

SARATOGA_NHP
WATER_RESOURCE_MONITORING
1987

INTRODUCTION:

THIS REPORT WILL OUTLINE THE BASIC OBJECTIVES, CONSIDERATIONS, AND DESIGN OF MONITORING THE WATER RESOURCES OF SARATOGA NHP.

WATER RESOURCE MONITORING OBJECTIVES:

THE WATER RESOURCE MONITORING OBJECTIVES FOR SARATOGA NHP ARE:

1. TO DETERMINE ANY LEVELS OF CONTAMINATION IN THE WATER OR SEDIMENTS OF THE PARK, SPECIFICALLY CAUSING THE LOCAL PCB PROBLEM FROM THE HUDSON RIVER AND INTRUSION INTO PARK LAND.
2. TO COLLECT BASELINE DATA OF PARK STREAMS AND PONDS TO MEASURE AGAINST STATE OF NEW YORK STANDARDS AND TO USE AS FUTURE REFERENCE.
3. TO DETERMINE THE IMPACTS ON THE WATER RESOURCE THROUGH PRESENT PARK MANAGEMENT ACTION PROGRAMS (AND SPECIAL USE PERMITTEE'S).
4. TO DETERMINE HEALTH AND SAFETY FACTORS FOR PARK VISITORS WHO UTILIZE THE WATERS OF THE PARK FOR RECREATION AND IRRIGATION PURPOSES.

BACKGROUND:

THE WATER RESOURCE MONITORING OBJECTIVES FOR SARATOGA NHP ARE DERIVED FROM AND COMPLEMENT THE PARKS ENABLING LEGISLATION (52 STATUTE 608), AND NPS MANAGEMENT POLICIES FOR PROTECTION OF THIS "PRIMARY" PARK RESOURCE. THIS PROGRAM OUTLINE IS BUT ONE PART OF THE PARKS' COMPREHENSIVE RESOURCE MANAGEMENT PLAN (REVISED 1987) WHICH PROVIDES THE FRAMEWORK AND STRATEGIES FOR EFFECTIVELY MANAGING THE PARKS NATURAL AND CULTURAL RESOURCES.

NPS MANAGEMENT POLICIES STATE THAT "WATERS OF A PARK ARE A PRIMARY RESOURCE..., AND EMPHASIS SHOULD BE PLACED ON CONSERVATION OF THIS RESOURCE..." SPECIFICALLY;

1. CONTROL OF EROSION INDUCED BY HUMAN ACTIVITIES;
2. PREVENTION OF DIRECT POLLUTION BY LIVESTOCK THROUGH THE ELIMINATION OF STREAMSIDE OR LAKESIDE CORRALS OR PASTURES, OR DIRECT WATERING SITES ON NATURAL WATERS;
3. AVOIDANCE OF CONTAMINATION BY TOXIC SUBSTANCE, SUCH AS CERTAIN PESTICIDES, HERBICIDES, AND HEAVY METALS

PARK WATER RESOURCES

HUDSON RIVER-- THE HUDSON RIVER IS THE MOST PROMINENT WATER FEATURE IN THE PARK. IT FLOWS NORTH TO SOUTH ALONG THE EASTERN PARK BOUNDARY. THE RIVER IS HISTORICALLY SIGNIFICANT TO THE PARK AND OFFERS AN OUTSTANDING AESTHETIC MANTLE BUT IS USED LITTLE FOR RECREATIONAL PURPOSES DUE TO INDUSTRIAL PCB CONTAMINATION.

OLD CHAMPLAIN CANAL-- THIS HISTORIC CANAL RUNNING ADJACENT TO HIGHWAY ROUTE 4 REMAINS FILLED WITH STREAM FLOW WATERS AND OCCASIONAL HUDSON RIVER FLOOD WATERS. THE FUNCTIONING SECTION OF CANAL IS USED FOR AGRICULTURAL IRRIGATION. WATER IS PUMPED FROM THE CANAL TO CROP LANDS ON THE BLUFF TOPS ADJACENT TO THE PARKS STOP # 8 BOUNDARY.

KROMA KILL CREEK-- THIS FIRST ORDER STREAM DRAINS THE NORTH EASTERN PORTION OF THE PARK AND IS THE MAIN CONTRIBUTOR TO THE GREAT RAVINE AREA WHICH HAS HISTORICAL SIGNIFICANCE. THIS STREAM EMPTIES INTO THE CHAMPLAIN CANAL AND EVENTUALLY INTO THE HUDSON RIVER.

MILL CREEK-- MOST OF THE WATERSHED FOR THIS FIRST AND SECOND ORDER STREAM IS WITHIN PARK BOUNDARIES EXCEPT FOR THE SECTION WHICH PASSES THROUGH THE MAJOR PARK INHOLDING WHERE AGRICULTURAL AND/OR DAIRY FARMING IS PRACTICED. THE STREAM EVENTUALLY EMPTIES INTO THE HUDSON RIVER.

AMERICAN CREEK-- THIS SMALL FIRST ORDER STREAM DRAINS THE SOUTHERN PORTION OF THE PARK ALONG ROUTE # 4. THIS WATERWAY EMPTIES INTO THE HUDSON RIVER.

DEVILS HOLLOW CREEK-- THIS FIRST/SECOND ORDER STREAM IS LOCATED ON THE RECENTLY PURCHASED PRICE FARM AREA AND DRAINS A SIGNIFICANT AGRICULTURAL AREA ON THE SOUTH WESTERN SECTION OF THE PARK.

PONDS-- THERE ARE VARIOUS SMALL PONDS WITHIN PARK BOUNDARIES THAT ARE AT PRESENT UN-NAMED. THERE ARE SEVERAL ALONG THE FLOOD PLAIN AREA OF THE HUDSON RIVER.

PARK SURFACE WATER SIGNIFICANCE

THE MANY STREAMS AND THE CHAMPLAIN CANAL ARE MAINLY UTILIZED FOR TWO PURPOSES. IRRIGATION OF ADJACENT FARMERS CROPLAND AND FISHING BY RECREATIONISTS.

SECONDLY, THE STREAMS AND CANAL ARE A MAJOR PORTION OF THE AESTHETIC SCENE THAT IS TRYING TO BE MAINTAINED. SUBSEQUENTLY THE STREAM BANKS AND PATHS ALONG THESE WATER ROUTES ARE HIKEED BY VISITORS TRYING TO GRASP THE LANDSCAPES' HISTORIC SIGNIFICANCE.

WATER SAMPLE PROCEDURES

1. FIRST ORDER OF BUSINESS IS TO TEST SEDIMENT SAMPLES FOR PCB CONTAMINATION. THERE WILL BE FIVE SAMPLES TAKEN FROM THE HUDSON RIVER FLOOD PLAIN AREA IN SPRING OF 1987. THESE SAMPLES WILL BE ANALYZED BY T.C. MALE LABORATORIES OF LATHAM N.Y. AND WILL CONFORM TO "STANDARD METHODS" TECHNIQUES FOR ANALYSIS. ACTUAL SITES FOR SAMPLING WILL BE DELINEATED AND MARKED FOR FUTURE REFERENCE.
2. SECONDLY, PARK STAFF WILL BEGIN A PROGRAM OF SAMPLING 10 STATIONS ALONG SURFACE STREAMS OF THE PARK (SEE MAP FOR LOCATIONS). SAMPLING IN THE FIELD WILL LOOK AT EACH SITES' a) pH, b) STREAM FLOW DISCHARGE RATE, c) CONDUCTIVITY, d) DISSOLVED OXYGEN, e) BIO-CHEMICAL OXYGEN DEMAND (BOD), f) TEMPERATURE.
3. THERE WILL BE FIVE STATION SITES THAT WILL BE SAMPLED ONCE EVERY TWO WEEKS FOR FECAL COLIFORM BACTERIA (SEE MAP).
4. THIS SAMPLING WILL BE ON A TWO WEEK CYCLE STARTING IN MAY 1987 AND CONTINUE THROUGH UNTIL SEPTEMBER 30, 1987.

CONCLUSION

THE OBJECTIVE OF THIS PROGRAM IS TO DEVELOP BASE LINE DATA FOR THE WATER RESOURCES OF THE PARK. ALSO, TO DELINEATE ANY TROUBLE ZONES FOR ANY POLLUTION LEVELS BASED UPON STATE OF NEW YORK STANDARDS.

*DATA ANALYSIS WILL BE ACCOMPLISHED BY UTILIZING THE
"WATER Q" PROGRAM MADE FOR OLYMPIC N.P.*

LITERATURE_CITED

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