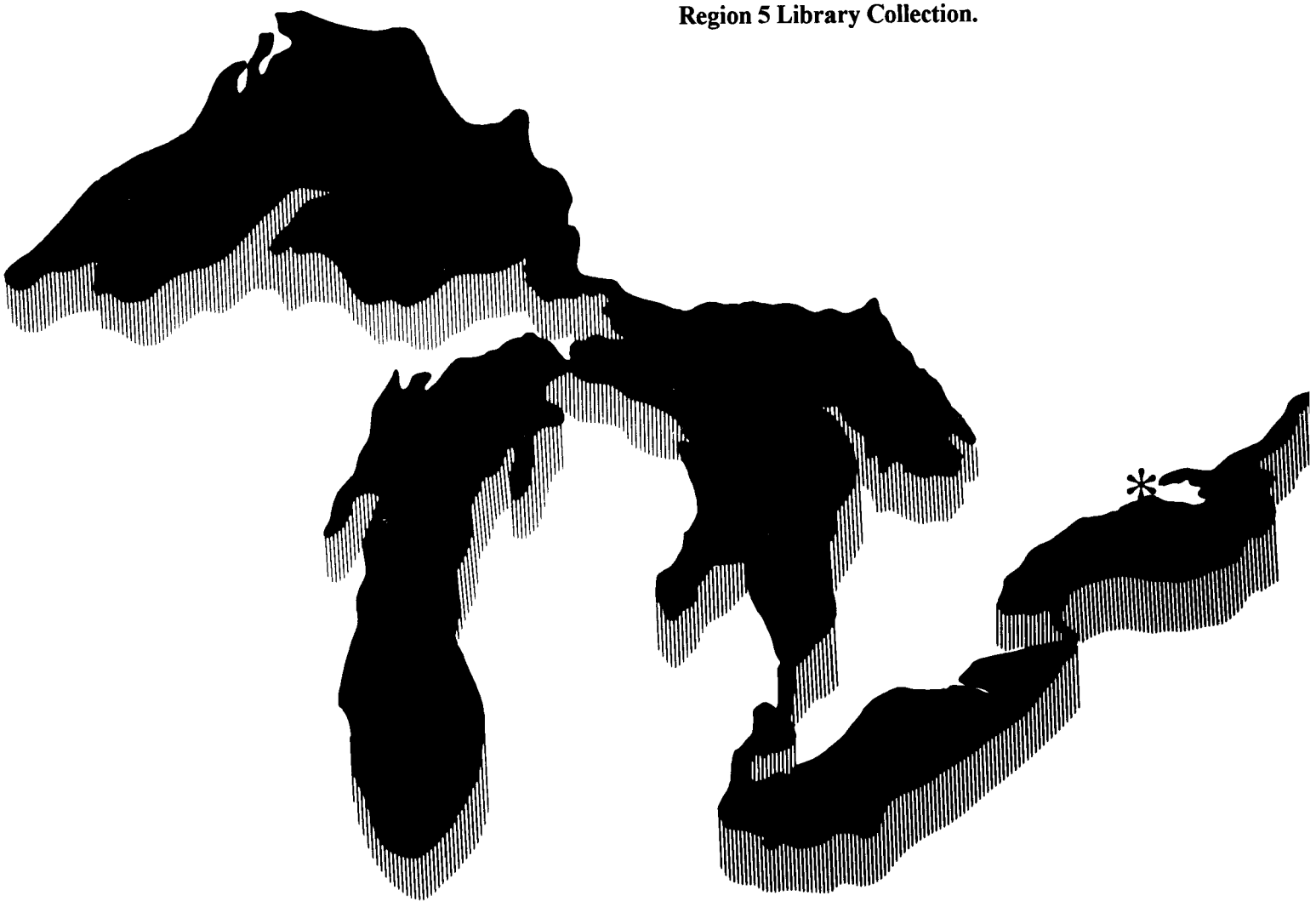
905-2-87-002
April 1987

EPA

Oswego County/ Lake Ontario Water Quality Demonstration Project



FOREWORD

The U.S. Environmental Protection Agency (USEPA) was created because of increasing public and governmental concern about the dangers of pollution to the health and welfare of the American people. Noxious air, foul water, and spoiled land are tragic testimony to the deterioration of our natural environment.

The Great Lakes National Program Office (GLNPO) of the USEPA was established in Region V, Chicago, Illinois to provide specific focus on the water quality concerns of the Great Lakes. The Section 108(a) Demonstration Grant Program of the Clean Water Act (PL 92-500) is specific to the Great Lakes drainage basin and thus is administered by the Great Lakes National Program Office.

Several sediment erosion-control projects within the Great Lakes drainage basin have been funded as a result of Section 108(a). This report describes one such project supported by this Office to carry out our responsibility to improve water quality in the Great Lakes.

We hope the information and data contained herein will help planners and managers of pollution control agencies to make better decisions in carrying forward their pollution control responsibilities.

Valdas V. Adamkus
Administrator, Region V
National Program Manager for the Great Lakes

EPA-905/2-87-002
April 1987

OSWEGO COUNTY/LAKE ONTARIO WATER QUALITY DEMONSTRATION PROJECT

by

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Mike Townsend

Oswego County Soil and Water Conservation District
Oswego, New York

Grant No. S005722
Section 108(a) Demonstration Project

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Project Officer

John C. Lowrey
Technical Assistance

GLNPO # 87-06
U.S. Environmental Protection Agency
Great Lakes National Program Office
230 South Dearborn Street
Chicago, Illinois 60604

September 1986

Disclaimer

This report has been reviewed by the Great Lakes National Program Office and Water Quality Standards Section, U.S. Environmental Protection Agency, Region V and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

OSWEGO COUNTY/LAKE ONTARIO
WATER QUALITY DEMONSTRATION PROJECT

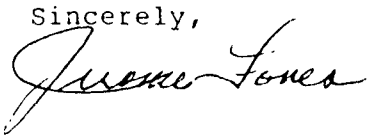
Dear Cooperator;

The Directors of the Oswego County Soil and Water Conservation District proudly present this final report at the conclusion of the Oswego County/Lake Ontario Water Quality Demonstration Project. Experiences and findings from four years with no-till in Oswego County can be located here.

The overall success of the project has relied upon the working relationships of everyone involved. Through the desire and committment of agency people, farmers, dealers and commercial sales people a joint effort in solving water quality issues has been recognized and stimulated. With the support of the U.S. Environmental Protection Agency's Great Lakes National Program Office, the practice of no-till has been proven as an erosion control and management tool for the landowner.

The lessons learned from this project will be available to acquaint farmers new to no-till. The District looks to the future with continued efforts regarding no-till and its associated measures.

Sincerely,

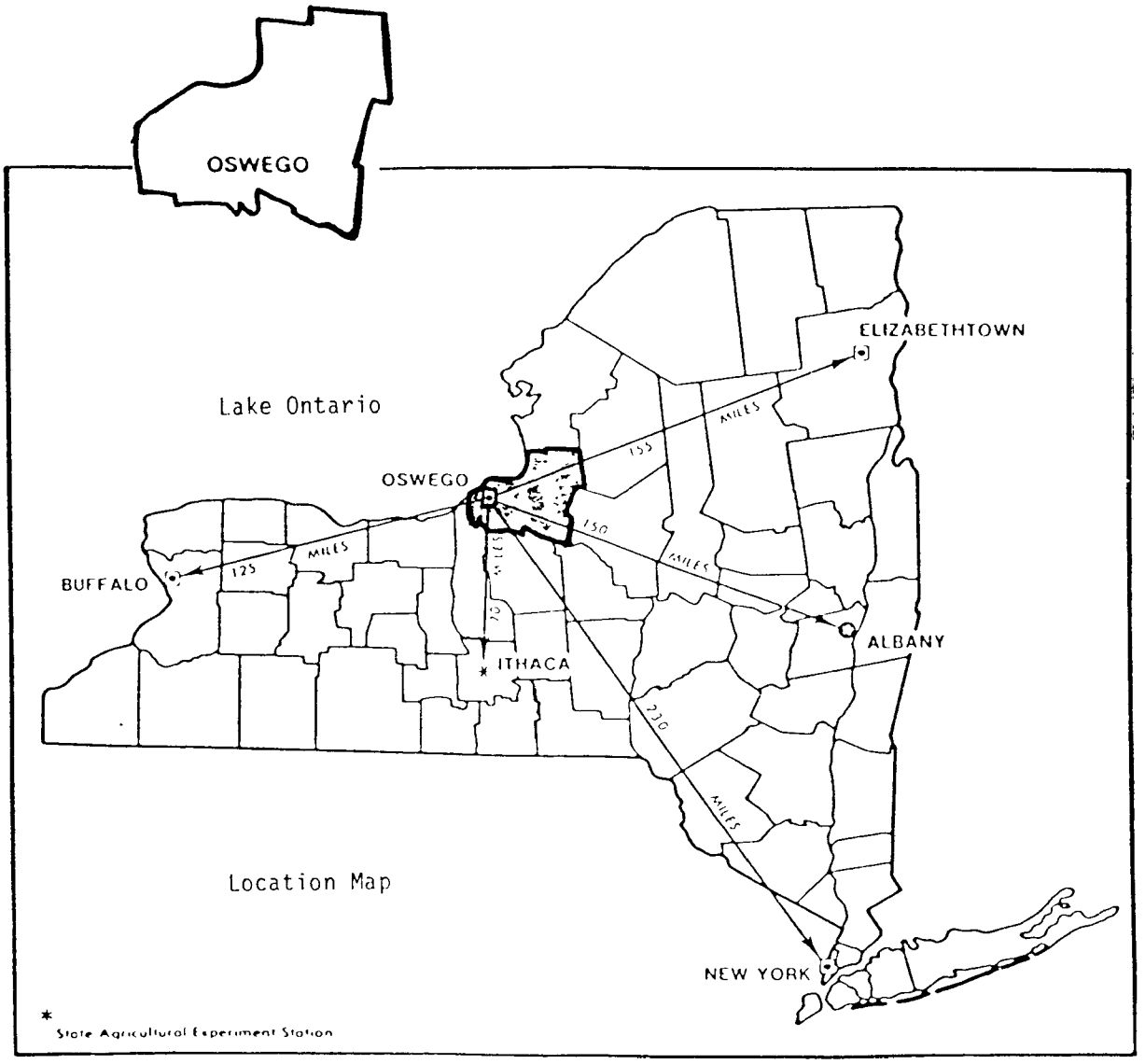


Jerome Fones
Oswego County SWCD

This project has been financed (in part) with Federal funds from the Environmental Protection Agency under grant number S005722-01-0. The contents do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

OSWEGO COUNTY/LAKE ONTARIO

WATER QUALITY DEMONSTRATION PROJECT



IMPROVING WATER QUALITY

BY

REDUCING SOIL EROSION

THROUGH

CONSERVATION TILLAGE

OSWEGO COUNTY SOIL AND WATER CONSERVATION DISTRICT
BOARD OF DIRECTORS

Jerome Fones, At-Large Representative ..... Chairman
Marshall Minot, Grange Representative ..... Vice Chairman
Sam Weber, Jr., Farm Bureau Representative ..... Member
Theodore Jerrett, County Legislative Representative ..... Member
Vernon Randall, County Legislative Representative ..... Member

Cooperating Agencies

United States Environmental Protection Agency, Region V
Great Lakes National Program Office ..... Ralph Christensen
Project Officer

Oswego County SWCD ..... John DeHollander, Dist. Manager
John Flanagan, Dist. Technician
Monty Curtis, Dist. Technician
Cindy Moxley, Sec./Treasurer

USDA Soil Conservation Service ..... Michael Townsend, Dist.Conservationist
Kevin Harris, Soil Conservationist

Cooperative Extension Service ..... Keith Severson
Field Crop Specialist

USDA Agricultural Stabilization and Conservation Service ..... Larry Meyer
County Executive Director

Oswego County Health Department .....Robert Shearer
Ground Water Management Specialist

The following is a list of individuals without whose concerned committment, support and participation in the no-till demonstration project, the goals and lessons learned would not have been acheived:

District Staff	District Board	ASCS Committee
Ronald Kaplewicz	George Loomis	George Loomis
John Flanagan	Jerome Fones	Sam Mattison
John DeHollander	Vernon Randall	Fred Rumsey
Michele Bailey	Jim Bishop	Fay Morey
Monty Curtis	Edward Frawley	
Cindy Moxley	Ted Jerrett	
	Sam Weber, Jr.	

No-Till Committee	Agway	USDA - SCS
Robert Shearer	John DuBois	Paul Webb
Ronald Kaplewicz	Tom Prouty	Paul Mitchell
Keith Severson		John Jeffredo
Larry Meyer		Mike Townsend
Al Hawkins		David Hoyt
		Kevin Harris

Chevron Chemical	FMC Corp.	Equipment Dealers
Mark Testerman	Nick Halford	Halsey's Equipment
Scott Anderson	Julie Griffen	Krakau Implement
		Jorolemon & Sons

Aerial Applicator
Loren Shestak

Precipitation data compliments of US Weather Observers John Ferlito, Robert Sykes and the US Department of Commerce.

A special appreciation and thanks to all the farmers who participated throughout the project.

OSWEGO COUNTY/LAKE ONTARIO WATER QUALITY DEMONSTRATION PROJECT

TABLE OF CONTENTS

THE SETTING

Oswego County, New York State

Oswego County is located near the eastern end of the Great Lakes System, having Lake Ontario as its northern border. A large drainage area in Central New York State flows through the county by means of the Oswego River. There are also many other streams draining directly into Lake Ontario (see attachment #1).

Of the 619,520 acres in the county, approximately 90%, or 557,500 acres drain directly into Lake Ontario.

Lake Ontario provides a variety of resources: recreation, drinking water, commercial shipping and other industrial uses. The metropolitan area of greater Syracuse, NY is located just south of Oswego County. The City of Syracuse and its suburbs rely quite heavily on Lake Ontario for their municipal drinking water supply.

Field of hay being converted to a no till plot.(note spray skips due to inadequate marking of spray line)

The majority of Oswego County's acreage is in woodland (52%). Wetlands and water (13%) and cropland (17%) are the other major land uses. The agricultural community is made up of dairy, cash crops, vegetables, fruit, beef, sheep and horses. Of the county's cropland acreage, approximately 4,000 acres of truck crops are irrigated; 2,000 acres in oats; 17,000 acres in corn (85% is silage); 400 acres in wheat and 30,700 acres in hay.

Oswego County has a humid-continental climate that is broadly representative of the northeastern part of the United States. Lake Ontario is a major influence on climate in the county. It moderates the temperature, reducing heat in summer and extreme cold in winter. Lake Ontario significantly affects precipitation in winter. Snowfall is often very heavy inland and occurs in bands of varying width and depth (see attachment #2).

The frost-free season is about 180 days in the vicinity of Oswego, about 160 days in the southeastern part of the county, and about 150 days in the northeastern part.

Elevation in the county ranges from 200 feet above mean sea level in the swampy areas that border Lake Ontario to 1,750 feet on the Tug Hill Plateau in the northeast corner of the county. In the western two-thirds of the county, relief is fairly uniform. The most pronounced relief in the western part of the county occurs on drumlins. These drumlins were formed by glaciers that moved down over the area and formed long narrow or oval, smoothly rounded hills of unstratified glacial drift. The advancement and retreatment of these glaciers markedly influenced the topography and soils of Oswego County.

A number of agencies have responsibilities and programs which impact on water quality within the county. These include: Oswego County Soil and Water Conservation District, USDA-Soil Conservation Service and Agricultural Stabilization & Conservation Service, County Health Department, NYS Department of Environmental Conservation, US Environmental Protection Agency, St. Lawrence Eastern Ontario Commission, Tug Hill Commission and Cooperative Extension Service.

Recent trends in the county have been similar to nationwide trends; fewer farmers but actual farming acreage remaining fairly constant. There has been some increase in acreages of organic soil farms in recent years. The county's population has been estimated during the last decade to be growing at a rate of 25%.

Since the initial passage of Section 208 of the Federal Water Pollution Control Act (Public Law 92-500), efforts have been made to establish the objectives of fishable, swimmable and drinkable waters by the mid-1980's. Additional statutes, such as the Safe Drinking Water Act, the Toxic Substances Control Act and the Resource Conservation & Recovery Act underscore the public concerns for an improved environment. Oswego County has been an active partner with the federal and state government in meeting public demands for a cleaner and safer environment.

THE PROBLEM

Excessive Nutrient Loading into Lake Ontario

Excessive amounts of phosphorous, nitrogen and sediment were reaching Lake Ontario at rates which were having detrimental effects on water quality. The EPA No-till Demonstration Project complimented the objectives set forth to control nutrient loading by the International Joint Commission US/Canada Agreement in reducing the phosphorous contribution into the Great Lakes.

The application of manure and commercial fertilizers at high amounts were attributed as potential sources of pollutants in drainage areas directly associated with Lake Ontario. During the recent decade or two, many municipalities along or near Lake Ontario have installed sewage treatment facilities in attempting to reduce point source loadings.

Excessive erosion on agricultural lands, higher production recommendations, intensified farming on sensitive soils, and urban expansion also contributed to the overall problem (see attachment #3).

The effects of this problem could be seen in excessive sedimentation into our streams, rivers and lakes. Waters were becoming nutrient enriched; increasing plant growth, lowering oxygen levels, increasing water treatment costs, and reducing recreational utilization. It had reached a point where it was affecting not only the aquatic resource but also the public, in general.

The goals by which the Soil and Water Conservation District operated remained consistent with federal and state objectives in obtaining swimmable, fishable and drinkable waters.

THE PROCESS

No - Till Demonstration Project

During 1982, the Oswego County Soil and Water Conservation District applied for and received through the Environmental Protection Agency-Great Lakes National Program Office, an $80,000 grant for what was to be known as the Oswego County/Lake Ontario Water Quality Demonstration Project. The local District was awarded this grant due to the large agricultural drainage area associated directly with Lake Ontario and its potential for reducing phosphorus contributions.

White corn planter purchased by SWCD to do no-till demonstration projects

Public announcements were made via county wide newspapers, agricultural bulletins and radio (see attachment #4). The agricultural community was informed from the beginning by the formation of a No-till Committee which was comprised of the SWCD, USDA-SCS and ASCS, Cooperative Extension, County Health Department and the County Planning Department. These members provided direction and the plan of action needed to carry out the program's objectives.

The study scope was to evaluate the agricultural related sources of non-point pollution and their impact upon total phosphorus contribution to Lake Ontario. It concluded that a reduction in the total phosphorus contribution can be achieved by accelerating the rate of no-till farming. A minimum of 900 acres was set as a goal to effectively demonstrate the programs objectives.

Watersheds were chosen as identified in the "Lake Ontario Drainage Basin Study" (see attachment #1).Local resource information indicates that there is concentrated agricultural activity in the lower portions of these watersheds which may contribute phosphorus and other pollutants to Lake Ontario. Because there are also larger portions containing minimal agricultural activity, these watersheds did not qualify as a whole in the "Drainage Basin Study".

Lilliston seeder purchased by District to do no-till seedings in sod or small grain stubble

The SWCD operated the project. Each year of the program, winter/spring workshops were held to review and explain objectives/goals to interested farmers (see attachment #5). Prospective farmers who wished to participate signed up at this time. Specific fields were qualified based upon fertility,

drainage, soil loss and water quality impact. The No-till Committee would then review and approve designated demonstration sites which included a conventionally tilled plot for yield comparison. In addition, cost-share monies through ASCS were provided as an incentive for implementation of no-till.

Prior to installation of any of the no-till, the site was analyzed and individual project plans were prepared for each landowner (see attachments #6-8). The no-till portion of the project included an evaluation of the demonstration plot to be installed and also a conventional check plot for yield comparison. Some of the information gathered during this time were: acres in the demonstration site, acres in the conventional site, soil types, slopes, date of planting, hybrid used, fertilizer applied, etc. (see attachment #9). Evaluations of these sites took place throughout the growing season.

Each participating farmer was given herbicide, fertilizer and management recommendations by Cooperative Extension and the Soil Conservation Service. The SWCD provided, through the grant, a no-till corn planter, a no-till seeder and the personnel to insure the installation of the no-till practices.

Yield checks were taken on conventional plots and no-till plots to give comparisons for further evaluation.

Planted fields were then scouted throughout the growing season for any possible adverse growing conditions. Scouting responsibilities were divided up among agency representatives of the No-till Committee. At harvest, yield comparison checks were calculated between no-till and conventional corn plots (see attachment #10). After harvest,data on all fields were tabulated for review and analysis (see attachments #11,12). This data has been utilized as a training tool when convincing farmers and other interested parties of the value of no-till.

The SWCD sponsored no-till tours for the general public to see the practice of no-till farming. These tours proved to be a valuable publicity tool (see attachment #13), in not only showing the practice of no-till and its benefits, but also the successful cooperative effort among local agencies and all involved particpants.

THE RESPONSE

The No-till Demonstration Project was funded under a grant from US-EPA with technical assistance by the USDA-SCS (see attachment #1 for designated watersheds). No effort was made to monitor the impacts of the project on pollutant loadings to streams and lakes.

In 1981, the NYS Department of Environmental Conservation published a Stream Stressed Segment Analysis for Oswego County identifying nutrient runoff from NPS as a potential water quality problem.

Education on the practice of no-till has been achieved through actual on site demonstrations, farm visits, and tours for the general public, legislators and agencies; presentations at various agency sponsored public meetings; and intra-agency support for the practice throughout the county and state.

Technical assistance in implementing the project at the local level came from the Soil and Water Conservation District and USDA-Soil Conservation Service, which complimented these agencies' normal operations with the landowners.

Farmers and Agri business touring a no-till plot on the Richard Potter farm.

Direct financial assistance to the SWCD was provided by EPA ($80,000 for machinery, labor and administrative costs) and the USDA-ASCS ACP Program of $121,700 for cost share incentives to landowners. In-kind non-federal contributions of local agencies and landowners totaled approximately $276,000. Education, technical assistance and cost share support were components of the project that were coordinated through the SWCD.

Technicial and financial assistance was provided to willing and interested landowners within designated watersheds. These particular watersheds were identified due to their intensified farming practices on erodible soils within the drainage basin of Lake Ontario. One significant program element which was implemented was the use of fertilizer recommendations based on recent soil tests. Factors that were considered by the SWCD, USDA-SCS and Cooperative Extension Service in selecting no-till fields were water quality, soil erosion, economics, drainage and level of management. In addition to the no-till practice, area landowners have been installing terraces, cover crops, water management control structures and conservation tillage to further reduce soil erosion.

Rye seed being aerial applied as a cover crop in standing corn.

Funding of the no-till project began in October of 1982. Sixty-five per cent of project funds were from US-EPA and thirty-five per cent from local matching funds, totaling $123,125. In addition, federal cost-share money was provided through the USDA-ASCS as a Special Project specifically to compliment the no-till grant. A financial penalty of forfeitting one's federally approved cost-share dollars was agreed to for not fulfilling the no-till program requirements. This penalty agreement was made between the SWCD and the ASCS Co. Committee. During the term of the project this never became an issue. During the four year program, existing staff of the SWCD was used to implement this project. The following is a listing of estimated man hours per agency: SWCD - 4900; SCS - 1900; ASCS - 480; Coop. Extension - 960.

The SWCD took the lead role in conducting the project, initiating the No-till Steering Committee, which is comprised of the SWCD, USDA-SCS & ASCS, Coop. Ext., and the County Planning & Health Departments. These agencies entered into an informal cooperative agreement to assist in the project. Cooperative Extension was responsible for education, herbicide & fertilizer recommendations; USDA-SCS was responsible for site selection based upon soils & drainage and assisting w/herb. and fert. recommendations; USDA-ASCS provided federal cost-share funds; and the SWCD was responsible for administering program and implementing project demonstration plots. The County Health and Planning Departments represented the non-agricultural viewpoint of the project and provided valuable information on the county's groundwater resource.

Informational meeting sponsored by the Oswego County Soil and Water Conservation District to acquaint [illegible] with the no-till program

As the project got underway, the need for cost-share incentives was evident to promote the practice of no-till. Through planning and education, the landowners acceptance of conservation tillage seemed to have the greatest impact on a successful program. The project proved itself many times to participants, thereby lessening the need for additional incentives. The multi-jurisdictional nature of the project is an asset, bringing a closer understanding and working knowledge between local agencies and landowners. It promotes a wiser use of agency resources, eliminating duplicative efforts and further enhances individual growth among all interested parties.

RESULTS

The attainment of our goal of reducing erosion and associated phosphorous has been greatly assisted by the no-till demonstration project. The use of soil tests as a basis for recommending fertilizer application rates resulted in a 40% reduction of actual applied fertilizer as compared to what landowners would have applied without the use of tests. In addition, erosion has been reduced by 75% on most agricultural lands where no-till has been demonstrated, thus, reducing nutrient loading. The Water Quality Demonstration Project has stimulated a change in attitude toward the effective utilization of fertilizers and an improved awareness of the effective and prescribed use of pesticides.

As a result of effected changes in the agricultural support system, many changes have occurred in Oswego County. The demand for special mix or blended fertilizers was met by local fertilizer dealers. A new equipment dealer made conservation tillage equipment available to area farmers on a rental basis. Crop yields have remained stable as compared to convential tillage sites. Farm landowners realized economic gains with no-till by reducing time, fuel, and machinery costs.

Corn seedling emerging through residue left from previous years corn crop (note that cover is greater than 80%).

Shortly into this project the potential for nutrients leaching into the groundwater became a great concern. Locally, various attempts were made to receive federal or state funded grants for investigative research studies of no-till and its relationship to groundwater quality. Just this year, a NYS funded study through the state's Land Grant college (Cornell) will be implemented to investigate the potential effects, if any, of chemical/nutrient loading of groundwater in a no-till vs. conventional situation. In addition, the United States Geological Survey has applied for funding of a five year New York State study to analyze the movement of chemicals through various soil types under no-till conditions.

LESSONS LEARNED

The project has provided many satisfying experiences. These experiences can be regarded as key ingredients towards a successful program. The most important key points learned are:

1) Working with landowners having the willingness to participate fully with program requirements. This came about through education and being candid with the public from the beginning regarding the program's objectives and goals.

2) The overall cooperative effort between agencies. All agencies involved made a committment to see that the project goals would be carried through from start to finish. This cooperative atmosphere was a vital factor in the success of the project.

3) Good, thorough communication among all parties. Agencies, private sector and landowners all gained respect for each other based upon the projects informational network.

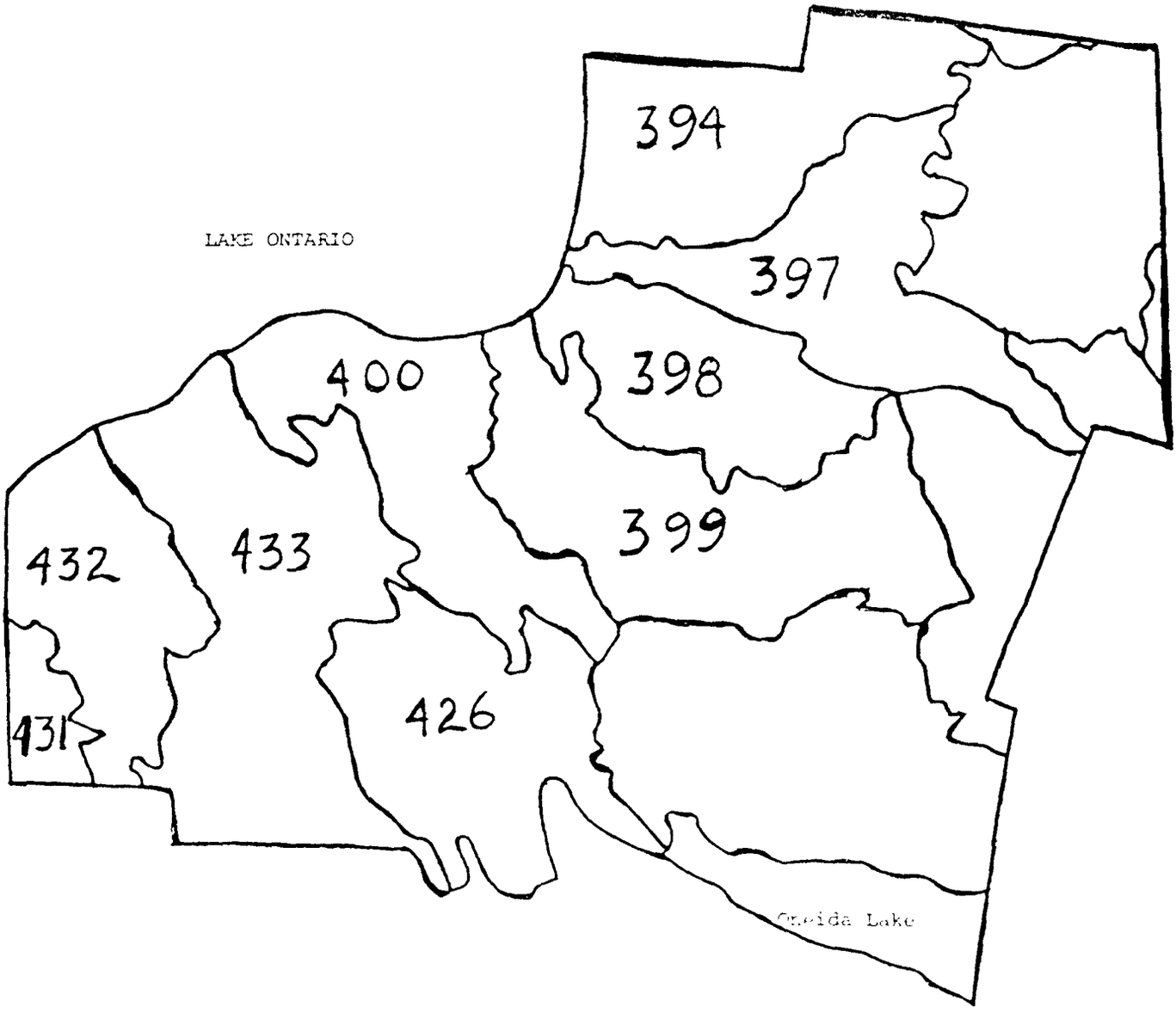
4) Good data base to work from. Having learned from others through their experiences in working with no-till gave us a better understanding and foresight to manage a program of this magnitude and scope.

Important facets that could be utilized to improve similar projects include: cooperation among all parties; keeping good, factual records; and keeping the landowner (participant) and general public informed.

We feel that the overall performance and operation of the project could have been improved in only two specific areas. Our scouting program might have been accomplished more effectively by hiring an individual strictly to perform these responsibilities. Secondly, the lack of time curtailed opportunities in demonstrating various fertilizer and insecticide application rates on the comparison plots.

ATTACHMENT #1

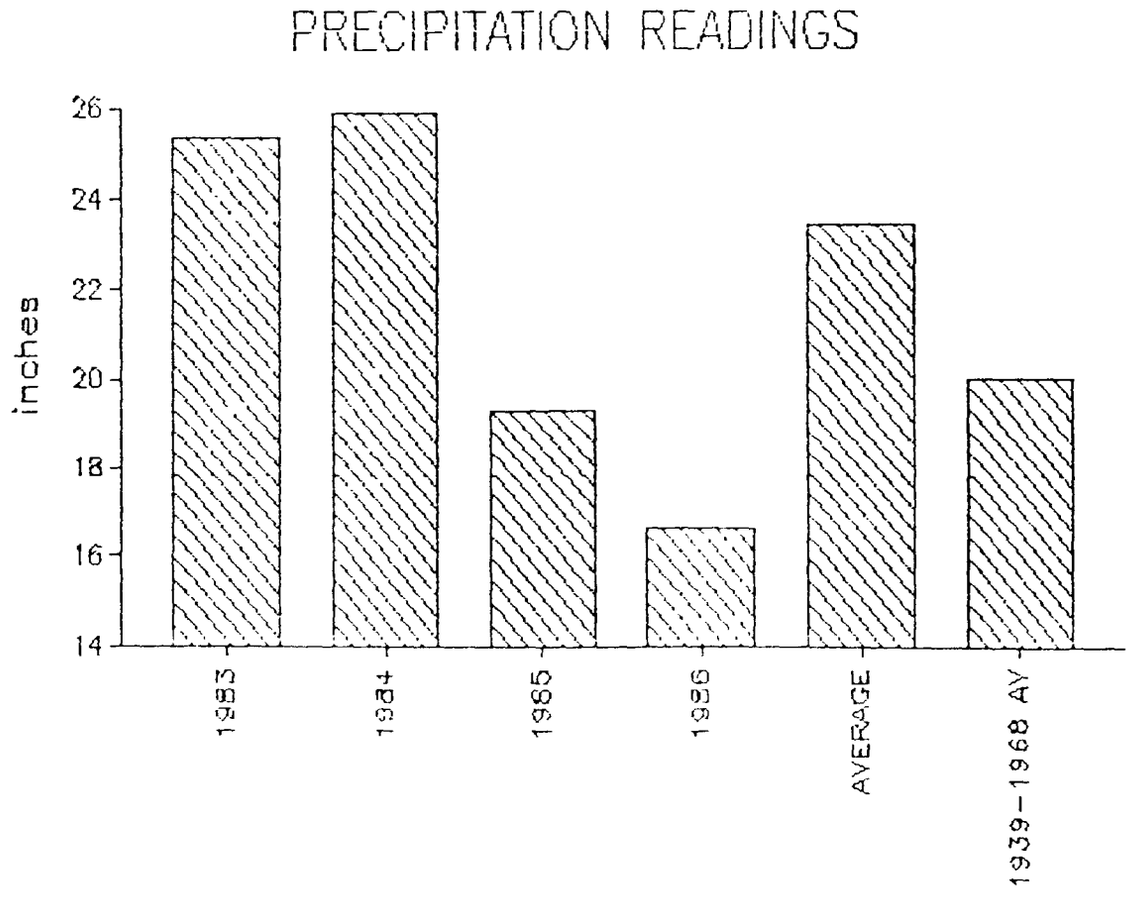
OSWEGO COUNTY TARGET WATERSHEDS
(CNI DESIGNATIONS)



Attachment #2

PRECIPITATION READINGS
FOR
CITY OF OSWEGO,NEW YORK

MONTH	1983	1984	1985	1986	AVERAGE	1939-1968 AVE.
APRIL	5.72	3.44	1.44	3.32	3.48	2.91
MAY	4.69	5.71	2.15	2.66	3.80	3.04
JUNE	1.28	2.06	3.30	4.70	2.84	2.43
JULY	2.02	3.60	2.50	2.64	2.69	2.64
AUGUST	4.01	5.72	3.13	3.27	4.03	2.69
SEPTEMBER	3.67	4.04	3.20		3.64	2.98
OCTOBER	3.95	1.32	3.59		2.95	3.30
TOTAL	25.34	25.89	19.31	16.59	23.43	19.99
AVERAGE	3.62	3.70	2.76	3.32		2.86



SOILS INVOLVED IN NO-TILL DEMONSTRATIONS

AgA: Alton gravely fine sandy loam 0 to 3 percent slopes
This is a deep, well drained to excessively drained, medium to moderately coarse textured gravelly soil. It occupies level areas of glacial outwash terraces, kames and beach ridges. Unlimed it is strongly acid to medium acid in the upper solum and moderately acid to neutral in the lower solum. Permeability is moderately rapid in the solum.Available water capacity is low to moderate. Natural fertility is low. This soil is well suited to all of the crops commonly grown in the county. The main problems are a tendency to be droughty and coarse fragments in the surface may interfere with cultivation and harvesting of some crops. The capability subclass is IIs.

AgB: Alton gravelly fine sandy loam, 3 to 8 percent slopes.
This is a deep, well drained to excessively drained, medium to moderately coarse textured gravelly soil. It occupies gently sloping areas of glacial outwash terraces, kames and beach ridges. Unlimed it is strongly acid to medium acid in the upper solum and medium acid to neutral in the lower solum. Permeability is rapid in the solum. Available water capacity is low to moderate. Natural fertility is low. This soil is well suited to all of the crops commonly grown in the county. The main problems are a slight erosion hazard, a tendency to be droughty and coarse fragments in the surface may interfere with cultivation and harvesting of some crops. Capability subclass is IIs.

AoB: Alton gravelly silt loam, 3 to 8 percent slopes
This is a deep, well drained to somewhat excessively drained, medium textured gravelly soil. It occupies level and gently sloping areas of glacial outwash terraces, kames and beach ridges. Unlimed it is strongly acid to mediuim acid in the upper solum and medium acid to neutral in the lower solum. Permeability is moderately rapid in the solum. Available water capacity is low to moderate. Natural fertility is low. This soil is well suited to all of the crops commonly grown in the county . The main problems are a tendency to be droughty and coarse fragments in the surface may interfere with cultivation and harvesting of some crops. Capability subclass is IIs.

AvB
Amboy very fine sandy loam, 2to 6 percent slopes
This is a deep, well drained, moderately coarse textured soil which has a fragipan at 15 to 30 inches. It occupies level to gently sloping areas of wind or water deposited silts and very fine sands. It is associated with glacial deposits primarily. Unlimed it is very strongly acid to medium acid above the fragipan. Available water capability is moderate. Natural fertility is low. This soil is well suited to all crops commonly grown in the county. The main problems are an erosion hazard when cultivated and maintaining lime and nutrient levels. Most areas are used to grow crops in support of dairying. Capability subclass is IIe.

AwC3
Amboy-Williamson complex, rolling, severly eroded.
These soils occur together in a pattern so intermingled that mapping them separately was impractical. These soils are deep, moderately coarse textured and have fragipans. Amboy is well drained and Williamson is moderately well drained. They occupy areas of wind or water deposited silts aand very fine sands. They are associated with glacial deposits primarily. Unlimed they are very strongly acid to medium acid above the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate to low. The choice of crops that can be grown on these soils is limited. Erosion has stripped much of the surface off and in places exposed the subsoils. Gullies and hills are common. This soil is best suited to woodland or pasture. The main problems are the erosion hazard, damage from past erosion and steepness of slopes. Capability subclass is IVe.

CHC
Colton-Hinkley complex, rolling.
These soils occur together in a pattern that makes mapping these separately impractical. These are deep excessively drained, coarse textured gravelly soils. They occupy undulating and rolling areas of outwash plains, terraces, kames and eskers. Unlimed they are very strongly and strongly acid in the solum. Permeability is rapid. The available water capacity is low and very low in these soils. Natural fertility is low. Farmed areas are used for silage corn, hay and pasture. Most areas are idle, reforested or in hardwoods. The main problems are the droughtiness and stoniness. Capability subclass is IVs.

DeB: Deerfield loamy fine sand, 0 to 6 percent slopes. This is a deep, moderately well drained, coarse textured soil. It occupies level to gently sloping terraces, deltas and outwash plains. Unlimed it is very strongly acid to medium acid through out. Permeability is rapid. Available water capacity is low. Natural fertility is low. This soil is suited to crops, hay and pasture. The main problems are slight wetness in the spring and a tendency to be droughty during the growing season. Capability subclass is IIIw.

EpB: Empeyville gravelly fine sandy loam,3 to 8 percent slopes. This is a deep,moderately coarse textured soil which has a fragipan at 14 to 22 inches. It occupies gently sloping areas of glacial till in the uplands. Unlimed it is very strongly to slightly acid in the solum. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is suited to cropland, hay and pasture. Much of this soil is in woods. The main problems are a slight wetness in spring, a shorter growing season due to elevation and an erosion hazard. Capability subclass is IIe.

HeB: Herkimer shaley silt loam, 2 to 8 percent slopes. This is a deep, well drained, medium textured soil. It occupies level and gently sloping alluvial fans composed of material from sandstone and dark colored shale. Unlimed it is strongly acid to neutral in the solum. Permeability is moderate. Available water capacity is high. Natural fertility is medium. This soil is suited to crops, hay and pasture. The main problem is a slight wetness in the spring when the water table is high. Capability subclass is IIe.

HkB: Hinckley gravelly loamy sand, 3 to 8 percent slopes. This is a deep, excessively drained, coarse textured gravelly soil. It occupies level and gently sloping areas of outwash plains, terraces, deltas, kames and eskers. Unlimed it is extremely acid to medium acid. Permeability is very rapid. Available water capacity is low to very low. Natural fertility is low. Farmed areas are used for silage corn, hay and pasture. Many areas are idle, reforested or are in hardwoods. The main problems are droughtiness and stoniness. Capability subclass is IIs.

IrA: Ira gravelly fine sandy loam, 0 to 3 percent slopes. This is a deep, moderately well drained, moderately coarse textured soil which has a fragipan at 20 to 40 inches. It occupies level areas of glacial till plains. Unlimed it is very strongly acid to strongly acid in the surface and strongly to medium acid above the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is suited to cropland, hay and pasture. The main problem is a slight wetness in the spring. Tilled areas are used to grow crops in support of dairying. Much of the area is in permanent pasture, woodland or idle. Capability subclass is IIw.

IrB: Ira gravelly fine sandy loam, 3 to 8 percent slopes. This is a deep, moderately well drained, moderately coarse textured soil which has a fragipan at 20 to 40 inches. It occupies gently sloping areas of glacial till plains. Unlimed it is very strongly to strongly acid in the surface and strongly to medium acid above the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is suited to cropland, hay and pasture. The main problems are a slight wetness in the spring and a slight erosion hazard. Tilled areas are used to grow crops in support of dairying. Much of the area is in permanent pasture, woodland or is idle. Capability subclass is IIw.

IrC: Ira gravelly fine sandy loam, 8 to 15 percent slopes. This is a deep, moderately well drained, moderately coarse textured soil which has a fragipan at 20 to 40 inches. It occupies sloping areas of glacial till plains. Unlimed it is very strongly to strongly acid in the surface and strongly to medium acid above the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is suited to cropland, pasture and hay. The main problems are a slight wetness in the spring, a moderate erosion hazard and steepness of slopes. Tilled areas are used to grow crops in support of dairying. Much of the area is in permanent pasture, woodland or idle. Capability subclass is IIIe.

IsC: Ira-Sodus gravelly fine sandy loams, rolling.
These soils occur together in a pattern that makes mapping them separately impractical. These soils are deep and moderately coarse textured. Sodus is well drained and Ira is moderately well drained. They both have fragipans. They occupy rolling areas of glacial till plains. Unlimed they are strongly to medium acid above the fragipan and medium to slightly acid in the fragipan. Permeability is moderate above the fragipan. Available water capacity is low to moderate. Natural fertility is low. These soils are suited to crops, hay and pasture. Most crops are grown in support of dairying. The major problems are an erosion hazard and steepness of slope. Capability subclass is IIIe.

Mn: Minoa very fine sandy loam.
This is a deep, somewhat poorly drained, medium textured soil. It occupies level and gently sloping deltas of former glacial lakes. Unlimed it is strongly acid to neutral in the solum. Permeability is moderate. Available water capacity is moderate. Natural fertility is low. This soil is suitable for crops, hay and pasture or woodland. Prolonged wetness limits the choice of crops that can be grown. Erosion is a hazard. Most cultivated areas are used for grain and grassland. Capability subclass is IIIw.

OaB: Oakville loamy fine sand, 0 to 6 percent slopes.
This is a deep, somewhat excessively drained, coarse textured soil. It occupies outwash plains,lake plains, moraines, sand dunes and beach ridges. Unlimed it is slightly acid to neutral in the solum. Permeability is very rapid. Available water capacity is low to very low. Natural fertility is low. These soils are suited to crops but are severely limited because of droughtiness. Most areas are idle or in woods. When cultivated small grain and hay are grown. Capability subclass is IVs.

RaB: Raynham silt loam, 0 to 6 percent slopes.
This is a deep, poorly to somewhat poorly drained, medium textured soil. It occupies level and gently sloping areas of water deposited silts and very fine sands. Unlimed it is strongly acid to slightly acid in the solum. Permeability is slow. Available water capacity is high. Natural fertility is low. When drained it is suitable for crops, hay and pasture. Undrained it is best suited to hay and pasture. Many areas are idle or in woods. Capability subclass is IIIw.

RhA
Rhinebeck silt loam, 0 to 2 percent slopes.
This is a deep, somewhat poorly drained soil. The surface is medium textured and the subsoil is fine textured. It occupies level areas of lake laid silt and clays. Unlimed it is slightly acid to neutral in the surface and neutral in the subsoil. Permeability is moderate in the surface and slow in the subsoil. Available water capacity is high. Natural fertility is high. This soil is suitable for crops, hay and woodland. Prolonged wetness limits the choice of crops that can be grown. Erosion is a hazard. Most cultivated areas are used for grain and grassland. Capability subclass is IIIw.

RhB
Rhinebeck silt loam, 2 to 6 percent slopes.
This is a deep, somewhat poorly drained soil. The surface is medium textured and the subsoil is fine textured. It occupies level areas of lake laid silt and clays. Unlimed it is slightly acid to neutral in the surface and neutral in the subsoil. Permeability is moderate in the surface and slow in the subsoil. Available water capacity is high. Natural fertility is high. This soil is suitable for crops, hay and woodland. Prolonged wetness limits the choice of crops that can be grown. Erosion is a hazard. Most cultivated areas are used for grain and grassland. Capability subclass is IIIw.

ScB
Scriba Very Fine Sandy Loam,0 to 8 percent slopes
This is a deep, Somewhat poorly drained, moderately coarse textured soil that has a fragipan at 12 to 18 inches. It occupies level and gently sloping areas of glacial till in the uplands. Unlimed it is very strongly acid to slightly acid above the fragipan and strongly acid to neutral in the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. The main problems are a prolonged wetness in the spring and maintaining lime and nutrient levels. Most tilled areas are used for hay and pasture. Other areas are in woods or idle. Capability subclass is IIIw

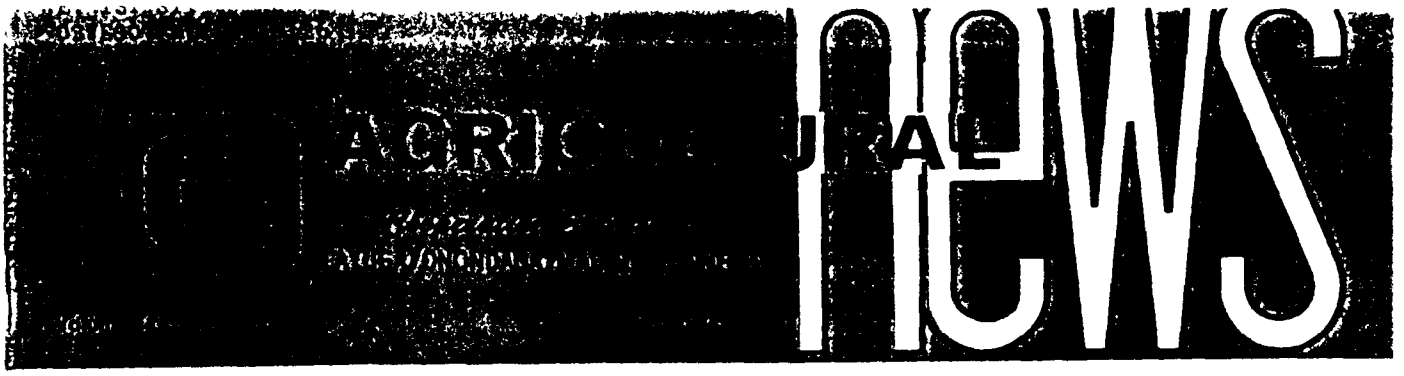
SgB
Sodus Gravelly Fine Sandy Loam,3 to 8 percent slopes
this is a deep, well drained, moderately coarse textured soil which has fragipan at 20 to 53 inches. It occupies gently sloping areas of glacial till plains. Unlimed it is strongly acid to medium acid above the fragipan and medium acid to slightly acid in the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is suited to cropland,hay and pasture. Most crops are grown in support of dairying. The major problem is the erosion hazard when cultivated. Capability subclass is IIe.

WIB
Williamson very fine sandy loam, 2 To 6 percent slopes.
This is a deep, moderately well drained, medium textured soil that has a fragipan at 15 to 24 inches. It occupies level and gently sloping areas of lake plains and uplands where wind or water deposited silts and very fine sands. Unlimed it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is well suited to all crops commonly grown in the county. The main problems are an erosion hazard when cultivated and maintaining lime and nutrient levels. Most areas are used to grow crops in support of dairying. Capability subclass is IIe.

WnB
Windsor loamy fine sand, undulating.
This is a deep, well drained to excessively drained, coarse textured soil. It occupies level to undulating sand plains and terraces. Unlimed it is very strongly to strongly acid in the solum. Permeability is rapid or very rapid. Available water capacity is low to moderate. Natural fertility is low. This soil is best suited to hay and pasture. The main problem is droughtiness. Cultivated areas are used for pasture primarily. Most areas are idle or wooded. Capability subclass is IIIs

WnC
Windsor loamy fine sand, rolling.
This is a deep, well drained, coarse textured soil. It occupies rolling sandy plains and terraces. Unlimed it is very strongly to strongly acid in the solum. Permeability is rapid or very rapid. Available water capacity is low to moderate. Natural fertility is low. This soil is best suited to hay, pasture or woodland. The main problems are droughtiness and complex slopes. Some areas aree in hay and pasture. Most areas are idle or wooded. Capability subclass is VIs.

WoCK
Worth gravelly fine sandy loam, rolling.
This is a deep, well drained, moderately coarse textured soil which has a fragipan at 18 to 30 inches. It occupies rolling areas of glacial till plains. Unlimed it is very strongly and strongly acid above the fragipan. Permeability is moderate above the the fragipan. Available water capacity is moderate. Natural fertility is low. This soil is best suited to cropland, hay and pasture. The main problems are the complex slopes, the moderate erosion hazard and the somewhat shorter growing season due to elevation. Most cultivated areas are used to grow crops in support of dairying. Much of this soil is in woodland. Capability subclass is IIIe



No-Till Acres Are Growing In Oswego County

By KEITH SEVERSON

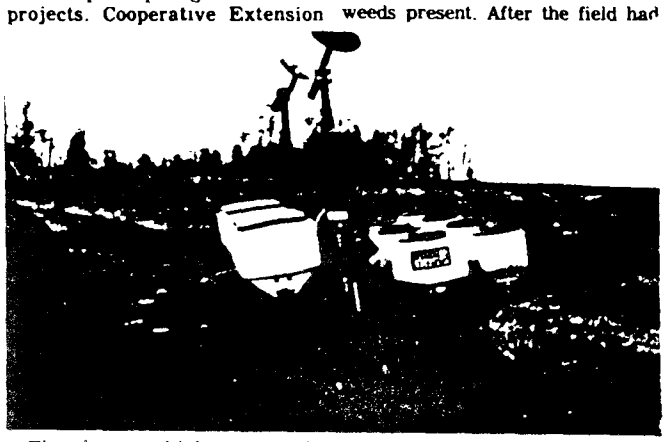
In 1983 Cooperative Extension, Soil and Water Conservation District, Agricultural Stabilization and Conservation Service and Soil and Water Conservation Service represented a unified effort to provide assistance for farmers interested in trying no-till on forage crops.

In 1983 the Oswego County Soil and Water Conservation District applied for a grant through the Environmental Protection Agency A portion of the funds from this grant were to be used for the promotion and demonstration of no-till forage and grain crops in Oswego County. The Oswego County Agricultural Stabilization and Conservation Service also made application for special funding which could be applied for by farmers participating in the no-till projects. Cooperative Extension became involved early in the project providing the other agencies with recommendations on the agronomic requirements, economics, and holding meetings to introduce and explain the project to our farmers

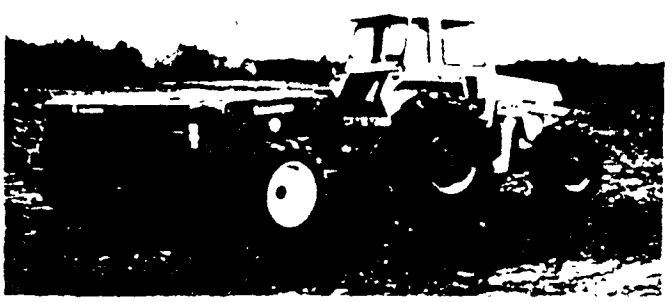
This project as viewed through the farmer's eyes, might appear like this A regional meeting was held in the community and would discuss how to sign up to be a cooperator in the no-till project In addition to that, they could obtain information about fertilizer, lime population, weed control, insect control, equipment and economics of no-till from other farmers in the county who have grown no-till, his Cooperative Extension Agent and equipment and chemical representatives. These meetings were well attended and provided basic information for getting started. After a soil sample was obtained, the farmers could sign up with the A.S.C.S. office to receive cost sharing and if they didn't have a planter, could make arrangements with the Soil and Water Conservation District to have it planted with their machine. The farmers received information on lime, fertilizer and pesticides from his field representative or Cooperative Extension Agent after a field visit was made to observe the weeds present. After the field had received all of the preplant herbicides, fertilizer and lime, the farmer was informed of the date the tractor and planter would be arriving The farmer was able to observe the way the planter worked and ask questions of the operator while they loaded fertilizer and lime into the planter Individuals stopped at the fields to observe plant populations, weeds, insects, and relay our observations and recommendations to the farmer A tour of the county provided farmers with an opportunity to discuss with the machine operators how the equipment was working now that they have been in various field conditions and observe other farms that participated in the project Yields were established for the corn fields as bushels of grain and tons of silage.

Success rates on the seedings will be more accurately evaluated when we see how they look in '84 Winter meetings will be held to summarize 1983's results and allow farmers another chance to ask questions of the participating farmers and the farm agencies involved

In 1983 300 acres of no-till corn was planted and 120 acres of hay were seeded with the no-till equipment owned by the Oswego County Soil and Water Conservation District.



The planter which was purchased by the "District" in '83 was a four-row Seed Boss no-till planter



This Lilliston no-till seeder was one of the first ones purchased and used in New York State. Farmers who participated in the project had their fields planted and were only charged a small fee for fuel and use of the tractor which was rented to the "district" by the Halsey Machinery Company.

FIELD CROP'S ISSUE

Attachment #5

Oswego County Soil and Water Conservation District
2 Erie Street - Oswego, New York 13126 - (315) 343-0040

-- AGENDA --

LANDOWNER WORKSHOP ON NO-TILL

February 19, 1986

Cooperative Extension Office, Mexico, N.Y.

1:00 PM - Welcome and Introductions

1:10 PM - John DeHollander, SWCD: Program review & no-till corn

1:30 PM - Mike Townsend, SCS: No-till seedings

1:50 PM - Scott Anderson, Chevron: Economics of no-till

2:15 PM - BREAK

2:30 PM - John DuBois, Agway: Fertilizer and sprayer forecast

2:50 PM - Larry Meyer, ASCS: Special project area and cost $hare

3:10 PM - Questions and answers

3:30 PM - Adjourn

Attachment #6

Oswego County Soil and Water Conservation District
2 Erie Street - Oswego, New York 13126 - (315) 343-0040

PREAPPLICATION FOR FARMER PARTICIPATION

1) NAME_____ PHONE NUMBER_____

ADDRESS_____

TOWNSHIP_____

2) LOCATION OF PROPOSED SITE: Draw a simple location map and please identify nearest roads (please keep in mind that we need 10-15 acres for demonstration and an adjacent conventional plot).

3) I'm interested in ( )corn ( )seeding ( )small grain
(check one or more)

4) Is row width for your corn plantings flexible? ( )yes ( )no
If no, what are your maximum and minimum row spacings?_____

_____

5) Previous crop (example; corn grain, corn silage, hay, etc.)

_____

6) I have a current soil test. ( )yes ( )no (1981 or more recent is considered curren

7) In your estimation what is the drainage condition of the field? (example: droughty, well drained, moderately well drained, poorly drained, artificially drained, etc.)

Attachment #7

Oswego County Soil and Water Conservation District
2 Erie Street - Oswego, New York 13126 - (315) 343-0040

LANDOWNERS NAME_____ PHONE_____

ADDRESS_____

TOWNSHIP_____

1) Soil Test/Field Number (cross reference for extension files):_____

2) Soil Test Results: (amount recommended for crop)

P_____lbs/Ac K_____lbs/Ac N_____lbs/Ac pH_____tons/Ac

3) Field Number on Conservation Plan (for soils information)_____

4) Acres of No-Till (per field): _____, _____, _____

a) Acres of Conventional_____

5) Approximate Planting Date:_____

6a) Cropping and Tillage History-Demonstration Site

Last Years' Crop_____

Two Years' Ago Crop_____

Three Years' Ago Crop_____

*Type of Tillage	Number of Trips

*Note if performed in Fall.

List any Weed Problems: Annual_____

Perennial_____

List any Insect Problems:_____

Herbicides Applied (what,how much and when)_____

Attachment #8

Oswego County Soil and Water Conservation District
2 Erie Street - Oswego, New York 13126 - (315) 343-0040

OSWEGO COUNTY/LAKE ONTARIO WATER QUALITY

DEMONSTRATION PROJECT

WAIVER FORM

I,_____, would like to participate in the Oswego County Soil and Water Conservation Districts' no-till demonstration project. I would like to use the tillage equipment available through the project on a portion of my land. I agree to reimburse the Soil and Water Conservation District for the use of the tractor and also to provide all fuel for the tractor while on my farm.

I recognize that this effort is for demonstration and educational purposes and will not hold the project or any of its representatives responsible for any loss, damage, personal injury, or liability resulting from the use of the equipment and/or recommendations by representatives. I agree to abide by all recommendations of the representatives. The representatives include the Oswego County Soil and Water Conservation District, its employees, its Directors, and all agencies affiliated with the no-till project.

_____ _____
Signature of Farmer (Tenant) Date

_____ _____
Address County

_____ _____
Approved for the SWCD Board Date

Technicians name _____

District phone no.:_____

ATTACHMENT #9

FIELD DATA SHEET

CONSERVATION TILLAGE DEMONSTRATION PLOT

1. Cooperators Name:_____

2. State: _____, County:_____, Year:_____

3. Plot Number:_____(Assigned by District)

4. Acres in Plot:_____

5. Comparison Plot Number(s):_____,_____,_____.
(Complete another sheet on each comparison plot)

6. Predominant Soil Series _____ (Enter only one) Example Blount

   Slope: (Circle one) 0-2, 2-6, 6-12, 12-18, 18+.

   Erosion: (Circle one) Slight, Moderate, Severe.

   Drainage: (Circle one or more) Undrained, Random tile, Systematic tile, Surface.

   Soil loss: Average annual soil loss (USLE) with farmers normal rotation _____T/Ac /Yr.

7. Soil Test Result pH:_____, Available P_____lbs., Available K_____lbs.

8. Crop Planted. (Check one) Corn____, Soybeans____, Other (list)_____.

9. Previous Crop: (Check one) Corn____, Soybeans____, Other (list)_____.

10. Date Planted: ____/____/____ Type planter or drill used. _____

11. Planter Seed Drop _____per Ac., Variety: _____

12. Row Width:_____inches.

13. Tillage Planting Method: (Check one or more)

    No-till_____, Ridge till_____, Conventional_____, Chisel_____,

    Disk_____, Other (list)_____

14. Residue Type: (Check one) If cover crop used, list

    Corn____, Soybeans____, Sm. Grain____, Sod_____, Sm. Grain/Green manure _____,

    Other (list)_____

15. Percent Soil Cover immediately after planting (Circle one)

    Less than 25%, 25-50%, 50-75%, 75+%.

16. Emergence/Stand population _____(3 weeks after planting)

17. Ridge Height (3 weeks after planting) (Check one)

    Less than 3"_____, 3-6"_____, 6" +_____.

18. Cultivation (Number of times for) Weed control_____ Dates.____/____/_____,___/___/_____.

    Ridge Building _____ Dates ____/____/_____,___/___/_____.

19. Nitrogen Applied (Fill in as appropriate)

a) Anhydrous Ammonia,_____lbs. actual N (Circle one) Fall applied,
Spring preplant, side dress, other (list)_____ Date applied____/____/____

b) 28%,_____lbs. actual N (Circle one) Injected preplant, Injected sidedress, Broadcast,
Dribbled in band, Other (list)_____ Date applied____/____/____

c) Urea,_____lbs actual N, (Circle one) Broadcast, Incorporated Date applied____/____/____.

d) Other (list)_____ _____lbs. actual N, Date applied____/____/____.

20. Total lbs. P2O5_____, (Circle) a) liquid, dry. b) broadcast, injected.

21. Total lbs. K2O_____, (Circle) a) liquid, dry. b) broadcast, injected.

22. Row Starter fertilizer (Do not include above)
Actual N_____lbs., P2O5_____lbs., K2O_____lbs.

23. Herbicides·

Product	Check*	Date Applied	Rate/Ac.	Form	Carrier Gal/Ac.	Applied Farmer	Applied Custom

24. Insecticides·

Product	Check*	Date Applied	Rate/Ac.	Form	Applied Farmer	Applied Custom

* Check here for those pesticides NOT normally used in your conventional cropping operation.

25 Other Pesticides (List Rodenticide, Fungicide, Product name, etc.)

Product	Date Applied	Rate	Applied Farmer	Applied Custom
	____/____/____			
	____/____/____			

26 YIELD:_____bu./Ac. "DRY"

27. Pest management monitoring by· (Check appropriate)
Grower_____ Consultant_____ Extension Rep._____ SWCD Rep._____
Other (list)_____, No Monitoring done_____

28 Limiting Factors (Circle one)
Drainage, Herbicide Mngt., Insect Mngt., Fertilizer Mngt., Equipment, Weather,
Other (Explain)_____

29 Rescue treatment used (describe)

30. $_____/bu. Estimated production cost for this system by farmer (if known).

YIELD DATA-1983
NO-TILL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
SCOTT,ROBERT	3 NO-TILL	17.0	102	20000	5.3
SCOTT,ROBERT	4 NO-TILL	16.8	109	21500	20.1
PATANE,FRED	38 NO-TILL	11.1		23000	6.4
SUMMERVILLE,WILLIAM	16 NO-TILL	15.3	92	18000	16.0
RUMSEY,FRED	3 NO-TILL	11.5	80	24000	15.5
GEORGE,THOMAS	18 NO-TILL	N/A	80		17.0
MCDONALD,ROBERT	1 NO-TILL	16.8	78	21000	11.0
ROGERS,LEEANN	A NO-TILL	16.5	81	26600	6.7
	B NO-TILL	21.2	104	25600	7.7
JONES,ROBERT	15 NO-TILL	16.5	90	28000	12.0
	8 NO-TILL	17.0	81	28000	1.0
GEER,DAVID	10 NO-TILL	21.3	110	24500	9.0
RICE,ROBERTA	3B NO-TILL	15.0	75	17000	16.0
TOMPKINS,JIM	14 NO-TILL	18.0	76	30000	12.0
	1 NO-TILL	18.0	70		19.9
CLARK,GARY	13 NO-TILL	16.0	90	19000	9.8
	5 NO-TILL	14.3	78	23000	9.4
WEBER,SAM JR.	3B NO-TILL	14.5	73	23000	12.0
GRANGER,RONALD	3 NO-TILL	11.8	69	18000	12.0
LOOMIS,HOWARD	11 NO-TILL	23.7	99	25000	9.0
KOMM,WILLIAM	A NO-TILL	22.5	110	25000	7.0
	B NO-TILL	15.5	90	25000	4.5
DRAKE,PHILIP	13 NO-TILL	13.5	87	23000	11.6
MATTISON,SAM	14 NO-TILL	16.8	79	25000	8.5
POTTER,RICHARD	16 NO-TILL	23.0	140	26000	16.2
	12 NO-TILL	16.5	100	17000	4.6
WEIGHTED AVERAGE		16.7	89	23175	
TOTAL ACRES					280.2

*NO CONVENTIONAL PLOTS FOR COMPARISON IN 83
SEE COMPARISON YIELD SHEETS FOR YEARS 84,85 AND 86

ATTACHMENT #10b

PAGE 1 OF 2

YIELD COMPARISON DATA-1984
NO-TILL VERSUS CONVENTIONIAL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
CLARK,GARY	14-NO-TILL	19.6	90	25000	10.8
	14-CONV	15.8	68	25000	
	15-NO-TILL	21.2	84	26000	10.7
	15-CONV	20.5	89	26000	
DRAKE,PHIL	1-NO-TILL	23.5	108	23000	11.0
	1-CONV	25.0	110	23000	
NURSE,BUD	1-NO-TILL	18.9	72	22000	10.0
	1-CONV	21.8	78	22000	
GRANGER,RON	1-NO-TILL	23.3	88	21000	12.0
	1-CONV	.0	0	0	
HOFFMAN,EARL	1-NO-TILL	16.2	81	28000	16.7
	1 CONV	.0	0	0	
KOMM,BILL	1-NO-TILL	21.9	76	21000	14.8
	1-CONV	18.3	61	21000	
	2-NO-TILL	21.7	78	22000	10.6
	2-CONV	.0	0	0	
JERRETT,TED	1-NO-TILL	25.2	121	22000	10.5
	1-CONV	.0	0	0	
JONES,DONALD	1-NO-TILL	19.5	90	26000	10.5
	1-CONV	17.5	76	26000	
	2 NO-TILL	14.8	48	26000	10.4
	2 CONV	15.5	25	26000	
KLEBS,CHARLES	1-NO-TILL	21.8	78	26000	7.4
	1-CONV	22.5	67	26000	
	2-NO-TILL	23.1	110	23000	11.0
	2-CONV	.0	0	0	
LOOMIS,HOWARD	1-NO-TILL	23.5	80	23000	10.0
	1-CONV	26.0	87	21000	
GEER,DAVID	1-NO-TILL	10.6	71	23000	18.9
	1-CONV	12.6	99	23000	
MATTISON,SAM	1-NO-TILL	12.4	52	22000	24.8
	1-CONV	12.8	40	25000	
MINOT,MARSHALL	3-NO-TILL	22.2	98	23000	4.8
	CONV	.0	0	0	
	4-NO-TILL	19.5	99	26000	5.6
	4-CONV	21.5	96	26000	

PAGE 2 OF 2

YIELD COMPARISON DATA-1984
NO-TILL VERSUS CONVENTIONIAL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
O'CONNOR,JAMES	1-NO-TILL	24.7	103	21000	7.8
	1-CONV	22.5	100	24000	
POTTER,RICHARD	1-NO-TILL	20.5	126	24000	26.3
	1-CONV	.0	0	0	
	2-=NO-TILL	13.9	98	24000	6.0
	2-CONV	15.9	106	24000	
ROGERS,LEANNE	1-NO-TILL	18.8	82	28000	8.0
	1-CONV	19.0	64	28000	
SG&S	1 NO-TILL	.0	118	22000	21.0
	1-CONV	.0	123	22000	
RICE,ROBERTA	1-NO-TILL	23.6	75	20000	10.7
	1-CONV	.0	0	0	
SUMMERVILLE,WILLIAM	1-NO-TILL	17.0	93	21000	15.0
	1-CONV	25.4	109	21000	
TOMPKINS,JIM	1-NO-TILL	19.9	97	29000	21.1
	1-CONV	12.8	105	29000	
PARKHURST,EDWARD	1-NO-TILL	18.0	79	24000	9.2
	1-CONV	.0	0	0	
PATANE,FRED	1-NO-TILL	21.0	103	21125	25.0
	1-CONV	.0	0	0	
PETRO,JOHN	1-NO-TILL	.0	132	26000	15.9
	1-CONV	.0	0	0	
	2-NO-TILL	.0	78	25000	4.8
	2-CONV	.0	75	25000	
RUMSEY,FRED	1-NO-TILL	.0	112	23500	15.5
	1-CONV	.0	118	27000	
SCOTT,ROBERT	1-NO-TILL	25.3	93	27000	14.4
	1-CONV	26.2	96	27000	
TOTAL ACRES					411.2
AVERAGE YIELD OF CONV PLOTS		18.1	87		
AVERAGE YIELD OF NO-TILL PLOT		19.6	92		
AVERAGE EMERGENCE				24627	

AVERAGES ARE WEIGHTED

PAGE 1 OF 2

YIELD COMPARISON DATA-1985
NO-TILL VERSUS CONVENTIONAL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
CLARK,GARY	14-NO-TILL	18.5	106	24000	11.1
	14-CONV	16.5	115	24000	
	15-NO-TILL	15.0	121	22000	11.1
	15-CONV	15.0	95	21000	
DRAKE,PHIL	1-NO-TILL	16.5	94	24000	12.7
	1-CONV	12.0	51	24000	
DROUGHT,KENNETH	1-NO-TILL	13.8	71	14000	10.8
	1-CONV	17.5	88	14000	
FOWLER,JOE	1-NO-TILL	16.0	80	22000	19.9
	1-CONV	12.0	67	22000	
GRANGER,RON	1-NO-TILL	20.5	82	31000	12.6
	1-CONV	17.0	82	31000	
HOFFMAN,EARL	1-NO-TILL	14.0	79	18500	14.2
	NO CONV				
JERRETT,GEORGE	1-NO-TILL		127	22800	8.8
	NO CONV				
JERRETT,TED	1-NO-TILL	15.0	109	27700	11.1
	1-CONV	13.5	96	27700	
JONES,DONALD	1-NO-TILL	20.0	101	26700	11
	1-CONV	18.0	68	26700	
KLEBS,CHARLES	1-NO-TILL	21.0	85	24000	7.7
	1-NO CONV				
	2-NO-TILL	20.5	65	24000	11
	2-CONV	21.0	67	24000	
LOOMIS,HOWARD	1-NO-TILL	16.5	114	23000	10
	1-CONV	17.5	110	23000	
MANDIGO,DAN	15-NO-TILL	25.0	115	30500	14
	15-CONV	22.0	100	30500	
	16-NO-TILL	19.5	95	30500	12.3
	NO CONV				
MATTISON,SAM	1-NO-TILL	15.2	93	23700	21.9
	1-CONV	14.0	86	23700	

PAGE 2 OF 2

YIELD COMPARISON DATA-1985
NO-TILL VERSUS CONVENTIONAL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
MINOT,MARSHALL	1-NO-TILL	12.5	58	30000	8.2
	NO CONV				
	2-NO-TILL	24.2	117	26000	5.3
	CONV	21.5	104	26000	
	3-NO-TILL	20.0	108	30000	5
	CONV	22.5	120	30000	
	4-NO-TILL	18.4	110	27000	5.6
	NO CONV				
O'CONNOR,JAMES	1-NO-TILL	16.3		26000	7.8
	1-CONV	16.0		31000	
POTTER,RICHARD	1-NO-TILL		127	23600	25.9
	1-CONV		127	23600	
ROGERS,LEANNE	1-NO-TILL	21.0	88	23400	15.2
	NO CONV				
	2-NO-TILL	17.0	71	23200	10.5
	NO CONV				
SG&S FARMS	1-NO-TILL	20.5	105	22000	20.5
	1-CONV	18.5	98	22000	
SOULE,ROBERT	1-NO-TILL	11.5	71	24400	22.5
	1-CONV	14.0	71	24400	
SUMMERVILLE,WILLIAM	1-NO-TILL	13.5	105	22000	14.7
	1-CONV	17.0	115	22000	
TOMPKINS,JIM	1-NO-TILL	16.5	98	28000	20.9
	NO CONV				
WEIGHTED AVERAGES ARE BEING USED					362.3
AVERAGE YIELD OF NO-TILL PLOT		17.2	96	23196	
AVERAGE YIELD OF CONV PLOTS		16.3	101	22353	

CONVENTIONAL PLOTS ARE + OR - ONE ACRE

OCT 28,1986 YIELD COMPARISON DATA-1986

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DROUGHT,[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	18.0	55	18700	
FOWLER,[illegible]	1 NO-TILL	15.4	65	24700	19.1
	1 CONV	21.5	75	24700	
GEER,STEVE	1 NO-TILL	12.5	120	23000	11.2
	1 CONV	9.5	91	23000	
GEER,STEVE	2 NO-TILL	N/A	76	23000	18.3
	2 CONV	N/A	N/A		
GEER,STEVE	3 NO-TILL	13.1	86	24600	5.1
	3 CONV	N/A	N/A		
GEER,STEVE	4 NO-TILL	10.4	83	23000	4.9
	4 CONV	N/A	N/A		
GEYER,AL	1 NO-TILL	30.7	121	22900	16.1
	1 CONV	23.0	111	22900	
JERRETT,GEORGE	1 NO-TILL	13.8	91	22300	4.0
	1 CONV	20.0	110	22300	
JERRETT,GEORGE	2 NO-TILL	17.5	82	20700	8.7
	2 CONV	18.5	72	20700	
JERRETT,TED	1 NO-TILL	24.8	98	19300	8.5
	1 CONV	24.5	101	19300	
KOMM,BILL	1 NO-TILL	12.1	84	20700	10.0
	1 CONV	N/A	N/A		
LOOMIS,HOWARD *	1 NO-TILL	14.0	63	24300	10.0
	1 CONV	15.2	77	24300	
MATTISON,SAM	1 NO-TILL	10.4	56	26800	21.6
	1 CONV	9.5	51	26800	
MINOT,MARSHALL	1 NO-TILL	16.5	84	20400	6.2
	1 CONV	N/A	N/A		
MINOT,MARSHALL	2 NO-TILL	18.3	91	27200	5.4
	2 CONV	14.3	76	27200	
MINOT,MARSHALL	3 NO-TILL	21.8	113	24600	10.9
	3 CONV	N/A	N/A		
MINOT,MARSHALL	4 NO-TILL	17.3	86	28000	5.5
	4 CONV	N/A	N/A		
MINOT,MARSHALL	5 NO-TILL	12.5	80	25200	8.2
	5 CONV	N/A	N/A		

OCT 28,1986 YIELD COMPARISON DATA-1986
PAGE 2 OF 2 NO-TILL VERSUS CONVENTIONIAL

COOPERATOR	PLOT	SILAGE tons/ac	DRY CORN bu/ac	AVERAGE STAND	ACRES
NURSE,BUD ***	1 NO-TILL	6.5	38	17332	22.1
	1 CONV	7.5	39	17332	
O'CONNOR,JIM **	1 NO-TILL	9.8	27	22000	6.1
	1 CONV	17.5	77	22000	
POTTER,RICHARD	1 NO-TILL	N/A	109	24000	17.0
	1 CONV	N/A	N/A		
POTTER,RICHARD	2 NO-TILL	N/A	119	26600	7.0
	2 CONV	N/A	96	26600	
SG&S FARMS	1 NO-TILL	N/A	97	19700	21.6
	1 CONV	N/A	84	19700	
SHELDON,GORDON	1 NO-TILL	N/A	139	19700	10.3
	1 CONV	N/A	N/A		
SHELDON,GORDON	2 NO-TILL	N/A	143	19700	14.0
	2 CONV	N/A	N/A		
SUMMERVILLE,BILL	1 NO-TILL	10.1	101	20700	14.8
	1 CONV	N/A	N/A		
TOMPKINS,JIM	1 NO-TILL	23.0	95	28600	19.9
	1 CONV	N/A	N/A		
WEIGHTED AVERAGES ARE BEING USED					342.2
AVERAGE YIELD OF NO-TILL PLOTS		15.3	88	22313	
AVERAGE YIELD OF CONV PLOTS		23.1	76		

NOTES:
* DENOTES PLANTED BY FARMER WITH OWN EQUIPMENT
** DENOTES WEED PROBLEM
*** DENOTES WATER MANAGMENT PROBLEM
CONVENTIONAL PLOTS ARE + OR - ONE ACRE

1983

SUMMARY OF NO-TILL ACRES

AND

TYPE OF RESIDUE COVER

OSWEGO COUNTY NEW YORK	CROP	OS	CS	SOD	CS/CC	ACRES TOTAL
26 Cooperators	Corn		33.1	216.7	40	289.8
	Alfalfa	15.5		19.5	23.1(w/oats)	58.1
	Oats					
	Sorgum		10.5			10.5
	Clover & Timothy				24.3	24.3
	Trefoil & Timothy			9.6	10.3	19.9
	Clover			18.5		18.5
	TOTALS	15.5	43.6	264.3	97.7	421.1 acres

KEY

CS = Cornstalks
CS/CC = Silage Ground or Stalks with Covercrop
OS = Oat Stubble

Attachment #11a

Revised 10/1/83

1984 SUMMARY OF NO-TILL ACRES

AND

TYPE OF RESIDUE COVER

OSWEGO COUNTY NEW YORK	CROP	CS	SOD	CS/CC	SMALL GRAIN	ACRES TOTAL
36 Cooperators	Corn	82.1	172.7	110.4		365.2
	Alfalfa		2.2		34.1	36.3
	Timothy & Clover		13.2			13.2
	Timothy, Trefoil, Alfalfa & Clover		12.2			12.2
	Sudangrass		16.5			16.5
	Alfalfa & Trefoil		9.7			9.7
	Alfalfa, Trefoil & Timothy		26.9			26.9
	Alfalfa & Timothy		5.2	15.3		20.5
	Trefoil & Timothy		18.1	8.0		26.1
	Spring Wheat/Alfalfa	2.9				2.9
	Clover		2.1			2.1
	TOTALS	85.0	278.8	133.7	34.1	531.6

KEY

CS = Cornstalks
CS/CC = Silage Ground or Stalks with Covercrop

1985 SUMMARY OF NO-TILL ACRES

TYPE OF RESIDUE COVER

OSWEGO COUNTY NEW YORK	CROP	CS	SOD	CS/CC	SMALL GRAIN	ACRES TOTAL
31 Cooperators	Corn	85.3	107.9	169.1		362.3
	Alfafa & Timothy				29.0	29.0
	Alfafa		21.3		9.4	30.7
	Bromegrass, Trefoil, Alfafa		7.0	8.0		15.0
	Orchardgrass & Clover		7.0			7.0
	Alfafa & Trefoil		13.0		14.6	27.6
	Clover		8.0			8.0
	Alfafa & Bromegrass				27.3	27.3
	Sudangrass		21.6			21.6
	Oats, Alfafa, Rye			25.0		25.0
	Trefoil, Timothy, Bluegrass		9.1			9.1
	Reedcanary & Clover		10.2			10.2
	Buckwheat	9.4				9.4
	Oats		8.7			8.7
	Rye		7.5			7.5
	Timothy, Trefoil, Clover, Bluegrass		9.7			9.7
	Timothy & Clover				5.5	5.5
	TOTALS	94.7	231.0	202.1	85.8	613.6

KEY

CS = Corn stalks
CS/CC = Silage ground w/wo covercrop

1986 SUMMARY OF NO-TILL ACRES

TYPE OF RESIDUE COVER

OSWEGO COUNTY NEW YORK	CROP	CS	SOD	CS/CC	SMALL GRAIN	TOTAL ACRES
24 COOPERATORS	CORN	60.4	99.6	182.2		342.2
	ALFALFA		10	6.3		16.3
	ALFALFA & TIMOTHY			3.9		3.9
	CLOVER		10			10
	TIMOTHY		4.2			4.2
	ALFALFA, BROMEGRASS, TIMOTHY & TREFOIL	3.6				0 3.6
TOTALS		64	123.8	192.4		380.2

KEY
CS= CORNSTALKS
CS/CC= SILAGE GROUND WITH OR WITHOUT COVER CROP

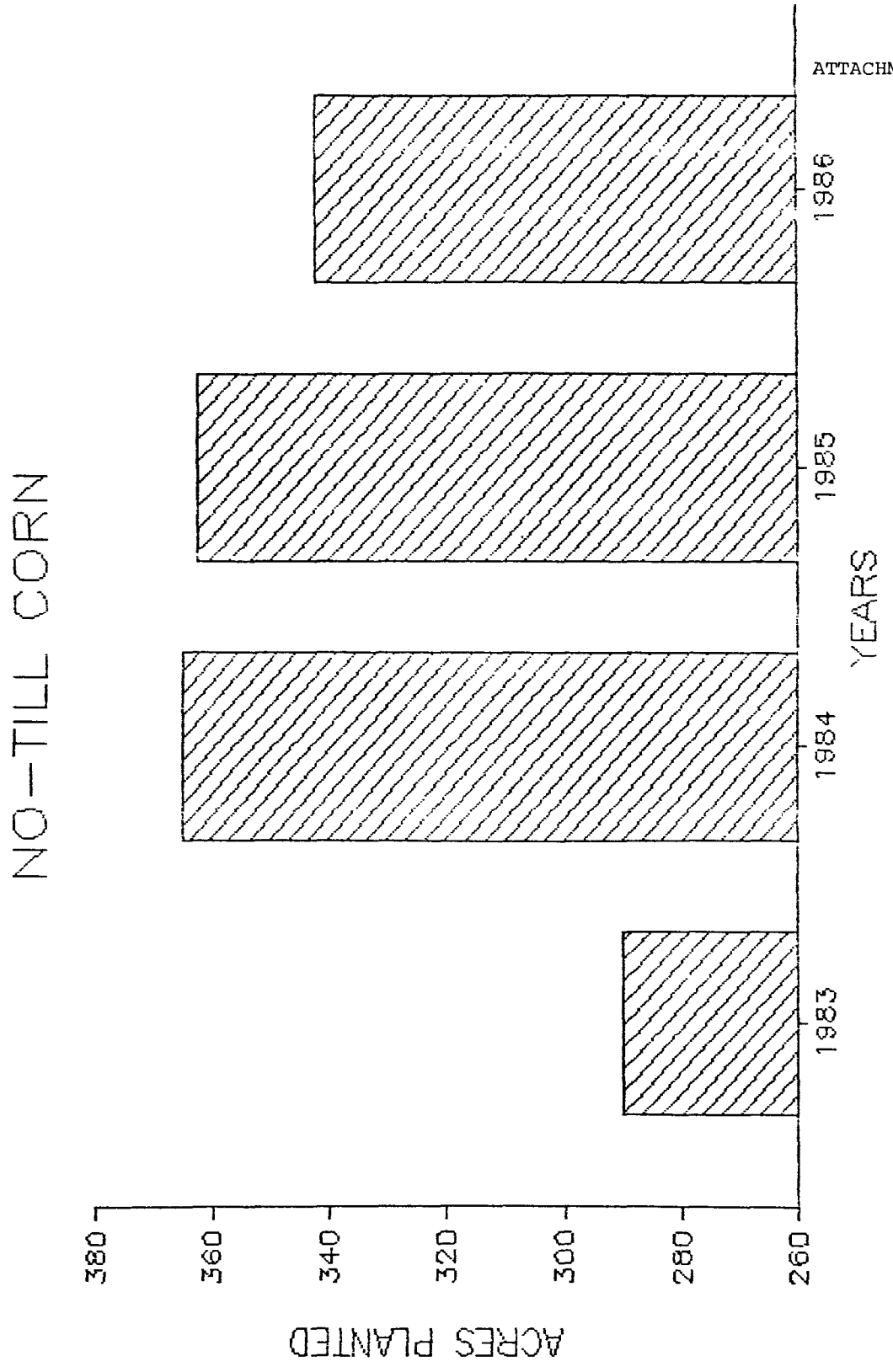
1983-1986 SUMMARY OF NO-TILL ACRES

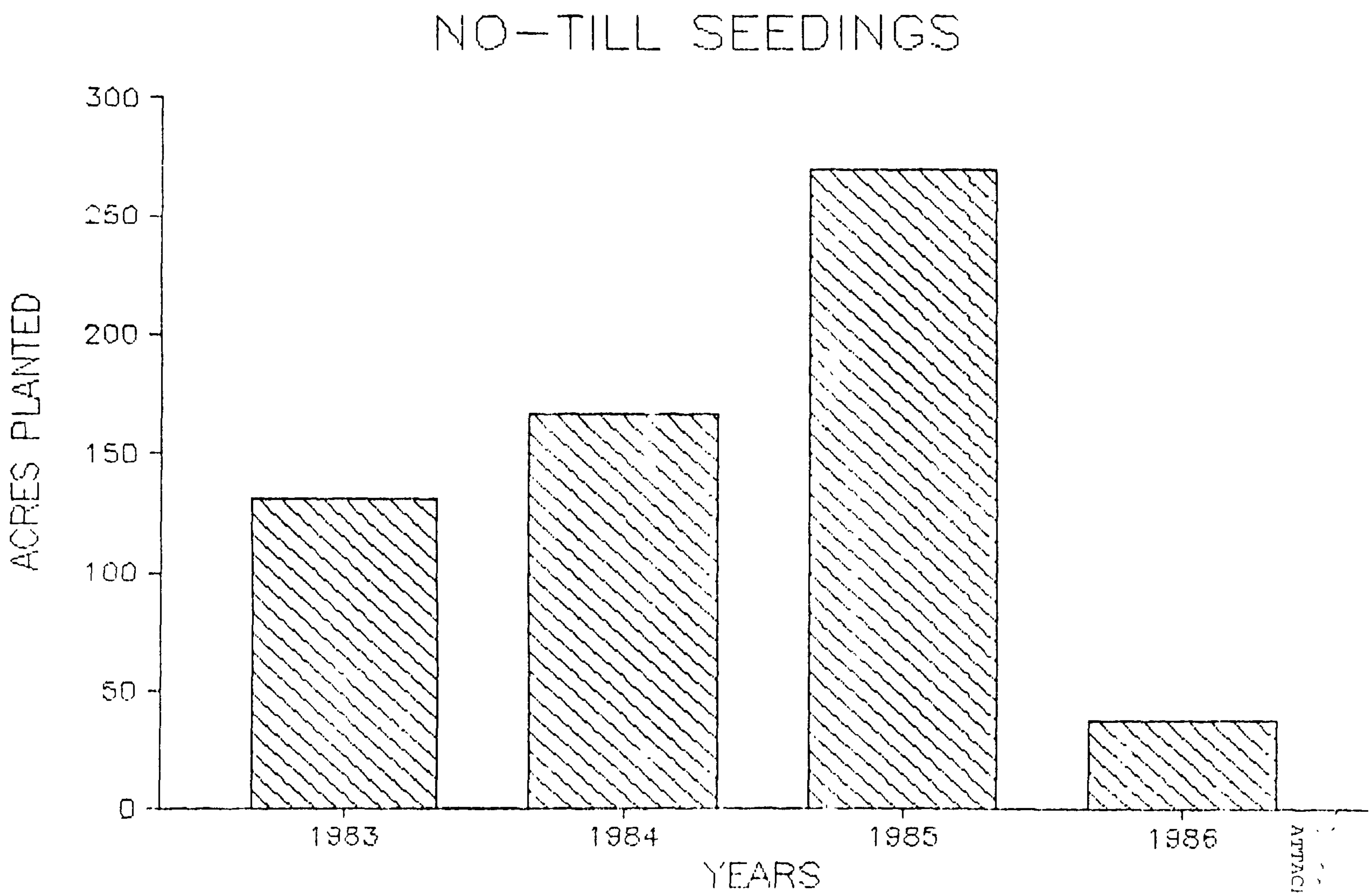
TYPE OF RESIDUE COVER

OSWEGO COUNTY NEW YORK	CROP	CS	SOD	CS/CC	SMALL GRAIN	TOTAL ACRES
61 COOPERATORS COMPLETING 175 PLOTS	CORN	261.	596.9	501.7		1359.5
	ALFALFA & TIMOTHY		5.2	19.2	29	53.4
	ALFALFA		53	29.4	43.5	125.9
	BROMEGRASS, TREFOIL, ALFALFA		7	8		15
	ORCHARDGRASS & CLOVER		7			7
	ALFALFA & TREFOIL		22.7		14.6	37.3
	CLOVER		38.6			38.6
	ALFALFA & BROOMEGRASS				27.3	27.3
	SUDANGRASS		38.1			38.1
	OATS, ALFALFA, RYE			25		25
	TREFOIL, TIMOTHY, BLUEGRASS		9.1			9.1
	REEDCANARY & CLOVER		10.2			10.2
	BUCKWHEAT	9.4				9.4
	OATS		8.7			8.7
	RYE		7.5			7.5
	TIMOTHY,TREFOIL, CLOVER & BLUEGRASS		9.7			9.7
	TIMOTHY & CLOVER		13.2	24.3	5.5	43
	SORGHUM	10.5				10.5
	TREFOIL & TIMOTHY		27.7	18.3		46
	SPRINGWHEAT & ALFALFA	2.9				2.9
	TIMOTHY, TREFOIL, ALFALFA & CLOVER		12.2			12.2
	ALFALFA, TREFOIL & TIMOTHY		26.9			26.9
	TIMOTHY		4.2			4.2
	ALFALFA, BROMEGRASS, TIMOTHY & TREFOIL	3.6				3.6
TOTALS		287.	897.9	625.9	119.9	1931
						1931

KEY
CS=CORNSTALKS
CS/CC=SILAGE GROUND WITH OR WITHOUT COVER CROP

ATTACHMENT #12a





ATTACHMENT #12b

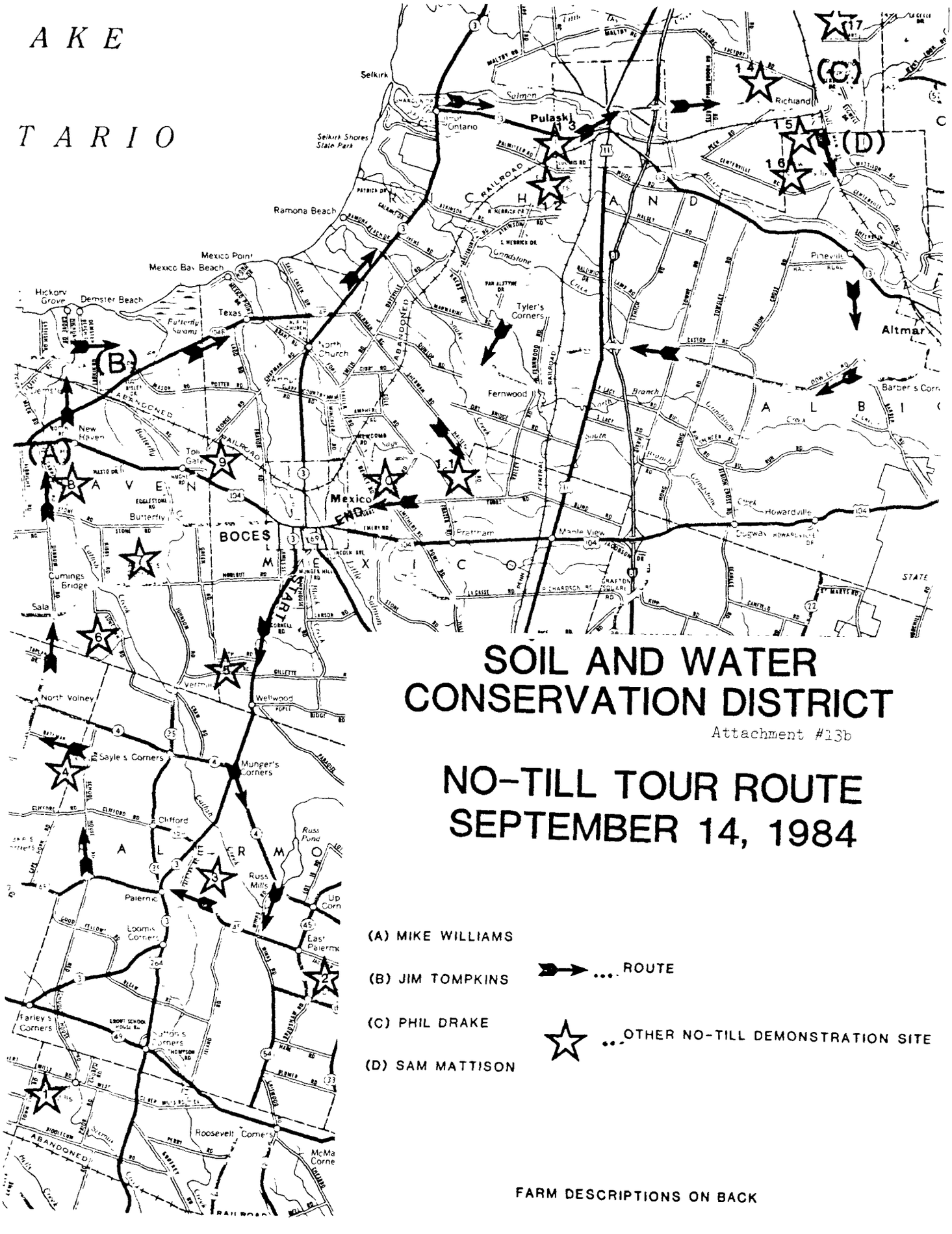
Attachment #13a

NO-TILL TOUR

SEPTEMBER 14, 1984

We'll begin at BOCES in Mexico, New York at 10:30 A.M. (cars can be left in the parking lot).

10:30 A.M.	The White corn planter and the Lilliston seeder will be on display for your inspection. Representatives from various agencies and businesses will be on hand to answer your questions.
11:15 A.M.	Board the bus. Box lunches will be provided for you to enjoy at your convenience as we travel. We'll take the country road tour on the way to our first stop.
11:45 A.M.	Our first stop will be at the farm of Mike Williams in the Town of New Haven. This 9 acre no-till seeding into a sod was planted on July the 13th.
NOON	Board the bus.
12:15 P.M.	The farm of Jim Tompkins should be an interesting stop. This 21 acre field of corn was planted into a rye cover on June 12th. Shestak Aviation of Fulton, New York will provide the excitement as he aerially seeds a winter cover crop on this New Haven farm.
12:45 P.M.	Board the bus.
1:15 P.M.	This is the second year of no-till corn on this 12 acre field owned by Phil Drake of Richland. See what a difference a year can make. We'll also take some time to estimate yields.
1:40 P.M.	Board the bus.
1:45 P.M.	One last stop at a field seeded in 1983. This 23 acre alfalfa seeding owned by Sam Mattison of the Town of Albion illustrates well the potential for no-till seedings.
2:00 P.M.	Board the bus for the ride home.
2:30 P.M.	Return to BOCES.



SOIL AND WATER CONSERVATION DISTRICT

Attachment #13b

NO-TILL TOUR ROUTE SEPTEMBER 14, 1984

(A) MIKE WILLIAMS

(B) JIM TOMPKINS

(C) PHIL DRAKE

(D) SAM MATTISON

.... ROUTE

... OTHER NO-TILL DEMONSTRATION SITE

FARM DESCRIPTIONS ON BACK

FIELD DESCRIPTIONS

A) Mike Williams: 9 Acres of alfalfa, timothy and trefoil planted on a sod on July the 13th; pH 6.0; herbicide applied on 7/9/84 was 2 quarts of roundup per acre; starter fertilizer applied was 300# of 0-24-24.

B) Jim Tompkins: 21 Acres of corn planted into a rye cover crop on the 12th of June; pH 6.0; planter seed drop 35,000; stand population 29,000+; row starter fertilizer N-30lbs., P_2O_5 - 60 lbs.; K_2O - 60 lbs.; herbicides applied pre-emerge 6/12/83 were 1 quart of paraquat, 2 quarts of bladex, and 1½ quarts of dual; insecticide applied at time of planting was 5 lbs/acre of 15g furadan.

C) Phil Drake: Our second year of no-till corn on this field planted on May the 17th. pH 6.0; planter seed drop of 25,000; stand population 23,000+; row starter fertilizer N-20lbs, P_2O_5 - 40 lbs, K_2O - 20 lbs.; herbicides applied pre-emerge 5/13/84 were 1 quart of paraquat, 2 quarts atrazine, 2½ quarts of bladex, ½ pint banvel, ½ pint 2,4-D per acre; insecticide at time of planting was 10lb/acre of 15g furadan.

D) Sam Mattison: 23 Acres of oats and alfalfa planted into corn stubble on the 11th of May 1983; pH 6.7; seed drop of 2 bushel oats and 14½ lbs/Ac of alfalfa.

OTHER NO-TILL DEMONSTRATION SITES

1) Gary Bowering: 11 acres of seeding into an old sod planted on 7/23/84.

2) Jim French: 13 acres of seeding into an old sod planted on 8/3/84.

3) Roberta Rice: 11 acres of corn into a sod planted on 6/21/84.

4) Steve Geer: 19 acres of corn planted into corn residue planted on 5/25/84.

5) Ed Parkhurst: 15 acres of corn into an old sod planted on 6/8/84.
11 acres of seeding into an old sod planted on 6/9/84.

6,7) Gary Druce: 9 acres of corn into corn residue planted on 6/10/84.

8) Ted Jerrett: 10 acres of corn into a rye cover planted on 6/6/84.

9) Gary Clark: 22 acres of corn into an old sod planted on 6/13/84.

10) Sam Weber: 4 acres of seeding into an old sod planted on 6/13/84.

11) Ron Granger: 12 acres of corn into a sod planted on 6/19/84.

12) Howard Loomis: 10 acres of corn into corn residue planted on 6/14/84.

13) SG&S Farms: 21 acres of corn into corn residue planted on 6/7/84.

14) Marshall Minot: 10 acres of corn into an old sod planted on 6/7/84.

15,17) Charles Klebs: 18 acres of corn into an old sod planted on 5/18/84.

16) Sam Mattison: 25 acres of corn into a rye cover planted on 5/19/84.

OSWEGO COUNTY/LAKE ONTARIO
WATER QUALITY DEMONSTRATION PROJECT

FACT SHEET-1984 TOUR

NUMBER ☆	GROWER	CROP	DATE PLANTED	ACRES PLANTED	SOIL NAME	FIELD TYPE	POPULATION PLANTED	ROW FERTILIZER N-P-K ACTUAL LBS. PER ACRE	ADDITIONAL NITROGEN (lbs.) RECOMMEND	HERBICIDES USED PER ACRE (Pre Plant)	HERBICIDES USED PER ACRE (Post Plant)	INSECTICIDES USED PER ACRE	STAND POPULATION	SPECIAL COMMENTS
1	Gary Downing	Alfalfa Trefoil Timothy	5/23/84	11	Ira	Sod	16 lbs	0-60-60	---	Roundup 2qts	----------	----------	-------	Some broadleafs are appearing in the field.
2	Tim French	Timothy Alfalfa	5/ /84	13.2	Various	Sod	15 lbs	0-70-70	---	Roundup 2qts	---------	--------	------	
3	Roberta [illegible]	Corn	5/21/84	10.7	Ira	½ corn ½ oats	27,000	45-45-45	25 lbs	Roundup 2qts	Bladex	Furadan 7 lbs	20,000+	
4	Steve Geer	Corn	5/24/84	18.9	Oakville	Corn	27,400	48-24-24	60 lbs	Bicep 2qts	----------	----------	23,000+	
5	Ed Parkhurst	Corn	6/8/84	5.6	Sodus	Sod	25,000 +	22-22-22	30 lbs	Roundup 2qts	----------	Furadan 7 lbs		This field was hit by army worms
		Corn	6/8/84	9.2	Sodus	Sod	25,000 +	45-45-45	-----	Paraquat 1qt Atrazine 2qts Bladex 1 lb	----------	Furadan 7 lbs		This field was an unmowed haylot; also hit badly by army worms.
		[illegible] Alfalfa	6/9/84	6.7	Sodus	Sod	16 lbs	0-44-44	-----	Roundup 2qts	----------	----------	-------	
		Timothy Trefoil Alsike Alfalfa	6/9/84	5.5	Ira	Sod	16 lbs	0-44-44	-----	Roundup 2qts	----------	----------	-------	
6,7	Gary Druce	Corn	6/11/84	5.7	Alton	Corn	24,500	30-30-30	-----	Paraquat 1qt Lasso 1qt Bladex 1qt Atrazine 1qt	----------	Furadan 7 lbs	20,000+	
		Corn	6/11/84	3.7	Sodus	Corn	24,500	30-30-30	50 lbs	Paraquat 1qt Lasso 1qt Bladex 1qt Atrazine 1qt	----------	Furadan 7 lbs	21,000+	

Attachment #13c

OSWEGO COUNTY/LAKE ONTARIO
WATER QUALITY DEMONSTRATION PROJECT

FACT SHEET-1984 TOUR

☆ NUMBER	GROWER	CROP	DATE PLANTED	ACRES PLANTED	SOIL NAME	RESIDUE TYPE	POPULATION PLANTED	ROW FERTILIZER N-P-K ACTUAL LBS. PER ACRE	ADDITIONAL NITROGEN (lbs.) RECOMMEND	HERBICIDES USED PER ACRE (Pre Plant)	HERBICIDES USED PER ACRE (Post Plant)	INSECTICIDES USED PER ACRE	STAND POPULATION	SPECIAL COMMENTS
8	Ted Jerrett	Corn	6/5/84	10.5	William-son	Rye	26,000	30-60-60	60 lbs	Paraquat 1qt Lasso 1qt	Banvel ½pt	----------	22,000	
9	Gary Clark	Corn	6/13/84	10.7	William-son	Sod	26,000	17-52-70	30 lbs	Atrazine 4qts Bladex 2qts 2-4D 1pt	--------	Furadan 7 lbs	26,000	This field was sprayed for army worms
		Corn	6/13/84	10.8	Ira	Sod	26,000	17-52-70	30 lbs	Atrazine 4qts Bladex 2qts 2-4D 1pt	---------	Furadan 7 lbs	25,000	This field was also sprayed for army worms
10	Sam Weber	Alfalfa Clover	6/13/84	7.3	William-son & Raynham	Sod	13 lbs	0-80-80	-----	Roundup 2qts	---------	----------	------	Poor Weed Control
11	Ronald Granger	Corn	6/18/84	12	Ira	Corn & Sod	28,300	45-45-45	15 lbs	Paraquat 1qt Atrazine 4qts Lasso 2qts	----------	Furadan 7 lbs	21,000	This field was sprayed for army worms
12	Howard Loomis	Corn	6/14/84	10	Scriba	Corn	24,000	20-40-20	10 lbs	Atrazine 1½qt Bladex 2qts	----------	Furadan 7 lbs	23,000	
13	G&S Farm	Corn	6/6/84	21	Raynham	Corn	25,000	30-60-60	50 lbs	Paraquat 1qt Dual 8E 2pt Atrazine (4L) 1½qt Princep (4L) 2½pt		Furadan 7 lbs	22,000	
14	Marshall Minot	Corn	6/5/84	5.6	William-son	Sod	27,000	18-36-108	30 lbs	Atrazine 4qt Paraquat 1qt Lasso 1½qt	Banvel ½pt	Furadan 7 lbs	26,000	
		Corn	6/6/84	4.8	Deerfield	Sod	27,000	45-24-36	---	Strazine 4qt Paraquat 1qt Lasso 1½qt	Banvel ½pt	Furadan 7 lbs	23,000	

#13c cont'd

OSWEGO COUNTY/LAKE ONTARIO
WATER QUALITY DEMONSTRATION PROJECT

FACT SHEET-1984 TOUR

NUMBER ☆	GROWER	CROP	DATE PLANTED	ACRES PLANTED	SOIL NAME	RESIDUE TYPE	POPULATION PLANTED	RON FERTILIZER N-P-K ACTUAL LBS. PER ACRE	ADDITIONAL NITROGEN (lbs.) RECOMMEND	HERBICIDES USED PER ACRE (Pre Plant)	HERBICIDES USED PER ACRE (Post Plant)	INSECTICIDES USED PER ACRE	STAND POPULATION	SPECIAL COMMENTS
15, 17	Charles Klebs	Corn	5/18/84	11	Windsor	Sod	26,000	15-15-15	25 lbs	Paraquat 1qt Atrazine 4qt Lasso 1½	---	Lorsban 8 lbs	23,000	
		Corn	5/18/84	7.4	Worth	Sod	26,000	18-72-72	25 lbs	Paraquat 1½qt Atrazine 4qt	---	Lorsban 8 lbs	26,000	
16	Sam Mattison	Corn	5/20/84	24.8	Alton	Rye	25,000	15-30-15	50 lbs	Roundup 2qt	---	Furadan 7 lbs	22,000	Very stony field
A	Michael Williams	Trefoil Timothy Alfalfa	7/13/84	9	Ira	Sod	18 lbs	0-77-77	-----	Roundup 2qt	---	---	-------	
B	Jim Tomkins	Corn	6/12/84	21.1	William-son	Rye	35,000	30-60-60	60 lbs	Paraquat 1qt Dual 1½qt Bladex 2qt	---	Furadan 5 lbs	29,000	
C	Phil Drake	Corn	5/17/84	11	Alton	Corn	25,000	20-40-20	25 lbs	Paraquat 1qt Atrazine 2qt Bladex 2½qt Banvel ½pt 2-4D ½pt	---	Furadan 10 lbs	23,000	Second year of no-till on this field
D	Sam Mattison	Oats & Alfalfa	5/11/83	23.1	Windsor	Corn	2 bu. oats 14.5 of Alfalfa	---	-----	---	---	---	-------	Second year of no-till on this field

#13c cont'd

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1 REPORT NO	2	3 RECIPIENT'S ACCESSION NO
EPA-905/2-87-002		

4 TITLE AND SUBTITLE	5. REPORT DATE
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	6 PERFORMING ORGANIZATION CODE: 5GL
7 AUTHOR(S): John DeHollander, Mike Townsend	8. PERFORMING ORGANIZATION REPORT NO: GLNPO # 87-6
9 PERFORMING ORGANIZATION NAME AND ADDRESS: Oswego County Soil and Water Conservation District, 120 East 1st Street, Oswego, New York 13126	10 PROGRAM ELEMENT NO.
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15 SUPPLEMENTARY NOTES

Ralph G. Christensen, Project Officer

16 ABSTRACT

The demonstration project was to evaluate the agricultural related sources of nonpoint pollution and their impact upon total phosphorus contribution to Lake Ontario. The use of no-till and conservation tillage equipment to reduce sediment runoff from cropland was part of this project. ASCS cost shared the no-till practice with farmers while the Soil and Water Conservation District and Soil Conservation Service provided the technical assistance to demonstrate the tillage practice. The Extension Service provided the educational link to informthe farmer of the benefits of conservation tillage. The residue left on the surface of the soil does reduce the erosion and phosphorus runoff to Lake Ontario. A savings in time, equipment, cost and soil are benefits of tne conservation tillage management practice.

17 KEY WORDS AND DOCUMENT ANALYSIS

a DESCRIPTORS	b IDENTIFIERS/OPEN ENDED TERMS	c COSATI Field/Group
Soil Water quality Erosion Runoff Agriculture No-till Conservation tillage Phosphorus Fertilizer Pesticide		

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