel widths from stream banks on both sides.		**Poor**: Natural vegetation extends less than 1/3 active channel width from stream banks on both sides.

10 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 7 _ 1

Comments: This is a minor stream valley in an area of fairly low relief, but the stream flows against its valley wall in some places, and is cutting into it, so the riparian zone is locally narrow to absent.

Vegetation

In-stream vegetation (describe types and amounts): Fairly abundant, but types not identified on this trip (botanical dummy).

Canopy cover over stream channel (estimate percentage): __80__

Riparian overstory (estimate percentages)
__5__ conifer trees __95__ deciduous trees (Oak, black birch)

Riparian understory (estimate percentages)
__50__ shrubs __50__ grass/herbaceous _____ nonnative
Comment: Grass is patchy but common in riparian area adjacent to stream.

Adjacent land: Young deciduous forest. Numerous saplings and young trees; few trees of more than 1 ft girth.

Biota

Macroinvertebrates: rate on scale from 10 (excellent) to 1 (poor): ____

Sensitive (S) species communities dominant	Facultative (F) species communities dominant	Tolerant (T) species communities dominant	Very reduced numbers or absent

10 _ 1

Animals observed in area (wild and domestic): Birds. Swear I heard a peacock (on grounds of ranch house?)

Significant Features (describe)

Cultural/historic features: None.

Scenic features: No specific features, but beautiful hiking land.

Recreational features: None except for private fishing pond adjacent to ranch house and private recreational horse trail north of road.

Geological features: About 100 ft upstream from this area the valley is thickly choked with glacial rubble consisting of thick slabs of sandstone. Vandermark Creek flows through these jumbled rocks, mostly hidden from view, heard but not seen. Fascinating to wander around in this area.

Current or Potential Problems (describe) Note erosion/sedimentation, unusual water appearance or odor, flooding, stormwater discharge, litter, potential pollution sources, domestic animals near stream, absent or damaged buffer zone, etc.

1. Vandermark Creek near ranch house flows through a two-acre (est.) area of cultivated lawn, which extends up to the stream bank. Lawn runoff is possible contributing source of nutrients for the growth of algae noted a short distance downstream at station 4.

Photographs (describe view direction and significance):

1. View upstream of cut bank on right, on outside of meander bend. Note bare ground and exposed roots of trees in area of bank collapse.

2, 3. Closeup views of same area from opposite bank.

Additional comments: Trail north of road is used as private recreational horse trail.