

Region <u>SCR</u>	County <u>Dane</u>	Report Date <u>1/6/05</u>	Classification <u>CWA</u> <small>CC011, defac</small>
Water Body: <u>Pleasant valley Branch</u>			
Discharger: <u>no point source discharge</u>			

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

- Naturally occurring pollutant concentrations prevent the attainment of use
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met
- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
- Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use
- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses
- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

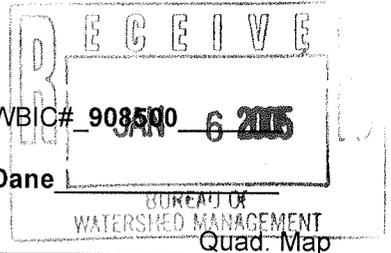
Supporting Evidence in the report (include comments on how complete/thorough data is)

- Biological Data (fish/invert) brown trout ; fair - good IBI
- Chemical Data (temp, D.O., etc.) temp = 0.25°
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map
- Other: _____

Historical Reports in file:
1/6/05 - J. Amrhein

Additional Comments/How to improve report:
- good fish data
- good temp data

FISH AND AQUATIC LIFE DESIGNATED USE FORM
(Attach supporting data sheets)



WATERBODY NAME Pleasant Valley Branch WBIC# 908510
 REGION SCR BASIN Sugar-Pecatonica COUNTY Dane
 Segment Shown on Daleyville

Reference Site(s) _____, Attach class. form for ref. site/cond.

SEGMENT DESCRIPTION for Segment 1 of 1 (headwater = segment 1)

From: Headwaters downstream <u>5.5</u> mi.,.	lat/long 42° 55' 47.37" 89° 46' 9.3"	tn, rng, ¼, ¼, section SW, SE T5N R6E S3
To: Mouth at Kittleson Valley Creek	lat/long 42° 52' 33.96" 89° 47' 14.62"	tn, rng, ¼, ¼, section SW, SE T5N R6E S28

Attach site map and photos showing stream segment and discharge point

DESIGNATED USE INFORMATION:

New Classification x, Standards Review _____, Ref. Site _____, Date field work conducted/completed _____

Current FAL Designated use Default Full Fish and Aquatic Life, Date _____ (attach)

Existing FAL Use Based on current data Coldwater - A - Class II, Date April, 2004

Recommended Attainable Designated use Coldwater - A - Class II

Seasonal Designated use(s)/Dates Year round

Other Applicable Uses: ORW _____, ERW _____, GL _____, GLS _____, Drinking Water Supply _____, Recreation _____, Wild Life _____

Submitted By: <i>James P. Huber</i>	Date: <i>4/5/2004</i>
Reviewed By: <i>Greg Sigler</i>	Date: <i>1/5/05</i>
Approved Basin Leader: <i>W.D. Kausis</i>	Date: <i>4-6-04</i>
WQS Sect. Chief, or Designee:	Date:

Water Body Name Pleasant Valley Branch, WBIC# 908500, Date April, 2004

DISCHARGER INFORMATION:

Municipality/Company N/A - No point source discharge on this stream, Permit # _____

Outfall Location _____

Contact Person _____, Contact Date(s) _____

Did A Representative Observe Field Work? No _____, Yes _____,

Representative Name _____, Date(s) _____

Comments about facility, representative's observations, etc.:

BASIS FOR DESIGNATED USE DECISION (List and briefly discuss key elements for the decision)

Send final report to:

Facility N/A Date: _____

Basin Wastewater Eng. N/A Date: _____

Limits Calculator: N/A Date: _____

Watershed Expert Greg Seale Date: 12/22/04

Fish and Habitat Expert Scott Stewart Date: 12/22/04

Bureau of Endangered Resources when these species are present n/a Date: _____

Other interested parties (list) N/A Date: _____

LITERATURE REVIEW

1. WDNR, 2000. Proposed Dane County Lakes and Watershed Cold Classification (Devereaux memo to Sue Jones. 10/9/2000).
2. Lyons, John, Lizhu Wang and Timothy Simonsen. 1996. Development and Validation of an Index of Biotic Integrity for Coldwater Streams in Wisconsin. North American Journal of Fisheries Management. 16:241-256.
3. WDNR, 2004. Waterbody Use Classification Guidance.
4. Simonson, Timothy, John Lyons, and Paul Kanehl. Guidelines for Evaluating Fish Habitat in Wisconsin Streams. U.S. Department of Agriculture Forest Service General Technical Report NC-164. 36 pages.

Summarize and interpret the literature available and how it relates to and supports the classification and the recommended designated use: **The above cited literature provides historic accounts and support of current data which properly identifies the classification of this stream.**

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FIELD ASSESSMENT DATA AND OBSERVATIONS

Assessment dates: 6/3/2003 to 6/3/2003

PHYSICAL/CHEMICAL DATA

SEGMENT LENGTH 144, 153 m, DEPTH, AVG. _____ MAX. 0.59m AVG. WIDTH 3.2, 2.5 m

SEGMENT GRADIENT 3.0 m/km, VELOCITY _____

SUBSTRATE MATERIAL %silt 30 %sand 30 %gravel 30
 %rubble _____ %organic _____ %other 10

NATURAL FLOW 3.1-3.5 cfs, (MEASURED X, ESTIMATED _____).

Flow was high _____, normal X, low _____, very low _____

Q7,2 flow _____, Q7,10 flow _____, estimated _____ or measured _____

EFFLUENT FLOW: 24 hr. average _____, measured _____, estimated _____
 Design flow _____

TEMPERATURE See narrative, Instantaneous _____ or 24 hr. max. average _____, Date(s) _____

DISSOLVED OXYGEN:

Instantaneous _____ mg/L, Time of day _____, Date _____

Continuous: Minimum _____ mg/L, Range _____ mg/L to _____ mg/L

Dates / time measured: _____ to _____, total = _____ hrs.

CHEMICAL DATA COLLECTED:

BREIF INTERPRETATION/COMMENTS: See narrative

Water Body Name Pleasant Valley Branch, WIBC# 908500, Date April, 2004
=====

BIOLOGICAL DATA

FISH: Sampling date various, Attach species list and IBI forms if applicable

Survey Location(s) Various – see narrative

Distance sampled _____ Sampling Gear _____

No. of species _____, Total fish _____,

No. of species not listed as tol. to low DO _____, Total fish _____, % not listed _____

Endangered or other special category species _____

Warm B species _____, Total no. _____

MACROINVERTEBRATES: Sampling date 11/13/2003, HBI/FBI 5.823

Survey location(s) Upstream CTH H (downgradient H bridge) and Upstream upper CTH Bridge

Sampling Procedure Kick net

< 100 organisms found, list dominant genera, numbers and HBI values:

> 100 organisms found, attach taxonomy bench sheet or other analyses:

% individuals with HBI value 5 or less _____

OTHER BIOLOGICAL DATA/OBSERVATIONS:

See narrative.

INTERPRETATIONS BASED ON EXISTING FISH AND AQUATIC LIFE COMMUNITY:

Indicates a Coldwater – A – Class II n stream. See narrative.

HABITAT

Procedure Modified Simonson, et. al, (1994)

Habitat rating 40 (fair) – both sites, attach habitat rating forms

Significant problems affecting use attainment:

low flow sedimentation bank erosion ditching fish cover depth

Other _____

Observations About Habitat Quality:

Habitat would improve if nonpoint sources of pollution are mitigated. See narrative.

WATERSHED DATA AND OBSERVATIONS

AREA

Approximate size 77 sq. miles

Land use: % crop land 48, % pasture _____, % forest 31,

% grass land 19, % urban _____, % wetland _____,

No. feedlots/barn yards near stream 4

Other NPS Pasturing and row crops near stream

Is this watershed currently or proposed to receive NPS management under a State, Federal or local organization? Yes , no . List dates and explain: **Stream rehabilitation project was conducted in 2003 using the federal Wildlife Habitat Improvement Project (WHIP) funds.**

Discuss NPS impacts and controllability, and NPS relationship to fish and aquatic life existing and attainable uses. Include factors such as bank erosion, land cover/use near stream, gully erosion, barn yards, etc. (attach additional sheets if required): **Additional segments are being proposed for the state's Targeted Runoff Management (TRM) program. Numerous acres in the riparian corridor have been signed up in the Conservation Reserve Enhancement Program (CREP).**

THIS PAGE MUST BE COMPLETED WHEN THE RECOMMENDED DESIGNATED USE IS TOLERANT FISH AND AQUATIC LIFE OR VERY TOLERANT AQUATIC LIFE.

RECOMMENDED DESIGNATED USE _____

Tolerant and Very Tolerant Designated uses

Tolerant Fish and Aquatic Life and Very Tolerant Aquatic Life designated uses are not defined as full fish and aquatic life uses. In most cases an TFAL or VTALuse is the best that can be attained by these resources due to natural habitat or water quality limitations. A designated use recommendation into one of these sub-categories must be based on one or more of the following factors (s. 283.15(4), Stats.). Check all that apply to this designated use and provide a brief description of the situation:

- a. Naturally occurring pollutant concentrations prevent the attainment of a full fish and aquatic life community.**
- b. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of a full fish and aquatic life community, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating water conservation requirements.**
- c. Human caused conditions or sources of pollution prevent the attainment of a full fish and aquatic life community and cannot be remedied or would cause more environmental damage to correct than to leave in place.**
- d. Dams, diversions or other types of hydrologic modifications preclude the attainment of a full fish and aquatic life community, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a full fish and aquatic life community.**
- e. Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of a full fish and aquatic life community.**

DESCRIPTION:

Stream Reclassification

Pleasant Valley Branch

Sugar-Pecatonica Basin
Gordon Creek Watershed (SP05)
WBIC # 908500

Submitted by James F. Amrhein
Wisconsin Department of Natural Resources
South Central Region Headquarters
April, 2004

INTRODUCTION

Pleasant Valley Branch originates in Section 3 of Perry Township (T5N, R6E) and flows south for 7 miles before joining Kittleson Valley Creek (Figure 1). It drains mostly crop and pasture land, and small forest areas. The creek is spring-fed with a moderate gradient (WDNR, 1985). Pleasant Valley is currently classified as a Default Diverse Fish and Aquatic Life (Full Fish and Aquatic Life) stream. Although it has been considered a warm water forage fishery, Marshall (1988) considered it to have potential for trout. In 1998, the stream was added to the state's list of impaired waters because it was not meeting its potential as a trout stream due to habitat impairments caused by nonpoint source pollution.

Little historic information is available on the stream. Fago sampled one station in 1976 below County Highway A and found a variety of forage fish species with mottled sculpin, an intolerant coolwater indicator species, especially predominant. In 1986, two macroinvertebrate samples were taken. One from a tributary to Pleasant Valley Branch had a Hilsenhoff Biotic Index (HBI) of 6.22 which is interpreted as "fair" (Hilsenhoff, 1987) and the other taken at County Highway A had an HBI of 1.77 (excellent). The tributary was, and still is, heavily impacted by over-pasturing and agriculture.

STUDY AREA

In 2002 and 2003, more extensive studies of Pleasant Valley have been conducted due, in part, to a stream rehabilitation project taking place on a portion of the stream (Figure 1). In 2002, fish sampling was conducted at County Highway A and Kittleson Valley Road. Additionally, a temperature recorder was placed at Kittleson Valley Road to take hourly readings of water temperature. In 2003, fish sampling took place at 3 sites on the stream, habitat evaluations were conducted at 2 sites, and two macroinvertebrate samples taken at 2 sites.

RESULTS AND DISCUSSION

Habitat scores taken from two sites on the stream in 2003 both show a score of 40, or "fair" according to Simonsen et. al. (1994). While the stream is fair to good in terms of width/depth ratio, riffles, meanders, and riparian buffer, it lacks in cover for fish and suffers from heavy siltation (WDNR, 2003). Stream restoration efforts are currently

underway to address the nonpoint source and habitat issues (Amrhein, personal observation).

Fish assemblage from all areas of the stream show a fair to good Coldwater Index of Biotic Integrity (CWIBI) based on interpretation from Lyons, et. al. (1996). While the numbers of fish are limited by lack of habitat, the fish assemblage shows a predominance of cold and coolwater species such as brown trout, mottled sculpin, and brook stickleback (Table 1).

Table 1: Fish Sampling from Pleasant Valley, 2002-2003

Species	2002 Upstream CTH A	2002 Kittleson Valley Rd	2003 Upstream CTH H	2003 Habitat Site	2003 End Habitat site to CTH H
Brown Trout		16	29		1
Mottled Sculpin	81	55	5	2	6
Brook Stickleback	44		5	9	29
White Sucker			16		
Creek Chub			8	1	
Fantail Darter			4		
Fathead Minnow				1	
CW IBI	50 (Fair)	60 (Good)	30 (Fair)	N/A*	50 (Fair)

- Unable to calculate because less than 25 individuals collected

Brown trout are more prevalent in the lower sections of the stream primarily because there is more habitat, particularly deeper water, available to them. Multiple year classes of trout were found in the lower portions of the stream at County Highway H and Kittleson Valley Road (Figure 2). The upper portions of the stream have much potential if habitat can be improved and nonpoint sources of pollution mitigated.

Water temperatures were recorded hourly from June 20, 2002 through March 26, 2004 at Kittleson Valley Road. Throughout the recording period, instantaneous maximum temperatures did not exceed 25°C (Figure 3). The maximum daily mean temperature for the summer periods (June 1st to September 30th) did not exceed 22°C (Figure 4). Winter temperatures did appear to drop near 0°C; however, young-of-the-year brown trout were collected and are an indicator of egg survival.

The 2003 macroinvertebrate data is not available at the time of this report.

RECOMMENDATIONS AND CONCLUSION

Based on the data collected from various sections of Pleasant Valley Branch, and using the draft “Guidelines for Designating Fish and Aquatic Life Uses for Wisconsin Surface Waters” (WDNR, 2003), Pleasant Valley meets the definition of a “Coldwater-A- Class II” community as defined below:

“Coldwater ecosystems capable of attaining a salmonid community with one or more age groups above the age of 1 year, in sufficient numbers to indicate substantial survival from one year to the next. These streams also contain habitat and water quality adequate for natural reproduction, but some stocking is necessary to fully utilize all available habitat or to sustain a fishery.”

Given the limited habitat in the stream sections sampled, the numbers of trout are fairly good and indicate a strong potential if nonpoint sources of pollution can be mitigated and habitat improvement projects continue.

Therefore **the entire length of Pleasant Valley Branch should be classified as a Coldwater – A – Class II stream.**

REFERENCES

- Hilsenhoff, William L. 1987. An Improved Biotic Index of Organic Stream Pollution. *The Great Lakes Entomologist*. Vol. 20. No. 1. Pp. 31-39.
- Lyons, John, Lizhu Wang, and Timothy Simonsen. 1996. Development and Validation of an Index of Biotic Integrity for Coldwater Streams in Wisconsin. *North American Journal of Fisheries Management*. 16:241-256.
- Marshall, Dave. 1988. Sugar River Basin Nonpoint Source Assessment. Wisconsin Department of Natural Resources. Unpublished Report.
- Simonson, Timothy, John Lyons, and Paul Kanehl. Guidelines for Evaluating Fish Habitat in Wisconsin Streams. U.S. Department of Agriculture Forest Service General Technical Report NC-164. 36 pages.
- WDNR. 1985. Surface Water Resources of Dane County. Elizabeth Day, Gayle Grzebieniak, Kurt Osterby, and Cliff Brynildson. Wisconsin Department of Natural Resources Lake and Stream Classification Project. Second edition.
- WDNR. 2003. Fisheries and Habitat Evaluation - Pleasant Valley Branch. June 3, 2003. Wisconsin Department of Natural Resources. Unpublished data.

Figure 2: Brown Trout collected from Pleasant Valley Branch

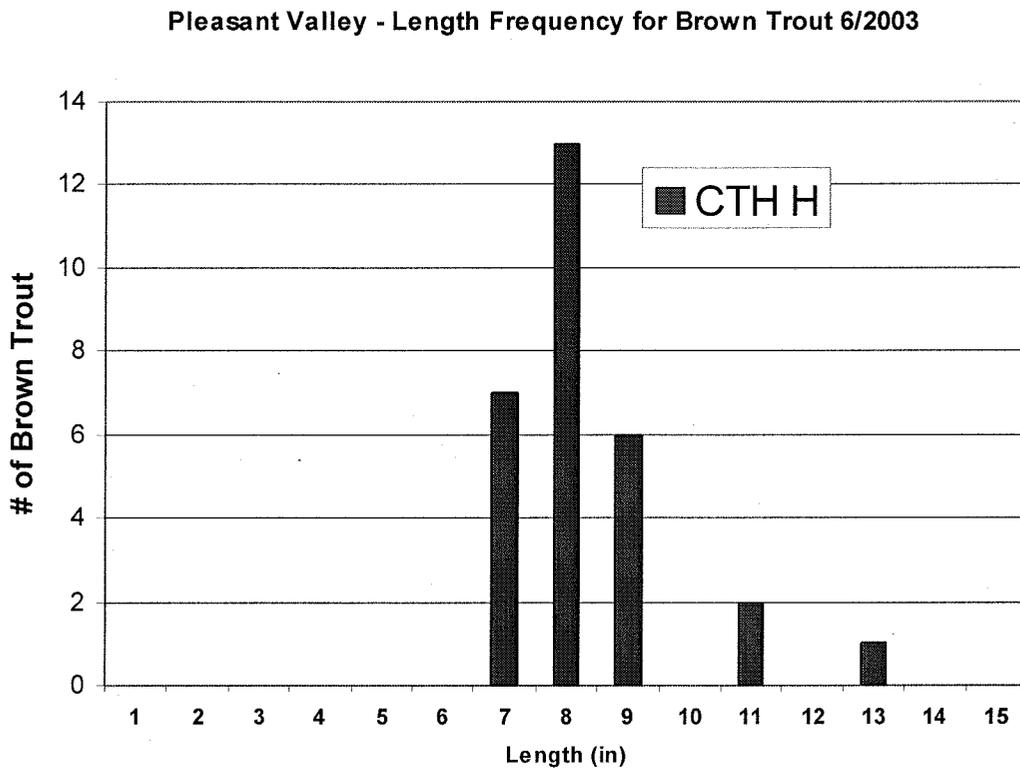
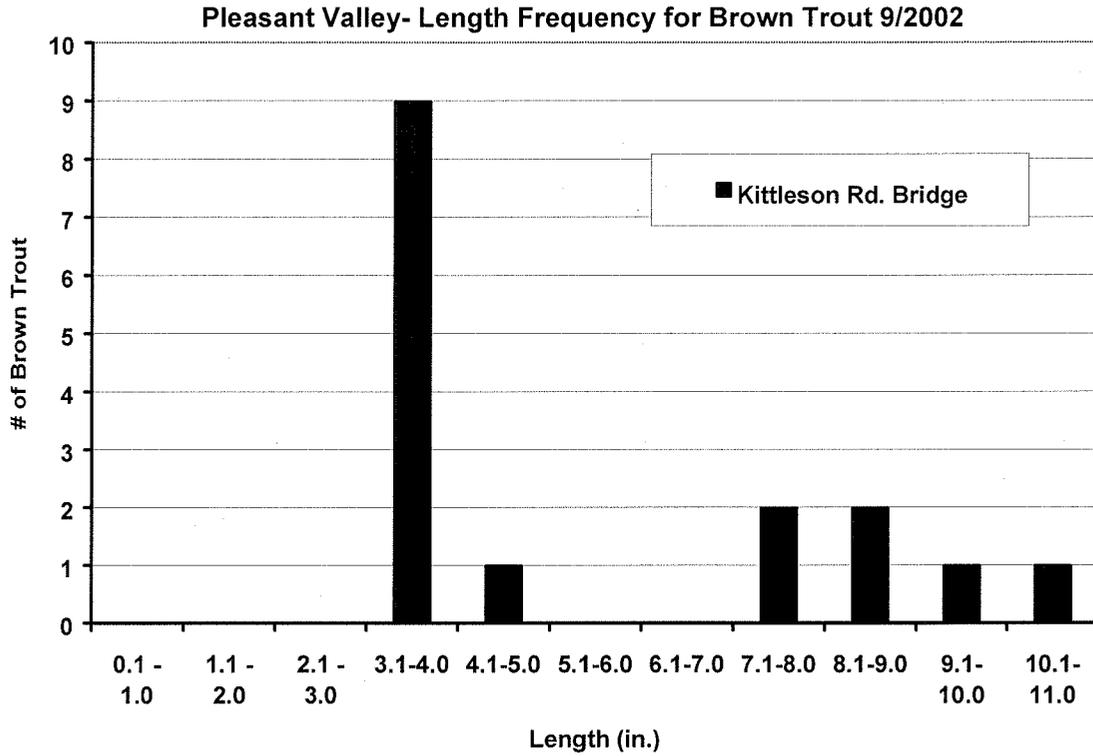


Figure 1: Pleasant Valley Branch

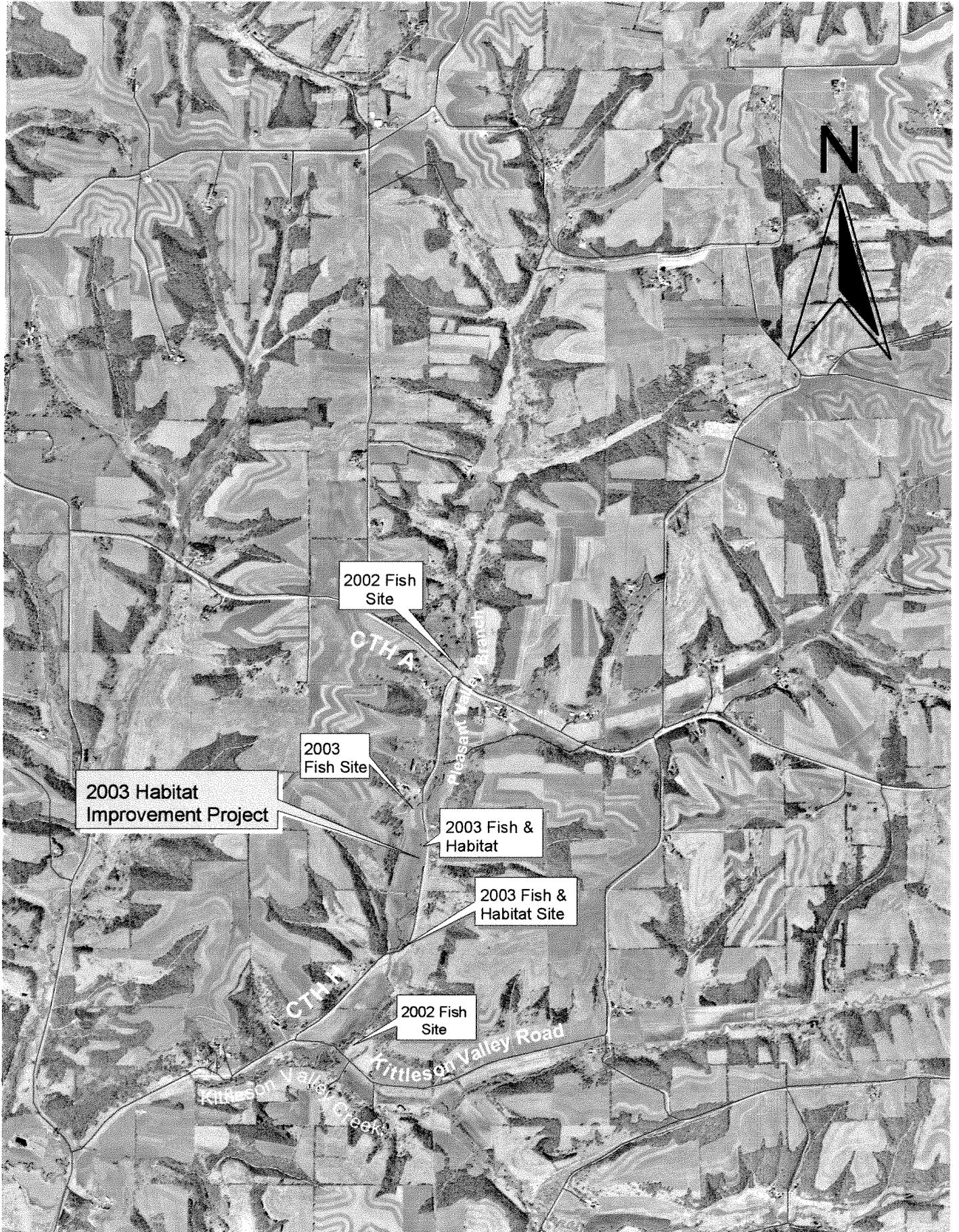


Figure 2: Brown Trout collected from Pleasant Valley Branch

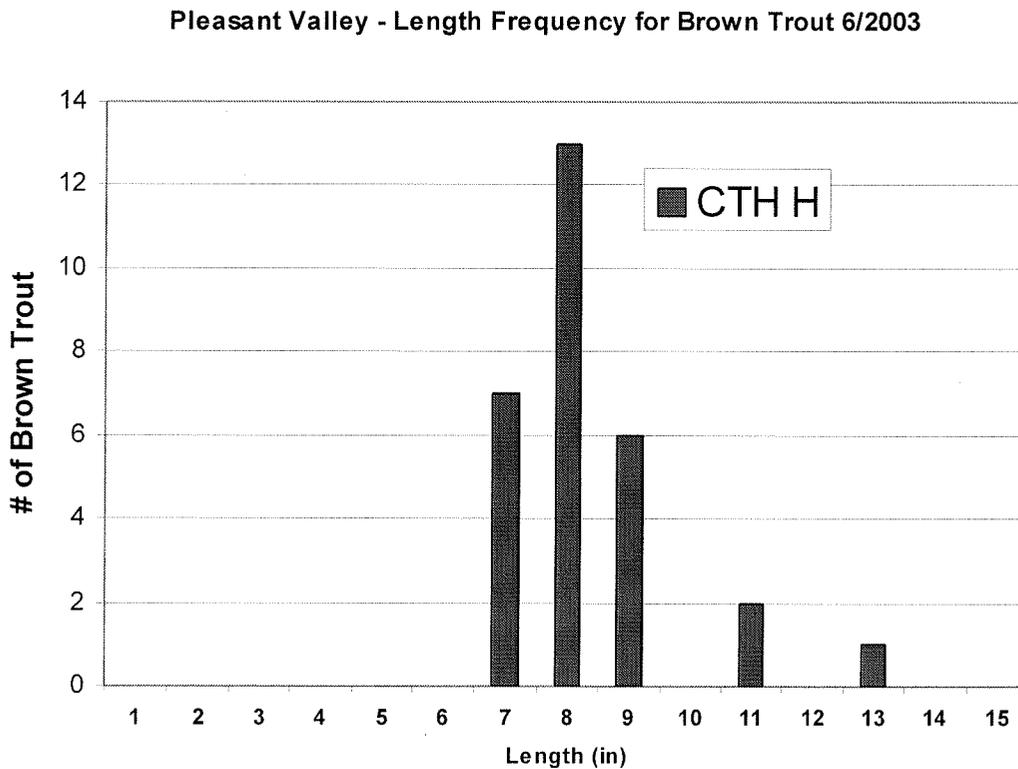
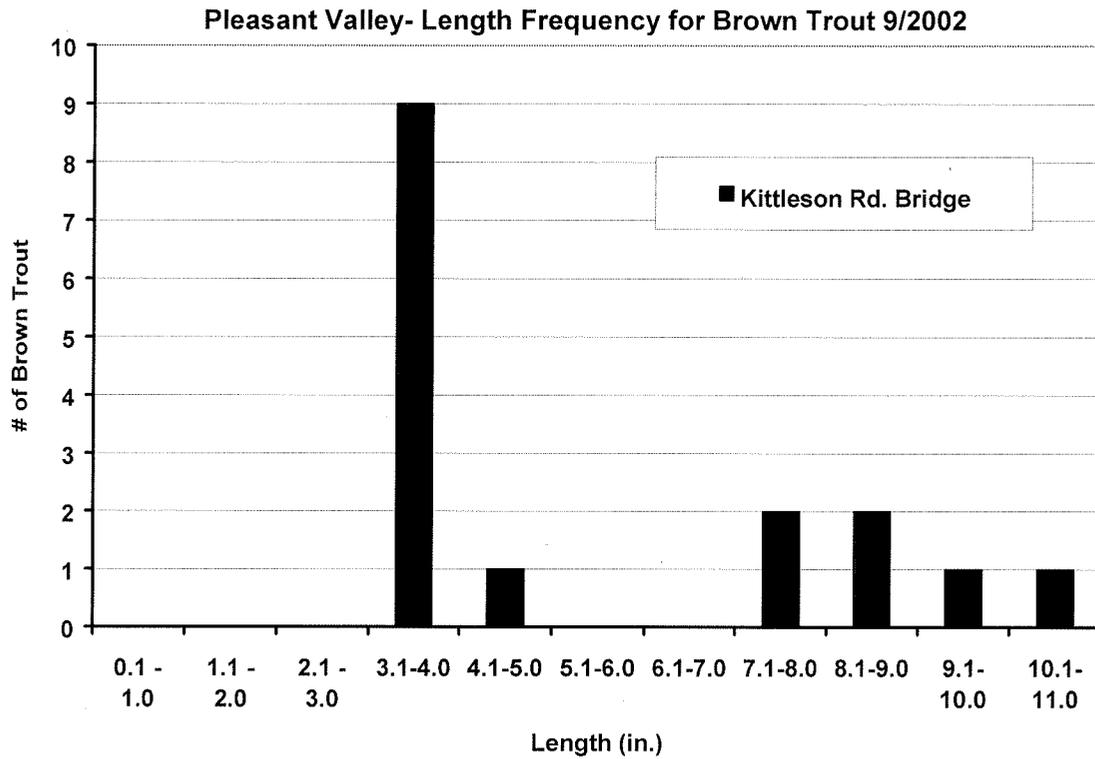


Figure 3: Hourly Water Temperatures, March 2002 - May 2004

Hourly Temperatures - Pleasant Valley Branch at Kittleson Valley Road

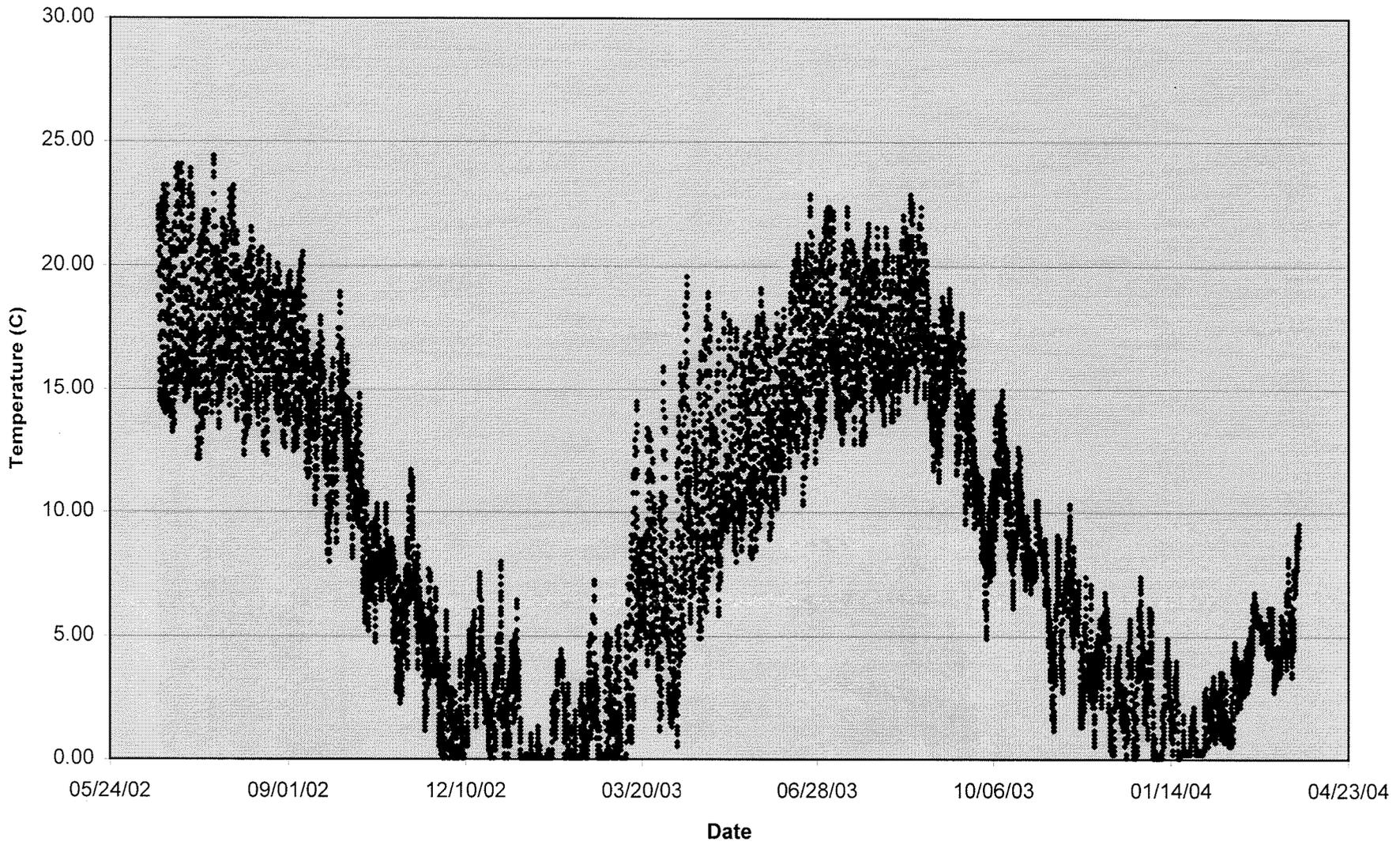


Figure 4: Summer Mean Daily Temperatures

Summer Mean Daily Temperatures - Pleasant Valley Branch 2002 & 2003

