Summary Report

Qualitative Analysis

of

Fish Species

at

Manassas National Battlefield

and

Natural Resources Management Trainee Participation

Gordon Olson
Antietam National Battlefield
November 3, 1982

Overview

On September 30 and October 1, 1982 I assisted in a qualitative fishery survey in surface waters of Manassas National Battlefield. The study was conducted to establish baseline data which will be used in assessing the impact of a proposed historic scene restoration project. A copy of the final survey report is attached.

Activities

During the two days of sampling I assisted in electroshocking, specimen collection and identification under the direction of the U.S. Fish and Wildlife Service.

Training Accomplishments

This activity provided me with:

a. a basic understanding of electrofishing apparatus, its operation and appropriate use

b. field exposure to wildlife sampling techniques

c. insight into the abundance of aquatic life forms in what would normally be considered insignificant waterways

d. an introduction to freshwater species identification

e. an opportunity to establish a working relationship with another Federal agency and to gather information on other capabilities of the Fish and Wildlife Service

f. a list of suppliers useful in fisheries management

g. a desire to conduct a similar survey at Antietam.

Summary

This activity proved useful by giving me hands on experience with a skill which is essential in achieving sound fisheries management and a thorough Resources Base Inventory.

Equipment

a. QEG-300R backpack generator produced by Tanaka Kogyo Company, Japan

b. probe and net wired to the generator

c. collecting nets

d. collecting buckets

e. ice chest

bags

rs

otes and maps

FISH SPECIES COMPOSITION

IN SELECTED STREAMS IN

MANASSAS NATIONAL BATTLEFIELD PARK

MANASSAS, VIRGINIA

September 1982

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

FISHERY ASSISTANCE
P.O. Box 729
Gloucester Point, VA 23062

Gary L. Swihart
Acting Project Leader
(804) 642-4740

FISH SPECIES COMPOSITION IN SELECTED STREAMS IN MANASSAS NATIONAL BATTLEFIELD PARK

I Introduction

A qualitative fishery survey was conducted September 30 - October 1, 1982, on Youngs Branch, Chinn Branch, Bull Run and an unnamed stream flowing through the Groverton Confederate Cemetery, Manassas National Battlefield Park, Manassas, Virginia. The survey was conducted by Mr. Gary Swihart, U.S. Fish and Wildlife Service, Office of Fishery Assistance, Gloucester Point, Virginia, with the assistance of Park Service personnel.

The study was done to determine species diversity and was not intended to evaluate relative abundance of any species. Each sampling station included portions of the streams having a pool/riffle habitat to ensure collecting fish species having a site specific requirement. Samples were collected using a gasoline powered back-pack electroshocker having an output of 120 VAC. Species collected were placed on ice and transported to the Gloucester Point office where positive identification was made (1) and 2) literature cited).

Information collected can be used by the National Park Service as base line information to evaluate changes in fish species composition which may occur as a result of watershed disturbance during site restoration.

II Results of Fishery Survey

The following is a listing of sample sites (see attached map for locations) and fish species collected at each site.

The fact must be stressed that there is no guarantee that each and every species of fish present in a stream, river, pond, or lake will be collected when doing any type of feasible sampling. The possibility exists of not sampling a particular niche inhabited by a particular species or even failing to collect the species after it has been located. In addition, fish species composition and relative abundance will change depending on the season and climatic conditions when the sampling is done.

Sample Site	Species Collected
Chinn Branch Station A 100 feet	Redfin pickerel Northern hog sucker
Chinn Branch Station B 250 feet	Redfin pickerel Northern hog sucker Redbreast sunfish Creek chubsucker Creek chub
Chinn Branch Station C 150 feet	Creek chub Johnny darter unidentified salamander
Youngs Branch Station A 250 feet	Redbreast sunfish Pumpkinseed Bluespotted sunfish Yellow bullhead Spotted shiner Johnny darter Creek chub

Results, Cont'd.

Sample Site	Species Collected
Youngs Branch Station B 350 feet	Redbreast sunfish Pumpkinseed Bluespotted sunfish Largemouth bass Longnose dace Johnny darter Creek chub
Youngs Branch Station C 250 feet	Redbreast sunfish Redfin pickerel Bluegill Pumpkinseed Yellow bullhead White sucker Fallfish Golden shiner Spottail shiner Johnny darter Creek chub
Groverton Confederate Cemetery Branch 250 feet	Bluegill Green sunfish Golden shiner Creek chub Unidentified salamander Johnny darter Creek chubsucker
Bull Run Station A 300 feet	Redfin pickerel Redbreast sunfish Bluegill Warmouth Green sunfish Smallmouth bass Cutlips minnow Bluntnose minnow Spottail shiner Common shiner Comely shiner Johnny darter Rosyside dace Creek chub

Results, Cont'd.

Sample Site	Species Collected
Bull Run Station B 400 feet	Redbreast sunfish Bluegill White sucker Fallfish Cutlips minnow Bluntnose minnow Northern hog sucker Longnose dace Blacknose dace Johnny darter Common shiner Spottail shiner Creek chub

III Discussion

The survey produced 26 species represented by 16 genera in 6 families (see attached list of Common and Scientific names). All species collected are common to the habitat and locality sampled (2) literature cited).

All of the species collected have experienced periods of siltation and turbidity of their habitat in the past from naturally occurring events. Generally, these periods would have been of short duration and probably only modest turbidity resulted due to the watershed being in grassland and forest. No adverse effects would have been observed from the turbidity and the fish community continued to flourish.

However, during site restoration if proper safeguards are not employed, the silt load may become heavy and could last for an extended period of time. If these conditions occur some or all of the fish species may be eliminated from the stream due to several factors: 1) direct suffocation of fish due to gills becoming clogged with silt; 2) fish in stressed conditions are more susceptible to diseases and will die; 3) food organisms are eliminated resulting in starvation of the fish or the fish leave the area in search of better habitat; and 4) spawning sites and eggs are destroyed which eliminates future generations.

IV Recommendations

The following recommendations are made to help protect the aquatic resources on Manassas National Battlefield Park if site restoration is initiated:

1. Selectively remove only the timber that is absolutely necessary to accomplish the required objectives.

2. Leave an undisturbed buffer zone (75-100 feet wide) on both sides of all water courses.

3. Stabilize and re-seed all disturbed areas immediately following timber removal.

4. Any area prone to erosion should be stabilized with filtering material (baled straw, etc.).

If an environmental assessment is required for the site restoration project, the NPS may want to contract with a local college to conduct water chemistry and an aquatic invertebrate inventory on streams affected. This information would be beneficial for base line data.

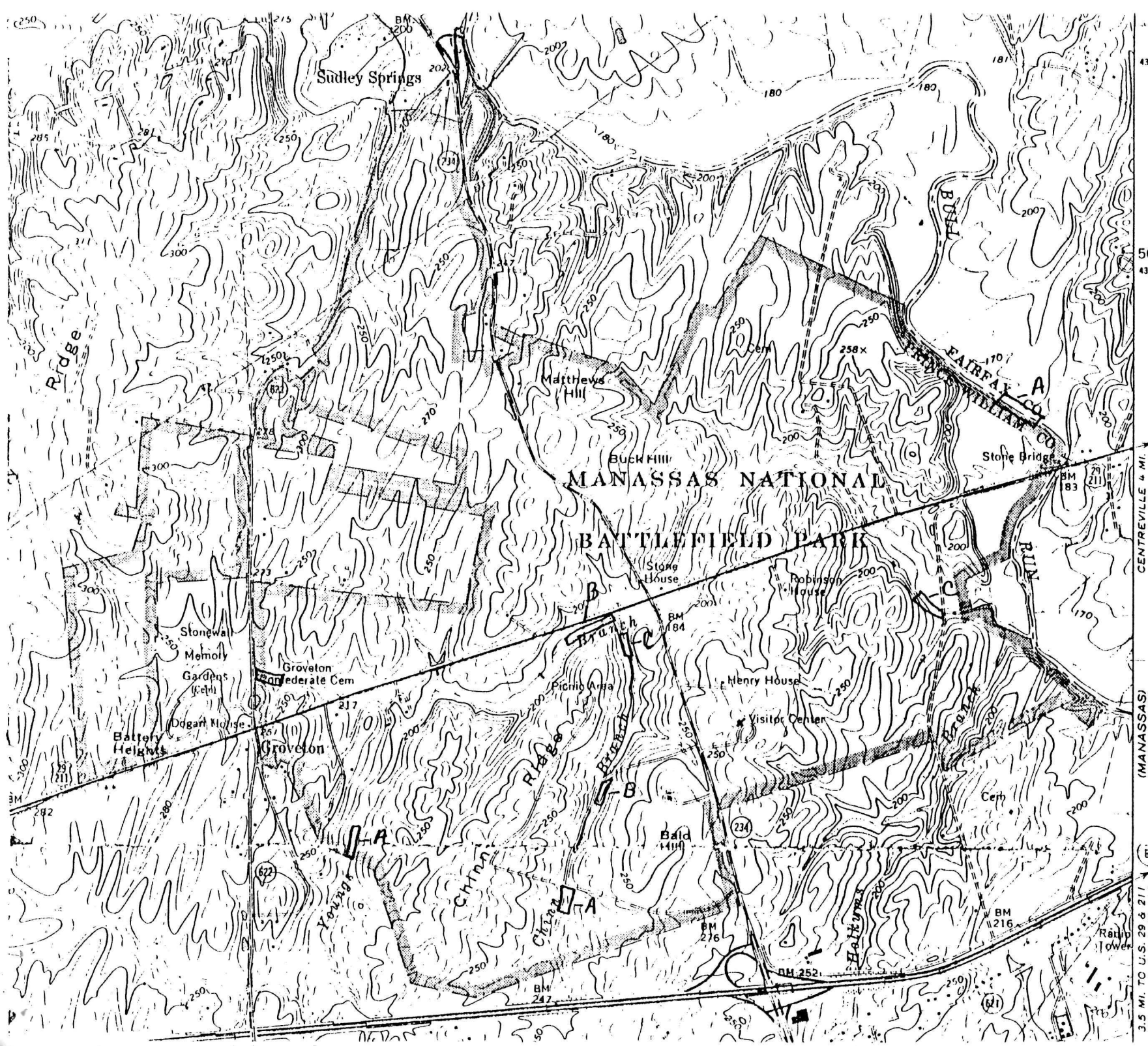
LITERATURE CITED

1) Eddy, S., "The Freshwater Fishes." Second Edition.

2) Lee, S.D., C.R. Gilbert, C.H. Hocutt, R.E. Jenkins, D.E. McAllister and J.R. Stauffer, Jr. 1980 et seq. "Atlas of North American Freshwater Fishes." N.C. State Mus. Nat. Hist., Raleigh.

COMMON AND SCIENTIFIC NAMES OF FISHES
COLLECTED AT MANASSAS NATIONAL BATTLEFIELD PARK
September 30 - October 1, 1982

Common	Scientific
Redfin pickerel	*Esox americanus americanus* Gmelin
Northern hog sucker	*Hypentelium nigricans* (Lesueur)
Creek chubsucker	*Erimyzon oblongus* (Mitchill)
Cutlips minnow	*Exoglossum maxillingua* (Lesueur)
Golden shiner	*Notemigonus crysoleucas* (Mitchill)
Comely shiner	*Notropis amoenus* (Abbott)
Common shiner	*Notropis cornutus* (Mitchill)
Spottail shiner	*Notorpis hudsonius* (Clinton)
Blacknose dace	*Rhinichthys atratulus* (Hermann)
Longnose dace	*Rhinichthys cataractae* (Valenciennes)
Rosyside dace	*Clinostomus funduloides* Girard
Bluntnose minnow	*Pimephales notatus* (Rafinesque)
Creek chub	*Semotilus atromaculatus* (Mitchill)
Fallfish	*Semotilus corporalis* (Mitchill)
White sucker	*Catostomus commersoni* (Lacepede)
Yellow bullhead	*Ictalurus natalis* (Lesueur)
Bluespotted sunfish	*Enneacanthus gloriosus* (Holbrook)
Redbreast sunfish	*Lepomis auritus* (Linnaeus)
Green sunfish	*Lepomis cyanellus* Rafinesque
Pumpkinseed	*Lepomis gibbosus* (Linnaeus)
Warmouth	*Lepomis gulosus* (Cuvies)
Bluegill	*Lepomis macrochirus* Rafinesque
Smallmouth bass	*Micropterus dolomieui* Lacepede
Largemouth bass	*Micropterus salmoides* (Lacepede)
Johnny darter	*Etheostoma nigrum* Rafinesque



FISH SAMPLING STATION

MNBP

SEPTEMBER 30 - OCTOBER 1, 1982

50'

4302

4301

-B