Martel Laboratories, Inc.

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F I E L D S U M M A R Y R E P O R T

1:100,000 : DEVIL'S LAKE SE

Oct. 1, 1979 to Oct. 5, 1979

QUADS (7.5') with check sites:

Starkweather	Lakota NW
Starkweather NE	Devil's Lake
Sweetwater	Derrick NW
Crary	Lawton
Crary NW	
Bartlett	
Edmore	
Edmore SW	

PERSONNEL:

L. Vinzant	- Martel Labs	
I. Kenenski	"	"
K. Patterson	"	"
C. Elliott	USFWS	

PHOTOGRAPHY: 1:65,000 Color infra-red taken June 4, 1979

COLLATORAL DATA: USGS 1:24,000 topographic maps

Stewart and Kentrud, 1971. "Classification of Natural Ponds and Lakes in the Glaciated Prairie Region".

Eisenlohr, et.al.1972. Hydrologic Investigations of Prairie Potholes in North Dakota , 1959-1968.

SCS Soil Survey of Walsh County, North Dakota

OVERVIEW

Devil's Lake SE is a relatively flat area in northeast North Dakota of glacial drift origin that is subject to intense agriculture. Since this area is somewhat similar to the New Rockford SW quadrangle, review of the field summary report for that area should help in the evaluation of the Devil's Lake area. Bailley recognizes two distinct eco-regions in this area with the majority of the area categorized as:

Domain: Humid Temperate

Division: Subhumid Prairie

Province: Tall Grass Prairie

Section: Wheatgrass-Bluestem-Needlegrass

Physical Division: Interior

Subdivision: Dakota-Minnesota Drift and Lake-bed Flats

Land-Surface Form: Flat Plains

Bailley categorizes the extreme northeast area of this quadrangle as:

Domain: Humid Temperate

Division: Subhumid Prairie

Province: Tall Grass Prairie

Section: Bluestem Prairie

Physical Division: Interior

Subdivision: Dakota -Minnesota Drift and Lake-bed Flats

Land-Surface Form: Irregular Plains
Local Relief: 100-300 feet
Profile Type: 50-75% of gentle slope is in lowland

BIOLOGICAL CHARACTERISTICS of WETLANDS

Marine: Not present

Esturine: Not present

Riverine: Few integrated waterways are present, although many ditches do occur. When delineated, natural waterways usually will be cover typed R40WF or R4SBC. Artificial waterways usually will be R40WFx or R4SBCx.

Lacustrine: Many open water bodies greater than 20 acres are present, although few are of a permanent nature. Classifications will include L10WH, L20WG, L20WF, and L2FLC with the size of the lake being an important factor in the water regime applied.

Palustrine: Most wetlands will be classified as palustrine with most of these support ing emergent vegetation.

Open water designation will only be used when no vegetation is exhibited in the photography and USGS symbology indicates perennial water.

Only a moderate number of semi-permanently flooded wetlands occur in this area with Typha spp. usually the dominant vegetation. Scirpus acutus also is locally dominant while in alkaline conditions, Scirpus paludosus usually is dominate. Phragmites communis, associated with fen areas, exhibits a tolerance range from semi-permanent to saturated water regimes.

An unusual situation observed in the field was Scolochloa festucacea, often dead, ringed by Typha spp. H. Kantrud, through C. Elliott, indicates these areas is semi-permanently flooded basins with

S. festucacea pioneering during drier years, but being flooded out during normally wet years; therefore, if Typha spp. can be identified on the photography, these areas will be considered semi-permanent wetlands. If only S. festucacea is observed, they will be considered seasonal wetlands.

Seasonally flooded wetlands are very characteristic of this area with S. festucacea widespread and very often the dominant vegetation.

OTHER WELL-REPRESENTED SPECIES INCLUDE:

Polyganum spp.
Spartina pectinata
Juncus interior
Alisma triviale
Scirpus americanus
Calamagrostis sp.
Carex antherodes
Rumex sp.
Sparganium eurycarpum
Eleocharis spp.
Bidens frondosa
Phalaris arundinacea
Sium suave

MINOR SPECIES INCLUDE:

Agropyron repens
Cirsium arvense
Sonchus arvensis
Echinocloa crusgalli

Few temporary wetlands are present in this area, most probably due to their drainage (v) or farming (Pf). Poa pölustris, Rumex sp , and Hordeum jubatum were noted in the field. Wetlands in the Devil's Lake area are much more prone to tillage due to a noticeable lack of livestock and, therefore, no need for hay. Important agricultural crops are sunflowers, wheat, and flax. Bechmannia syziagachne is a characteristic emergent in these disturbed areas.

IMAGERY, DELINEATIONS, FIELD CHECKING:

The June photography is of excellent quality and resolution; therefore, few wetlands should be omitted. Delineation congestion may become a problem; however, to date, no areas have been found where all wetlands cannot be labelled. To help alleviate some congestion, small drainage ditches will not be delineated, although all wetlands affected by drainage ditches will have the "d" special modifier applied.

The June photography exhibits a good degree of wetness that will aid interpretation. The excess wet signatures present in the May photography for New Rockford SW are not present in the Devil's Lake SE photography and, therefore, most wet signatures and/or evidence of basins will be delineated.

THE MOST PERVASIVE PROBLEMS ARE:

1.) Wetland-Upland boundaries. Since wetland basins with definite boundaries are not as prevalent here as in New Rockford SW, many large areas without noticeable relief and subject to intensive agricultural practices, do not exhibit distinct wetland-upland boundaries.

2.) Water regimes. Since many wetlands are not vegetated in the photography, it is difficult to associate water regime with community types.

3.) Identifying farmed wetlands due to the intensive agricultural practices of burning, ditching, and fall-plowing. This is complicated by 1978 and 1979 being wetter than normal.

SOLUTIONS ...

1) Wetland-upland boundaries are often very subtle with signature intensities as the key to demarcations. Field investigation revealed many of these areas to be in crops. Since some natural draw-down had occurred by the time the photography was taken, most of these wet signatures will be delineated. This will unavoidably include some croplands (sunflowers, wheat, or flax) as wetland.

2) Water regimes probably will be more accurate in this area than in New Rockford SW due to the relatively drier conditions and preponderance of seasonal wetlands. Many of these seasonal wetlands exhibit a distinctive red signature of S. festucacea on the photography. Distinguishing seasonal from temporary wetlands may be a problem in some areas.

3) Farmed wetland delineations also should be more accurate than in New Rockford SW, because of the lack of excessive standing water obscurring the vegetation or bare soil; however, the extent of farmed wetlands still may be conservative. When any evidence of tillage

such as plow furrows or a uniform dark gray-blue tone indicative of cleared ground is observed in the photography. these areas will be classified as Pf.

SUMMARY ..

The June photography is of excellent quality and resolution; however, primarily due to the intensive agriculture, some problems still exist. These include wetland-upland differentiation in broad areas of little relief, distinguishing water regimes(particularly in areas that do not exhibit vegetation in the photography), and correct identification of farmed wetlands.