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Wetland Resources of Eastern South Dakota

Rex R. Johnson
South Dakota State University

Kenneth F. Higgins
South Dakota State University

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Acknowledgments

WETLAND RESOURCES
OF EASTERN SOUTH DAKOTA

Rex R. Johnson
Department of Wildlife and Fisheries Sciences
South Dakota State University
Brookings, SD 57007

and

Kenneth F. Higgins
Assistant Leader
South Dakota Cooperative Fish and Wildlife Research Unit
U.S. Geological Survey, Biological Resources Division
South Dakota State University
Brookings, SD 57007

Foreword

The mere mention of the word "wetland" in coffee shops and other gathering places on the prairies today brings out emotions and opinions that run the gamut from saving them all to draining them all.
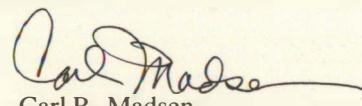
To some people, what we do with wetlands has been, and still is, a personal choice, a matter of exercising individual rights on private property. To others, wetlands are community resources that provide values that touch all of society. They contend that what is done to and about wetlands is a community decision regardless of ownership. Herein lies the controversy we have experienced over wetlands on the prairie—a resource which provides societal benefits, yet is privately owned.

The owners of prairie wetlands, like landowners everywhere, are possessive of their rights and options to make the most of their investment or inheritance. They jealously guard their right to determine the fate of the resources they own. Those interested in the public benefits of wetlands are equally motivated to ensure that wetland values are defended. Where this debate will lead is a matter of speculation.

Before landscape-level decisions about land use, and in this case wetland use, can adequately be addressed, all parties involved will be better equipped to defend their position if they know the extent of the resource, where it is, factors of quality, and something of the social interests in this resource.

Dr. Johnson and Dr. Higgins have done a masterful job of bringing together a state-of-the-art inventory of eastern South Dakota's wetland resources and have made comparisons of several factors of the nature of the wetlands found in the glaciated region of South Dakota. They have also included in this paper a history of some of the social and economic issues surrounding wetlands on the prairies, wetlands use and misuse, and the issues that make up the wetland controversies of the region.

Wetland Resources of Eastern South Dakota is an essential reference for those concerned about the future of wetlands and wetland policy in South Dakota and beyond. Armed with the information contained in this publication, decision makers at all levels will be informed on the number, size, and distribution of wetlands in eastern South Dakota. People working on the landscape level or on an individual ownership level will find this unique publication a valuable tool.

Carl R. Madsen
U.S. Fish and Wildlife Service
Brookings, S.D.

The Carl Madsen estate includes wetlands from all three Cowardin *et al.* (1979) systems found in South Dakota: palustrine wetlands including an 11 acre restoration; Lake Campbell, a lacustrine wetland; and a riverine wetland.

Contents

Eastern South Dakota, comprised of 44 counties east and north of the Missouri River, covers about 35,400 square miles. Wetlands and deepwater habitats account for 2,222,113 ac (899,277 ha) or 9.8% of the landscape. Of this total, palustrine system wetlands constitute 80.1% (1,780,859 ac or 720,704 ha), lacustrine system wetlands and deepwater habitats 16.8% (371,982 ac or 150,538 ha), and riverine system wetlands 3.1% (69,273 ac or 28,034 ha).

A total 932,829 wetland basins (potholes or lakes, for example) covering 2,128,674 ac (861,463 ha) delineated from palustrine and lacustrine wetlands occur in eastern South Dakota. Temporary basins make up 55.7% (520,379) of the total number of basins and 18.3% (390,054 ac or 157,853 ha) of the total area. Seasonal basins make up 35.9% (334,699) of the total basins and 26.0% (553,515 ac or 224,004 ha) of the total area. Semipermanent basins make up 8.1% (76,260) of the total basins and 34.0% (722,904 ac or 292,555 ha) of the total area. Permanent basins (basins containing lacustrine wetlands or permanent or intermittently exposed palustrine wetlands) comprise 0.2% (1,457) of the total number of basins and 21.7% (462,201 ac or 187,050 ha) of the total area. Of all semipermanent basins, 23,997 are natural basins—that is, they contain at least one semipermanent wetland—covering about 377,660 ac (152,837 ha); 38,663 covering 237,069 ac (95,941 ha) are shallower basins with dugouts or other excavations or are isolated dugouts; and 11,527 covering 99,411 ac (40,231 ha) are impoundments. A total 603 natural permanent basins occur in eastern South Dakota covering 194,037 ac (78,526 ha). A total 384 permanent basins are impoundments, comprising 264,156 ac (106,902 ha), mostly in the Missouri River reservoirs.

The median size of basins in eastern South Dakota is only 0.4 ac (0.16 ha). Of all eastern South Dakota basins, 58.8% are ≤0.5 ac (0.2 ha) in size; 72.9% are ≤1.0 ac (0.4 ha); 83.4% are ≤2.0 ac (0.8 ha); and 92.1% are ≤5.0 ac (2.0 ha). Only 2.6% are larger than 10 ac (4.0 ha).

Eastern South Dakota has a recent history of glaciation; consequently, drainage networks of riverine wetlands are poorly developed over most of the region. The best developed drainage networks occur on the western slope of the Missouri Coteau and east of the Big Sioux River, areas that were not covered by Late Wisconsin glaciers.

Over most of eastern South Dakota, water travels by surficial flow into insular basins that formed from melting ice blocks deposited in glacial till. The distribution and characteristics of basins in eastern South Dakota were influenced by the timing, frequency, and manner of glaciation. Low relief landscapes, such as ground moraine or glacial lake plains, tend to include numerous shallow temporary and seasonal basins, while high relief landscapes, such as terminal or dead-ice moraine, tend to include deep basins with semipermanent or permanent water regimes.

Temporary and seasonal basins are most abundant in the James River Lowland and Minnesota-Red River Lowland physiographic regions, the paths along which glaciers advanced. Natural semipermanent and permanent basins are most abundant on the Prairie Coteau physiographic region.

Most basins at the northern end and along the eastern margin of the Prairie Coteau are small. In the interior of the Coteau, semipermanent and permanent basins occur in more gradually undulating terrain and are larger. Chains of permanent lakes occur adjacent to the west side of the Big Sioux River within the Prairie Coteau. Most of these lakes formed like smaller basins, but the ice mass in this area was subject to less compression and was less fragmented. Basins with semipermanent water regimes due to excavated dugouts are widely distributed across eastern South Dakota, but semipermanent and permanent impoundments are most abundant on the western slope of the Missouri Coteau.

WETLAND RESOURCES
of Eastern South Dakota

Wetlands are a prominent feature of the glaciated prairie pothole region of the U.S., including most of eastern South Dakota (Fig. 1). Wetlands have traditionally been viewed as economically unproductive refugia for native and exotic weeds and for small mammals and blackbirds that cause crop damage. Wetlands have been considered to be obstacles to planting, cultivating, and harvesting crops.

Perceptions of wetlands are beginning to change. The public is beginning to appreciate the biotic, hydrologic, and economic role of wetlands; however, this new appreciation is not universal, leading to controversy regarding appropriate uses for wetlands.

A detailed review of prairie wetland functions and values has been compiled by Hubbard (1988), and a community profile that describes the origin, hydrology, functions, and biota of prairie wetlands was developed by Kantrud *et al.* (1989).

Previous attempts to summarize wetland acreage totals for South Dakota and some other states have underestimated actual wetland area. In some cases, wetland inventories focused on wetlands with specific functions and values (for example, waterfowl production), while other inventories ignored small wetlands (for example, inventories were based on soil surveys with relatively large minimum mapping units without consideration of hydric soil inclusions). Because wetlands play an important role in current debates about environmental protection, factual information about wetland abundance, characteristics, and distribution is important.

This publication identifies the extent, characteristics, and location of eastern South Dakota wetlands, mapped and classified by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), and describes demographics of wetland basins (for example, potholes impoundments, and natural lakes). "Wetland" describes an area with a homogeneous water regime and plant community structure as delineated by the NWI (for example, an area with a temporary water regime and emergent vegetation vs. an area with a semipermanent water regime and submersed vegetation). A "basin" is defined as a depression on the landscape that contains at least one wetland but may contain more than one wetland with different water regimes or types of plant communities (Fig. 2) (Cowardin 1982).

- Prairie Pothole Region
- Transition Parklands
- Lake Agassiz Plain
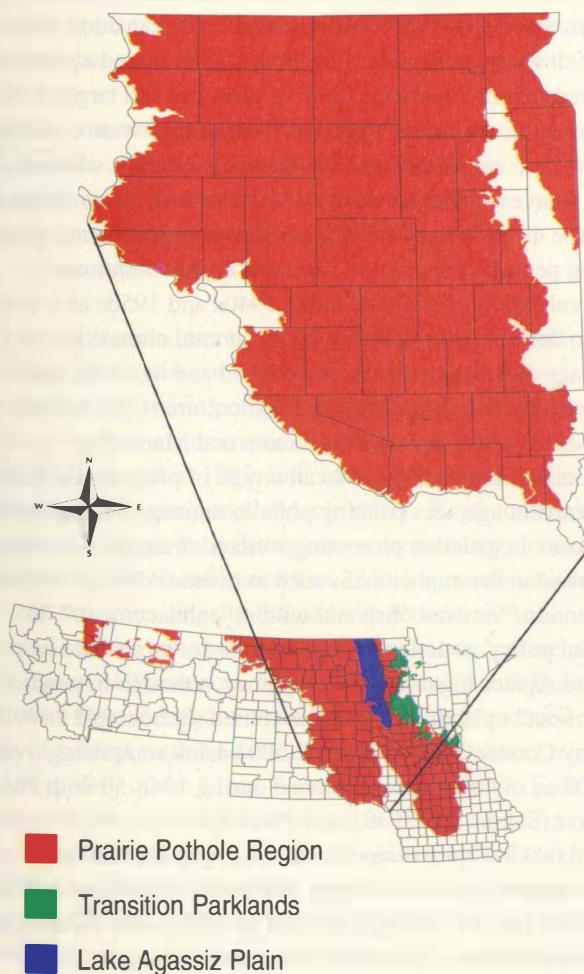
Figure 1. The glaciated prairie pothole region of eastern South Dakota was delineated using the distribution of characteristic soils.
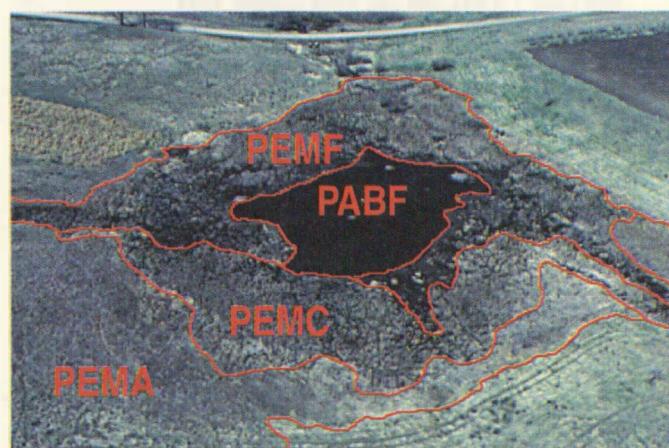
Figure 2. The term "wetland" describes an area with a homogeneous water regime and plant community structure as delineated by the NWI. A "basin" is the depression that contains the wetlands extending upslope to the limit of the wetlands.

Wetlands Loan Act which authorized borrowing against future "duck stamp" revenues. Passage of the Small Wetlands Acquisition Act in the same year also authorized the USFWS to purchase small basins valuable to breeding waterfowl (Higgins 1981, Higgins *et al.* 1987). Approximately 700 USFWS Waterfowl Production Areas (WPAs) covering about 183,000 ac (74,000 ha) of uplands and wetlands were purchased in South Dakota by 1994 (USFWS Div. Refuges Realty Office, Denver, pers. comm.). The USFWS also has used funding from these acts to obtain easements on approximately 613,000 ac (248,000 ha) of eastern South Dakotawetlands through 1994 (USFWS Div Refuges Realty Office, Denver, pers. comm.). Landowners are constrained from burning, draining, filling, or leveling protected wetlands during the period of the easement, which is typically perpetual, unless a variance is issued by the USFWS.

Public and private efforts to both drain and protect wetlands in the prairie pothole region continue. Baseline data on the extent, characteristics, and distribution of wetlands are important to ensuring the future of wetland resources. An accurate assessment of wetland area, number of basins, and their distribution and characteristics is valuable because: (1) knowledge of remaining wetland habitat is important in predicting the impact of new state and federal wetland protection statutes and programs or the impact of modifications to existing statutes and programs; (2) previous status surveys of basins have relied on samples of a small percentage of the U.S.; (3) a wetland inventory may be used to identify regional differences in the characteristics of wetlands or basins and in their density and distribution; and (4) understanding the wetland habitat base enhances administration and management of wetlands biota.

The National Wetlands Inventory

Growing public awareness of the importance of wetlands prompted the USFWS in 1974 to instruct the Office of Biological Services to conduct an inventory of U.S. wetlands and to acquire scientific information on the characteristics and extent of wetlands. As the National Wetlands Inventory (NWI) was becoming fully operational, the USFWS officially adopted the Cowardin *et al.* (1979) classification system for wetlands and deepwater habitats. Cowardin *et al.* (1979) defined wetlands as:

> ... lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land sup-

ports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Deepwater habitats are defined as "permanently flooded lands lying below the deepwater boundary of wetlands" (6.6 ft or 2.0 m) (Cowardin *et al.* 1979).

The NWI uses information on hydrology, hydrophytes, and hydric soils to delineate wetlands and deepwater habitats in accordance with national photographic, cartographic, and digitizing standards (USFWS 1994a, 1994b, 1995).

Hydrology refers to surface and subsurface water movements and accumulation. Wetlands usually are periodically saturated or ponded at some time during the growing season. Growing season is variously defined as the soil frost-free period, or the period when the soil temperature exceeds 4°C, which corresponds roughly to the period of biological activity in soil.

Hydrophytes are plants adapted to growth in water or in saturated soils. Wetland soils must be flooded or saturated long enough during the growing season to alter soil chemistry and to stress upland-adapted plants.

Hydric soils are soils formed under aquic or peraquic moisture regimes. This implies at least periodic inundation or saturation during the growing season. Because oxygen diffuses slowly through water, hydric soils are at least periodically anaerobic due to bacterial metabolic consumption of oxygen. Under anaerobic conditions, facultative and obligate anaerobic bacteria reduce oxidized forms of nitrogen, iron, manganese, and other compounds. Bacterial reduction of iron and manganese oxides produces the distinctive gley colors and mottles characteristic of hydric soils.

In the Cowardin *et al.* (1979) classification system, wetlands and deepwater habitats are relatively homogeneous with respect to hydrologic, edaphic, and biotic attributes. They are classified by hydrology, size, vegetation, and natural or anthropogenic origins and modifications. The Cowardin *et al.* (1979) system is hierarchical. The number of classification levels in the hierarchy is open-ended. The NWI has adopted conventions which generally use five levels of the classification hierarchy for wetlands and deepwater habitats in eastern South Dakota (Fig. 3). Cowardin *et al.* (1979) provided a detailed description of these classification taxa; a brief description is provided here.

PEMCx

System | Class | Water Regime | Special Modifier

L1UBHh

System | Subsystem | Class | Water Regime | Special Modifier

R4SBA

System | Subsystem | Class | Water Regime
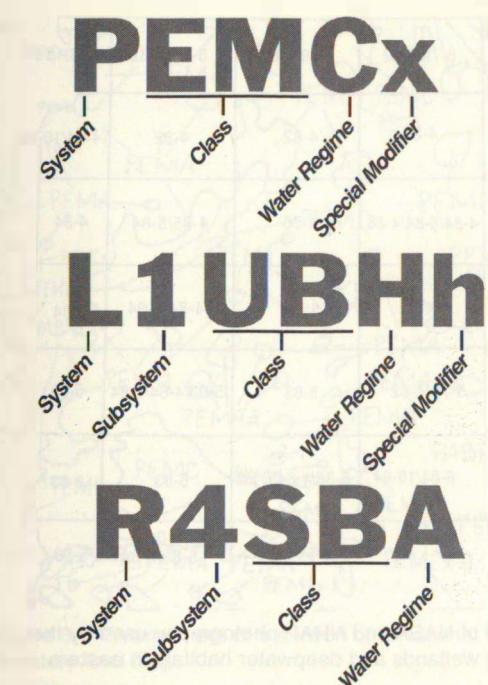
Figure 3. Elements of the Cowardin *et al.* (1979) classification system.

Systems, the highest level in the classification hierarchy, encompass wetlands and deepwater habitats with similar hydrologic, geomorphologic, biologic, and chemical characteristics. Wetlands in three of the five systems defined by Cowardin *et al.* (1979) occur in South Dakota: **palustrine** (lentic wetlands), **lacustrine** (deepwater lentic habitats or large lentic wetlands without trees or shrubs, persistent emergent vegetation, or emergent mosses or lichens), and **riverine** (lotic wetlands without trees or shrubs, or persistent emergent vegetation) (Table 1). Marine and estuarine system wetlands and deepwater habitats do not occur in South Dakota.

The palustrine system includes wetlands that contain trees, shrubs, and herbaceous vegetation, and wetlands without woody or herbaceous emergents. These wetlands are less than 6.6 ft deep at low water and less than 20 ac (8 ha) in size without a wave-formed or bedrock shoreline. Palustrine wetlands in South Dakota are generally small (for example, wetlands within prairie potholes). Palustrine wetlands may be larger than 20 ac if they support woody or persistent emergent vegetation. The palustrine system has no subsystems (Table 1).

Table 1. Elements of the Cowardin *et al.* (1979) classification system used in eastern South Dakota and NWI codes for systems, subsystems, classes, and modifiers.

System		L - Lacustrine		
Subsystem	1 - Limnetic	2 - Littoral		
Class	UB - Unconsolidated Bottom	UB - Unconsolidated Bottom	AB - Aquatic Bed	US - Unconsolidated Shore

System		P - Palustrine			
Class	UB - Unconsolidated Bottom	AB - Aquatic Bed	US - Unconsolidated Shore	EM - Emergent	SS - Scrub Shrub	FO - Forested

System		R - Riverine	
Subsystem	2 - Lower Perennial	3 - Upper Perennial	4 - Intermittent
Class		UB - Unconsolidated Bottom	SB - Streambed	US - Unconsolidated Shore

Water Regime

A Temporarily Flooded
B Saturated
C Seasonally Flooded
F Semipermanently Flooded
G Intermittently Exposed
H Permanently Flooded

Special Modifiers

b Beaver
d Partially Drained/Ditched
h Diked/Impounded
x Excavated

regions (Fig. 7) were delineated from the Natural Resource Conservation Service STATSGO soil GIS (1:250,000 scale) (USDA-SCS 1993; Johnson *et al.* 1995). USGS 8-digit hydrologic units (watersheds) (Appendix C, Fig. 43) were digitized from a 1:500,000 scale paper map (USGS 1978). County polygon, line, and point coverages were joined to cover each physiographic region and hydrologic unit. Physiographic regions and hydrologic units were clipped out of the composite coverages. County boundaries passing through wetlands within physiographic regions and hydrologic units were deleted.
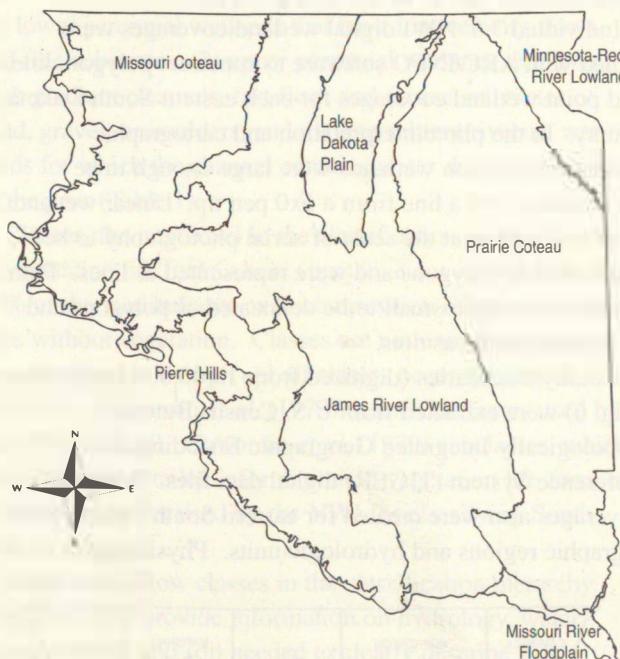
Figure 7. Eastern South Dakota physiographic regions.

Converting NWI-Delineated Wetlands to Basins

Most data on prairie pothole region wetlands and wetland biota are collected for basins. We converted wetlands delineated and classified by the NWI to "basins" to complement these data. The protocol for converting wetlands to basins and for classifying basins was developed by USFWS personnel to support mapping of potential duck breeding-pair distribution (Cowardin *et al.* 1995). Protocol for different applications could be developed. **It is inappropriate to make direct comparisons between NWI wetland classifications and basins (for example, the area of wetlands and basins by water regime) because "basins" are composite features composed of one to many wetlands.**

NWI 7.5' wetland coverages were converted to basin coverages with a series of ARC Macro Language programs (AMLs) and INFO programs in ARC/INFO. Point wetlands were buffered with a radius of 25 ft (7.62 m, area = 0.045 ac

or 0.0182 ha), and linear wetlands were buffered by a distance of 24 ft (7.32 m) (total width of a buffered linear wetland was 48 ft) to convert them to polygons. Buffer distances were selected based on mean widths of point and linear wetlands determined from aerial photographs in the prairie pothole region and to maintain consistency with basin coverages created by USFWS personnel for North Dakota (Cowardin *et al.* 1995). Buffered point and linear coverages were overlaid on the polygon coverage. Arcs separating wetlands were deleted to produce composite, contiguous basin features classified by water regime using the following guidelines:

1. Within a basin, arcs separating contiguous wetlands were deleted and the composite polygon classified by the most permanent water regime regardless of size (Fig. 8a).
2. Buffered linear wetlands (natural or excavated) entering a basin were combined with the basin (Fig. 8b).
3. Excavated wetlands connecting two natural basins were maintained as separate features (Fig. 8c).
4. Natural temporary wetlands separating wetlands with more permanent water regimes were maintained as separate features (Fig. 8d).
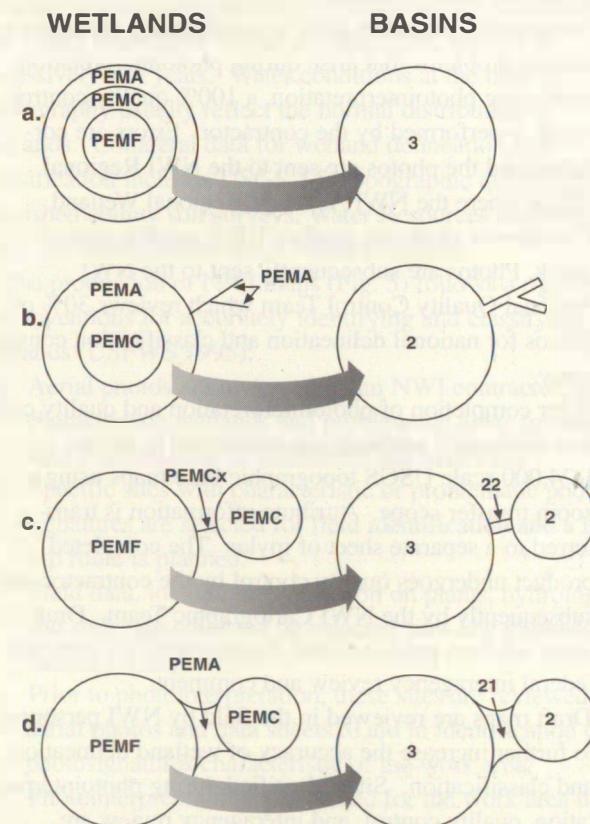
Figure 8. Wetlands delineated by the NWI were converted to basins by dissolving arcs and classifying the basin's water regime by the most permanent wetland within it. **3**=Semipermanant; **2**=Seasonal **22**=Seasonal ditches; **21**=Temporary.

Approximately 1% of basins were manually evaluated to assure accuracy in the basin creation process. Neatlines from 7.5' basin coverages were deleted where they passed through a basin in county coverages. County basin coverages were combined, and physiographic regions and hydrologic units were clipped out as described above for wetland coverages. County boundaries were deleted where they passed through a basin within a physiographic region or hydrologic unit.

In the data summaries that follow, wetlands, deepwater habitats, and basins that fell on state boundaries were partitioned along the boundary, and only the area within South Dakota is reported. Only the area of the Missouri River and its reservoirs that fell within the boundaries of eastern South Dakota counties was included in the analyses. Summary statistics were generated in ARC/INFO.

Grid Creation for Spatial Analysis

A grid of 10 mi^2 (25.60 km^2) cells was generated in ARC/INFO and was overlaid on basin physiographic region coverages. Area and number of basins by water regime in a cell were assigned as attributes to that cell. Any basin within a cell or on the boundary of a cell was counted within that cell. Only the area of the basin within a cell was assigned to that cell.

RESULTS AND DISCUSSION
Eastern South Dakota Wetlands and Deepwater Habitats

Surface water (depressional and riverine wetlands) covers approximately 9.8% or 2,222,113 ac (899,277 ha) of the 35,390 mi^2 (90,600 km^2) of eastern South Dakota (Fig. 9). Composition of the total area of surface water in eastern South Dakota is 80.1% palustrine wetlands, 16.8% lacustrine wetlands and deepwater habitats, and 3.1% riverine wetlands (Fig. 10). In the following discussion, total area for each system is partitioned by Cowardin *et al.* (1979) subsystems, classes, water regimes, and special modifiers. These acreages are presented for each eastern South Dakota county, USGS 8-digit hydrologic unit, and physiographic region in Appendices B-D.

Palustrine Wetlands
System and Classes

Wetlands in the palustrine system cover 1,780,859 ac (720,704 ha) of eastern South Dakota (Table 2). The palustrine system has no subsystems. Palustrine wetlands in the emergent class occupy 1,380,270 ac (558,629 ha) or 77.5% of total palustrine wetland area. Palustrine wetlands in the
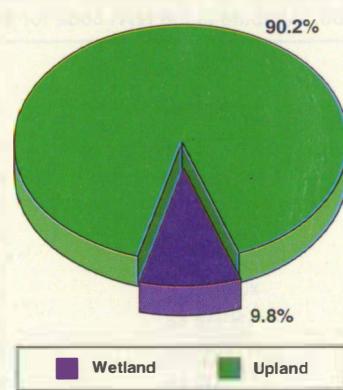
Figure 9. Approximately 2,222,113 ac (899,277 ha) of wetlands were delineated by the NWI in the 35,390 mi^2 (90,600 km^2) that comprise eastern South Dakota.
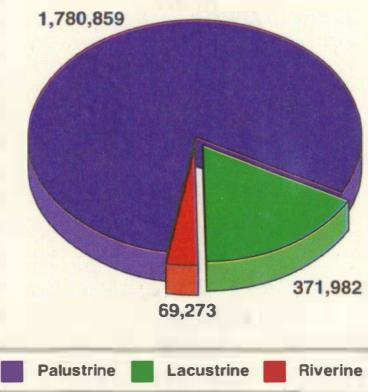
Figure 10. Acres of eastern South Dakota wetlands delineated by the NWI using the Cowardin *et al.* (1979) system.

aquatic bed class comprise 59,895 ac (24,3289 ha) or 3.4% of the total area. Palustrine wetlands in mixed emergent and aquatic bed classes, that is, EM/AB and AB/EM, collectively comprise 282,430 ac (114,298 ha) or 15.8% of total palustrine wetland area. Palustrine wetlands in other classes each comprise less than 1.5% of the total area of palustrine wetlands (Fig. 11) (Table 3).

Water Regimes

Palustrine wetlands with seasonal water regimes, which comprise 774,881 ac (313,590 ha) or 43.5% of the total palustrine wetland area, are more abundant than palustrine wetlands with other water regimes. Palustrine wetlands with temporary water regimes cover 584,489 ac (236,685 ha) or 32.8% of the total palustrine wetland area; wetlands with semipermanent water regimes cover 415,387 ac (168,105 ha) or 23.3%; wetlands with intermittently exposed water regimes cover 4,369 ac (1,768 ha) or 0.2%; wetlands with saturated water regimes cover 1,213 ac (491 ha) or 0.1%; and palustrine wetlands with permanent water regimes—
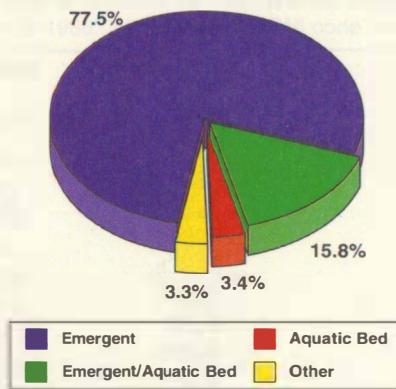
Figure 11. Percent of total acres of eastern South Dakota palustrine wetlands by Cowardin *et al.* (1979) class.

Table 3. Area and percent of total area of palustrine wetlands in 18 classes and mixed classes delineated by the NWI in eastern South Dakota. Codes for classes are presented in Table 2. In mixed classes, the most abundant class is listed first.

Class	Acres	%
EM	1,380,383.6	77.5
AB	60,116.0	3.4
FO	23,961.3	1.3
SS	3,289.6	0.2
UB	6,591.4	0.4
US	80.6	t
EM/AB	253,087.0	14.2
AB/EM	29,343.1	1.6
EM/FO	8,826.2	0.5
FO/EM	6,681.3	0.4
EM/SS	5,407.5	0.3
SS/EM	713.6	t
FO/SS	308.6	t
SS/FO	521.1	t
SS/US	1,165.3	0.1
US/SS	373.4	t
EM/UB	7.7	t
UB/FO	2.2	t
TOTAL	1,780,859.6	99.9
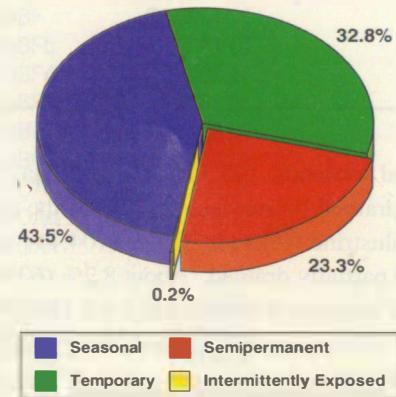
of the total and 58.9% of the area of created wetlands. Stock dam impoundments cover 54,345 ac (21,993 ha) or 3.1% of total palustrine wetland area and 41.1% of the area of created wetlands (Fig. 13). Beaver-created impoundments delineated by the NWI cover only 14 ac (6 ha) or a trace of the total area of created palustrine wetlands.

Of all eastern South Dakota excavated wetlands delineated by the NWI, 56,827 are dugouts or similar features, for example, wetlands classified as PABFx, PUBFx, PABGx, PUBGx, or PUBHx. Dugouts are concentrated where livestock production was or remains a major land use and are commonly located in natural basins or in natural stream courses (McPhillips *et al.* 1983). Dugouts in eastern South Dakota occurred in 22,530 existing natural basins with 1 to 13 dugouts per basin. Of the total number of dugouts, 9,010 (15.9%) are located in natural temporary basins, 19,506 (34.3%) are in natural seasonal basins, 6,021 (10.6%) are in natural semipermanent basins, and 549 (1.0%) are in natural permanent basins. The median size of existing temporary basins containing dugouts (n=3,290) is 2.1 ac (0.9 ha); the median size of existing seasonal basins containing dugouts (n=14,439) is 4.6 ac (1.9 ha); the median size of semipermanent basins containing dugouts (n=4,333) is 4.1 ac (1.7 ha); and the median size of permanent basins containing dugouts (n=468) is 3.1 ac (1.3 ha). Of the total 56,827 dugouts, 21,741 dugouts (38.3%) are isolated from existing natural wetlands, have completely drained the basin they are excavated in, or are located in linear stream channels.

Many excavated drainage ditches, which were visible on aerial photography, and many road ditches were not delineated as wetlands by the NWI because they did not display wetland characteristics at the time of photography. Nonetheless, approximately 8,849 mi (14,159 km) of linear excavated palustrine wetlands (road ditches and drainage ditches) were delineated in eastern South Dakota. Of the

Figure 12. Percent of total acres of eastern South Dakota palustrine wetlands by water regime.
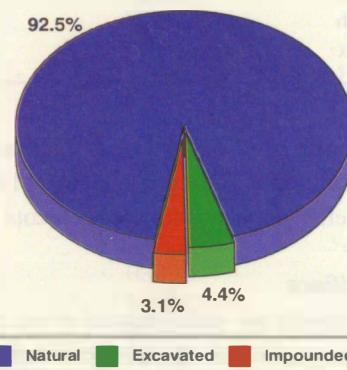
Figure 13. Percent of total acres of eastern South Dakota palustrine wetlands by special modifier.

total length, 7,911 mi (12,658 km) have a seasonal water regime, 586 mi (938 km) have a temporary water regime, and 347 mi (556 km) have a semipermanent water regime. Wetlands in road ditches in eastern South Dakota generally have seasonal water regimes.

Lacustrine Wetlands and Deepwater Habitats
System and Subsystems

Wetlands and deepwater habitats in the lacustrine system, including both natural lakes and lacustrine impoundments, cover 371,982 ac (150,538 ha) of eastern South Dakota (Table 2). Lacustrine wetlands are assigned to limnetic or littoral subsystems. Lacustrine wetlands in the limnetic subsystem (limnetic lacustrine wetlands with semipermanent and intermittently exposed water regimes) comprise 49,730 ac (20,125 ha) or 13.4% of total lacustrine habitat delineated by the NWI. All deepwater habitats in South Dakota are permanently flooded lacustrine sites in the unconsolidated bottom class, and they cover 201,841 ac (81,684 ha) or 54.3% of total lacustrine habitat. Lacustrine wetlands in the littoral subsystem comprise 120,412 ac (48,730 ha) or 32.4% of total lacustrine wetland area.

Classes

All limnetic lacustrine habitat in eastern South Dakota is classified in the unconsolidated bottom class. Of the total area of littoral lacustrine wetlands, 114,528 ac (46,349 ha) or 94.9% are in the aquatic bed class, 2,501 ac (1,012 ha) or 2.5% are in the unconsolidated bottom class, and 3,353 ac (1,357 ha) or 2.6% are in the unconsolidated shoreline class (beaches).

Water Regimes

Most eastern South Dakota lacustrine habitats have permanent or intermittently exposed water regimes. Permanent lacustrine habitat covers 201,841 ac (81,684 ha) or 54.3% of total lacustrine habitat. Intermittently exposed lacustrine wetlands cover 152,481 ac (61,708 ha) or 41.0% of total lacustrine habitat. Semipermanent lacustrine wetlands, which are all in the littoral subsystem in eastern South Dakota, cover 14,361 ac (5,812 ha) or 3.9% of total lacustrine habitat area (Fig. 14). Temporary lacustrine wetlands, which are all beaches adjacent to lakes and impoundments, cover 870 ac (352 ha) of eastern South Dakota. Seasonal lacustrine wetlands, also shorelines, cover 2,501 ac (1,012 ha). Temporary and seasonal lacustrine wetlands each comprise <1% of the total area.

Special Modifiers

Created lacustrine wetlands and deepwater habitats cover 226,107 ac (91,504 ha) or 60.8% of total lacustrine wetland area in eastern South Dakota (Fig. 15). Of the total area of created lacustrine wetlands, 224,745 ac (90,953 ha) or 99.4% are artificial impoundments and 1,362 ac (551 ha) or 0.6%, are excavated.

Created lacustrine wetlands and deepwater habitats are most abundant in counties bordering Missouri River. The five counties with the greatest area of lacustrine impoundments, ranked in order of decreasing abundance, are Hughes (14,969 ac or 6,058 ha), Sully (14,425 ac or 5,838 ha), Charles Mix (10,549 ac or 4,269 ha), Campbell (8,401 ac or 3,400 ha), and Potter (7,644 ac or 3,093 ha) (Appendix B).

Natural lacustrine wetlands and deepwater habitats make up 145,875 ac (59,034 ha) or 39.2% of total lacustrine habitat area (Fig. 15). A total 534 ac (216 ha) of natural lacustrine wetlands are partially drained.

Natural lacustrine wetlands and deepwater habitats are most abundant in counties in the northern and north-central Prairie Coteau and in Roberts County, which contains part of
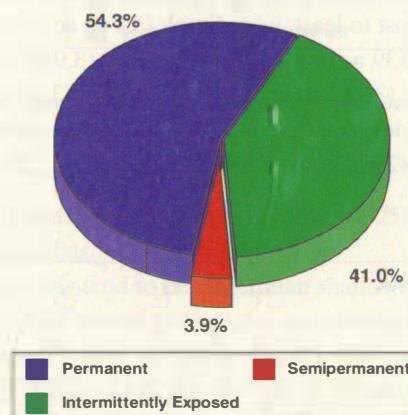
Figure 14. Percent of total acres of eastern South Dakota lacustrine wetlands by water regime. Temporary and seasonal wetlands comprise a trace of total lacustrine wetland area.
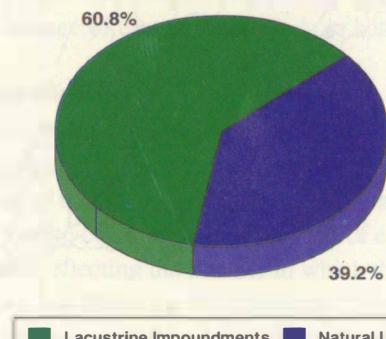
Figure 15. Percent of total acres of eastern South Dakota lacustrine wetlands by special modifier.

Big Stone Lake. The five counties with the greatest area of natural lacustrine wetlands and deepwater habitats, ranked in order of decreasing abundance, are Day (8,550 ac or 3,460 ha), Hamlin (6,567 ac or 2,658 ha), Marshall (6,118 ac or 2,476 ha), Codington (6,006 ac or 2,431 ha), and Kingsbury (4,307 ac or 1,743 ha) (Appendix B).

Riverine Wetlands
System, Subsystems, and Classes

Drainage networks of riverine wetlands have developed slowly in South Dakota's subhumid and semiarid environments and are most abundant in counties in the northern James River Lowland and in southeastern South Dakota bordering free-flowing reaches of the Missouri River (Fig. 16). Wetlands in the riverine system cover 69,273 ac (28,034 ha) of eastern South Dakota (Table 2). Of the total area, 50,576 ac (20,468 ha) or 73% are comprised of riverine wetlands wide enough to be delineated with polygons, and 18,695 ac (7,566 ha) or 27% are comprised of linear wetlands (using a 48 ft-wide [14.64 m] buffer for linear wetlands for area calculation).

The eight counties with the most riverine wetland habitat, ranked from most to least, were Spink (5,710 ac or 2,311 ha), Brown (4,539 ac or 1,837 ha), Yankton (3,949 ac or 1,597 ha), Clay (3,912 ac or 1,583 ha), Union (3,697 ac or 1,496 ha), Charles Mix (4,033 ac or 1,632 ha), Bon Homme (3,526 ac or 1,427 ha), and Beadle (3,170 ac or 1,283 ha) (Appendix B).
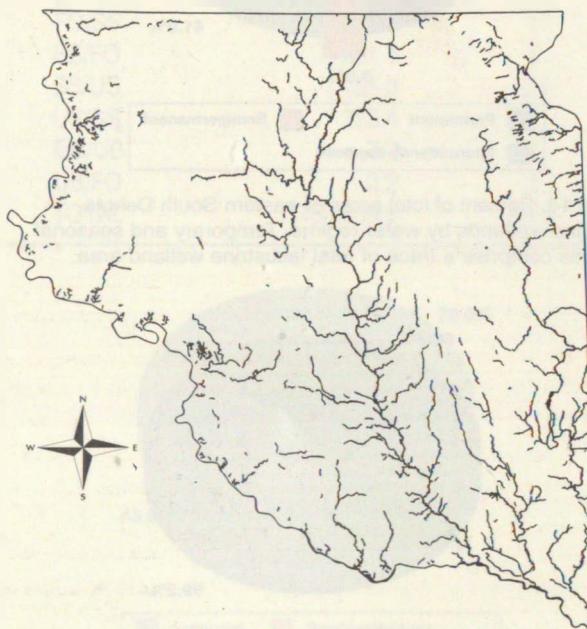
Riverine wetlands in the lower perennial subsystem (for example, the Missouri, James, or lower Big Sioux rivers) cover 35,257 ac (14,269 ha) or 50.9% of total riverine wetland area. The unconsolidated bottom class of lower perennial riverine wetlands covers 32,034 ac (12,964 ha) or 90.7% of lower perennial riverine habitat, while wetlands in the unconsolidated shoreline class, or mud and sandbars, cover 3,225 ac (1,305 ha) or 9.1% of total lower perennial riverine habitat.

One reach of upper perennial riverine habitat occurs in eastern South Dakota at the falls of the Big Sioux River in the city of Sioux Falls. This area covers approximately 7 ac (2.7 ha) and is in the unconsolidated bottom class.

Riverine wetlands in the intermittent subsystem cover 34,016 ac (13,766 ha) or 49.1% of total riverine wetland area. Intermittent riverine wetlands were always classified by the NWI in the streambed class (with rocky or muddy substrates) and often alternate along the course of a stream with palustrine emergent wetlands.

Water Regimes

Semipermanent riverine habitat in eastern South Dakota, like the Big Sioux north of Brookings, covers 30,611 ac (12,388 ha) or 44.2% of the total area of riverine habitat. The next most abundant riverine wetland water regime is permanent, which covers 19,281 ac (7,803 ha) or 27.8% of the total area. Riverine wetlands with the intermittently exposed water regime cover 12,133 ac (4,910 ha) or 17.5% of the total area. Seasonal riverine wetlands cover 3,981 ac (1,611 ha) or 5.7% of the total area; and temporary riverine wetlands cover 3,267 ac (1,322 ha) or 4.7% of the total riverine habitat in eastern South Dakota (Fig. 17).

Figure 16. Distribution of riverine wetlands in eastern South Dakota. Discontinuities in river channels indicate impoundments or intervening stretches of palustrine wetland.
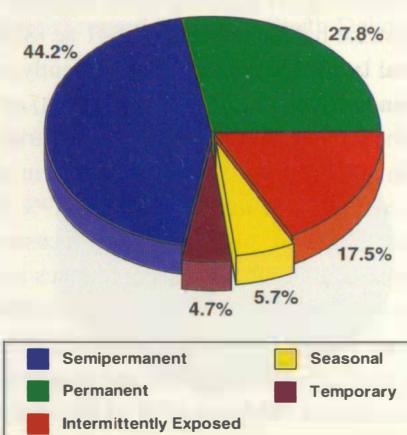
Figure 17. Percent of total acres of eastern South Dakota riverine wetlands by water regime.

Special Modifiers

Excavation has created or modified 2,166 ac (876 ha) or 3.1% of riverine habitat in eastern South Dakota. The other 67,107 ac (27,158 ha) or 96.9% of riverine habitat that remain in eastern South Dakota have not been directly altered by excavation.

Eastern South Dakota Basins

In this publication, a basin is defined as a depression that contains one or more wetlands extending up-slope to the limit of the wetlands within it (Cowardin 1982). Basins were classified by water regime and other factors following protocol described in the methods section. Basin coverages were created from NWI-mapped wetlands to complement existing data on basin distribution, hydrology, and biota. Although terminologies for wetland and basin water regimes are the same, **acreage of NWI-mapped wetlands and basins are not comparable** because basins are composite features comprised of one or more wetlands.

A total 932,829 basins occur in eastern South Dakota, comprising 2,128,674 ac (861,463 ha). This number and acreage includes only naturally or artificially closed depressions (for example, potholes, lakes, and impoundments) and does not include riverine wetlands. Of the total acreage and number of basins, 55.7% of the basins and 18.3% of the basin acreage are temporary basins, 35.9% of the basins and 26.0% of the basin acreage are seasonal basins, 8.1% of the basins and 34.0% of the basin acreage are semipermanent basins, and 0.2% of the basins and 21.7% of the basin acreage are permanent basins (Fig. 18).

Size Structure of Basins

Most eastern South Dakota basins are small potholes. The median size of South Dakota basins is 0.4 ac (0.16 ha). Of the temporary, seasonal, semipermanent, and permanent basins delineated from NWI data in eastern South Dakota, 58.8% are ≤0.5 ac (0.2 ha) in size, 72.9% are ≤1.0 ac (0.4 ha), 83.4% are ≤2.0 ac (0.8 ha), and 92.1% are ≤5.0 ac (2.0 ha). Only 2.6% are >10.0 ac in size. These percentages are consistent with estimates from the prairie pothole region of North Dakota (Cowardin *et al.* 1981; D. Cohan, USFWS, Bismarck, pers. comm.).

Basins ≤0.5 ac in size comprise 6.8% of the total basin area in eastern South Dakota, basins ≤1.0 ac comprise 12.1% of the total acreage, basins ≤2.0 ac comprise 20.1% of the total acreage, and basins ≤5.0 ac comprise 34.6% of the total acreage. Basins >5.0 ac in size comprise 65.4% of the total acreage of eastern South Dakota basins, and basins >10.0 ac comprise 53.8% of the total acreage of basins. The
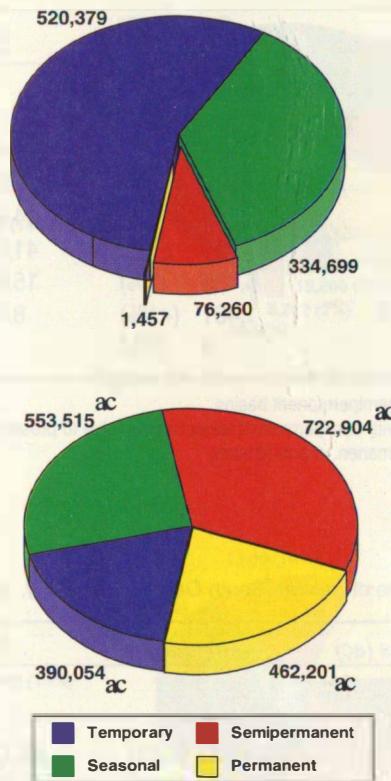
Figure 18. Number and acres of eastern South Dakota basins by water regime.

<1.0% of basins >100.0 ac in size comprise 25.7% of eastern South Dakota basin acreage (Tables 4-7).

Deeper basins tend to be larger than shallower basins. The median sizes of natural permanent, semipermanent, seasonal, and temporary basins in eastern South Dakota are 98.54 ac (39.88 ha), 2.27 ac (0.92 ha), 0.49 ac (0.20 ha), and 0.30 ac (0.12 ha), respectively (Figs 19-27). Although the 75.7% of basins ≤1.0 ac in size comprise 12.1% of total basin acreage because they are small, nearly all have temporary or seasonal water regimes and provide different functions and values than larger, deeper basins that comprise a larger percentage of the total acreage of eastern South Dakota basins.

Basin Distribution

Basins cover from 4.6% to 15.6% of eastern South Dakota counties (Table 8) and display clumped distributions. That is, high densities of temporary, seasonal, and natural semipermanent basins tend to occur in discrete regions of eastern South Dakota, in part reflecting the manner in which they were formed during and following glacial retreat. Most of eastern South Dakota was covered by Late Wisconsin glaciers that entered the state approximately 25,000 years ago and

Table 4. Number of eastern South Dakota temporary, seasonal, and semipermanent basins by water regime and size class.

Size Class (ac)	Temporary		Seasonal		Semipermanent					
					N^a		D^b		I^c	
≤0.5	363,350	(70%)	172,428	(52%)	2,104	(9%)	17,019	(44%)	2,229	(19%)
0.5-1.0	73,959	(14%)	52,239	(16%)	2,055	(9%)	3,474	(9%)	1,923	(17%)
1.0-2.0	47,615	(9%)	44,481	(13%)	3,114	(13%)	3,057	(8%)	1,900	(16%)
2.0-5.0	27,555	(5%)	41,677	(12%)	5,504	(23%)	5,615	(15%)	2,203	(19%)
5.0-10.0	6,439	(1%)	15,606	(5%)	4,226	(18%)	4,172	(11%)	1,394	(12%)
10.0-100.0	1,461	(<1%)	8,212	(2%)	6,436	(27%)	5,080	(13%)	1,786	(15%)
>100	0	(0%)	56	(<1%)	558	(2%)	246	(<1%)	92	(<1%)

[a] Natural semipermanent basins
[b] Basins with semipermanent water regimes due to presence of an excavated feature such as a dugout
[c] Semipermanent impoundments

Table 5. Acres of eastern South Dakota temporary, seasonal, and semipermanent basins by water regime and size class.

Size Class (ac)	Temporary		Seasonal		Semipermanent					
					N^a		D^b		I^c	
≤0.5	87,056	(22%)	42,128	(8%)	623	(<1%)	4,853	(2%)	676	<1%
0.5-1.0	56,116	(14%)	40,025	(7%)	1,518	(<1%)	2,404	(1%)	1,392	(1%)
1.0-2.0	68,852	(18%)	65,736	(12%)	4,599	(1%)	4,505	(2%)	2,742	(3%)
2.0-5.0	84,036	(22%)	132,525	(24%)	18,225	(5%)	18,706	(8%)	7,135	(7%)
5.0-10.0	43,949	(11%)	108,086	(20%)	30,098	(8%)	29,769	(13%)	9,819	(10%)
10.0-100.0	50,045	(13%)	156,577	(28%)	176,463	(47%)	124,098	(52%)	45,424	(46%)
>100	0	(0%)	8,441	(2%)	146,134	(39%)	52,735	(22%)	32,223	(32%)

[a] Natural semipermanent basins
[b] Basins with semipermanent water regimes due to presence of an excavated feature like a dugout
[c] Semipermanent impoundments

Table 6. Number of eastern South Dakota permanent wetland basins by water regime and size class.

Size Class (ac)	N^a		D^b		I^c	
≤0.5	2	(<1%)	50	(11%)	10	(3%)
0.5-1.0	1	(<1%)	40	(9%)	9	(2%)
1.0-2.0	3	(<1%)	92	(20%)	9	(2%)
2.0-5.0	4	(<1%)	115	(24%)	32	(8%)
5.0-10.0	4	(<1%)	79	(17%)	57	(15%)
10.0-100.0	272	(45%)	90	(19%)	192	(50%)
>100	317	(53%)	4	(1%)	75	(20%)

[a] Natural permanent basins
[b] Basins with permanent water regimes due to presence of an excavated feature such as a dugout
[c] Permanent impoundments

Table 7. Acres of eastern South Dakota permanent basins by water regime and size class.

Size Class (ac)	N^a		D^b		I^c	
≤0.5	<1	(<1%)	15	(<1%)	1	(<1%)
0.5-1.0	<1	(<1%)	29	(<1%)	7	(<1%)
1.0-2.0	4	(<1%)	125	(2%)	13	(<1%)
2.0-5.0	15	(<1%)	378	(7%)	110	(<1%)
5.0-10.	30	(<1%)	550	(11%)	434	(<1%)
10.0-100.0	14,417	(7%)	2,011	(39%)	6,764	(3%)
>100	179,571	(93%)	2,092	(40%)	256,826	(97%)

[a] Natural permanent basins
[b] Basins with permanent water regimes due to presence of an excavated feature such as a dugout
[c] Permanent impoundments

Figure 19. Sizes of all temporary, seasonal, semipermanent, and permanent basins combined.
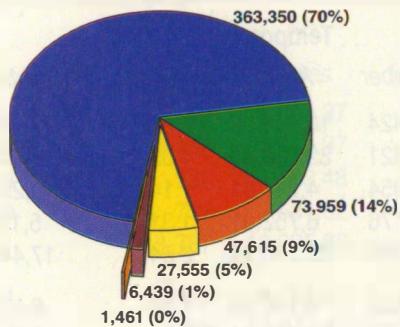
Figure 20. Sizes of temporary basins.
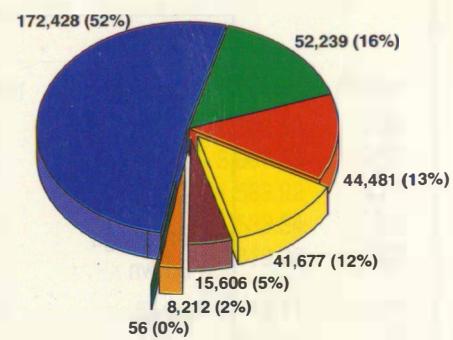
Figure 21. Sizes of seasonal basins.
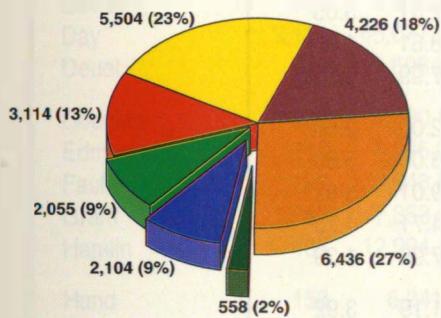
Figure 22. Sizes of natural semipermanent basins.
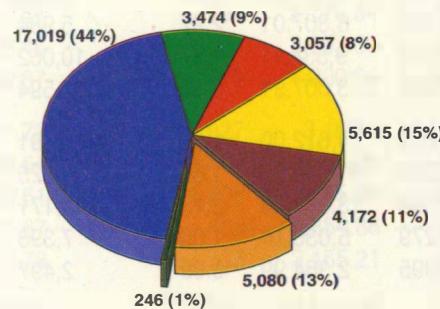
Figure 23. Sizes of basins with semi-permanent water regimes due to dugout excavation.
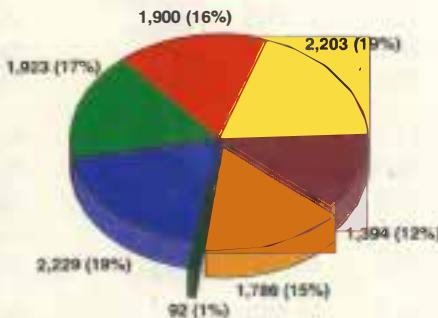
Figure 24. Sizes of impoundments with semipermanent water regimes.
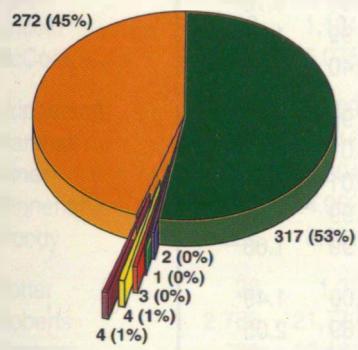
Figure 25. Sizes of natural permanent basins.
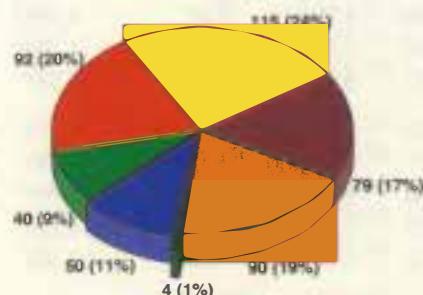
Figure 26. Sizes of basins with permanent water regimes due to dugout excavation.
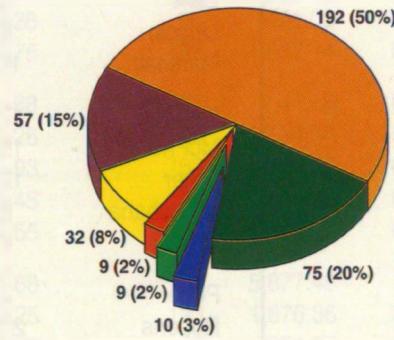
Figure 27. Sizes of impoundments with permanent water regimes.

Legend for figures 19-27.

■ <0.5	■ 1.0-2.0	■ 5.0-10.0	■ >100
■ 0.5-1.0	■ 2.0-5.0	■ 10.0-100	

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Table 8. Number, acres, and percent of each county comprised of basins by water regime.

County	Temporary			Seasonal		
	Number	Acres	Percent	Number	Acres	Percent
Aurora	10,424	10,346.99	2.27	8,517	11,756.00	2.58
Beadle	41,821	32,536.00	4.02	14,940	33,109.00	4.09
Bon Homme	5,354	4,247.01	1.14	3,253	5,148.91	1.39
Brookings	7,176	6,752.01	1.31	5,117	10,567.75	2.05
Brown	32,986	28,148.99	2.54	17,444	31,098.00	2.81
Brule	6,622	6,145.99	1.14	6,120	9,010.10	1.66
Buffalo	2,154	2,315.01	0.74	1,308	2,871.01	0.92
Campbell	4,823	4,771.01	0.97	4,358	9,129.01	1.85
Charles Mix	6,927	6,709.01	0.91	7,375	11,705.00	1.59
Clark	13,074	7,451.50	1.20	9,618	13,588.70	2.20
Clay	4,118	5,694.00	2.14	1,519	3,444.99	1.29
Codington	5,173	4,307.00	0.94	3,566	5,864.70	1.28
Davison	9,701	8,307.01	2.97	5,984	8,522.01	3.05
Day	13,207	9,534.11	1.37	10,062	12,918.61	1.85
Deuel	7,697	3,607.91	0.89	11,594	9,507.99	2.33
Douglas	4,819	4,612.00	1.66	4,591	7,102.00	2.56
Edmunds	22,050	11,396.00	1.55	22,225	41,223.00	5.60
Faulk	22,596	13,697.99	2.13	15,171	36,159.01	5.62
Grant	6,279	5,036.10	1.09	7,396	7,714.71	1.75
Hamlin	2,995	2,364.99	0.69	2,497	4,787.96	1.39
Hand	35,240	21,583.00	2.34	18,355	36,111.19	3.92
Hanson	7,185	5,171.01	1.86	5,503	7,093.01	2.55
Hughes	4,889	5,447.00	1.06	1,869	4,483.01	0.88
Hutchinson	12,983	11,780.00	2.26	6,058	11,471.99	2.20
Hyde	16,309	8,855.99	1.60	7,951	20,522.00	3.70
Jerauld	6,373	5,502.00	1.62	4,553	7,219.99	2.12
Kingsbury	14,618	7,338.01	1.33	8,141	10,861.01	1.97
Lake	5,555	4,602.24	1.25	4,166	6,460.01	1.76
Lincoln	8,968	2,650.00	1.77	4,724	5,945.99	1.61
Marshall	11,731	8,278.10	1.46	10,687	8,825.40	1.56
McCook	12,078	7,434.99	2.02	9,514	12,747.99	3.45
McPherson	15,757	8,712.00	1.18	19,183	28,405.01	3.86
Miner	12,258	6,190.99	1.69	10,862	11,545.01	3.16
Minnehaha	6,927	6,128.99	1.18	4,296	7,841.99	1.51
Moody	4,172	3,391.99	1.02	3,363	5,585.99	1.68
Potter	7,305	6,147.01	1.07	3,789	8,555.00	1.49
Roberts	20,963	13,217.60	1.82	14,329	14,877.89	2.05
Sanborn	17,962	15,682.00	4.30	10,049	18,153.99	4.98
Spink	36,260	30,282.99	3.14	11,261	23,698.00	2.45
Sully	9,694	10,433.01	1.52	2,953	7,069.01	1.04
Turner	9,556	8,454.01	2.14	4,521	7,577.00	1.92
Union	2,154	4,345.01	1.45	998	3,046.99	1.02
Walworth	6,178	5,482.01	1.15	2,789	6,062.01	1.27
Yankton	5,107	5,474.01	1.61	2,624	5,118.01	1.50

Table 8, continued.

Semipermanent

County	N[a] Number	Acres	Percent	D[b] Number	Acres	Percent	I[c] Number	Acres	Percent
Aurora	301	8,755.0	1.92	1,312	5,008.37	1.1	194	1,588.53	0.35
Beadle	221	8,847.4	1.09	2,155	21,870.37	2.7	184	3,007.88	0.37
Bon Homme	219	3,675.5	0.99	532	1,163.48	0.31	246	1,563.92	0.42
Brookings	537	10,231.22	1.99	732	3,531.82	0.69	140	1,533.34	0.3
Brown	535	17,866.99	1.61	1,787	12,225.86	1.1	76	819.26	0.07
Brule	154	3,991.6	0.74	1,462	4,797.31	0.89	554	6,143.71	1.13
Buffalo	36	372.29	0.12	299	2,047.81	0.66	589	3,522.19	1.13
Campbell	91	2,826.58	0.57	763	3,297.28	0.67	429	1,387.3	0.28
Charles Mix	405	7,029.03	0.96	1,065	3,577.29	0.49	799	4,855.65	0.66
Clark	1,122	34,325.03	5.54	1,172	5,970.75	0.96	187	1,989.83	0.32
Clay	43	782.01	0.29	149	875.16	0.33	92	534.86	0.2
Codington	708	13,693.64	2.98	703	2,793.77	0.61	96	2,192.71	0.48
Davison	101	1,326.94	0.47	591	2,774.94	0.99	80	596.29	0.21
Day	3,114	45,077.52	6.46	1,004	3,333.39	0.48	140	803.08	0.12
Deuel	979	11,698.26	2.87	478	1,930.04	0.47	159	1,930.02	0.47
Douglas	322	4,780.48	1.72	927	3,166.0	1.14	77	353.73	0.13
Edmunds	216	4,695.28	0.64	1,607	12,886.35	1.75	154	1,772.46	0.24
Faulk	129	3,948.53	0.61	1,406	13,205.84	2.05	274	4,545.03	0.71
Grant	1,282	7,353.91	1.67	468	1,354.88	0.31	189	1,354.45	0.31
Hamlin	433	12,994.13	3.78	515	3,155.21	0.92	43	269.83	0.08
Hand	158	6,241.1	0.68	1,774	18,019.96	1.96	742	12,207.79	1.33
Hanson	225	3,115.37	1.12	645	2,362.35	0.85	64	278.17	0.1
Hughes	22	377.02	0.07	350	4,585.32	0.9	634	3,218.72	0.63
Hutchison	244	2,491.09	0.48	1,361	5,053.72	0.97	322	2,110.14	0.41
Hyde	35	1,146.82	0.21	750	7,738.45	1.4	671	8,087.97	1.46
Jerauld	203	3,765.63	1.11	705	3,577.58	1.05	444	5,107.75	1.5
Kingsbury	865	32,593.54	5.9	913	4,300.06	0.78	70	727.6	0.13
Lake	629	13,359.02	3.63	801	3,197.37	0.87	117	836.68	0.23
Lincoln	199	1,134.93	0.31	434	1,026.95	0.28	95	421.02	0.11
McCook	556	6,076.43	1.65	949	2,766.76	0.75	133	1,037.14	0.28
Mcpherson	1,087	14,899.5	2.02	1,185	6,485.58	0.88	197	2,445.8	0.33
Marshall	3,667	21,416.59	3.78	646	1,471.04	0.26	120	1,194.54	0.21
Miner	633	9,304.84	2.54	1,138	3,388.94	0.93	63	762.97	0.21
Minnehaha	431	4,962.29	0.95	800	2,358.92	0.45	134	849.86	0.16
Moody	224	3,606.45	1.08	494	1,835.09	0.55	168	1,100.97	0.33
Potter	28	1,377.3	0.24	970	9,626.38	1.68	796	5,877.45	1.02
Roberts	2,786	21,770.85	3	730	1,816.35	0.25	123	1,876.36	0.26
Sanborn	298	10,461.97	2.87	636	8,326.51	2.28	37	261.67	0.07
Spink	242	7,287.33	0.75	1,683	18,545.79	1.92	95	842.62	0.09
Sully	25	1,714.84	0.25	785	9,131.77	1.33	681	4,738.74	0.69
Turner	214	2,065.25	0.52	690	2,451.72	0.62	138	1,602.09	0.41
Union	49	1,259.93	0.42	172	462.07	0.15	111	159.55	0.05
Walworth	63	1,507.34	0.32	561	7,695.66	1.62	561	1,737.45	0.37
Yankton	166	1,453.16	0.43	364	1,878.63	0.55	309	1,164.14	0.34

[a] Natural semipermanent basins
[b] Basins with semipermanent water regimes due to presence of an excavated feature like a dugout
[c] Semipermanent impoundments.

Table 8, continued.

	Permanent								
	N[a]			D[b]			I[c]		
County	Number	Acres	Percent	Number	Acres	Percent	Number	Acres	Percent
Aurora	2	336.6	0.07	31	170.31	0.04	15	501.8	0.11
Beadle	12	4,580.04	0.57	10	270.4	0.03	7	791.2	0.1
Bon Homme	13	621.8	0.17	7	42.77	0.01	3	12,204.55	3.28
Brookings	26	8,941.35	1.74	15	303.7	0.06	1	141.66	0.03
Brown	5	1,864.03	0.17	17	104.97	0.01	18	17,314.46	1.56
Brule			0	9	171.76	0.03	18	14,650.14	2.71
Buffalo	1	128.16	0.04	3	16.24	0.01	21	12,136.98	3.89
Campbell	19	2,980.35	0.6	5	6.92	0	22	23,622.1	4.79
Charles Mix	4	2,703.62	0.37	16	53.96	0.01	16	26,990.84	3.67
Clark	9	2,995.84	0.48	1	86.01	0.01	4	224.04	0.04
Clay	2	108.84	0.04	2	15.27	0.01	2	29.45	0.01
Codington	33	18,002.15	3.92	14	171.84	0.04			0
Davison			0	9	115.7	0.04	2	783.88	0.28
Day	40	25,130.03	3.6	40	66.31	0.01	4	344.52	0.05
Deuel	34	9,201.25	2.26	2	46.65	0.01	4	221.47	0.05
Douglas			0	3	33.45	0.01	1	132.23	0.05
Edmunds	19	3,491.7	0.47	5	21.86	0	15	409.83	0.06
Faulk	15	1,844.61	0.29	8	18.96	0	20	1,532.69	0.24
Grant	14	2,841.84	0.65	14	743.64	0.17	9	671.6	0.15
Hamlin	13	17,989.22	5.23	4	15.72	0			0
Hand	14	1,709.77	0.19	1	0.32	0	12	877.58	0.1
Hanson	2	178.36	0.06	9	103.55	0.04	3	154.28	0.06
Hughes			0	1	6.58	0	13	40,585.51	7.93
Hutchison	4	522.7	0.1	11	97.55	0.02	11	425.92	0.08
Hyde	7	2,411.34	0.44	2	12.51	0	9	2,542.61	0.46
Jerauld	14	685.61	0.2	6	32.63	0.01	4	149.18	0.04
Kingsbury	11	12,568.2	2.27	8	1,335.99	0.24	3	52.92	0.01
Lake	20	8,657.7	2.35	4	30.08	0.01			0
Lincoln			0	21	121.5	0.03	6	388.14	0.1
McCook	19	1,218.45	0.33	2	17.38	0	2	630.72	0.17
Mcpherson	36	4,944.25	0.67	2	11.44	0	14	1,445.73	0.2
Marshall	91	21,185.39	3.74	20	67.03	0.01	11	626.97	0.11
Miner	8	769.48	0.21	7	21.44	0.01	4	272.16	0.07
Minnehaha	21	3,514.18	0.67	59	265.99	0.05	14	168.94	0.03
Moody	6	567.67	0.17	9	38.73	0.01			0
Potter	5	249.43	0.04	8	15.92	0	16	19,118.15	3.33
Roberts	35	16,299.4	2.24	18	75.34	0.01	11	17,989.44	2.48
Sanborn	5	1,885.09	0.52	5	36.08	0.01	3	97.06	0.03
Spink	14	4,060.41	0.42	15	136.68	0.01	5	754.08	0.08
Sully	12	2,537.91	0.37			0	19	40,162.17	5.86
Turner	4	635.82	0.16	12	41.91	0.01			0
Union	6	940.51	0.31	6	53.38	0.02	4	99.74	0.03
Walworth	2	4,174.58	0.88	4	96.41	0.02	24	20,475.05	4.3
Yankton	6	559.6	0.16	25	106.14	0.03	14	4,436.18	1.3

[a] Natural permanent basins.
[b] Basins with permanent water regimes due to presence of an excavated feature like a dugout.
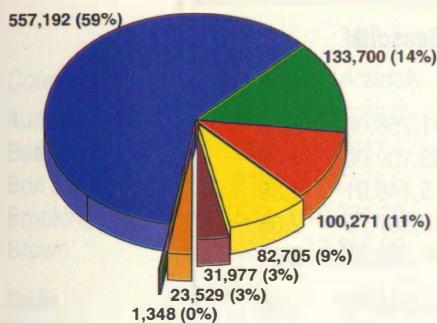[c] Permanent impoundments.

retreated from the state for the last time about 10,000 years ago (Appendix A). As Late Wisconsin glaciers advanced southward they encountered the Prairie Coteau, a wedge-shaped highland comprised of a bedrock core covered by pre-Late Wisconsin glacial till. The advancing glaciers split into two lobes, the James, that flowed down the James River Lowland, and the Des Moines, that flowed through northeastern South Dakota into southern Minnesota and Iowa.

Because eastern South Dakota has a recent glacial history, much of the landscape has unintegrated drainage. That is, surface runoff flows into insular depressions or basins that formed from the melting of ice blocks deposited with the glacial till. The thickness of the ice mass and the amount and manner of deposition of glacial debris determined the modern topography and characteristics of basins. High-relief, knob-and-kettle terrain developed when glaciers deposited large volumes of englacial or superglacial debris and commonly includes numerous deep basins. These basins, which often have semipermanent water regimes, tend to be small where the ice mass was subjected to considerable shear and compression and large where the ice mass was less fractured. Conversely, landscapes with less relief like glacial lake plains, or ground moraine overlain by stratified drift flowing out of melting glaciers, often contain shallow basins with temporary or seasonal water regimes.

Basins tend to be least abundant in areas that were not covered by Late Wisconsin glaciers. Basins in these areas, like the western slope of the Missouri Coteau or the Big Sioux River Valley, have disappeared as integrated drainage networks of streams developed, or they have been filled by aeolian sediment deposition. Basins are most dense along the paths of glacial advance and retreat in the James River Lowland and Minnesota-Red River Lowland (Central Lowland), as well as on the northern and eastern Prairie Coteau and the northeastern Missouri Coteau (Fig. 28).

The area of the landscape covered by basins is a function of basin abundance and basin size but reflects the same general patterns as basin density (Fig. 29). The most notable differences occur on the Prairie Coteau, the Missouri Coteau, and in James River Lowland. Basin acreage is relatively high on the Prairie Coteau farther south than where the highest basin density occurs. Large semipermanent basins and lakes are common on most of the northern half of the Prairie Coteau west of the Big Sioux River. The acreage of basins is lower over most of the James River Lowland and northeastern Missouri Coteau where basins are abundant but most are small.

- ■ <90 basins
- ■ 90-180 basins
- ■ 180-270 basins
- ■ 270-420 basins
- ■ >420 basins
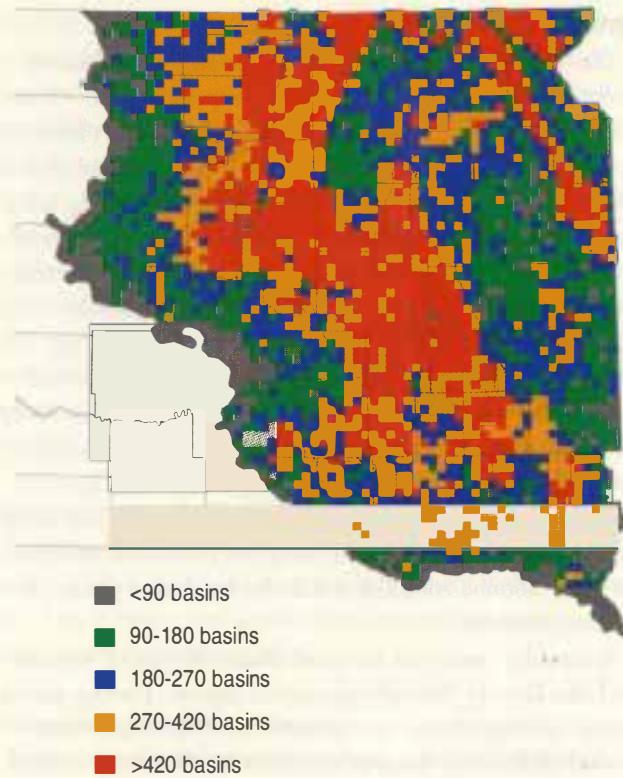
Figure 28. Distribution of basins expressed as number of basins/10 mi^2.

- ■ <225 acres
- ■ 225-450 acres
- ■ 450-725 acres
- ■ 725-1100 acres
- ■ >1100 acres
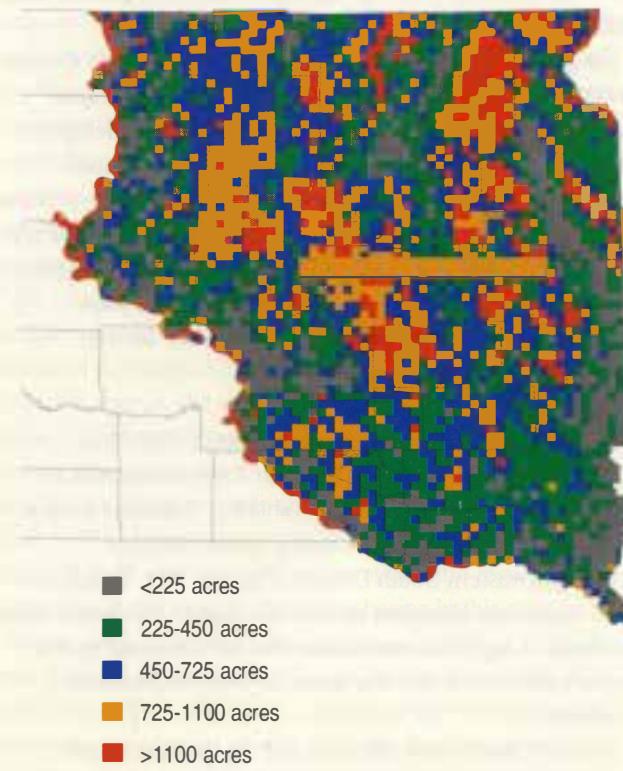
Figure 29. Distribution of basins expressed as acres of basins/10 mi^2.

22
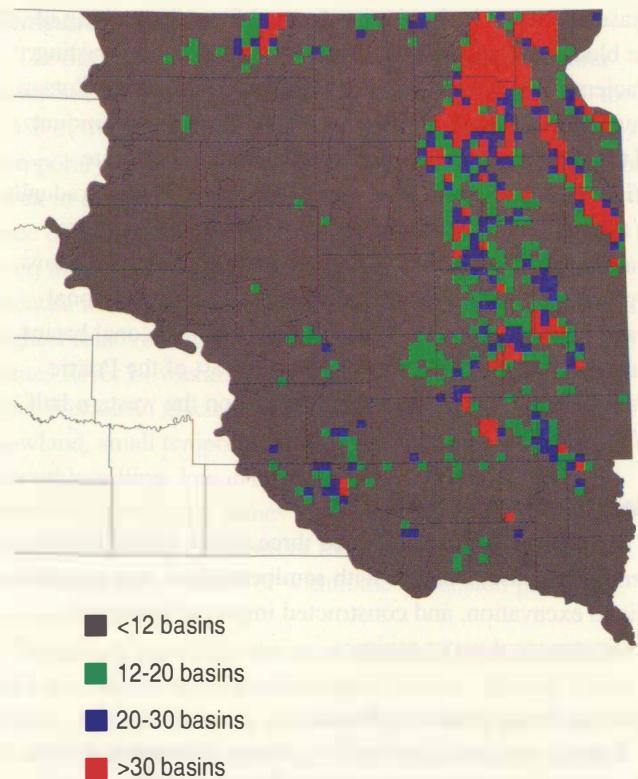
Figure 34. Distribution of natural semipermanent basins expressed as number of basins/10 mi^2.

■ <12 basins
■ 12-20 basins
■ 20-30 basins
■ >30 basins
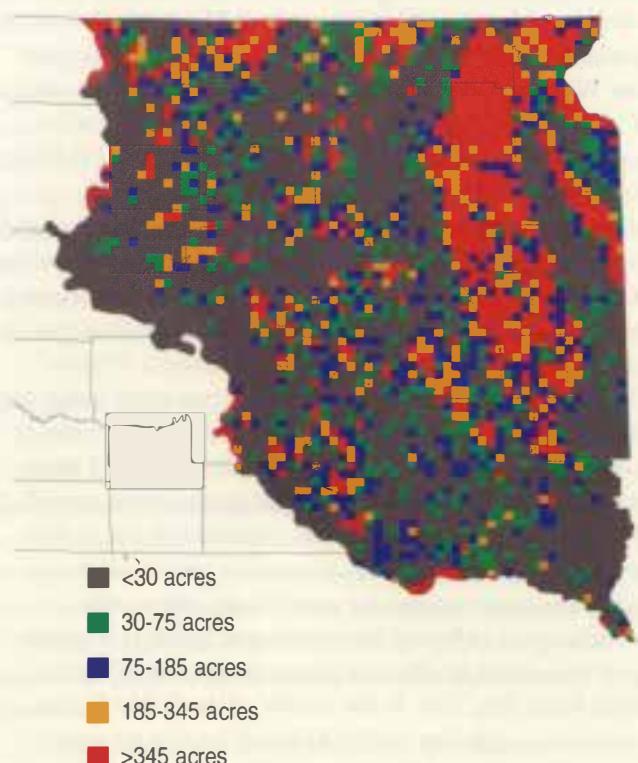
Figure 35. Distribution of natural semipermanent basins expressed as acres of basins/10 mi^2.

■ <30 acres
■ 30-75 acres
■ 75-185 acres
■ 185-345 acres
■ >345 acres

although the density of semipermanent basins is lower in this area, the acreage of semipermanent basins is great.

The Prairie Coteau slopes downward toward the west (Flint 1955); and because the glacial advance encountered a more gradual coteau escarpment in the west, the James lobe of Late Wisconsin glaciation advanced farther over the Prairie Coteau than the Des Moines lobe. Consequently, most natural semipermanent basins on the Prairie Coteau are found west of the Big Sioux River, which marks the limit of Late Wisconsin glacial advance in most locations (Flint 1955).

Semipermanent Basins due to Dugouts or Other Excavations

Dugouts are commonly excavated in natural basins and may impart a semipermanent water regime to basins where no natural semipermanent wetland exists (for example, a 0.1 ac (0.04 ha) dugout excavated in a 1 ac [0.4 ha] seasonal wetland delineated by the NWI results in a 1.1 ac [0.44 ha] basin with a semipermanent water regime). In other cases, dugouts may appear as isolated basins or they may be excavated in the channels of linear wetlands. The 38,663 basins with semipermanent water regimes due to dugouts or other excavations cover 237,069 ac (99,148 ha) and comprise from 0.2% to 2.7% of the total area of eastern South Dakota counties (Table 8). These basins are scattered throughout eastern South Dakota. Their density is low throughout the Lake Dakota Plain physiographic region and in extreme southeastern South Dakota (Fig. 36) because land use in these areas is primarily tillage agriculture while dugout excavation is commonly associated with areas of livestock production.

The acreage of semipermanent basins due to the presence of dugouts is inflated in regions where dugouts are commonly excavated in large, natural temporary and seasonal basins, imparting semipermanent water regimes to these basins. These regions include the central James River Lowland lying west of the James River and the northern Missouri Coteau (Fig. 37).

Impoundments with Semipermanent Water Regimes

The 11,527 impoundments with semipermanent water regimes cover 99,411 ac (40,231 ha). They comprise from 0.1% to 1.5% of the total area of eastern South Dakota counties (Table 8). Impoundments are generally associated with wetlands flowing in channels. Consequently, most impoundments are found in areas that were not covered by Late Wisconsin glaciers, where integrated drainage networks have developed sufficiently to focus runoff in channels and where livestock grazing is the primary land use. Most impoundments with semipermanent water regimes in eastern South Dakota occur on the west slope of the northern and central Missouri Coteau (Figs 38, 39).

Legend:
- <12 basins
- 12-20 basins
- 20-30 basins
- >30 basins
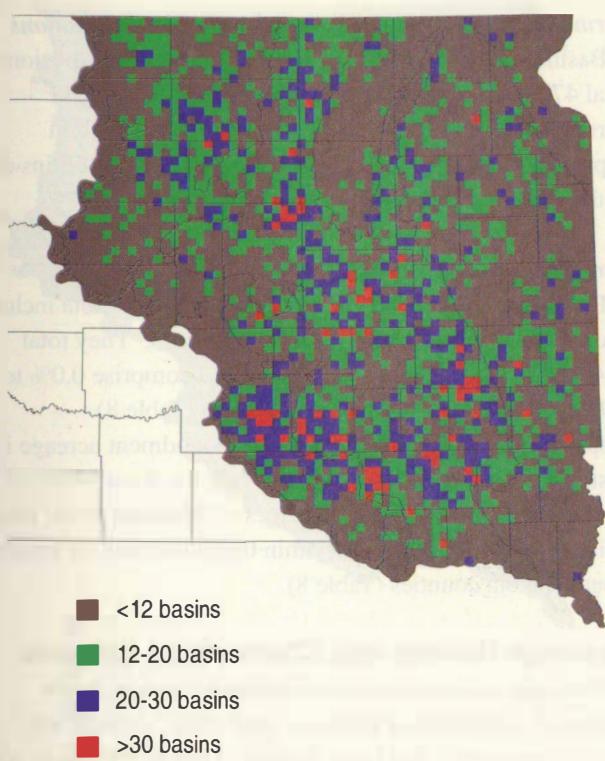
Figure 36. Distribution of semipermanent basins due to dugout excavation expressed as number of basins/10 mi^2.

Legend:
- <12 basins
- 12-20 basins
- 20-30 basins
- >30 basins
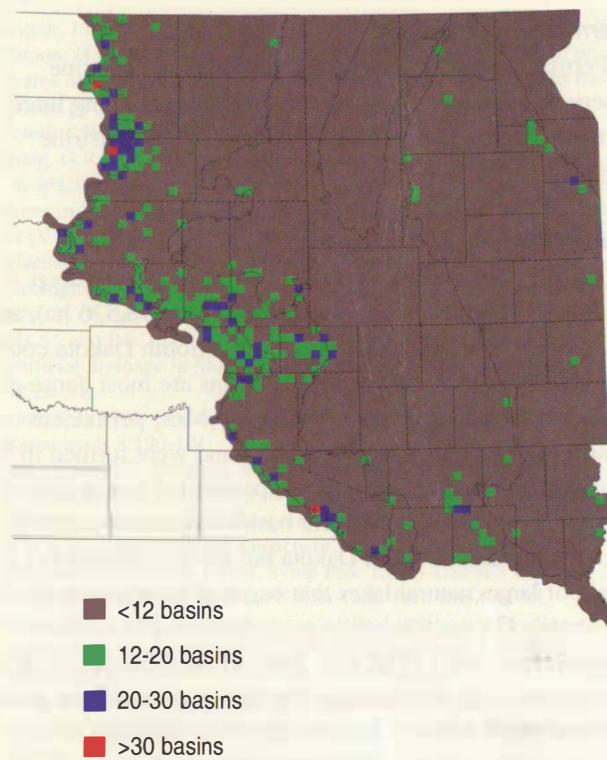
Figure 38. Distribution of semipermanent and permanent impoundments expressed as number of basins/10 mi^2.

Legend:
- <30 acres
- 30-75 acres
- 75-185 acres
- 185-345 acres
- >345 acres
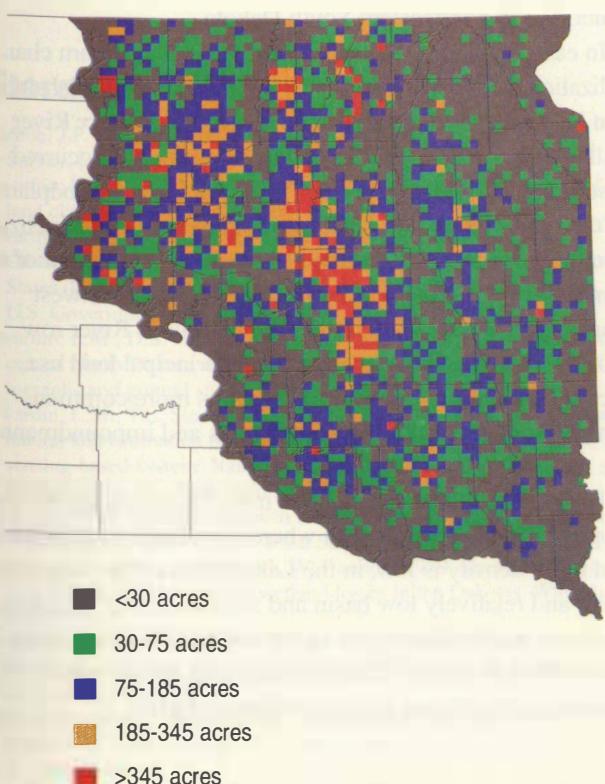
Figure 37. Distribution of semipermanent basins due to dugout excavation expressed as acres of basins/10 mi^2.

Legend:
- <30 acres
- 30-75 acres
- 75-185 acres
- 185-345 acres
- >345 acres
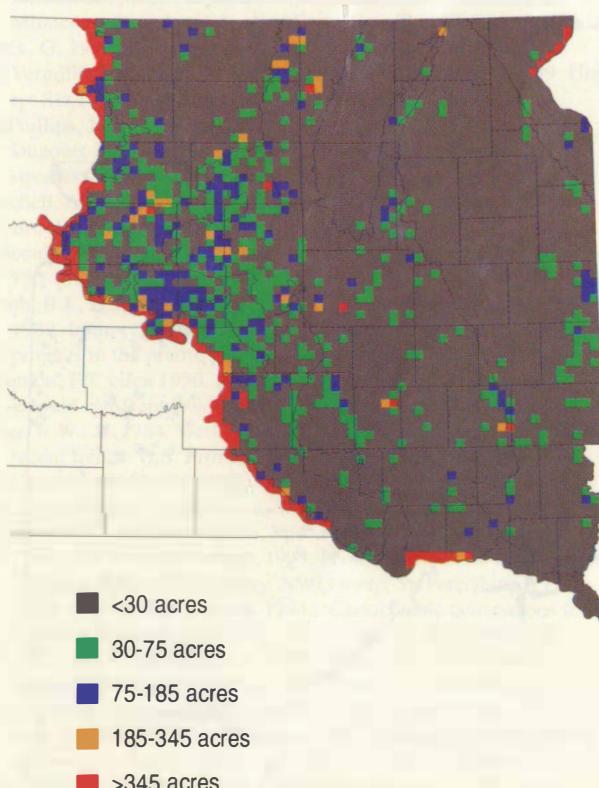
Figure 39. Distribution of semipermanent and permanent impoundments expressed as acres of basins/10 mi^2.

Permanent Basins

Permanent basins consist of natural lakes, lacustrine reservoirs, and natural and created basins containing intermittently exposed or occasionally permanent palustrine wetlands.

Natural Permanent Basins

These basins consist chiefly of natural lakes and deep potholes. They total 603, cover 194,037 ac (78,526 ha), and comprise from 0.0% to 5.2% of eastern South Dakota counties (Table 8). Natural permanent basins are most dense at the northern end of the Prairie Coteau. Most permanent basins in this area are small potholes and were formed in the manner described for natural semipermanent basins in this area. Large natural, permanent basins (lakes) are scattered throughout eastern South Dakota but are concentrated in a chain of large, natural lakes that occur along the long axis of the Prairie Coteau from near its northern end to southern Minnehaha County (Fig. 40). Most of these basins occur at the eastern limit of advance of the James lobe and are probably ice-block lakes. Large blocks of ice persisted in stagnant glacial debris near the margin of glacial advance because they were remote from the active ice margins and were not subjected to the shear and compression applied elsewhere (R. Hammond, South Dakota Geological Survey, pers. comm.).
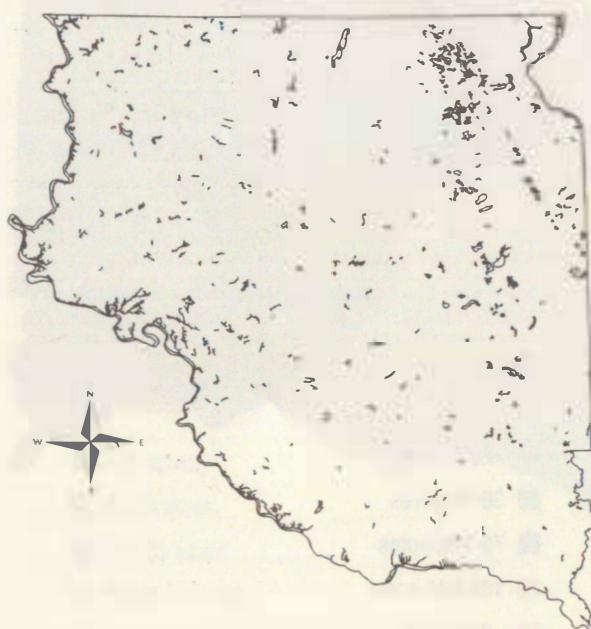
Figure 40. Distribution of permanent basins in eastern South Dakota.

Permanent Basins due to Dugouts or Other Excavations

Basins with permanent water regimes due to excavations total 470 and cover 4,008 ac (1,622 ha) (Table 8). Permanent basins due to excavations are distributed in approximately the same pattern as semipermanent basins due to the presence of dugouts or other excavations.

Permanent Impoundments

Permanent impoundments in eastern South Dakota include deep stockdams and small to large reservoirs. They total 384, cover 264,156 ac (106,902 ha), and comprise 0.0% to 7.93% of eastern South Dakota counties (Table 8). Approximately 95% of permanent impoundment acreage in eastern South Dakota is associated with the three Missouri River reservoirs. Reported acreages of Missouri River reservoirs are limited to the area within the boundaries of eastern South Dakota counties (Table 8).

Drainage Ditches and Channelized Streams

Drainage and stream channelization in eastern South Dakota is a function of land use, land value, cultural attitudes, topography, and basin density. Drainage intensity also is related to the proximity to drainage outlets. Erickson *et al.* (1979) found that drainage rates increased in anticipation of and following stream channelization in the Wild Rice Creek watershed in northeastern South Dakota.

In eastern South Dakota, most drainage and stream channelization have occurred in areas with high stream densities, that is, the James River Lowland and the Big Sioux River Valley (Fig. 41). In the latter, most drainage has occurred east of the Big Sioux River, or within the river's floodplain. In the James River Lowland, most drainage and channelization have occurred in the central part of the region east of the James River, modifying streams originating on the west slope of the Prairie Coteau. East of the James River row crop and small grain agriculture is the principal land use. West of the river, livestock production is more common, drainage ditches are fewer, and dugouts and impoundments are more abundant.

Drainage and channelization is most limited along the west slope of the Missouri Coteau where rangeland predominates and basin density is low, in the Lake Dakota Plain where low relief and relatively low basin and stream density discourage drainage, and in the interior of the northern Prairie Coteau where most drainage is internal and steep rolling terrain discourages construction of large drainage ditches.

- ■ 0-1 ditch
- ■ 2-5 ditches
- ■ 6-10 ditches
- ■ >10 ditches
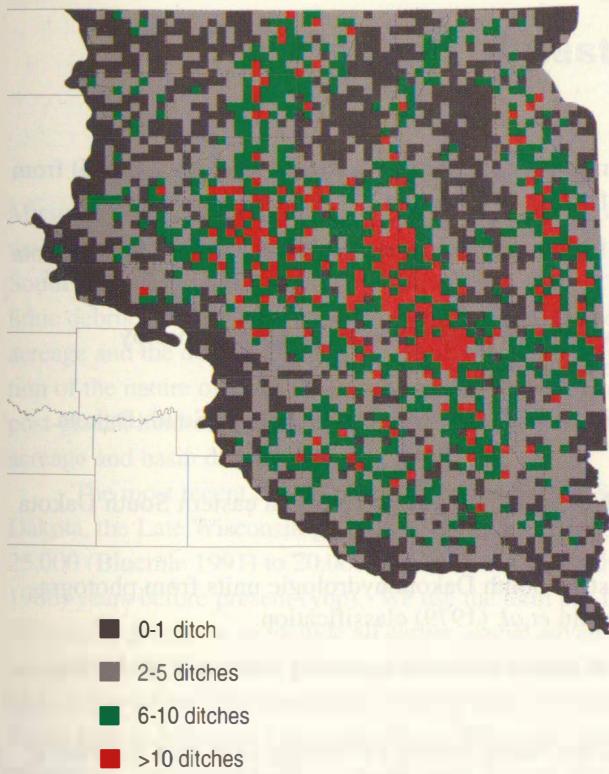
Figure 41. Distribution of channelized streams and drainage ditches with wetland characteristics linking two or more natural basins.

Literature Cited

Bluemle, J.P. 1991. Face of North Dakota. North Dakota Geological Survey. Ed Series 21. Bismarck.

Cowardin, L.M. 1982. Some conceptual and semantic problems in wetland classification and inventory. Wildl Soc Bull 10:57-60.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish Wildl. Serv. FWS/OBS 79/31. Washington, D.C: U.S. Government Printing Office.

Cowardin, L.M., D.S. Gilmer, and L.M. Mechlin. 1981. Characteristics of central North Dakota wetlands determined from sample aerial photographs and ground study. Wildl Soc Bull 9:280-288.

Cowardin, L.M., T.L. Shaffer, and P.M. Arnold. 1995. Evaluation of duck habitat and estimation of duck population sizes with a remote-sensing-based system. National Biol Serv Biol Sci Rep 2, Publications Unit. Washington, D.C: U.S. Fish Wildl Serv.

Dahl, T.E. 1990. Wetlands losses in the United States, 1780's to 1980's. Washington, D.C: U.S. Fish Wildl Serv.

Erickson, R.E., R.L. Linder, and K.W. Harmon. 1979. Stream channelization (P.L. 83-566) increases wetland losses in the Dakotas. Wildl Soc Bull 7:71-78.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Dept Army, Waterway Exp Stat Tech Rep Y-87-1. Vicksburg, Miss.

Evans, C.D. and R.E. Black. 1956. Duck production on the prairie marshes of South Dakota. U.S. Dept Interior, Bur Sport Fish Wildl Sci Rep Wildl 32.

Flint, R.F. 1955. Pleistocene geology of eastern South Dakota. U.S. Geol Surv Prof Paper 262. Washington, D.C: U.S. Fish Wildl Serv.

Flint, R.F. 1971. Glacial and quarternary geology. New York: J. Wiley and Sons.

Goldstein, J.H., B.O. Wilen, D. Pierce, C. Baxter, J.R. Hartmann, B. Simon, H.R. Tomlinson, and R. Ready. 1988. Impact of federal programs on wetlands. Vol 1: Lower Mississippi alluvial plain and the prairie pothole region. Report to Congress by the Secretary of the Interior, Washington, D.C.

Hallberg, G.R. and T.J. Kemmis. 1986. Stratigraphy and correlation of the glacial deposits of the Des Moines and James Lobes and adjacent areas in North Dakota, South Dakota, Minnesota, and Iowa. Pp 65-68 *in* (V. Sibrava, D.Q. Bowen, and G.M. Richmond, eds) Quarternary glaciations in the Northern Hemisphere: report of the International Geological Correlation Programme. Proj. 24, Int Union Geol Sci and UNESCO. New York: Pergamon Press.

Hewes, L. and P.E. Frandson. 1952. Occupying the wet prairie: role of artificial drainage in Story County, Iowa. Ann Amer Assoc Geogr 42:24-50.

Higgins, K.F. 1981. "Duck Stamp" dollars reserve native prairie tracts. Rangelands 3:190-191.

Higgins, K.F., D.E. Nomsen, and W.A. Wentz. 1987. Role of the Conservation Reserve Program in relation to wildlife enhancement, wetlands, and adjacent habitats in the Northern Great Plains. Pp 99-104 *in* (J.E. Mitchell, ed) Impacts of the Conservation Reserve Program in the Great Plains, Symp Proc USDS-USFWS Rocky Mountain For Range Exp Sta USDA-Gen. Tech Rep RM-58.

Hubbard, D.E. 1988. Glaciated prairie wetland functions and values: a synthesis of the literature. U.S. Fish Wildl Serv Biol Rep 88(43), Washington, D.C.

Johnson, R.R., K.F. Higgins, and D.E. Hubbard. 1995. Using soils to delineate South Dakota physiographic regions. Great Plains Res (in press).

Kantrud, H.A., G.L. Krapu, and G.A. Swanson. 1989. Prairie basin wetlands of the Dakotas: community profile. U.S. Fish Wildl Serv Biol Rep 85(7.28), Washington, D.C.

Leitch, J.A. and L.E. Danielson. 1979. Social, economic, and institutional incentives to drain or preserve prairie wetlands. University of Minnesota Dept Agric Applied Econ, Econ Rep ER79-6, St. Paul.

Mack, G. 1991. Wetland status survey of Minnesota, Big Sioux, Vermillion, and upper James River watersheds 1983/84-1989. Unpubl rpt SD-IR-91-002, U.S. Fish Wildl Serv, Pierre, S.D.

McPhillips, K.B., L.D. Flake, W.A. Wentz, and R.L. Linder. 1983. Dugouts in eastern South Dakota: their relation to basin wetlands and streams. J Soil Water Conserv 38:434-436.

Mitchell, A.S. 1941. Pioneer life, Dakota Territory, 1861-1889. Brookings: Brookings County Historical Soc.

Schoenfeld, C. 1949. Good-bye pot-holes. Field and Stream 54(4):35-37, 150-152.

Smith, B.J., H.W. Browers, T.E. Dahl, D.E. Nomsen, and K.F. Higgins. 1989. Indirect wetland drainage in association with federal highway projects in the prairie pothole region. Wetlands 9:27-39.

Staunton, F.T. circa 1950. Pothole drainage and its effect on wildlife. Unpubl rpt, Dept Wildlife Fish. Sci. Brookings: SDSU.

Tiner, R.W., Jr. 1984. Wetlands of the United States: current status and recent trends. U.S. Fish and Wildl Serv. Washington, D.C: U.S. Government Printing Office.

U.S. Department of Agriculture, Soil Conservation Service. 1993. STATSGO data users guide. Misc Publ 1492.

U.S. Fish and Wildlife Service. 1995. Photointerpretation conventions for National Wetlands Inventory. NWI Group, St. Petersburg, FL.

U.S. Fish and Wildlife Service. 1994a. Cartographic conventions for the National Wetlands Inventory. NWI Group, St. Petersburg, FL.

U.S. Fish and Wildlife Service. 1994b. Digitizing conventions for the National Wetlands Inventory. NWI Group, St. Petersburg, FL.

U.S. General Accounting Office. 1979. Better understanding of wetland benefits will help Water Bank and other federal programs achieve wetland presevation objectives. Rpt to Congress, Washington, D.C.

U.S. Geological Survey. 1978. Hydrologic unit map - 1978. State of South Dakota. Reston, Va.

Visher, S.S. 1917. Geography of South Dakota. South Dakota Geol Surv Bull 8:1-177.

Appendices

Formation of Eastern South Dakota Basins

Almost all of South Dakota east and north of the Missouri River is covered by glacial drift (Fig. 42). Most natural basins in the glaciated prairie pothole region (Fig. 1) of South Dakota formed from the melting of ice deposited with lithic debris during glacial stagnation or retreat. Wetland acreage and the density of basins on the landscape is a function of the nature of glaciation, time since glaciation, and post-glacial landscape changes that typically reduced wetland acreage and basin density.

The most recent episode of glaciation in eastern South Dakota, the Late Wisconsin glaciation, began approximately 25,000 (Bluemle 1991) to 20,000 (Hallberg and Kemmis 1986) years before present (ybp). We use the term pre-Late Wisconsin glaciation to include all earlier glacial advances.

Pre-Late Wisconsin glaciers advanced from the northeast, and pre-Late Wisconsin glacial topography of eastern South Dakota influenced the path of Late Wisconsin glacial advances. The Prairie Coteau and Missouri Coteau (Fig. 7) have cores of bedrock left by ancient streams eroding Cretaceous shales and limestones. As pre-Late Wisconsin glaciers advanced southwestward, they deposited extensive moraines that formed most of the Prairie Coteau. Then, as Late Wisconsin glaciers advanced southward, they encountered the Prairie Coteau and split into two lobes, the James Lobe, which flowed down the James River Lowland, and the Des Moines Lobe, which advanced through the Minnesota-Red River Lowland into southern Minnesota and Iowa.

Wisconsin glaciation was less extensive in eastern South Dakota than pre-Late Wisconsin glaciation (Fig. 42); however, loess deposition and erosion probably eliminated many wetlands and basins as modern expressions of pre-Late Wisconsin drift. Glaciers retreated from eastern South Dakota most recently about 10-12,000 ybp (Hallberg and Kemmis 1986, Bluemle 1991), although detached, stagnant ice probably persisted until about 9,000 ybp.

Because the last episode of glaciation in eastern South Dakota ended only 10-12,000 ybp, eastern South Dakota has a topographically young landscape compared to western South Dakota where erosional forces have been at work longer. Consequently, most of the landscape of eastern South Dakota has unintegrated drainage (that is, runoff from snowmelt or precipitation travels by overland flow into isolated basins rather than into tributary streams).

The thickness of the ice mass, amount of englacial and superglacial debris, and rate of glacier movement determined the amount of debris deposited and the modern topography and basin characteristics. Basin morphometry, watershed area, and basin-groundwater interactions determine each basin's water regime. High relief, "knob-and-kettle" terrain developed where thick ice flowed over escarpments and deposited large volumes of englacial and superglacial debris when the ice stagnated. This type of topography tends to include basins with steep sides and semipermanent water regimes. Many of these basins formed upon the melting of ice blocks deposited near the surface of till during the wasting process (Flint 1971).

Landscapes with less relief, like glacial lake deposits or areas of moraine overlain by stratified drift flowing out of melting glaciers, tend to include shallow basins with gradually sloping perimeters. Most basins in these landscapes have temporary or seasonal water regimes. Ice blocks that melted early in the wasting process or that were deeply buried in till also formed shallow depressions. Small basins are abundant on recessional moraines overlain by stratified drift in the James River Lowland and Minnesota-Red River Lowland. Small basins are also abundant near the position of active ice margins, usually near coteau slopes, where stagnant ice underwent greater compression and shear and was broken up into small, numerous blocks. Large basins tend to occur on the interior Prairie Coteau and Missouri Coteau in areas away from active ice margins and where the terrain is less radical and watersheds are larger.

The distribution of highest basin density in eastern South Dakota is correlated with the limits of the last Late Wisconsin glaciers in the James River Lowland and Minnesota-Red River Lowland (Fig. 28). Local relief in these physiographic regions rarely exceeds 9 m. Over most of the region, streams and integrated drainage networks are poorly developed. Visher (1917) estimated that over 80% of the James River Lowland has surface drainage into closed basins. Topography is characterized by smoothly rolling, broad, subparallel ridges formed as recessional moraines with abundant small, shallow basins. Inter-ridge areas between recessional moraines, which mark zones over which glaciers retreated more quickly, contain large basins or riverine wetlands that drain toward the James River.

Basin density is also high at the northern end and along the eastern margin of the Prairie Coteau and along the northeastern margin of the Missouri Coteau. High relief knob-and-kettle topography is characteristic of these regions.

Advancing Late Wisconsin glaciers transported englacial and superglacial debris to the top of the coteaus and stagnated. As imbedded blocks of ice melted, basins formed in the till surface, and dead-ice moraine topography developed. The density of basins along the margins of the Prairie Coteau and Missouri Coteau appears to be positively correlated with coteau slope inclination; that is, the highest density of basins occurs adjacent to the steepest coteau slopes, which determined the position of the active ice margin and the compressive forces to which the ice mass was subjected. Compressive forces fractured the ice mass into small blocks which in turn melted to form numerous small basins.

Basins are generally least abundant where glaciation has been less recent and where post-glacial landscape changes have reduced basin density. Most post-glacial landscape changes have been erosional, resulting in the evolution of integrated surface drainage networks. Where sufficient time has elapsed since glaciation, basins may be relatively uncommon. These regions include areas east of the Big Sioux River in the interior of the Prairie Coteau, an ice-free zone during Late Wisconsin glaciation; southeastern South Dakota; and the western Missouri Coteau which slopes downward toward the Missouri River. These areas were covered by glacial drift from pre-Late Wisconsin glaciation and may have had high densities of basins at one time.

Depositional processes also may have reduced basin density. Aeolian sediment deposits may have covered basins east of the Big Sioux River and in extreme southeastern South Dakota. Furthermore, basins occur at low density over most of the Lake Dakota Plain because lacustrine sediments were deposited over the post-glacial landscape under glacial Lake Dakota.

■ Late Wisconsin Glaciation

■ Pre-Late Wisconsin Glaciation
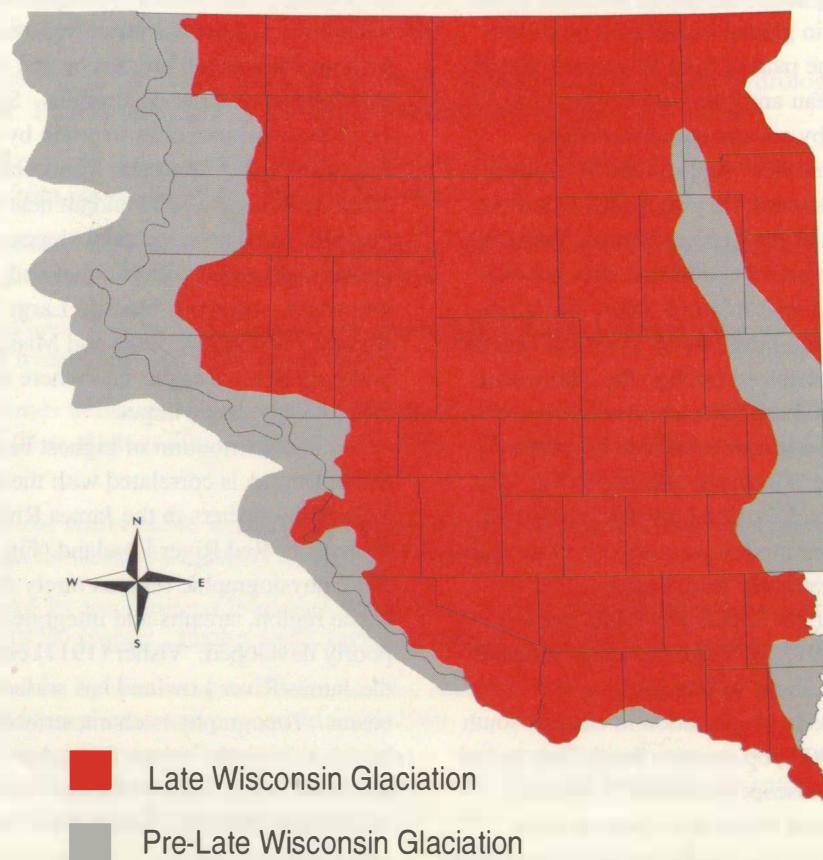
Figure 42. Limits of the drift sheets of Late-Wisconsin glaciers in eastern South Dakota.

Appendix B1. Summary of wetlands delineated in eastern South Dakota counties by the National Wetland Inventory (NWI) from photography acquired 1979-1986. Attribute is the NWI code for Cowardin *et al.* (1979) classification.

Polygon Wetlands

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
Aurora		**Beadle**		PFO/SSC	6.98	PEM/FOC	15.43
L1UBGh	43.30	L2ABF	295.17	PFO/SSCx	1.70	PEM/FOCd	6.53
L2ABG	109.53	L2ABFx	0.44	PFOA	146.25	PEM/FOCh	0.25
L2ABGh	17.09	L2ABG	1081.91	PFOAd	15.15	PEM/FOCx	4.92
PAB/EMF	177.90	L2ABGh	140.23	PFOAh	0.11	PEM/SSC	27.24
PAB/EMFd	5.70	L2ABGx	105.54	PFOC	67.46	PEMA	1201.14
PAB/EMFh	23.61	L2UBF	13.96	PFOCh	1.63	PEMAd	580.62
PABF	91.80	PAB/EMF	548.39	PFOCx	1.73	PEMAh	0.24
PABFh	191.42	PAB/EMFd	73.34	PSS/EMA	0.24	PEMC	1425.77
PABFx	277.50	PAB/EMFh	21.10	PSS/EMC	1.99	PEMCd	274.07
PABGh	48.27	PABF	70.32	PSS/EMCd	0.38	PEMCh	0.41
PABGx	49.56	PABFd	2.03	PSS/FOA	2.61	PEMCx	0.11
PEM/ABF	1732.20	PABFh	236.01	PSSA	22.33	PEMF	501.12
PEM/ABFd	163.96	PABFhx	1.64	PSSAd	1.81	PEMFd	21.55
PEM/ABFh	8.46	PABFx	500.08	PSSC	6.32	PEMFh	106.30
PEM/ABFx	2.64	PABGh	9.13	PSSCd	0.63	PFO/EMA	2.82
PEM/FOA	10.91	PABGx	2.31	PSSCx	0.36	PFO/EMC	33.26
PEM/FOAh	0.41	PEM/ABF	1238.81	PUBFx	106.91	PFO/EMCd	0.30
PEM/FOC	27.01	PEM/ABFd	92.47	PUBGx	1.08	PFO/EMCh	0.62
PEM/FOCd	0.24	PEM/ABFh	18.21	PUSCx	3.82	PFO/EMCx	2.78
PEM/FOCx	1.16	PEM/ABFx	2.38	R2UBF	42.16	PFO/EMF	0.64
PEMA	4493.16	PEM/FOA	70.19	R2UBG	646.35	PFO/SSA	6.27
PEMAd	1018.71	PEM/FOAd	13.79	R2UBGx	3.62	PFOA	65.70
PEMAh	2.39	PEM/FOC	112.36	R4SBF	309.07	PFOAd	4.33
PEMC	4092.08	PEM/FOCd	41.07			PFOAh	0.25
PEMCd	486.45	PEM/FOCx	4.03			PFOAx	0.14
PEMCh	4.67	PEM/SSA	0.89	**Bon Homme**		PFOC	14.77
PEMCx	2.94	PEM/SSAd	0.25	L1UBGh	15.70	PFOCd	0.48
PEMF	756.66	PEM/SSC	28.69	L1UBHh	3330.26	PFOCh	0.49
PEMFh	3.68	PEM/SSCd	3.96	L2ABF	235.85	PFOCx	2.83
PEMFx	1.99	PEMA	14192.38	L2ABFx	0.34	PSS/EMC	1.19
PFO/EMA	0.81	PEMAd	2316.61	L2ABG	81.29	PSS/FOA	58.74
PFO/EMC	18.75	PEMAh	2.10	L2USA	0.17	PSS/USAh	0.70
PFO/EMCd	1.72	PEMAx	0.22	L2USC	0.80	PSS/USC	192.10
PFO/EMCh	8.14	PEMB	11.72	OUT	46.44	PSSA	35.90
PFOA	14.79	PEMC	15757.96	PAB/EMF	28.65	PSSAh	5.50
PFOAd	3.88	PEMCd	1753.30	PAB/EMFh	3.59	PSSC	51.34
PFOAh	0.44	PEMCh	101.82	PABF	163.78	PUBFx	20.29
PFOC	16.45	PEMCx	15.11	PABFd	2.96	PUS/SSC	3.05
PFOCd	1.43	PEMF	168.24	PABFh	96.93	R2UBH	1029.28
PFOCh	6.97	PEMFd	2.68	PABFx	80.92	R2USA	54.94
PFOCx	0.50	PEMFh	9.41	PABG	7.49	R2USC	60.34
PUBFh	0.40	PEMFx	1.93	PABGh	3.63	R4SBA	2.30
PUBFx	24.86	PFO/EMA	21.91	PABGx	17.31	R4SBF	17.05
PUBGx	2.15	PFO/EMAd	5.79	PEM/ABF	1270.01		
R4SBF	102.07	PFO/EMC	80.71	PEM/ABFd	74.87	**Brookings**	
		PFO/EMCd	5.09	PEM/ABFh	241.80	L1UBG	933.79
		PFO/EMCx	1.51	PEM/ABFx	0.88	L2ABG	1934.94
		PFO/SSA	3.01	PEM/FOA	12.72	L2ABGh	13.73
				PEM/FOAd	1.65		

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
L2UBG	117.03	PUBGx	66.11	PFOC	161.28	PFOA	1.52
PAB/EMF	273.36	R2UBG	66.56	PFOCh	7.46	PFOAh	1.77
PAB/EMFd	37.94	R4SBF	307.79	PFOCd	12.06	PFOC	56
PAB/EMFh	3.07	R4SBFx	1.35	PSS/EMA	0.27	PFOCh	32
PAB/EMFx	4.08			PSS/EMAd	0.71	PFOCx	25
PABF	64.50	**Brown**		PSS/EMC	0.59	PSSA	7
PABFd	7.82	L1UBGh	907.10	PSS/FOA	7.20	PUBFh	6
PABFh	53.35	L2ABF	36.02	PSS/FOAd	1.46	PUBFx	8
PABFx	171.38	L2ABFd	58.69	PSS/FOC	6.45	PUBGx	3
PABGx	26.04	L2ABG	88.82	PSSA	4.64	PUSAh	6
PEM/ABF	2466.61	L2ABGh	1442.72	PSSAd	5.84	R4SBF	19 5
PEM/ABFd	376.88	PAB/EMF	256.33	PSSC	0.91		
PEM/ABFh	12.04	PAB/EMFd	100.66	PUBF	0.15	**Buffalo**	
PEM/ABFx	11.59	PAB/EMFh	10.95	PUBFx	44.35	L1UBGh	127 0
PEM/FOA	20.19	PABF	47.86	PUSCh	0.11	L1UBHh	4116 2
PEM/FOAd	1.17	PABFd	9.36	R2UBG	603.92	L2ABF	50 6
PEM/FOAx	4.85	PABFh	53.09	R4SBF	884.44	L2ABFh	12 4
PEM/FOC	163.13	PABFx	361.74	R4SBFx	0.29	L2ABFx	0 0
PEM/FOCd	1.43	PABGh	1.17			L2ABGh	42 7
PEM/FOCx	22.72	PABGx	46.97	**Brule**		L2UBGH	18 5
PEM/SSA	1.24	PEM/ABF	2217.85	L1UBHh	5684.42	L2USCh	2 7
PEM/SSC	5.90	PEM/ABFd	344.02	L2ABGh	66.20	PAB/EMF	19 0
PEM/SSCd	0.64	PEM/ABFh	4398.34	L2UBFh	0.00	PAB/EMFh	11 3
PEMA	3194.66	PEM/ABFx	0.66	L2USCh	19.33	PABF	7 7
PEMAd	1063.29	PEM/FOA	337.06	PAB/EMF	2.19	PABFh	585 9
PEMB	5.40	PEM/FOAh	7.82	PAB/EMFh	3.89	PABFx	60 2
PEMC	2092.54	PEM/FOAd	109.03	PABF	3.55	PABGh	60 9
PEMCd	499.94	PEM/FOC	144.85	PABFh	328.94	PABGx	6 7
PEMCh	4.34	PEM/FOCh	21.04	PABFx	259.86	PEM/ABF	185 0
PEMCx	31.96	PEM/FOCd	23.50	PABGh	49.01	PEM/ABFH	2 7
PEMF	24.25	PEM/SSA	7.60	PABGx	8.46	PEM/ABFh	4 1
PEMFd	4.17	PEM/SSAd	1.35	PABHx	0.23	PEM/FOA	4 1
PFO/EMA	16.88	PEM/UBFx	0.78	PEM/ABF	1044.90	PEM/FOC	0 3
PFO/EMC	84.56	PEMA	13242.14	PEM/ABFd	13.66	PEM/FOCh	1 0
PFO/EMCd	3.50	PEMAh	60.37	PEM/FOC	25.12	PEM/SSA	1 3
PFO/SSC	1.28	PEMAd	1502.72	PEM/FOCd	4.65	PEM/SSCh	0 2
PFOA	74.23	PEMAx	0.89	PEM/FOCh	3.30	PEMA	1042
PFOAd	6.78	PEMC	13169.77	PEM/FOCx	0.26	PEMAd	207.
PFOAh	1.00	PEMCd	1326.82	PEM/FOF	8.11	PEMAh	11.
PFOAx	0.27	PEMCh	138.84	PEM/SSC	0.39	PEMC	1299.
PFOC	115.24	PEMCx	17.49	PEMA	2965.14	PEMCd	140.
PFOCd	16.02	PEMF	221.36	PEMAd	755.90	PEMCh	21.0
PFOCh	0.20	PEMFx	0.12	PEMAh	8.17	PEMCx	0.9
PFOCx	3.29	PEMFd	602.69	PEMC	3664.99	PEMF	17.1
PSS/EMA	11.43	PFO/EMA	77.60	PEMCd	298.45	PEMFh	109.6
PSS/EMC	10.65	PFO/EMAd	8.04	PEMCh	10.25	PFO/EMA	0.5
PSS/FOA	11.95	PFO/EMC	200.21	PEMCx	0.47	PFO/EMC	2.7
PSS/FOAd	0.76	PFO/EMCh	5.27	PEMF	1677.87	PFOA	14.3
PSS/FOC	0.27	PFO/SSA	0.14	PEMFh	2.60	PFOAd	1.2
PSSA	4.27	PFO/SSAd	1.02	PEMFx	0.16	PFOAh	5.75
PSSAd	1.04	PFOA	215.07	PFO/EMA	2.33	PFOC	4.34
PSSC	6.73	PFOAd	8.93	PFO/EMC	0.13	PFOCd	0.5
PUBFx	45.89	PFOAh	2.34	PFO/EMCh	1.37	PFOCx	2.86

Attribute	Hectares
PSS/EMA	8.66
PSS/EMC	0.13
PSSA	7.66
PSSAd	1.00
PSSAh	12.45
PSSC	0.27
PSSCh	62.97
PUBFh	1.68
PUBFx	0.96
PUSCh	4.18
R4SBF	68.66

Campbell

Attribute	Hectares
L1UBGh	1484.96
L1UBHh	6864.50
L2ABF	74.05
L2ABFh	17.01
L2ABG	627.71
L2UBF	1.09
L2UBFh	3.32
L2USA	5.65
L2USCh	30.75
PAB/EMF	57.79
PAB/EMFh	3.85
PABF	111.79
PABFh	215.75
PABFx	119.14
PABG	23.49
PABGh	21.12
PABGx	1.91
PEM/ABF	586.84
PEM/ABFh	5.23
PEM/ABFx	0.16
PEM/FOA	1.45
PEM/FOAd	0.56
PEM/FOC	9.56
PEM/FOCd	0.84
PEM/SSA	2.25
PEM/SSC	18.26
PEM/SSCh	1.34
PEMA	3166.64
PEMAd	67.68
PEMAh	20.06
PEMC	4353.97
PEMCd	45.45
PEMCh	207.35
PEMCx	0.14
PEMF	331.74
PEMFh	92.05
PFO/EMC	9.99
PFO/SSA	1.56
PFOA	22.75
PFOAd	0.39

Attribute	Hectares
PFOC	26.17
PFOCh	0.14
PSS/EMA	0.25
PSS/EMC	2.17
PSS/FOA	0.32
PSS/FOC	1.34
PSSA	7.78
PSSAh	0.22
PSSC	6.01
PSSCd	4.15
PSSCh	3.95
PUBFx	0.09
PUBGx	0.46
PUSCh	0.53
R4SBA	0.28
R4SBF	63.92

Charles Mix

Attribute	Hectares
L1UBGh	310.56
L1UBHh	9860.16
L2ABF	206.48
L2ABG	895.38
L2ABGh	83.40
L2UBFh	189.97
L2USCh	105.29
PAB/EMF	200.09
PAB/EMFh	10.71
PAB/EMFx	0.15
PABF	168.12
PABFd	1.29
PABFh	307.14
PABFx	228.82
PABG	1.48
PABGh	28.58
PABGx	20.42
PEM/ABF	1700.96
PEM/ABFd	82.00
PEM/ABFh	46.01
PEM/ABFx	0.86
PEM/FOA	39.75
PEM/FOAd	5.31
PEM/FOAh	1.44
PEM/FOC	93.56
PEM/FOCd	0.36
PEM/FOCh	3.12
PEM/FOCx	2.31
PEM/SSA	103.24
PEM/SSAd	2.39
PEM/SSC	47.30
PEM/SSCd	0.24
PEM/SSCh	1.94
PEMA	1768.74
PEMAd	996.83

Attribute	Hectares
PEMAh	40.95
PEMAx	0.03
PEMC	4312.94
PEMCd	589.85
PEMCh	21.65
PEMCx	1.70
PEMF	442.33
PEMFd	14.44
PEMFh	27.64
PEMFx	2.25
PFO/EMA	116.72
PFO/EMAd	0.46
PFO/EMC	23.65
PFO/EMCd	1.06
PFO/EMCh	5.52
PFO/EMCx	0.62
PFOA	103.88
PFOAd	4.14
PFOAh	5.01
PFOAx	0.38
PFOC	48.49
PFOCd	0.92
PFOCh	6.52
PFOCx	1.39
PSS/EMA	20.11
PSS/FOC	0.11
PSSA	3.78
PSSAd	0.42
PSSC	7.26
PUBFx	4.13
PUBGx	1.41
PUBHh	1.07
PUSC	1.10
PUSCh	3.20
R2UBF	8.16
R2UBG	43.82
R2UBH	970.58
R2USA	40.44
R2USC	81.56
R4SBA	0.36
R4SBF	122.38
R4SBFx	1.66

Clark

Attribute	Hectares
L2ABF	12.02
L2ABG	541.71
L2ABGh	32.73
PAB/EMF	338.66
PAB/EMFh	30.18
PABF	16.12
PABFh	142.01
PABFx	254.77
PABGx	9.44

Attribute	Hectares
PABGh	8.75
PEM/ABF	10322.56
PEM/ABFd	1889.74
PEM/ABFh	21.86
PEM/ABFx	1.11
PEM/FOA	34.43
PEM/FOAd	10.25
PEM/FOC	189.91
PEM/FOCd	16.74
PEM/FOF	3.13
PEM/SSC	0.46
PEM/SSA	3.70
PEM/SSB	2.36
PEM/SSC	34.06
PEM/SSCh	0.21
PEMA	2523.84
PEMAx	0.09
PEMAd	1076.88
PEMAh	0.41
PEMC	6027.98
PEMCd	803.13
PEMCh	2.36
PEMCx	3.59
PEMF	369.63
PEMFh	9.72
PEMFd	7.23
PFO/EMA	25.05
PFO/EMC	78.14
PFO/EMCd	3.00
PFO/EMCh	0.63
PFO/SSA	0.29
PFO/SSC	4.30
PFOA	41.89
PFOAd	7.11
PFOAh	0.82
PFOC	60.71
PFOCH	2.01
PFOCd	5.47
PSS/EMA	0.98
PSS/EMC	2.81
PSS/FOA	7.86
PSS/FOC	3.13
PSSA	15.15
PSSAd	0.55
PSSC	20.85
PSSCd	1.68
PUBFx	13.08
R4SBF	2.07

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
Clay		**Codington**		**Davison**		**Day**	
L2ABFx	0.14	L1UBG	1773.91	L1UBGh	291.31	L1UBG	3715.48
L2ABG	17.41	L2ABG	4189.33	L2ABGx	30.90	L1UBGh	14.03
PAB/EMF	9.13	L2ABGx	23.35	PAB/EMF	13.47	L1UBH	1204.41
PABF	21.91	L2UBGx	21.93	PAB/EMFd	1.36	L2ABF	788.55
PABFh	37.33	L2USA	32.98	PABF	53.74	L2ABG	2038.20
PABFhx	0.72	PAB/EMF	97.58	PABFd	0.12	L2ABGh	98.20
PABFx	21.43	PABF	31.59	PABFh	44.60	L2UBG	15.29
PABGh	5.92	PABFh	35.12	PABFx	90.36	L2USA	195.66
PABGx	1.59	PABFx	128.60	PABGh	4.75	L2USC	505.55
PEM/ABF	27.92	PABG	0.71	PABGx	12.99	PAB/EMF	1507.39
PEM/ABFd	85.53	PABGx	2.27	PEM/ABF	158.08	PAB/EMFd	34.17
PEM/ABFx	3.21	PEM/ABF	5029.00	PEM/ABFd	18.90	PAB/EMFh	30.05
PEM/FOA	17.65	PEM/ABFx	8.46	PEM/ABFx	4.66	PAB/EMFx	0.10
PEM/FOC	4.28	PEM/ABFd	63.10	PEM/FOA	12.35	PABF	270.38
PEM/FOCx	23.18	PEM/ABFh	2.66	PEM/FOAd	9.22	PABFh	54.92
PEM/SSA	288.70	PEM/FOA	13.43	PEM/FOC	69.26	PABFx	149.69
PEM/SSC	2.73	PEM/FOC	30.06	PEM/FOCd	2.94	PABGh	4.17
PEMA	1260.99	PEM/FOCx	1.28	PEM/FOCh	1.91	PABGx	26.11
PEMAd	1073.06	PEM/SSA	4.63	PEM/FOCx	10.40	PEM/ABF	12973.82
PEMAh	0.78	PEM/SSC	15.58	PEM/SSA	3.03	PEM/ABFd	511.11
PEMAx	0.10	PEMA	1380.43	PEMA	2722.71	PEM/ABFh	5.48
PEMC	394.01	PEMAh	2.33	PEMAd	1034.91	PEM/ABFx	0.20
PEMCd	278.43	PEMAd	621.01	PEMAh	1.57	PEM/FOA	5.24
PEMCh	1.34	PEMC	2753.87	PEMAx	0.64	PEM/FOAd	2.49
PEMCx	4.56	PEMCh	0.75	PEMC	2411.78	PEM/FOC	35.40
PEMF	23.28	PEMCd	329.53	PEMCd	568.88	PEM/SSA	8.46
PEMFd	5.27	PEMCx	1.16	PEMCh	0.42	PEM/SSB	7.87
PFO/EMA	11.60	PEMF	658.57	PEMCx	0.31	PEM/SSC	18.46
PFO/EMAd	1.53	PEMFd	247.91	PEMF	43.80	PEMA	3481.87
PFO/EMC	12.05	PEMFh	0.34	PEMFh	10.79	PEMAd	1761.61
PFO/EMCd	0.33	PEMFx	1.46	PEMFx	0.49	PEMAh	11.64
PFO/EMCx	3.70	PFO/EMA	3.03	PFO/EMA	0.48	PEMAx	2.47
PFOA	25.04	PFO/EMC	7.25	PFO/EMAd	0.66	PEMB	5.33
PFOAd	1.23	PFO/EMCx	16.37	PFO/EMC	27.07	PEMC	4613.03
PFOAx	0.22	PFO/SSC	0.18	PFO/EMCd	1.03	PEMCd	935.70
PFOC	5.08	PFO/SSC	2.17	PFO/EMCh	1.25	PEMCh	1.50
PFOCd	1.49	PFOA	12.26	PFOA	63.38	PEMCx	6.29
PFOCh	0.39	PFOC	16.48	PFOAd	8.34	PEMF	2710.99
PFOCx	0.54	PFOCd	0.77	PFOAh	4.01	PEMFd	246.26
PSS/USA	44.03	PFOCx	0.04	PFOC	30.22	PEMFh	21.54
PSSA	102.88	PSS/EMC	3.68	PFOCd	2.47	PEMFx	0.04
PUBFx	2.89	PSS/FOA	2.08	PFOCh	0.38	PFO/EMA	2.56
PUBGx	4.36	PSS/FOC	1.34	PSSA	1.80	PFO/EMC	7.97
PUS/SSA	23.52	PSSA	6.16	PSSAh	2.80	PFO/EMCd	0.47
PUS/SSC	17.67	PSSAd	0.51	PSSC	0.15	PFO/EMCx	2.09
PUSA	0.91	PSSC	21.11	PUBFx	72.47	PFO/SSA	0.63
R2UBG	88.46	PUBFx	20.33	PUSCh	0.14	PFO/SSC	1.25
R2UBGx	24.87	PUBGx	25.66	R2UBG	131.51	PFOA	36.04
R2UBH	1000.53	R4SBF	173.49	R4SBA	0.47	PFOAd	2.92
R2USA	30.30	R4SBFx	4.23	R4SBF	299.50	PFOAx	0.42
R2USC	222.38					PFOC	20.58
R4SBC	0.94					PFOCd	0.62
R4SBF	4.01					PFOCx	1.19

Attribute	Hectares
PSS/EMC	11.72
PSS/EMCd	0.70
PSS/FOC	2.47
PSSA	7.84
PSSAd	1.34
PSSC	15.77
PUBFh	7.82
PUBFx	46.69
R4SBF	12.39

Deuel

Attribute	Hectares
L1UBG	194.43
L1UBH	302.48
L2ABG	2177.72
L2UBG	8.27
PAB/EMF	174.60
PAB/EMFd	123.93
PAB/EMFh	7.90
PABF	158.73
PABFd	0.57
PABFh	70.48
PABFx	122.08
PABGh	16.41
PABGx	4.01
PABHx	0.10
PEM/ABF	2832.55
PEM/ABFd	923.23
PEM/ABFh	6.14
PEM/ABFx	0.14
PEM/FOA	2.33
PEM/FOAd	5.45
PEM/FOC	16.76
PEM/FOCd	6.27
PEM/FOCx	3.20
PEM/SSA	1.38
PEM/SSC	2.51
PEM/SSCd	4.00
PEMA	978.01
PEMAd	567.25
PEMAh	0.16
PEMB	89.53
PEMBd	1.49
PEMC	2239.78
PEMCd	1149.60
PEMCh	6.62
PEMCx	3.28
PEMF	274.26
PEMFd	35.36
PEMFh	0.91
PEMFx	0.13
PFO/EMA	0.41
PFO/EMC	5.38
PFO/EMCd	4.04

Attribute	Hectares
PFO/EMCx	0.21
PFO/SSC	1.86
PFOA	15.62
PFOAd	3.27
PFOC	54.31
PFOCd	25.76
PFOCx	0.42
PSS/EMC	1.09
PSS/EMCd	0.55
PSS/FOA	0.60
PSS/FOC	3.22
PSSA	8.17
PSSAd	0.84
PSSC	10.69
PSSCd	7.61
PUBFx	16.99
PUSC	0.10
R4SBF	97.28

Douglas

Attribute	Hectares
L2ABF	7.80
L2ABGh	40.59
PAB/EMF	59.99
PAB/EMFh	11.91
PAB/EMFx	1.24
PABF	81.33
PABFd	25.70
PABFh	25.59
PABFx	179.84
PEM/ABF	881.79
PEM/ABFd	8.76
PEM/ABFh	3.73
PEM/FOA	3.13
PEM/FOAd	2.24
PEM/FOC	70.76
PEM/FOCd	31.35
PEM/FOCx	0.20
PEM/SSA	1.14
PEM/SSC	35.48
PEMA	1401.67
PEMAd	1004.28
PEMAh	2.13
PEMAx	0.38
PEMB	0.10
PEMC	2737.45
PEMCd	389.40
PEMCh	8.35
PEMCx	3.85
PEMF	187.98
PEMFd	56.13
PEMFh	10.10
PFO/EMA	0.80
PFO/EMC	14.96

Attribute	Hectares
PFOA	13.52
PFOAd	4.30
PFOAh	0.12
PFOAx	0.15
PFOC	32.91
PFOCd	4.75
PFOCh	0.58
PFOCx	7.34
PSS/EMA	1.57
PSS/EMC	1.14
PSS/FOA	1.00
PSSA	0.53
PSSC	4.23
PSSCd	1.95
PUBFx	25.28
PUBGx	13.53
R4SBF	1.34

Edmunds

Attribute	Hectares
L1UBGh	269.26
L2ABF	153.11
L2ABFh	10.06
L2ABG	488.18
L2ABGh	13.81
L2UBG	125.97
L2UBGh	14.85
L2USA	2.67
L2USC	41.30
PAB/EMF	391.12
PAB/EMFd	20.11
PAB/EMFh	41.97
PABF	175.57
PABFh	106.65
PABFx	143.67
PABGx	2.36
PEM/ABF	594.93
PEM/ABFh	2.80
PEM/FOA	6.36
PEM/FOC	4.94
PEM/FOCh	0.84
PEM/FOCx	0.31
PEM/SSC	2.98
PEM/UBFh	2.28
PEMA	6832.08
PEMAd	171.30
PEMAh	0.59
PEMAx	5.35
PEMC	18218.28
PEMCd	152.72
PEMCh	13.85
PEMCx	3.47
PEMF	511.39
PEMFh	9.00

Attribute	Hectares
PEMFx	0.84
PEMU	2.45
PFO/EMA	2.89
PFO/EMC	10.03
PFOA	23.54
PFOAh	1.06
PFOAx	0.11
PFOC	5.79
PFOCh	0.58
PSS/EMA	0.60
PSSA	1.66
PUBF	4.24
PUBFh	88.75
PUBFx	177.28
PUBGh	63.28
PUBGx	6.48
PUSCx	2.73
R4SBF	51.42

Faulk

Attribute	Hectares
L1UBGh	19.94
L2ABF	74.95
L2ABFh	7.65
L2ABG	489.71
L2ABGh	68.22
L2UBFh	99.91
L2UBGh	93.82
L2USC	5.49
PAB/EMF	650.60
PAB/EMFh	71.83
PABF	158.25
PABFh	361.94
PABFx	196.15
PABGh	41.91
PABGx	3.33
PEM/ABF	351.71
PEM/ABFd	2.11
PEM/ABFh	44.76
PEM/FOA	6.12
PEM/FOC	7.65
PEM/FOCh	1.03
PEM/FOCx	1.14
PEM/FOFh	1.37
PEM/SSA	0.61
PEM/SSC	0.59
PEMA	6300.36
PEMAd	617.56
PEMAh	13.01
PEMAx	1.38
PEMC	17352.85
PEMCd	474.20
PEMCh	46.71
PEMCx	3.50

Attribute	Hectares
PEMF	145.88
PEMFx	0.21
PEMFd	0.70
PEMFh	9.55
PEMU	12.65
PFO/EMA	0.39
PFO/EMCx	0.39
PFO/SSA	0.26
PFOA	24.59
PFOC	4.21
PFOCh	1.52
PSSA	2.70
PSSC	0.96
PUB/FOFh	0.92
PUBF	0.14
PUBFh	234.51
PUBFx	141.77
PUBGh	29.04
PUBGx	5.37
R4SBF	375.07
R4SBFx	0.98

Grant

Attribute	Hectares
L1UBHh	172.40
L1UBHx	278.61
L2ABF	10.23
L2ABG	568.03
L2ABGh	35.56
PAB/EMF	299.36
PAB/EMFd	10.55
PAB/EMFh	10.34
PAB/EMFx	1.32
PAB/FOC	1.28
PABF	298.86
PABFd	23.56
PABFh	108.72
PABFx	88.86
PABGh	19.36
PABGx	14.01
PEM/ABF	578.86
PEM/ABFd	26.86
PEM/ABFh	11.38
PEM/ABFx	5.15
PEM/FOB	0.20
PEM/FOA	6.56
PEM/FOC	16.64
PEM/FOCd	0.78
PEM/FOCh	0.14
PEM/FOCx	0.49
PEM/SSA	9.83
PEM/SSC	29.04
PEM/SSCd	2.20
PEM/SSCh	0.73

Attribute	Hectares
PEMA	1062.85
PEMAd	717.77
PEMAh	0.18
PEMB	7.08
PEMBd	0.92
PEMC	1850.31
PEMCd	489.01
PEMCh	10.71
PEMCx	2.22
PEMF	1282.44
PEMFd	88.70
PEMFh	31.25
PEMFx	0.98
PFO/EMA	3.84
PFO/EMC	10.84
PFO/EMCx	0.22
PFO/SSA	1.84
PFO/EMC	7.42
PFOB	1.88
PFOA	393.99
PFOAd	12.68
PFOAx	0.83
PFOC	59.39
PFOCd	7.88
PFOCh	1.43
PFOCx	1.22
PSS/EMA	0.43
PSS/EMC	2.68
PSS/EMCd	1.30
PSS/FOC	0.30
PSS/FOCd	2.43
PSSA	23.90
PSSAd	3.30
PSSC	51.09
PSSCd	5.74
PSSCh	0.99
PSSCx	0.59
PUBF	0.16
PUBFx	16.57
PUBGx	3.57
PUSAh	0.77
PUSCx	0.19
R2UBG	0.00
R2UBH	5.45
R4SBF	54.25
R4SBFx	1.36

Hamlin

Attribute	Hectares
L1UBG	3036.49
L2ABFx	0.10
L2ABG	3530.99
PAB/EMF	102.30
PAB/EMFx	2.32

Attribute	Hectares
PABFh	18.47
PABFx	104.97
PABGx	6.36
PEM/ABF	3710.13
PEM/ABFd	709.68
PEM/ABFx	10.71
PEM/FOA	12.83
PEM/FOAd	0.84
PEM/FOC	86.85
PEM/FOCd	24.48
PEM/FOCh	0.40
PEM/FOCx	3.15
PEM/SSA	0.12
PEM/SSC	12.50
PEM/SSCd	2.14
PEMA	959.10
PEMAd	230.04
PEMC	2559.48
PEMCd	528.10
PEMCx	2.12
PEMF	121.56
PEMFx	2.63
PFO/EMA	1.85
PFO/EMC	35.19
PFO/EMCd	1.75
PFO/EMCx	0.31
PFO/SSA	1.20
PFO/SSC	8.66
PFOA	19.66
PFOAd	1.17
PFOC	61.29
PFOCd	7.09
PFOCx	0.10
PSS/EMC	8.78
PSS/FOC	6.85
PSSA	2.50
PSSC	6.41
PSSCd	1.19
PUBFx	4.96
PUSC	1.03
R4SBF	209.77

Hand

Attribute	Hectares
L2ABF	619.48
L2ABFd	13.34
L2ABFx	5.39
L2ABG	414.60
L2ABGh	139.35
PAB/EMCh	4.33
PAB/EMF	619.84
PAB/EMFd	2.84
PAB/EMFh	47.24
PABF	167.27

Attribute	Hectares
PABFh	100?34
PABFhx	?69
PABFx	54?07
PABGh	2?4
PABHh	?4
PEM/ABF	21?45
PEM/ABFd	?24
PEM/ABFh	4?68
PEM/FOA	?37
PEM/FOC	2?39
PEM/FOCh	?8
PEM/FOCx	?9
PEM/SSAd	?3
PEM/SSC	?2
PEMA	7779?3
PEMAd	1497?6
PEMAh	10?8
PEMC	17731?1
PEMCd	935?3
PEMCh	51?3
PEMCx	5?6
PEMF	108?0
PEMFd	3?1
PEMFh	1?0
PFO/EMA	0?3
PFO/EMC	2.2
PFO/EMCh	3.3
PFO/SSCh	1.1
PFOA	51.?
PFOAd	3.?
PFOAh	1.?
PFOAx	0.?
PFOC	30.?
PFOCd	0.?
PFOCh	11.?
PFOCx	1.3
PSS/EMAd	0.2
PSS/EMC	0.6
PSS/FOA	0.4
PSSA	8.3
PSSC	6.0
PSSCd	0.4
PSSCh	0.7
PUBFx	37.6
PUBGx	0.1
PUSCx	0.3
R2UBF	52.5?
R4SBF	266.8?
R4SBFx	0.25

Hanson

Attribute	Hectares
L2ABF	11.04
L2ABG	50.2?

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
L2ABGh	59.91	PABFh	819.10	PEM/ABF	347.93	PAB/EMF	414.08
L2ABGx	25.93	PABFx	126.53	PEM/ABFd	36.74	PAB/EMFh	26.76
NP	1726.44	PABGh	22.67	PEM/ABFh	30.41	PABF	24.99
PAB/EMF	50.10	PABGx	2.66	PEM/FOA	47.57	PABFh	1138.93
PAB/EMFd	16.48	PEM/ABF	10.24	PEM/FOAd	4.31	PABFx	248.25
PABF	50.76	PEM/ABFh	1.25	PEM/FOAh	2.58	PABGh	16.46
PABFh	36.25	PEM/ABFx	0.14	PEM/FOC	34.22	PABGx	5.06
PABFx	116.21	PEM/FOC	4.45	PEM/FOCd	2.52	PEM/ABF	14.49
PABGx	15.83	PEM/FOCh	1.38	PEM/SSCh	1.38	PEM/ABFh	25.61
PEM/ABF	810.34	PEM/FOCx	1.49	PEMA	3463.44	PEM/FOC	1.71
PEM/ABFd	71.20	PEM/SSA	4.39	PEMAd	1953.66	PEM/FOCh	7.79
PEM/ABFx	0.13	PEM/SSAh	11.27	PEMAh	0.84	PEMA	3248.73
PEM/FOA	1.59	PEM/SSC	0.21	PEMAx	0.32	PEMAd	308.44
PEM/FOAd	0.85	PEMA	2139.58	PEMC	4040.83	PEMAh	14.51
PEM/FOC	15.63	PEMAd	164.31	PEMCd	590.59	PEMC	10657.59
PEM/FOCd	3.58	PEMAh	115.89	PEMCh	8.52	PEMCd	175.48
PEMA	1708.80	PEMAx	0.56	PEMCx	2.46	PEMCh	62.41
PEMAd	572.57	PEMC	2982.79	PEMF	79.34	PEMCx	0.61
PEMAh	0.18	PEMCd	34.37	PEMFd	23.63	PEMF	87.40
PEMAx	0.19	PEMCh	103.24	PEMFh	2.50	PEMFh	4.22
PEMC	2484.65	PEMCx	24.04	PFO/EMA	14.25	PEMFx	0.07
PEMCd	326.39	PEMF	9.38	PFO/EMAd	5.15	PFO/EMC	0.84
PEMCx	1.24	PEMFh	229.63	PFO/EMC	45.03	PFOA	8.24
PEMF	22.78	PEMFx	0.38	PFO/EMCd	24.77	PFOC	7.28
PFO/EMA	1.64	PFO/EMC	1.10	PFO/EMCh	0.49	PFOCh	0.35
PFO/EMC	45.52	PFO/EMCh	2.38	PFO/EMCx	2.58	PSS/FOCh	1.35
PFO/EMCh	0.70	PFO/SSCh	0.61	PFOA	49.10	PSSA	2.18
PFO/EMCx	1.78	PFOA	5.62	PFOAd	11.26	PSSC	1.13
PFOA	13.95	PFOAh	3.61	PFOAh	1.71	PSSCx	0.10
PFOAd	1.73	PFOC	6.28	PFOC	16.08	PUBFx	12.90
PFOC	6.30	PFOCh	6.59	PFOCd	0.76	R4SBF	4.05
PFOCd	3.47	PSS/FOC	0.15	PFOCh	2.10		
PSS/EMCd	0.58	PSSA	5.21	PFOCx	2.27	**Jerauld**	
PSSA	0.54	PSSAh	34.96	PSS/EMAd	7.17	L2ABF	126.15
PSSC	0.00	PSSC	0.52	PSSA	0.16	L2ABFd	54.10
PUBFx	14.47	PSSCh	7.94	PUBF	1.46	L2ABFx	1.21
PUBGx	0.05	PUBFx	3.31	PUBFh	0.26	L2ABG	56.66
R2UBG	248.01	PUSCh	0.20	PUBFx	8.86	PAB/EMF	93.17
R4SBF	95.08	R4SBF	149.39	PUSAh	0.25	PAB/EMFd	39.74
				PUSCh	0.06	PAB/EMFh	2.39
Hughes		**Hutchinson**		R2UBG	332.03	PAB/EMFx	1.55
L1UBGh	530.48	L1UBGh	42.55	R2USA	0.10	PABF	49.23
L1UBHh	14302.10	L2ABF	40.30	R2USC	0.30	PABFH	42.46
L2ABF	83.94	L2ABG	162.65	R4SBF	7.73	PABFX	31.97
L2ABFx	0.90	L2ABGh	22.71			PABFh	230.69
L2ABGh	72.51	PAB/EMF	28.49	**Hyde**		PABFx	89.75
L2UBFh	2.54	PAB/EMFh	1.80	L1UBHh	601.49	PABGH	3.73
L2USAh	3.29	PABF	197.24	L2ABF	619.25	PABGh	8.76
L2USCh	59.30	PABFd	7.14	L2ABFh	25.94	PABGx	13.20
PAB/EMF	21.13	PABFh	162.72	L2ABFx	1.67	PEM/ABF	1024.46
PAB/EMFh	6.50	PABFx	216.30	L2ABG	625.63	PEM/ABFd	72.33
PAB/EMFx	0.48	PABGh	22.69	L2ABGh	77.14	PEM/ABFh	6.13
PABF	22.29	PABGx	39.47	L2USCh	2.94	PEM/ABFx	0.18

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PEM/FOA	3.93	PEM/ABFd	1059.88	PAB/EMF	633.69	**Lincoln**	
PEM/FOAd	1.15	PEM/ABFh	1.91	PAB/EMFd	76.84	L1UBGh	20.?
PEM/FOC	9.43	PEM/ABFx	0.28	PAB/EMFh	1.18	L2ABGh	55.?
PEM/FOCd	5.76	PEM/FOA	9.80	PABF	146.79	PABF	3.?
PEM/FOCh	0.26	PEM/FOAd	0.17	PABFh	79.13	PABFd	1.?
PEM/FOCx	7.07	PEM/FOC	59.13	PABFx	174.85	PABFh	37.?
PEM/SSA	0.73	PEM/FOCd	4.34	PABGx	2.69	PABFx	53.?
PEM/SSC	1.11	PEM/FOCh	0.57	PEM/ABF	4054.55	PABGh	17.?
PEMA	3135.01	PEM/FOCx	0.29	PEM/ABFb	4.15	PABGx	41.?
PEMAd	517.36	PEM/SSA	1.48	PEM/ABFd	411.39	PEM/ABF	252.?
PEMAh	3.59	PEM/SSC	14.36	PEM/ABFh	1.31	PEM/ABFd	71.?
PEMAx	0.10	PEM/SSCd	0.38	PEM/FOA	1.74	PEM/ABFh	5.?
PEMC	2648.57	PEMA	4076.83	PEM/FOAd	3.40	PEM/ABFx	13.8
PEMCd	424.84	PEMAd	857.55	PEM/FOC	39.23	PEM/FOA	9.?
PEMCh	5.18	PEMAh	0.71	PEM/FOCd	0.44	PEM/FOC	1.?
PEMCx	1.49	PEMAx	0.10	PEM/FOCx	4.37	PEM/SSA	3.?
PEMF	49.32	PEMC	3703.09	PEM/SSC	0.81	PEMA	993.?
PEMFd	0.05	PEMCd	1177.82	PEM/SSCd	6.09	PEMAd	1514.?
PEMFh	3.35	PEMCh	1.00	PEMA	845.95	PEMAh	1.?
PEMFx	0.07	PEMCx	1.92	PEMAd	1205.83	PEMC	1101.?
PFO/EMA	1.66	PEMF	220.78	PEMAx	0.12	PEMCd	512.2
PFO/EMC	9.57	PEMFd	1.94	PEMC	1896.02	PEMCh	5.0
PFO/SSA	0.32	PFO/EMA	37.52	PEMCd	1195.67	PEMCx	2.?
PFO/SSC	0.28	PFO/EMAd	0.84	PEMCh	0.67	PEMF	4.?
PFOA	39.54	PFO/EMC	23.09	PEMCx	2.16	PEMFd	1.8
PFOAd	14.99	PFO/EMCd	2.80	PEMF	33.07	PEMFh	9.2
PFOAh	1.14	PFO/SSC	0.83	PEMFd	29.05	PEMFx	1.0
PFOC	28.47	PFOA	42.50	PFO/EMA	6.52	PFO/EMA	34.3
PFOCd	10.05	PFOAd	8.78	PFO/EMAd	2.75	PFO/EMAd	0.2
PFOCh	0.70	PFOAh	0.41	PFO/EMC	61.83	PFO/EMC	45.3
PFOCx	0.38	PFOC	119.87	PFO/EMCd	36.17	PFO/EMCx	4.5
PSS/EMC	0.14	PFOCd	36.12	PFO/EMCx	3.16	PFOA	64.2
PSS/FOA	1.36	PFOCh	0.86	PFO/SSC	1.29	PFOAd	3.5
PSS/FOC	2.38	PFOCx	0.39	PFOA	28.02	PFOAx	0.4
PSSA	3.56	PSS/EMC	9.89	PFOAd	7.55	PFOC	13.39
PSSAd	0.73	PSS/EMCd	0.95	PFOAx	0.22	PFOCd	1.44
PSSC	4.47	PSS/FOC	3.47	PFOC	63.89	PFOCh	1.07
PSSCh	0.21	PSSA	3.08	PFOCd	37.76	PFOCx	1.32
PUBFx	33.24	PSSAd	0.29	PFOCx	0.24	PSS/EMC	0.00
R4SBF	121.83	PSSAx	0.09	PSS/EMA	0.26	PSSA	1.05
		PSSC	4.48	PSS/EMC	3.26	PSSC	0.73
Kingsbury		PSSCd	3.39	PSS/EMCd	2.04	PSSCd	0.97
L2ABG	4307.17	PUBFh	0.12	PSS/FOCd	0.75	PUBFx	11.0?
L2ABGh	11.30	PUBFx	15.76	PSSA	2.41	PUBGx	5.75
PAB/EMF	257.57	R4SBF	55.40	PSSAd	0.19	R2UBF	0.33
PAB/EMFh	8.22			PSSC	6.04	R2UBG	213.76
PABF	134.59	**Lake**		PSSCd	0.56	R2USA	19.9?
PABFd	6.43	L1UBG	1696.00	PUBF	8.24	R2USC	2.33
PABFh	62.49	L2ABF	98.60	PUBFx	10.61	R4SBF	0.73
PABFx	322.23	L2ABFx	0.12	R4SBF	69.08		
PABGh	2.98	L2ABG	914.75			**Marshall**	
PABGx	20.38	L2ABGx	9.47			L1UBG	248.55
PEM/ABF	9813.31	L2UBG	26.74			L1UBGh	37.51

Attribute	Hectares
L1UBH	1855.07
L2ABF	20.36
L2ABG	3987.89
L2ABGd	15.30
L2ABGh	33.80
L2UBGh	30.41
L2USA	0.20
PAB/EMF	231.14
PAB/EMFd	0.53
PABF	693.98
PABFd	4.65
PABFh	12.36
PABFx	12.54
PABGh	6.45
PEM/ABF	2540.66
PEM/ABFd	96.54
PEM/ABFh	10.10
PEM/ABGx	1.61
PEM/FOA	14.78
PEM/FOAd	4.09
PEM/FOC	24.30
PEM/FOCd	11.63
PEM/SSA	8.56
PEM/SSC	2.20
PEMA	3793.66
PEMAd	963.14
PEMAh	3.25
PEMAx	0.25
PEMC	2523.39
PEMCd	318.98
PEMCh	2.57
PEMCx	1.24
PEMF	5223.70
PEMFd	482.53
PEMFh	52.98
PFO/EMA	17.40
PFO/EMC	3.10
PFO/EMCd	5.12
PFO/SSA	2.28
PFO/SSC	0.56
PFOA	37.59
PFOAd	4.50
PFOC	23.40
PFOCd	0.92
PFOCh	1.74
PFOCx	0.26
PSS/EMA	5.83
PSS/EMC	0.26
PSS/FOA	2.04
PSS/FOC	0.80
PSSA	8.51
PSSAd	1.86
PSSC	7.62

Attribute	Hectares
PSSCd	2.11
PUBF	2.97
PUBFh	68.12
PUBFx	108.66
PUBGh	30.14
PUBGx	19.80
PUBHh	0.12
R4SBF	5.32
R4SBFx	2.77

McCook

Attribute	Hectares
L2ABF	146.83
L2ABFx	0.34
L2ABG	406.25
L2ABGh	218.16
PAB/EMF	507.62
PAB/EMFd	20.91
PAB/EMG	10.73
PABF	111.17
PABFh	81.89
PABFx	169.98
PABGh	5.12
PABGx	3.12
PEM/ABF	1380.78
PEM/ABFd	68.10
PEM/ABFh	10.26
PEM/ABFx	7.72
PEM/FOA	0.54
PEM/FOC	18.22
PEM/FOCd	1.43
PEM/FOCx	3.27
PEMA	1754.11
PEMAd	1372.38
PEMAh	3.28
PEMC	3960.63
PEMCd	741.81
PEMCh	0.35
PEMCx	6.62
PEMF	23.08
PEMFd	0.30
PEMFh	3.89
PFO/EMA	6.15
PFO/EMAd	0.41
PFO/EMC	127.51
PFO/EMCd	3.24
PFO/EMCh	0.22
PFO/EMCx	3.96
PFOA	24.20
PFOAd	3.24
PFOC	33.44
PFOCd	5.38
PSS/EMA	1.02
PSS/EMAd	0.83

Attribute	Hectares
PSSA	0.78
PSSC	4.74
PUBFh	2.21
PUBFx	23.61
R2UBG	6.22
R4SBF	136.84

McPherson

Attribute	Hectares
L1UBGh	76.64
L2ABF	57.39
L2ABG	1488.07
L2ABGh	80.09
PAB/EMF	247.94
PAB/EMFh	11.54
PABF	446.64
PABFh	162.39
PABFx	258.59
PABGh	5.18
PABGx	4.62
PEM/ABF	2147.84
PEM/ABFd	1.05
PEM/ABFh	25.95
PEM/FOA	1.55
PEM/FOC	6.58
PEM/SSA	1.18
PEM/SSC	0.57
PEMA	6150.17
PEMAd	74.16
PEMAh	1.79
PEMAx	0.10
PEMC	11994.43
PEMCd	49.46
PEMCh	4.44
PEMCx	1.69
PEMF	2326.44
PEMFh	18.58
PFO/EMA	0.50
PFO/EMC	6.12
PFO/SSA	1.34
PFOA	11.26
PFOAd	0.21
PFOC	3.20
PFOCh	2.09
PSSA	0.09
PSSC	0.18
PUBFx	4.27
R4SBF	5.78

Miner

Attribute	Hectares
L2ABF	45.23
L2ABG	157.71
L2ABGh	77.67
PAB/EMF	115.05

Attribute	Hectares
PAB/EMFh	5.12
PABF	66.12
PABFd	5.61
PABFh	73.28
PABFx	258.84
PABGh	13.79
PABGx	7.10
PEM/ABF	2838.53
PEM/ABFd	183.76
PEM/ABFh	11.46
PEM/ABFx	1.84
PEM/FOA	2.31
PEM/FOC	15.87
PEM/FOCx	1.28
PEM/SSA	1.92
PEM/SSAd	0.32
PEM/SSC	0.70
PEMA	1975.96
PEMAd	722.96
PEMAh	0.77
PEMC	3938.50
PEMCd	575.43
PEMCh	1.70
PEMCx	1.24
PEMF	40.74
PEMFd	3.06
PEMFh	2.23
PFO/EMA	2.79
PFO/EMAd	0.15
PFO/EMC	54.64
PFO/EMCx	2.01
PFOA	22.32
PFOAd	5.61
PFOC	56.34
PFOCd	2.98
PFOCh	0.70
PFOCx	0.21
PSS/EMA	0.18
PSS/FOC	0.36
PSSA	0.76
PSSC	3.15
PUBF	0.80
PUBFh	1.96
PUBFx	17.72
PUBHx	1.57
PR4SBF	82.14
R4SBFx	1.08

Minnehaha

Attribute	Hectares
L1UBG	76.41
L2ABF	253.22
L2ABFx	0.81
L2ABG	1026.58

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PAB/EMF	137.01	PSSC	1.81	PFO/EMC	43.14	PEMAx	1.?
PABF	185.57	PUBF	0.09	PFO/EMCd	8.12	PEMAd	318.7
PABFd	4.59	PUBFh	0.24	PFO/EMCh	1.24	PEMAh	44.?
PABFh	62.52	PUBFx	45.61	PFO/SSA	0.13	PEMB	0.?
PABFx	115.78	PUBGh	3.86	PFO/SSCd	1.42	PEMC	5555.?
PABGh	24.21	PUBGx	56.69	PFOA	35.12	PEMCd	151.?
PABGx	50.83	PUSAx	0.39	PFOAd	11.58	PEMCh	43.9
PEM/ABF	1139.08	PUSC	0.26	PFOAh	0.37	PEMCx	4.?
PEM/ABFd	173.01	PUSCx	3.24	PFOC	77.75	PEMF	504.?
PEM/ABFh	3.36	R2UBG	363.07	PFOCd	1.90	PEMFh	2.1
PEM/ABFx	0.92	R2UBGx	53.96	PSS/EMC	1.86	PEMU	30.?
PEM/FOA	21.10	R2USA	4.55	PSS/FOC	0.95	PFO/EMAh	0.?
PEM/FOAd	0.94	R2USC	13.67	PSSA	1.70	PFO/EMCh	0.?
PEM/FOAx	0.26	R3UBG	2.68	PSSAd	1.74	PFOA	7.?
PEM/FOC	59.12	R4SBA	6.43	PSSC	0.53	PFOAd	1.4
PEM/FOCd	4.33	R4SBC	0.33	PSSCd	0.56	PFOAh	1.4
PEM/FOCh	2.13	R4SBF	312.68	PUBFh	0.29	PFOC	0.?
PEM/FOCx	21.14	R4SBFx	7.08	PUBFx	13.25	PFOCh	0.6
PEM/SSA	0.53			PUBGx	0.21	PSSA	1.?
PEM/SSAd	1.92			R2UBG	356.78	PSSAh	1.1
PEM/SSC	3.46	**Moody**		R2USA	0.19	PSSC	2.?
PEM/SSCd	1.77	L2ABG	173.78	R2USC	0.42	PSSCh	0.1
PEM/SSCh	7.45	PAB/EMF	127.89	R4SBA	0.60	PUB/EMFh	1.?
PEMA	1594.94	PAB/EMFd	4.46	R4SBF	54.87	PUBFh	169.0
PEMAd	1135.91	PAB/EMFh	7.56			PUBFx	103.9
PEMAh	14.09	PAB/EMFx	0.16	**Potter**		PUBGh	11.6
PEMAx	1.56	PABF	39.17	L1UBFh	0.51	PUBGx	6.1
PEMC	1302.40	PABFh	71.72	L1UBGh	954.85	PUSCx	0.4
PEMCd	587.86	PABFx	116.12	L1UBHh	6519.87	PUSCh	0.5
PEMCh	1.92	PABGx	17.64	L2ABF	82.29	R4SBF	0.1
PEMCx	4.47	PEM/ABF	933.18	L2ABGh	52.07		
PEMF	29.69	PEM/ABFd	215.88	L2UBF	0.04	**Roberts**	
PEMFd	10.34	PEM/ABFh	1.17	L2UBFh	2.95	L1UBG	81.2
PFO/EMA	5.84	PEM/ABFx	4.59	L2UBGH	52.54	L1UBHh	3938.3
PFO/EMAd	0.77	PEM/FOA	3.20	L2USCh	59.79	L2ABF	56.2
PFO/EMC	58.95	PEM/FOAd	11.36	PAB/EMF	31.93	L2ABFx	18.4
PFO/EMCd	7.94	PEM/FOC	122.58	PAB/EMFh	9.43	L2ABG	1889.6
PFO/EMCx	3.33	PEM/FOCd	20.76	PABF	27.03	L2ABGh	374.4
PFO/SSCx	1.09	PEM/FOCx	9.04	PABFh	528.45	L2UBGh	139.3
PFOA	52.67	PEM/SSAd	0.38	PABFx	125.69	PAB/EMF	670.5
PFOAd	7.64	PEM/SSC	1.46	PABGh	18.59	PAB/EMFd	1.7
PFOAh	0.24	PEMA	950.35	PEM/ABF	184.22	PAB/EMFh	66.8
PFOC	42.07	PEMAd	527.75	PEM/ABFh	8.75	PAB/EMFx	15.7
PFOCd	9.04	PEMAh	1.91	PEM/FOA	1.04	PABF	677.7
PFOCh	0.33	PEMC	794.92	PEM/FOAh	8.14	PABFd	35.5
PFOCx	0.52	PEMCd	323.60	PEM/FOC	1.09	PABFh	46.6
PSS/EMC	2.67	PEMCh	0.90	PEM/FOCh	0.99	PABFx	103.72
PSS/FOA	16.44	PEMCx	5.61	PEM/FOCx	0.18	PABG	31.3
PSS/FOAd	1.22	PEMF	22.07	PEM/SSA	0.37	PABGh	39.14
PSS/FOC	0.42	PEMFd	11.72	PEM/SSAh	2.82	PABGx	29.21
PSS/FOCd	0.93	PEMFh	0.17	PEM/SSC	1.28	PEM/ABF	3408.56
PSSA	7.18	PEMFx	0.38	PEM/SSCh	1.27	PEM/ABFb	0.55
PSSAd	0.82	PFO/EMA	3.40	PEMA	4029.12	PEM/ABFd	164.99
		PFO/EMAd	1.76				

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PEM/ABFh	1137.50	PSS/FOC	2.03	PEMCx	15.76	PEMAd	1220.71
PEM/ABFx	2.72	PSSA	69.15	PEMF	57.35	PEMAh	14.61
PEM/FOA	21.90	PSSAd	1.40	PEMFd	82.95	PEMAx	1.60
PEM/FOAh	1.07	PSSB	24.18	PFO/EMA	11.92	PEMB	4.78
PEM/FOC	28.37	PSSC	53.23	PFO/EMAd	4.08	PEMBd	2.68
PEM/FOCd	1.02	PSSCd	3.85	PFO/EMC	47.06	PEMC	11208.41
PEM/FOCh	11.14	PSSCh	13.93	PFO/EMCd	7.89	PEMCd	428.35
PEM/FOCx	0.28	PSSCx	4.05	PFO/EMF	8.10	PEMCh	1.88
PEM/SSA	22.39	PUBF	0.42	PFOA	86.34	PEMCx	16.83
PEM/SSAd	0.69	PUBFh	10.34	PFOAd	12.92	PEMF	86.45
PEM/SSAh	14.89	PUBFx	74.11	PFOC	66.85	PEMFd	0.36
PEM/SSB	236.74	PUBGh	2.64	PFOCd	7.39	PEMFh	5.54
PEM/SSC	79.11	PUBGx	4.08	PFOCx	2.24	PEMFx	1.66
PEM/SSCd	0.45	R2UBHx	7.66	PSS/FOA	0.79	PEMU	0.48
PEM/SSCx	2.27	R4SBF	32.18	PSSA	22.01	PFO/EMA	17.03
PEM/UBFh	0.01	R4SBFx	2.50	PSSAd	2.29	PFO/EMC	3.39
PEM/UBGh	0.10			PSSC	2.89	PFO/EMCx	3.31
PEMA	6214.97	**Sanborn**		PSSCd	0.50	PFO/SSAd	1.22
PEMAd	1434.28	L2ABF	63.67	PUBFx	21.95	PFO/SSC	1.12
PEMAh	285.05	L2ABFd	11.16	PUBGx	3.69	PFOA	285.29
PEMAx	9.15	L2ABFx	0.09	PUSCh	0.06	PFOAd	6.82
PEMB	47.62	L2ABG	37.75	R2UBG	360.30	PFOAh	5.72
PEMC	5573.72	L2ABGd	63.38	R2USA	1.27	PFOC	98.58
PEMCd	838.53	PAB/EMF	234.97	R4SBF	288.66	PFOCd	2.25
PEMCf	0.33	PAB/EMFd	89.63			PFOCx	3.62
PEMCh	501.60	PAB/EMFx	4.43	**Spink**		PSS/FOCx	1.13
PEMCx	35.69	PABF	47.67	L1UBH	539.56	PSSA	10.65
PEMF	3781.91	PABFd	198.00	L2ABF	190.78	PSSC	1.69
PEMFb	1.07	PABFh	27.14	L2ABG	575.82	PSSCd	0.18
PEMFd	237.86	PABFx	115.44	L2ABGh	166.79	PSSCx	0.59
PEMFh	477.00	PABGH	4.05	L2USA	4.68	PUBFx	17.30
PEMFx	36.87	PABGh	3.49	PAB/EMF	538.04	R2UBF	149.37
PFO/EMA	7.73	PABGx	10.81	PAB/EMFh	14.18	R2UBG	702.09
PFO/EMB	8.24	PEM/ABF	1493.04	PAB/EMFx	2.01	R4SBF	1331.04
PFO/EMC	15.19	PEM/ABFh	0.48	PABF	211.81	R4SBFx	2.02
PFO/EMCd	0.33	PEM/ABFd	401.16	PABFd	2.33		
PFO/EMCh	14.42	PEM/ABFx	0.57	PABFh	96.63	**Sully**	
PFO/EMCx	0.61	PEM/FOA	22.69	PABFx	317.84	L1UBGh	1868.14
PFO/SSA	4.93	PEM/FOAd	7.11	PABGh	6.67	L1UBHh	12385.15
PFO/SSC	1.89	PEM/FOAx	0.47	PABGx	55.31	L2ABF	184.30
PFOA	156.98	PEM/FOC	52.15	PEM/ABF	1080.15	L2ABFh	64.07
PFOAd	17.79	PEM/FOCd	14.44	PEM/ABFd	29.25	L2ABG	548.53
PFOAh	47.22	PEM/FOCx	0.99	PEM/ABFh	20.68	L2ABGh	37.32
PFOBd	0.40	PEM/SSA	1.24	PEM/ABFx	1.92	L2UBFh	12.90
PFOC	61.97	PEM/SSC	7.51	PEM/FOA	62.89	L2USAh	0.08
PFOCd	10.97	PEM/SSCd	8.34	PEM/FOC	64.41	L2USCh	57.69
PFOCh	49.48	PEMA	5820.00	PEM/FOCd	6.42	PAB/EMF	150.99
PFOCx	5.61	PEMAx	0.18	PEM/FOCh	0.71	PAB/EMFh	6.76
PSS/EMA	4.60	PEMAd	2925.45	PEM/FOCx	11.05	PABF	3.11
PSS/EMB	37.20	PEMAh	0.07	PEM/SSA	11.00	PABFh	821.23
PSS/EMC	53.60	PEMC	7297.47	PEM/SSB	0.20	PABFhx	0.35
PSS/EMCd	0.76	PEMCd	1651.05	PEM/SSC	1.48	PABFx	227.30
PSS/EMCh	2.06	PEMCh	0.31	PEMA	14406.17	PABGh	41.88

Column 1

Attribute	Hectares
PEM/ABF	346.00
PEM/ABFh	32.15
PEM/FOA	0.68
PEM/FOC	1.97
PEM/FOCh	3.64
PEM/SSC	1.40
PEM/SSCh	0.46
PEMA	4959.20
PEMAd	469.92
PEMAh	19.68
PEMAx	0.64
PEMC	5172.20
PEMCd	157.43
PEMCh	46.79
PEMCx	3.48
PEMF	14.73
PEMFh	12.88
PFO/EMC	0.20
PFO/EMCh	3.35
PFOA	12.95
PFOAx	0.76
PFOC	0.32
PFOCh	1.43
PSS/EMC	0.65
PSSA	2.30
PSSC	1.51
PSSCh	1.31
PUBFx	13.22
PUSAh	0.09
PUSCx	0.37
R4SBF	47.81

Turner

Attribute	Hectares
L2ABG	100.52
L2UBFx	12.61
PABF	45.12
PABFd	1.49
PABFh	84.79
PABFx	96.77
PABG	1.39
PABGx	16.95
PEM/ABF	430.76
PEM/ABFd	34.19
PEM/ABFh	0.46
PEM/ABFx	0.29
PEM/FOA	5.09
PEM/FOAd	0.55
PEM/FOC	27.08
PEM/FOCd	4.73
PEM/FOCx	11.19
PEM/SSAd	2.06
PEMA	1693.35
PEMAd	1988.96

Column 2

Attribute	Hectares
6PEMAx	0.10
PEMC	1748.44
PEMCd	920.81
PEMCh	1.21
PEMCx	1.90
PEMF	110.15
PEMFd	122.13
PEMFh	3.07
PFO/EMA	3.98
PFO/EMAd	1.88
PFO/EMC	51.37
PFO/EMCd	18.70
PFO/EMCh	1.35
PFO/EMCx	18.55
PFO/SSA	0.80
PFOA	38.28
PFOAd	9.16
PFOAh	0.75
PFOC	34.50
PFOCd	12.50
PFOCh	1.52
PFOCx	1.03
PSSA	1.56
PUBFx	35.25
R2UBG	39.92
R2USA	2.52
R2USC	1.09
R4SBF	29.68

Union

Attribute	Hectares
L2ABF	101.13
L2ABG	121.50
PAB/EMF	27.42
PAB/EMFx	0.66
PABF	79.08
PABFh	28.05
PABFx	36.08
PABGh	24.12
PEM/ABF	181.68
PEM/ABFd	16.50
PEM/ABFx	4.17
PEM/FOA	84.38
PEM/FOC	8.17
PEM/FOCx	4.34
PEM/SSA	310.92
PEM/SSC	15.43
PEM/SSCx	0.27
PEMA	697.74
PEMAd	471.44
PEMAh	3.36
PEMAx	1.38
PEMC	351.48
PEMCd	172.69

Column 3

Attribute	Hectares
PEMCh	13.61
PEMCx	3.03
PEMF	6.99
PEMFd	0.46
PEMFh	4.43
PEMFx	0.10
PFO/EMA	207.70
PFO/EMC	26.87
PFO/EMCx	9.77
PFO/SSA	13.01
PFO/SSC	14.94
PFOA	318.75
PFOAd	17.16
PFOAh	0.44
PFOC	6.62
PFOCd	2.51
PFOCh	1.73
PFOCx	0.65
PSS/EMA	26.13
PSS/EMC	0.91
PSS/FOA	8.43
PSS/FOC	9.68
PSS/USA	46.94
PSSA	43.34
PSSC	22.18
PSSCd	0.51
PUBFx	31.37
PUBG	0.51
PUBGx	17.99
PUS/SSA	0.80
PUSA	1.46
PUSCh	1.32
R2UBF	0.39
R2UBG	93.54
R2UBH	1043.21
R2UBHx	35.59
R2USA	77.32
R2USAx	4.48
R2USC	66.84
R4SBF	5.29
R4SBFx	2.29

Walworth

Attribute	Hectares
L1UBGh	1295.49
L1UBHh	6078.81
L2ABF	33.03
L2ABFh	147.31
L2ABG	782.83
L2ABGx	10.79
L2ABGh	61.37
L2UBFh	7.58
L2USCh	115.10
PAB/EMF	239.24

Column 4

Attribute	Hectares
PAB/EMFh	0.07
PABF	62.15
PABFh	320.09
PABFx	73.08
PEM/ABF	384.66
PEM/ABFh	12.00
PEM/FOA	3.02
PEM/FOC	2.09
PEM/FOCx	0.06
PEM/FOCh	4.03
PEM/SSA	0.04
PEMA	3700.01
PEMAx	1.04
PEMAd	152.06
PEMAh	77.07
PEMC	3597.04
PEMCd	92.75
PEMCh	17.02
PEMCx	2.09
PEMF	812.03
PEMFx	6.09
PEMFh	77.01
PFO/EMA	0.02
PFO/EMAx	0.08
PFO/EMC	0.08
PFO/SSA	0.70
PFO/SSC	0.00
PFO/SSCh	0.23
PFOA	24.00
PFOC	4.02
PFOCd	0.75
PSS/EMA	0.08
PSS/EMC	0.01
PSSA	4.08
PSSCh	0.05
PUBF	0.04
PUBFh	52.06
PUBFx	4.06
PUBGh	32.04
PUBGx	0.06
PUBHx	0.09
PUSAh	0.03
PUSAx	0.07
PUSCh	0.08
R4SBF	5.74

Yankton

Attribute	Hectares
L1UBGh	59.02
L1UBHh	1577.02
L2ABF	129.02
L2ABFx	0.06
L2ABG	121.03
L2ABGh	31.02

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PAB/EMF	7.77	PEM/FOCh	0.31	PFO/EMCd	12.67	PSSC	18.74
PAB/EMFh	0.60	PEM/SSA	8.50	PFO/EMCh	1.71	PSSCd	0.40
PAB/EMFx	0.96	PEMA	1021.30	PFOA	43.03	PUBFx	14.06
PABF	124.14	PEMAd	1161.48	PFOAd	29.15	PUBGx	8.12
PABFd	4.79	PEMAh	0.32	PFOAh	1.58	PUS/SSA	12.54
PABFh	145.05	PEMC	1483.28	PFOC	21.36	PUS/SSC	19.60
PABFx	67.95	PEMCd	398.05	PFOCd	1.02	PUSAh	0.06
PABGh	27.02	PEMCh	1.02	PFOCh	2.26	PUSCh	0.20
PABGx	5.77	PEMCx	4.78	PFOCx	1.49	PUSCx	0.09
PEM/ABF	176.25	PEMF	82.82	PSS/EMA	1.18	R2UBG	326.22
PEM/ABFd	14.54	PEMFd	19.69	PSS/EMC	0.40	R2UBH	931.56
PEM/ABFh	0.91	PEMFh	30.33	PSS/FOA	2.85	R2USA	31.84
PEM/FOA	9.91	PFO/EMA	56.99	PSS/USA	10.69	R2USC	84.38
PEM/FOAd	4.18	PFO/EMAd	1.36	PSS/USC	40.72	R4SBF	12.51
PEM/FOC	7.03	PFO/EMAh	4.50	PSSA	2.19		
PEM/FOCd	1.34	PFO/EMC	39.31	PSSAh	5.57		

Linear Wetlands

Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
Aurora		PEMA	410382.4	PEMAx	9508.3	PEMCd	3230.6
PABF	2372.4	PEMAd	4020.0	PEMC	529244.5	PEMCh	211.5
PABFh	316.3	PEMAx	15477.2	PEMCX	8280.8	PEMCx	459060.2
PABFx	5529.5	PEMC	686668.6	PEMCd	990.4	PEMF	359.0
PEM/ABF	888.4	PEMCd	1542.5	PEMCh	209.3	PFOA	62817.8
PEM/ABFh	147.3	PEMCh	410.7	PEMCx	150234.3	PFOAd	1590.5
PEM/FOC	299.4	PEMCx	935130.1	PEMF	1645.2	PFOAh	1204.9
PEM/FOCx	35.0	PEMF	2218.9	PEMFh	541.2	PFOAx	2424.8
PEMA	245849.8	PEMFx	156.7	PEMFx	750.2	PFOC	13900.8
PEMAd	1610.4	PFO/EMC	1117.0	PFO/EMC	745.9	PFOCd	426.7
PEMAx	3462.3	PFOA	39935.1	PFO/EMCx	255.6	PFOCx	2739.5
PEMC	395348.8	PFOAd	363.8	PFOA	46100.9	PSSA	102.6
PEMCd	651.7	PFOAh	1772.1	PFOAX	372.2	PUBFx	124.3
PEMCh	388.0	PFOAx	1371.9	PFOAd	434.4	R4SBF	39062.2
PEMCx	439308.7	PFOC	20428.8	PFOAh	2713.1	R4SBFx	2590.7
PEMF	108.9	PFOCd	1252.2	PFOAx	1639.2		
PEMFh	1585.2	PFOCx	620.0	PFOC	50667.1	**Brown**	
PFO/EMC	1111.5	PSSA	1956.4	PFOCh	208.6	PAB/EMF	356.7
PFOA	19077.5	PSSC	194.7	PFOCx	1079.7	PABF	1658.8
PFOAd	1461.4	PUBFx	727.5	PSS/FOA	392.9	PABFh	350.3
PFOAh	11219.4	PUSCx	28.2	PSSA	319.4	PABFx	2321.3
PFOAx	671.8	R4SBC	10790.6	PUBFx	209.9	PEM/ABF	13935.6
PFOC	11963.4	R4SBF	181162.8	R2USC	145.3	PEM/ABFx	297.9
PFOCd	120.4	R4SBFx	840.7	R4SBA	29175.6	PEM/FOA	414.0
PFOCh	191.5			R4SBC	17145.4	PEM/FOCx	676.2
PFOCx	2107.0	**Bon Homme**		R4SBF	132038.6	PEMA	353381.0
PUBFx	988.5	PABF	916.8	R4SBFx	1141.2	PEMAd	967.3
R4SBF	74481.5	PABFh	386.8			PEMAx	92332.7
R4SBFx	130.8	PABFx	548.1	**Brookings**		PEMC	455743.6
		PEM/ABFh	92.7	PABFx	56.6	PEMCd	5038.3
Beadle		PEM/FOA	174.4	PEM/FOC	286.4	PEMCh	106.4
PABFx	365.3	PEM/FOC	72.7	PEMA	454616.0	PEMCx	466530.3
PEM/ABF	771.8	PEMA	119401.6	PEMAd	2503.0	PEMF	23217.1
PEM/FOC	175.1	PEMAh	57.5	PEMAx	7478.2	PEMFx	1897.7
PEM/FOCh	90.5	PEMAd	2596.3	PEMC	1085781.4	PFO/EMC	167.4

Attribute	Length (m)
PFO/SSA	62.0
PFOA	143269.3
PFOAd	1436.1
PFOAh	1907.9
PFOAx	941.8
PFOC	35563.6
PFOCh	2566.4
PFOCd	5315.6
PFOCx	3832.4
PSS/FOA	6103.8
PUBFx	196.8
R4SBF	194411.9
R4SBFx	39881.4

Brule

Attribute	Length (m)
PABF	341.4
PABFh	311.7
PABFx	1105.4
PEM/FOC	150.2
PEM/FOCh	157.4
PEM/FOCx	152.4
PEMA	220038.5
PEMAd	1259.1
PEMAx	5254.4
PEMC	273096.5
PEMCd	547.6
PEMCh	444.1
PEMCx	257895.9
PEMFx	107.2
PFOA	15285.4
PFOAh	11472.5
PFOAx	1424.1
PFOC	14493.8
PFOCd	113.7
PFOCh	254.8
PFOCx	290.9
R4SBA	16376.6
R4SBC	9443.4
R4SBF	87574.0
R4SBFx	147.3

Buffalo

Attribute	Length (m)
L2UBGh	271.6
PABF	924.5
PABFh	142.2
PABFx	26.7
PEM/ABF	214.6
PEMA	373521.0
PEMAd	97.2
PEMAh	116.5
PEMAx	924.3
PEMC	364305.7
PEMCX	3450.1
PEMCd	223.3
PEMCh	24.1
PEMCx	49318.6
PEMF	404.5
PEMFh	192.1
PEMFx	12.2

Attribute	Length (m)
PFOA	5869.6
PFOAx	132.6
PFOAh	2949.5
PFOC	20824.6
PFOCh	528.8
PSSA	1570.7
PSSC	467.1
PSSCx	192.1
PUBFx	246.4
R4SBA	57866.7
R4SBC	49794.5
R4SBF	145838.1

Campbell

Attribute	Length (m)
L2UBFh	597.8
PAB/EMF	225.0
PABF	1483.0
PABFh	473.9
PABFx	1041.9
PEM/ABF	1687.4
PEM/ABFh	289.3
PEMA	279914.4
PEMAd	35.8
PEMAx	4166.1
PEMC	278196.6
PEMCh	1702.7
PEMCx	18368.9
PEMF	9282.8
PEMFh	713.8
PFOA	15133.4
PFOAh	2081.6
PFOAx	181.4
PFOC	1149.6
PFOCh	129.2
PFOCx	384.0
PSSA	4534.2
PSSC	167.8
R2SBA	20547.4
R4SBA	38688.3
R4SBC	10252.1
R4SBF	81235.7
R4SBFx	1547.0

Charles Mix

Attribute	Length (m)
PABF	1272.1
PABFh	944.4
PABFx	2524.4
PEM/ABF	8275.1
PEM/ABFh	545.5
PEM/ABFx	2051.0
PEM/FOC	159.7
PEM/FOCx	451.4
PEM/SSC	1144.2
PEM/SSCd	36.4
PEMA	369756.4
PEMAh	118.7
PEMAd	2881.3
PEMAx	6081.0
PEMC	713536.9

Attribute	Length (m)
PEMCd	550.6
PEMCh	2379.3
PEMCx	329289.9
PEMF	3523.2
PEMFh	687.2
PEMFx	1368.2
PFO/EMA	212.7
PFO/EMC	1441.3
PFOA	90623.5
PFOAx	1216.3
PFOAd	607.3
PFOAh	14069.8
PFOC	82190.1
PFOCh	1135.4
PFOCx	6246.7
PSSC	1436.3
PUBFx	86.3
PUBGx	23.1
PUSCh	20.4
R2UBF	352.7
R2USA	8842.1
R2USC	524.8
R4SBA	73170.6
R4SBC	11104.5
R4SBF	145003.9
R4SBFX	152383.1
R4SBFx	8776.0

Clark

Attribute	Length (m)
PABF	52.1
PABFx	5979.2
PEM/ABF	6565.7
PEM/ABFh	2157.3
PEM/ABFx	13.0
PEM/FOC	286.0
PEMA	265091.1
PEMAd	804.2
PEMAx	8687.6
PEMC	786117.4
PEMCX	215704.9
PEMCd	1208.7
PEMCh	58.6
PEMCx	234690.8
PEMF	4080.3
PEMFx	128.4
PFO/EMC	795.7
PFOA	72361.7
PFOAd	2259.1
PFOAh	3774.8
PFOAx	1564.0
PFOC	16496.8
PFOCh	137.7
PFOCx	3849.4
PSSA	1624.7
PSSC	231.5
PSSCx	64.1
PUBFx	258.9
R4SBF	5509.7

Attribute	Length (m)
Clay	
PABF	73_4
PABFh	1_0
PABFx	16_0
PEM/ABF	63_3
PEMA	6503_6
PEMAd	145_4
PEMAx	1034_7
PEMC	20001_0
PEMCd	150_7
PEMCx	24551_7
PEMF	35_9
PEMFx	295_3
PFO/EMC	72_9
PFOA	3170_2
PFOAd	25_
PFOAh	14_
PFOAx	1316_2
PFOC	2344_5
PFOCh	12_5
PFOCx	218_
PSSA	4_
R2UBG	3678_1
R2UBGx	548_3
R2USA	155_9
R2USC	183_3
R4SBA	83_5
R4SBC	496_0
R4SBF	456_3
R4SBFx	4710_4

Codington

Attribute	Length (m)
L2USA	657_6
PABFh	8_4
PABFx	28_1
PEM/ABF	421_7
PEM/FOC	58_4
PEMA	29305_9
PEMAd	34_0
PEMAx	409_9
PEMC	61794_9
PEMCd	95_2
PEMCh	30_7
PEMCx	4525_3
PEMF	711_9
PEMFx	174_7
PFOA	3925_3
PFOAD	15_4
PFOAx	_7
PFOC	3352_6
PSSC	80_2
PUBFx	411_5
R4SBF	6604_
R4SBFx	693_4

Attribute	Length (m)
Davison	
PABF	914.4
PABFx	1326.3
PEM/FOCx	36.5
PEMA	114840.5
PEMAd	6054.3
PEMAx	7674.9
PEMC	365793.7
PEMCh	469.4
PEMCd	3103.1
PEMCx	343864.7
PEMF	243.6
PEMFx	586.9
PFOA	18463.1
PFOAd	1298.4
PFOAh	3573.7
PFOAx	754.5
PFOAh	160.2
PFOC	10461.4
PFOCd	2222.0
PFOCx	1936.1
PSSA	142.7
PUBFx	496.6
R4SBF	71773.5
R4SBFx	12128.4
Day	
L2USA	59007.1
L2USC	796.4
PAB/EMF	1684.9
PABFh	55.3
PABFx	768.7
PEM/ABF	28077.5
PEM/ABFx	772.2
PEMA	252761.2
PEMAd	4500.0
PEMAx	22120.0
PEMC	320304.9
PEMCd	1550.2
PEMCh	635.9
PEMCx	104895.7
PEMF	14565.0
PEMFh	2212.0
PEMFx	1734.0
PFOA	41243.0
PFOAd	468.4
PFOAh	673.4
PFOAx	313.7
PFOC	4022.7
PFOCx	486.7
PSS/EMC	57.8
PSSA	4406.0
PSSC	157.0
PUBFx	187.1
R2USA	799.2
R4SBF	45743.6

Attribute	Length (m)
Deuel	
PABFh	187.3
PABFx	194.9
PEM/ABF	2146.7
PEM/FOC	278.7
PEMA	310944.5
PEMAd	4813.9
PEMAx	4610.6
PEMC	1266714.9
PEMCd	6139.0
PEMCx	252802.5
PEMF	2914.4
PFO/EMC	286.0
PFOA	31770.0
PFOAd	1895.1
PFOAx	101.8
PFOC	28033.3
PFOCd	639.0
PFOCx	1848.7
PSSA	2501.2
PSSC	2017.2
PUBFx	7753.2
R4SBC	28.8
R4SBCx	20.9
R4SBF	160036.8
R4SBFx	2964.4
Douglas	
PABF	1629.0
PABFh	135.7
PABFx	1048.3
PEM/FOC	448.9
PEM/FOCx	1123.3
PEMA	118538.0
PEMAd	1053.2
PEMAx	2526.2
PEMC	226065.7
PEMCd	711.7
PEMCh	96.7
PEMCX	214528.7
PEMF	803.5
PFO/EMC	1085.7
PFOA	13248.6
PFOAh	362.1
PFOC	10160.8
PFOCh	805.5
PFOCx	1195.8
PUBFx	50.9
R4SBCx	4490.0
R4SBf	57313.9
R4SBFx	41509.2
Edmunds	
L2USA	2020.6
L2USC	1920.1
PABF	177.9
PABFh	205.9
PABFx	394.0

Attribute	Length (m)
PEM/ABF	2403.8
PEMA	381857.4
PEMAd	370.4
PEMAx	90028.8
PEMC	465603.1
PEMCd	122.1
PEMCh	691.6
PEMCx	247365.3
PEMF	6413.8
PEMFx	251.7
PEMFh	1673.2
PFO/EMC	2448.5
PFOA	2734.5
PFOAh	6627.2
PFOAx	528.3
PFOC	1278.0
PFOCx	459.0
PUBFh	334.0
PUBFx	1255.3
R4SBF	11825.5
R4SBFx	146.5
Faulk	
L2USC	596.8
PABF	2028.7
PABFx	358.6
PEM/ABF	1743.0
PEMA	466256.4
PEMAh	46.0
PEMAd	982.4
PEMAx	111637.7
PEMC	656301.2
PEMCd	310.1
PEMCh	317.3
PEMCx	255659.9
PEMF	803.6
PEMFh	2490.8
PFOA	3657.1
PFOAd	258.2
PFOAh	1249.0
PFOAx	297.1
PFOC	1014.1
PFOCx	195.3
PFOCh	488.6
PUBFh	59.3
PUBFx	614.2
PUSA	26.1
R4SBC	1161.2
R4SBF	96877.0
R4SBFx	96.1
Grant	
PABFh	60.2
PABFx	339.3
PEM/ABF	391.5
PEMA	361756.2
PEMAd	1581.9
PEMAx	5900.9

Attribute	Length (m)
PEMB	19.3
PEMC	863774.6
PEMCd	1816.3
PEMCh	170.4
PEMCx	141515.5
PEMF	1125.2
PEMFh	259.4
PFOA	95695.9
PFOAd	248.3
PFOAh	310.4
PFOAx	423.2
PFOC	10080.3
PFOCd	251.0
PFOCh	926.8
PFOCx	34.4
PSSA	10420.8
PSSC	5673.3
PSSCx	471.4
PUBFx	260.7
R2UBG	733.1
R4SBA	9164.1
R4SBAx	15018.5
R4SBC	114273.1
R4SBCx	3469.8
R4SBF	235197.5
R4SBFx	2840.5
Hamlin	
PABFx	22.0
PEM/ABF	2336.4
PEM/FOA	286.1
PEM/FOC	641.6
PEMA	143061.0
PEMAd	1001.8
PEMAx	1882.0
PEMC	348524.0
PEMCd	1969.2
PEMCx	73465.1
PEMF	823.5
PEMFx	6529.9
PFO/EMC	159.2
PFOA	88855.1
PFOAd	2383.1
PFOAx	296.7
PFOC	11108.2
PFOCd	654.4
PFOCx	2339.8
PSSA	191.3
PSSC	82.1
PUBFx	50.0
R4SBF	27319.8
R4SBFx	318.7

Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
Hand		PEMC	419789.4	PEMCh	288.2	PFOC	28804.1
PABFh	279.8	PEMCh	3332.7	PEMCx	296316.8	PFOCd	3608.0
PABFx	335.5	PEMCx	146767.4	PEMF	51.5	PFOCx	5583.6
PEM/FOC	520.6	PEMF	747.9	PFOA	2340.0	PSSC	203.5
PEMA	987619.9	PEMFh	271.0	PFOAd	85.1	PSSCx	131.8
PEMAd	3284.1	PEMFx	228.7	PFOAh	2168.7	PUBFx	265.9
PEMAh	209.3	PFOA	6767.8	PFOAx	872.3	R4SBF	33499.5
PEMAx	17630.3	PFOAh	2032.4	PFOC	1913.4	R4SBFx	24397.2
PEMC	1664055.4	PFOC	4057.2	PFOCh	568.4		
PEMCd	1508.7	PFOCh	245.0	PUBFh	21.8	**Lake**	
PEMCh	531.6	PFOCx	174.1	PUBFx	119.8	PABF	481.1
PEMCx	850236.0	PSSA	1440.9	R4SBA	17683.8	PABFx	560.3
PEMFx	343.8	PSSAh	58.6	R4SBC	10740.4	PEM/ABF	189.5
PFO/EMC	327.0	PSSC	67.0	R4SBF	15165.6	PEM/FOC	673.7
PFOA	20313.0	PUBFx	33.3			PEM/FOCx	282.6
PFOAh	7963.8	R4SBA	71910.5	**Jerauld**		PEMA	78951.5
PFOAx	3409.4	R4SBC	38433.5	PABF	1491.5	PEMAd	5265.9
PFOC	23168.2	R4SBF	30206.9	PABFh	75.2	PEMAx	8188.4
PFOCh	338.1	R4SBFx	3226.7	PABFx	294.2	PEMC	446668.0
PFOCx	1371.7			PEM/ABF	229.3	PEMCd	2089.6
PSSA	1825.9	**Hutchinson**		PEM/FOC	997.1	PEMCx	219151.8
PUBFx	597.4	PABF	491.0	PEM/FOCx	58.8	PEMF	462.1
R4SBA	4028.4	PABFh	921.2	PEMA	382851.3	PFOA	46888.8
R4SBC	2460.6	PABFx	2481.1	PEMAd	2200.4	PFOAd	5829.4
R4SBF	27204.0	PEM/ABF	29.5	PEMAx	6251.1	PFOAh	436.2
		PEM/ABFh	181.5	PEMC	476517.7	PFOAx	2386.1
Hanson		PEM/FOC	2227.9	PEMCd	2348.8	PFOC	26867.8
PABF	102.7	PEM/FOCx	731.2	PEMCh	96.7	PFOCd	3707.9
PABFh	20.1	PEMA	152964.8	PEMCx	241904.7	PFOCh	207.4
PABFx	480.9	PEMAd	3215.2	PEMF	779.0	PFOCx	1267.5
PEM/ABF	242.6	PEMAx	32360.2	PEMFh	416.8	PSSA	186.0
PEM/ABFd	103.6	PEMC	778735.8	PFOA	26821.0	PSSAx	98.0
PEMA	58979.5	PEMCd	4597.7	PFOAd	2595.9	PSSC	312.8
PEMAd	1869.9	PEMCh	1392.2	PFOAh	6129.8	PUBFx	192.6
PEMAx	688.7	PEMCx	292464.1	PFOAx	778.6	R4SBF	81187.2
PEMC	203220.7	PEMF	1381.1	PFOC	11544.2	R4SBFx	4647.2
PEMCd	965.5	PEMFx	204.3	PFOCx	1346.0		
PEMCx	340747.6	PEMFh	517.3	PSSA	1089.1	**Lincoln**	
PFO/EMC	117.7	PFO/EMA	335.8	PSSC	216.9	L2USAh	196.6
PFO/EMCx	70.3	PFO/EMC	534.5	PUBFx	299.6	PABFh	37.2
PFOA	39322.5	PFO/EMCx	470.2	R4SBC	6540.0	PABFx	2095.5
PFOAd	3009.3	PFOA	37124.5	R4SBF	56315.0	PEM/ABFx	64.7
PFOAh	59.6	PFOAd	1703.0			PEM/FOA	372.8
PFOC	5816.9	PFOAh	2556.8	**Kingsbury**		PEMA	153158.9
PFOCd	182.0	PFOAx	1993.9	PABF	93.3	PEMAd	8071.3
PFOCx	892.1	PFOC	45778.1	PABFx	848.2	PEMAh	23.8
PSSAx	96.7	PFOCh	690.5	PEM/ABF	133.9	PEMAx	28917.9
PUBFx	69.9	PFOCx	2353.6	PEM/FOCx	238.4	PEMC	339202.3
R4SBF	87145.5	PUBFx	275.5	PEMA	230862.3	PEMCd	1546.1
R4SBFx	680.6	PUSCx	30.8	PEMAd	586.9	PEMCx	375150.0
		R4SBF	181523.5	PEMAx	5750.9	PEMFx	2864.3
Hughes		R4SBFx	7516.6	PEMC	573926.9	PFO/EMA	68.9
L2UBFh	160.5			PEMCd	2261.2	PFOCx	583.6
PABF	2414.4	**Hyde**		PEMCx	369578.5	PFOA	691723.9
PABFh	427.3	PABFh	57.3	PFO/EMC	364.9	PFOAx	539.7
PABFx	191.7	PEMA	630162.2	PFOA	93375.0	PFOC	25891.3
PEMA	368782.6	PEMAd	478.0	PFOAd	3327.6	PFOCx	6151.8
PEMAh	369.6	PEMAx	12289.0	PFOAh	2448.6	PSSA	974.4
PEMAx	4434.8	PEMC	757209.5	PFOAx	900.2	PSSAh	251.6

Attribute	Length (m)		Attribute	Length (m)		Attribute	Length (m)		Attribute	Length (m)
PSSAx	207.6		PEMFx	297.2		**Minnehaha**			PFOAd	3813.2
PUBFx	337.5		PFO/EMC	655.3		PABF	1774.0		PFOAh	634.2
R2UBG	296.4		PFOA	51042.1		PABFh	136.5		PFOAx	3611.8
R2USA	326.8		PFOAd	1224.1		PABFx	560.9		PFOC	16250.7
R2USC	6.7		PFOAh	890.3		PEM/ABF	4629.8		PFOCd	929.2
R4SBC	3053.0		PFOAx	889.2		PEM/ABFh	508.6		PFOCx	2967.0
R4SBF	98430.5		PFOC	10683.4		PEM/ABFx	106.4		PSSA	164.2
R4SBFx	20303.8		PFOCx	1009.2		PEM/FOA	877.3		PSSAd	100.6
			PSSA	382.2		PEM/FOC	2199.1		PSSC	363.9
Marshall			PSSC	718.4		PEMA	326750.3		PSSCd	307.8
L2USA	4790.6		PUBF	18.3		PEMAd	6440.7		PUBFx	38.7
L2USC	570.2		PUBFx	399.4		PEMAx	26034.5		PUBGx	46.2
PAB/EMF	162.3		R4SBF	125350.0		PEMC	844376.9		R2UBG	785.0
PABFh	47.3		R4SBFx	3613.0		PEMCd	2109.0		R4SBA	159.8
PABFx	177.8					PEMCh	28.1		R4SBF	89400.0
PEM/ABF	5684.0					PEMCx	295889.4		R4SBFx	8327.4
PEM/ABFx	513.5		**McPherson**			PEMF	2501.4			
PEM/FOA	909.1		PABFh	59.5		PEMFx	1466.3		**Potter**	
PEM/FOC	5721.2		PABFx	581.4		PFO/EMC	372.0		PABFh	33.2
PEMA	546070.9		PEM/ABF	15953.7		PFO/EMCx	470.6		PABFx	93.0
PEMAd	2063.2		PEM/ABFx	416.9		PFOA	136915.4		PEMA	362253.5
PEMAx	45301.3		PEMA	497036.2		PFOAd	3018.6		PEMAd	35.1
PEMC	541599.2		PEMAd	85.5		PFOAh	1451.9		PEMAh	238.3
PEMCd	1655.2		PEMAx	26857.2		PFOAx	12400.7		PEMAx	25560.3
PEMCh	46.8		PEMC	611079.5		PFOC	22772.8		PEMC	315278.8
PEMCx	70196.0		PEMCh	589.2		PFOCd	547.9		PEMCd	233.8
PEMF	142458.0		PEMCx	87783.3		PFOCx	4109.7		PEMCh	495.6
PEMFd	385.0		PEMF	65213.1		PSSA	1260.3		PEMCx	88543.1
PEMFh	2923.5		PEMFh	227.2		PSSAd	435.6		PEMF	1339.7
PEMFx	2661.5		PEMFx	860.2		PSSAx	222.9		PEMFh	247.1
PFO/SSA	324.4		PFOA	6771.3		PSSCx	353.9		PEMU	24.4
PFOA	17434.2		PFOAh	74.5		PUBFx	328.0		PFOA	3975.6
PFOAd	746.4		PFOAx	90.1		PUSAx	57.4		PFOAh	1889.2
PFOAx	511.6		PFOC	520.8		PUSCx	84.4		PFOAx	421.7
PFOC	12290.5		PUBFx	156.4		R2UBG	290.1		PFOC	148.2
PFOCd	558.7		R4SBF	34179.8		R2USC	123.9		PFOCh	991.0
PFOCh	941.4					R4SBA	123.6		PFOCx	131.9
PSSA	459.5					R4SBF	173263.6		PSSA	366.9
PUBFx	347.3		**Miner**			R4SBFx	21136.7		PUBFh	368.5
PUBGh	169.6		PAB/EMFd	253.8					PUBFx	824.4
PUBGx	297.9		PABFx	654.4		**Moody**			R4SBA	98646.9
R4SBA	305.4		PEM/ABF	2510.8		PABF	1178.8		R4SBC	25964.0
R4SBC	9717.7		PEM/ABFx	520.5		PABFx	516.8		R4SBF	38023.2
R4SBCx	9033.0		PEMA	160224.6		PEM/ABF	3590.1		R4SBFx	392.6
R4SBF	62905.6		PEMAd	3710.1		PEM/ABFx	939.5			
R4SBFx	52056.5		PEMAh	36.8		PEM/FOC	1280.0		**Roberts**	
			PEMAx	1092.3		PEMA	255191.0		L2ABGh	1068.0
McCook			PEMC	529060.8		PEMAd	4898.3		PAB/EMF	245.6
PABF	101.0		PEMCd	4785.4		PEMAx	25425.2		PABF	1532.9
PABFx	312.9		PEMCx	462280.1		PEMC	743461.5		PABFh	122.5
PEM/ABF	2105.8		PFOA	29213.1		PEMCd	1885.5		PABFx	198.2
PEMA	130486.8		PFOAd	1249.4		PEMCh	61.1		PEM/ABF	13745.0
PEMAd	4937.8		PFOAh	523.0		PEMCx	248468.7		PEM/FOC	3232.0
PEMAx	1933.7		PFOAx	217.8		PEMF	495.7		PEMA	399385.2
PEMC	566559.8		PFOC	16816.2		PEMFh	61.4		PEMAd	927.3
PEMCd	369.8		PFOCx	980.2		PEMFx	980.2		PEMAx	40059.1
PEMCh	41.1		PUBFx	662.5		PFO/EMC	858.6		PEMC	909318.3
PEMCx	454101.4		R4SBF	126890.4		PFO/EMCx	141.9		PEMCd	2547.6
PEMF	3077.0		R4SBFx	328.9		PFOA	25209.7		PEMCh	683.2

Attribute	Length (m)
PEMCx	184649.4
PEMF	36858.6
PEMFh	662.6
PEMFx	6339.9
PFO/EMA	132.3
PFOA	40289.6
PFOAd	2050.0
PFOAh	9376.9
PFOAx	2139.1
PFOC	13096.3
PFOCd	131.0
PFOCh	4416.8
PFOCx	2074.9
PSSA	7278.4
PSSC	2008.9
PSSCh	276.1
PUBFx	434.1
R4SBA	32588.0
R4SBAx	4861.9
R4SBC	60926.5
R4SBF	287335.8
R4SBFx	5278.3

Sanborn

Attribute	Length (m)
PABF	149.5
PABFx	38.4
PEM/ABF	1359.6
PEMA	95407.1
PEMAd	4334.2
PEMAx	19782.7
PEMC	176213.0
PEMCd	1336.2
PEMCx	458993.3
PEMFx	760.0
PFOA	37353.8
PFOAd	2892.9
PFOAx	2670.1
PFOC	3104.0
PFOCd	204.0
PFOCx	2207.8
PSSA	383.7
PUBFx	745.3
R4SBF	64090.7
R4SBFx	2936.3

Spink

Attribute	Length (m)
L2USA	814.2
PAB/EMF	69.2
PABFh	146.7
PABFx	1837.1
PEM/ABF	134.7
PEM/FOA	476.6
PEM/FOCx	71.1
PEMA	486138.1
PEMAd	10734.7
PEMAh	291.9
PEMAx	25620.7

Attribute	Length (m)
PEMC	526304.7
PEMCd	3806.1
PEMCh	24.7
PEMCx	983795.7
PEMF	1935.4
PEMFx	502.7
PFOA	123840.0
PFOAd	521.1
PFOAh	1033.1
PFOAx	1653.9
PFOC	5883.1
PFOCd	71.2
PFOCx	4801.3
PSSA	454.5
PUBFx	645.5
R4SBA	22.2
R4SBF	69022.5
R4SBFx	16863.4

Sully

Attribute	Length (m)
L2UBFh	637.3
PABFh	1710.1
PABFx	195.5
PEMA	312720.5
PEMAd	441.0
PEMAx	6863.3
PEMC	433183.6
PEMCd	84.3
PEMCh	805.7
PEMCx	192335.8
PEMF	49.1
PEMFh	1178.9
PEMFx	22623.8
PFOA	3881.0
PFOAh	3339.7
PFOAx	251.9
PFOC	949.6
PSSAh	172.6
PSSC	369.5
PUBFx	124.5
R4SBA	38372.9
R4SBC	19446.9
R4SBF	23732.4
R4SBFx	443.5

Turner

Attribute	Length (m)
L2ABFx	846.8
PABF	1537.6
PABFh	81.9
PABFx	703.0
PEM/ABF	2071.4
PEMA	105134.6
PEMAd	8586.3
PEMAx	23352.9
PEMC	576815.8
PEMCd	2231.1
PEMCh	96.2

Attribute	Length (m)
PEMCx	288844.2
PEMF	59.5
PFO/EMA	477.0
PFO/EMCx	153.9
PFO1Cd	64.4
PFOA	58214.0
PFOAd	705.0
PFOAh	1965.2
PFOAx	3044.8
PFOC	34522.8
PFOCd	47.6
PFOCh	42.4
PFOCx	4977.2
PSSA	150.8
PUBFx	561.4
R2UBG	41308.2
R2UBGx	615.0
R2USC	71.5
R4SBC	722.9
R4SBF	162741.7
R4SBFx	36514.5

Union

Attribute	Length (m)
PAB/EMF	194.2
PAB/EMFx	4236.5
PABF	254.4
PABFh	149.9
PEM/ABF	166.5
PEM/ABFx	14254.3
PEMA	79045.9
PEMAd	2094.6
PEMAx	20846.8
PEMC	134475.3
PEMCd	2709.6
PEMCx	174933.3
PEMF	193.2
PFOA	71122.6
PFOAd	243.5
PFOAh	455.1
PFOAx	3853.3
PFOC	6716.2
PFOCx	1670.2
PSSA	241.1
PUBFx	116.3
R2UBG	4743.4
R2USA	266.6
R2USC	189.4
R4SBCx	389.6
R4SBF	79683.0
R4SBFx	28802.1

Walworth

Attribute	Length (m)
L2UBFh	519.5
PABF	934.0
PEM/FOA	310.0
PEMA	309816.3

Attribute	Length (m)
PEMAx	15139.6
PEMC	218844.0
PEMCh	1339.9
PEMCx	33704.5
PEMF	2272.9
PFO/SSA	449.4
PFOA	8558.4
PFOAh	1103.1
PFOC	661.3
PFOCh	266.1
PSSA	1608.4
PSSAx	233.5
PSSC	164.0
PUBFh	173.4
PUBFx	320.1
R4SBA	80595.4
R4SBC	07057.6
R4SBF	39178.7
R4SBFx	1357.6

Yankton

Attribute	Length (m)
PABF	223.6
PABFh	1354.9
PABFx	718.3
PEM/ABF	412.9
PEM/FOA	396.1
PEMA	100768.3
PEMAd	3216.4
PEMAx	9282.9
PEMC	362186.8
PEMCd	2643.4
PEMCh	394.8
PEMCx	184219.9
PEMF	627.3
PEMFh	519.3
PFO/EMA	732.2
PFO/EMC	5014.7
PFO/EMCx	514.0
PFOA	51553.0
PFOAd	518.7
PFOAh	5802.1
PFOAx	4582.6
PFOC	69327.4
PFOCh	300.5
PFOCx	5562.1
PSSA	319.6
PUBFx	563.0
PUSCx	76.0
R2USC	79.0
R4SBA	7358.8
R4SBC	713.2
R4SBF	92158.4
R4SBFx	43380.7

Point Wetlands

Attribute	Number	Atttribute	Number	Attribute	Number	Attribute	Number
Aurora		**Brown**		**Charles Mix**		**Davison**	
PABFx	9	PABFh	2	PABFh	4	PABFx	9
PEMA	975	PABFx	147	PABFx	20	PEM/FOC	1
PEMAd	103	PEMA	8338	PEM/ABF	1	PEMA	1126
PEMC	727	PEMAd	51	PEMA	817	PEMAd	172
PEMCd	13	PEMAh	2	PEMAd	143	PEMAx	1
PEMCh	1	PEMAx	21	PEMAh	1	PEMC	637
PEMCx	8	PEMC	2163	PEMAx	1	PEMCd	17
PUBFx	33	PEMCd	5	PEMC	379	PEMCx	10
		PEMCh	1	PEMCd	16	PEMFx	4
Beadle		PEMCx	60	PEMCh	59	PFOA	2
PABFx	4	PFO/EMC	1	PEMCx	21	PUBFx	44
PEM/SSC	1	PFOA	10	PFO/EMCx	1		
PEMA	5314	PFOC	2	PFOA	1	**Day**	
PEMAd	147	PUBFx	53	PFOCx	1	PABFh	1
PEMC	469			PUBFx	5	PABFx	3
PEMCd	5	**Brule**		PUSCh	2	PEMA	2814
PEMCx	24	PABFh	13			PEMAd	115
PFOA	3	PABFx	16	**Clark**		PEMAx	17
PFOC	1	PEMA	733	PABFx	16	PEMC	988
PSSA	1	PEMAd	39	PEM/ABF	2	PEMCd	15
PUBFx	43	PEMC	401	PEMA	2083	PEMCh	1
0.78		PEMCd	4	PEMAd	61	PEMCx	8
PUSCx	1	PEMCh	30	PEMAx	1	PEMF	1
		PEMCx	9	PEMC	839	PFOA	15
Bon Homme		PEMFx	1	PEMCd	8	PSSA	1
PABFh	3	PFOA	3	PEMCx	20	PUBFh	1
PABFx	9	PUBFx	1	PFOA	2	PUBFx	19
PEMA	507			PSSA	1		
PEMAd	76	**Buffalo**		PUBFx	42	**Deuel**	
PEMAx	3	PABF	1			PABFx	2
PEMC	121	PABFh	5	**Clay**		PEMA	1251
PEMCd	4	PABFx	2	PABFh	1	PEMAd	127
PEMCh	3	PEMA	332	PABFx	3	PEMC	1027
PEMCx	4	PEMAd	4	PEMA	209	PEMCd	75
PFOA	1	PEMC	60	PEMAd	68	PEMCx	11
PFOAd	1	PEMCh	2	PEMAx	5	PFOC	3
PUBFx	1	PEMCx	3	PEMC	30	PFOCx	1
		PFOA	1	PEMCh	1	PSSA	1
Brookings		PFOCx	1	PEMCx	7	PUBFx	2
PABFx	5	PUBFx	8	PFOA	3		
PEMA	675					**Douglas**	
PEMAd	61	**Campbell**		**Codington**		PABFx	3
PEMAx	1	PABFx	7	PABFx	3	PEMA	294
PEMC	195	PEMA	1124	PEMA	803	PEMAd	21
PEMCd	3	PEMAd	2	PEMAd	19	PEMC	91
PEMCh	1	PEMAh	1	PEMC	296	PEMCd	3
PEMCx	4	PEMAx	3	PEMCd	6	PEMCx	13
PEMF	1	PEMC	352	PEMCx	1	PFOA	2
PFOA	1	PEMCh	2	PFOA	1	PFOC	1
PFOCx	1	PEMFh	1	PUBFx	18	PUBFx	1
PUBFx	12	PSSA	1				

Attribute	Number

Edmunds
Attribute	Number
PABFx	35
PEMA	7471
PEMAd	22
PEMAx	49
PEMC	2090
PEMCd	5
PEMCx	28
PFO/EMA	1
PFOA	1
PFOC	1
PUBFx	24

Faulk
Attribute	Number
PABFx	16
PEMA	6147
PEMAd	42
PEMAx	30
PEMC	841
PEMCd	5
PEMCx	2
PEMU	1
PUBFx	11

Grant
Attribute	Number
PEMA	874
PEMAd	52
PEMC	554
PEMCd	7
PEMCh	1
PEMCx	6
PFOA	4
PFOC	1
PFOCx	1
PUBFx	4

Hamlin
Attribute	Number
PABFx	1
PEMA	187
PEMAd	1
PEMC	89
PEMCx	6
PFOC	1
PUBFx	4

Hand
Attribute	Number
PABFh	1
PABFx	1
PEMA	8592
PEMAd	139
PEMC	772
PEMCd	3
PEMCx	7
PFOC	3
PSSA	1
PUBFx	29

Hanson
Atttribute	Number
PABF	1
PABFh	1
PABFx	3
PEMA	1153
PEMAd	122
PEMC	378
PEMCd	13
PEMCx	9
PFO/EMCx	1
PFOA	4
PUBFx	5

Hughes
Attribute	Number
PABFh	9
PABFhx	1
PABFx	3
PABGx	4
PEMA	826
PEMAd	3
PEMAh	2
PEMC	36
PEMCh	2
PEMCx	2
PFOA	2
PUBFx	12

Hutchinson
Attribute	Number
PABFh	2
PABFx	19
PEMA	1319
PEMAd	219
PEMAx	2
PEMC	241
PEMCd	6
PEMCh	6
PEMCx	16
PFOA	8
PFOAd	1
PUBFx	13
PUSCh	1

Hyde
Attribute	Number
PABFh	1
PEMA	5292
PEMAd	26
PEMC	229
PEMCx	12
PUBFx	6

Jerauld
Attribute	Number
PABFh	2
PABFx	3
PEM/FOCx	1
PEMA	642
PEMAd	32
PEMC	141
PEMCd	3
PEMCh	1
PEMCx	3
PUBFx	19

Kingsbury
Attribute	Number
PABFx	6
PEMA	1848
PEMAd	70
PEMC	249
PEMCd	29
PEMCx	7
PFOA	9
PUBFx	28

Lake
Attribute	Number
PABFx	3
PEM/ABF	1
PEM/FOCx	2
PEMA	542
PEMAd	130
PEMAx	1
PEMC	111
PEMCd	14
PEMCx	2
PFOA	6
PFOC	2
PUBF	1
PUBFx	22

Lincoln
Attribute	Number
PABFh	1
PABFx	12
PEMA	369
PEMAd	254
PEMAx	3
PEMC	65
PEMCd	11
PEMCh	1
PEMCx	39
PFOA	1
PUBFx	16

Marshall
Attribute	Number
PABFx	8
PEM/ABF	1
PEM/FOC	1
PEMA	3141
PEMAd	23
PEMAx	15
PEMC	2130
PEMCd	9
PEMCx	23
PEMF	30
PFOA	5
PSSC	1
PUBFh	1
PUBFx	6
PUBGx	2

McCook
Attribute	Number
PABFx	6
PEM/FOA	2
PEM/FOCx	5
PEMA	1537
PEMAd	382
PEMAh	3
PEMC	495
PEMCd	21
PEMCx	26
PFOA	6
PFOAd	1
PUBFx	30

McPherson
Attribute	Number
PABFx	20
PEM/ABF	1
PEMA	6364
PEMAd	5
PEMAx	10
PEMC	3188
PEMCd	2
PEMCh	1
PEMCx	14
PEMF	1
PUBFx	15

Miner
Attribute	Number
PABFx	5
PEMA	1815
PEMAd	157
PEMC	607
PEMCd	37
PEMCx	20
PEMF	1
PFOA	7
PSSA	1
PUBF	3
PUBFx	26

Minnehaha
Attribute	Number
PABFh	1
PABFx	4
PEM/FOCx	1
PEMA	625
PEMAd	260
PEMAx	20
PEMC	167
PEMCd	16
PEMCh	2
PEMCx	26
PFOA	5
PFOAx	2
PFOC	4
PUBFx	28
PUSAx	1
PUSCx	2

Moody
Attribute	Number
PABFh	1
PABFx	2
PEM/ABF	1
PEMA	404
PEMAd	79
PEMAx	3
PEMC	249
PEMCd	1

Attribute	Number		Atttribute	Number		Attribute	Number		Attribute	Number
PEMCx	2		**Sanborn**			**Turner**			**Walworth**	
PFOA	6		PEMA	1958		PABFh	1		PABFh	3
PFOAd	1		PEMAd	231		PABFx	13		PEMA	1521
PFOC	1		PEMAx	1		PEMA	695		PEMAd	3
PSSC	1		PEMC	368		PEMAd	305		PEMAx	18
PUBFx	5		PEMCd	7		PEMAx	1		PEMC	316
PUBGx	2		PEMCh	1		PEMC	143		PEMCd	1
			PEMCx	4		PEMCd	9		PEMCh	4
			PFOA	1		PEMCx	6		PEMCx	4
Potter			PFOC	2		PFO/EMCx	2		PFOA	3
PABFh	2		PSSA	1		PFOA	3		PFOAx	1
PABFx	4		PUBFx	27		PFOCx	1		PUBFx	5
PEMA	1776					PSSA	1			
PEMAd	36					PUBFx	15		**Yankton**	
PEMAh	2		**Spink**						PABFh	11
PEMAx	8		PABFh	1		**Union**			PABFx	12
PEMC	209		PABFx	24		PABFh	2		PEMA	434
PEMCd	14		PEMA	5795		PABFx	1		PEMAd	147
PEMCh	4		PEMAd	102		PEMA	57		PEMAx	1
PEMCx	6		PEMAx	5		PEMAd	20		PEMC	84
PEMU	2		PEMC	467		PEMAh	1		PEMCd	5
PFOA	1		PEMCd	5		PEMC	34		PEMCh	11
PSSA	1		PEMCx	19		PEMCd	4		PEMCx	4
PUBFx	5		PFOA	1		PEMCh	1		PFO/EMC	1
			PFOAx	1		PEMCx	5		PFOA	4
Roberts			PFOCx	1		PUBFx	3		PUBFx	2
PABF	1		PUBFx	31		R2USC	7			
PEM/ABF	1									
PEMA	3147		**Sully**							
PEMAd	23		PABFh	3						
PEMAx	14		PABFx	1						
PEMC	1853		PEMA	2011						
PEMCd	5		PEMAd	19						
PEMCh	1		PEMAx	1						
PEMCx	6		PEMC	79						
PEMF	4		PEMCh	1						
PFOA	1		PEMCx	1						
PSSC	1		PSSA	1						
PUBFx	36		PUBFx	37						
			PUSAx	1						

Appendix B2. Palustrine, lacustrine, and riverine wetlands delineated by the National Wetlands Inventory in eastern South Dakota counties from photography acquired 1979-1986.

	Polygon Wetlands, Hectares				Linear Wetlands, Length (m)		
County	Palustrine	Lacustrine	Riverine	County	Palustrine	Lacustrine	Riverine
Aurora	13,777.0	169.9	102.1	Aurora	1,147,816	0	74,612
Beadle	37,938.4	1,637.3	1,001.2	Beadle	2,127,179	0	192,174
BonHomme	6,677.6	3,664.4	1,163.9	Bon Homme	922,139	0	179,646
Brookings	11,133.1	2,999.5	375.7	Brookings	2,098,916	0	41,653
Brown	39,558.7	2,533.4	1,493.9	Brown	1,620,590	0	234,293
Brule	11,209.3	5,770.0	19.6	Brule	804,198	0	113,542
Buffalo	3,909.6	4,517.7	68.7	Buffalo	823,230	272	253,499
Campbell	9,554.9	9,109.1	64.2	Campbell	621,344	597	152,271
Charles Mix	11,678.6	11,651.3	1,269.0	Charles Mix	1,742,472	0	248,241
Clark	24,451.2	586.5	2.1	Clark	1,419,341	0	5,510
Clay	3,852.7	17.6	1,371.5	Clay	600,522	0	144,199
Codington	11,601.1	6,041.5	177.7	Codington	1,020,040	6,578	66,742
Davison	7,525.3	322.2	431.5	Davison	884,418	0	83,902
Day	29,615.1	8,575.4	12.4	Day	808,654	59,804	46,543
Deuel	9,990.6	2,682.9	97.3	Deuel	1,928,594	0	163,051
Douglas	7,354.9	48.4	1.3	Douglas	595,619	0	103,313
Edmunds	27,807.5	1,119.3	51.4	Edmunds	1,213,225	3,941	11,972
Faulk	27,326.7	859.7	376.1	Faulk	1,506,796	597	98,134
Grant	7,727.3	1,064.9	61.1	Grant	1,503,508	0	380,697
Hamlin	9,381.5	6,567.6	209.8	Hamlin	686,664	0	27,639
Hand	32,991.8	1,192.2	319.7	Hand	3,585,870	0	33,693
Hanson	6,396.6	147.2	343.1	Hanson	657,059	0	87,826
Hughes	6,939.0	15,055.1	149.4	Hughes	962,634	161	143,778
Hutchinson	11,543.7	268.2	340.2	Hutchinson	1,368,736	0	189,040
Hyde	16,518.1	1,954.1	4.1	Hyde	1,704,943	0	43,590
Jerauld	8,681.6	238.1	121.8	Jerauld	1,167,335	0	62,855
Kingsbury	22,138.3	4,318.5	55.4	Kingsbury	1,323,295	0	57,897
Lake	11,135.3	2,745.7	69.1	Lake	851,346	0	85,834
Lincoln	4,851.1	76.1	237.1	Lincoln	1,015,686	197	122,418
Marshall	17,397.7	6,299.1	8.1	Marshall	1,402,659	5,361	134,018
McCook	10,508.5	711.6	143.1	McCook	1,232,237	0	128,963
McPherson	23,972.4	1,702.2	5.8	McPherson	1,314,357	0	34,180
Miner	11,040.2	280.6	83.2	Miner	1,214,792	0	127,219
Minnehaha	7,036.8	1,357.0	764.5	Minnehaha	1,701,193	0	194,938
Moody	4,555.0	178.8	412.9	Moody	1,343,873	0	98,672
Potter	11,948.6	7,724.9	0.2	Potter	803,495	0	163,027
Roberts	27,094.4	6,497.7	42.3	Roberts	1,694,213	1,068	390,991
Sanborn	20,905.7	176.1	650.2	Sanborn	807,838	0	67,027
Spink	30,396.4	1,477.7	2,184.5	Spink	2,180,795	814	85,908
Sully	12,533.5	15,158.2	47.8	Sully	981,281	637	81,996
Turner	7,584.5	113.1	73.2	Turner	1,114,543	847	241,974
Union	3,379.9	222.6	1,329.0	Union	517,974	0	114,074
Walworth	9,759.2	8,532.4	5.7	Walworth	595,900	519	228,189
Yankton	5,164.2	1,920.1	1,386.5	Yankton	811,832	0	143,690

Point Wetlands, Number

County	Palustrine	Lacustrine	Riverine
Aurora	1,869	0	0
Beadle	6,013	0	0
BonHomme	733	0	0
Brookings	960	0	0
Brown	10,856	0	0
Brule	1,250	0	0
Buffalo	419	0	0
Campbell	1,493	0	0
Charles Mix	1,472	0	0
Clark	3,075	0	0
Clay	327	0	0
Codington	1,147	0	0
Davison	2,023	0	0
Day	3,999	0	0
Deuel	2,500	0	0
Douglas	429	0	0
Edmunds	9,727	0	0
Faulk	7,095	0	0
Grant	1,504	0	0
Hamlin	289	0	0
Hand	9,548	0	0
Hanson	1,690	0	0
Hughes	901	0	0
Hutchinson	1,853	0	0
Hyde	5,566	0	0
Jerauld	847	0	0
Kingsbury	2,246	0	0
Lake	837	0	0
Lincoln	772	0	0
Marshall	5,396	0	0
McCook	2,514	0	0
McPherson	9,621	0	0
Miner	2,679	0	0
Minnehaha	1,164	0	0
Moody	758	0	0
Potter	2,070	0	0
Roberts	5,093	0	0
Sanborn	2,601	0	0
Spink	6,452	0	0
Sully	2,155	0	0
Turner	1,195	0	0
Union	128	0	7
Walworth	1,879	0	0
Yankton	716	0	0

Appendix B3. Summary of wetlands delineated by the National Wetland Inventory in eastern South Dakota counties by Cowardin *et al.* (1979) classes. Photography used to delineate wetlands was acquired 1979-1986.

Polygon Wetlands, Hectares

Class	Aurora	Beadle	Bon Homme	Brookings	Brown
EM	10,862.77	34,333.55	4,111.38	6,920.58	30,283.30
AB	785.21	2,444.90	690.55	2,271.79	2,146.51
UB	70.73	815.21	4,395.55	1,229.40	1,555.56
US	0.00	3.83	116.27	0.00	0.12
FO	44.48	232.36	89.04	217.08	407.19
SS	0.00	31.47	92.76	12.06	11.40
SB	102.08	309.07	19.36	309.15	884.74
EM/AB	1,907.28	1,351.89	1,587.58	2,867.14	6,960.90
AB/EM	207.23	642.85	32.25	318.48	367.95
EM/FO	39.76	241.45	41.52	213.51	643.35
FO/EM	29.44	115.04	40.45	104.96	291.14
FO/SS	0.00	11.71	6.27	1.29	1.17
SS/FO	0.00	2.61	58.74	12.99	15.13
SS/EM	0.00	2.63	1.20	22.09	1.59
EM/SS	0.00	33.81	27.25	7.79	8.96
US/SS	0.00	0.00	3.05	0.00	0.00
SS/US	0.00	0.00	192.82	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Class	Brule	Buffalo	Campbell	Charles Mix	Clark
EM	9,384.06	2,820.05	8,285.12	8,219.40	10,824.94
AB	716.31	823.71	1,212.02	1,941.18	1,017.61
UB	5,687.32	4,412.03	8,354.46	11,389.90	13.09
US	19.80	6.86	36.94	231.63	0.00
FO	22.46	29.09	49.47	170.76	118.05
SS	0.18	84.37	22.14	11.46	38.25
SB	19.56	68.66	64.21	124.41	2.07
EM/AB	1,093.53	192.53	592.25	1,829.84	12,235.30
AB/EM	6.09	37.95	61.65	210.97	368.84
EM/FO	45.07	7.00	12.42	145.88	254.51
FO/EM	3.85	3.67	9.99	148.07	99.45
FO/SS	0.00	0.00	1.56	0.00	4.60
SS/FO	0.00	0.00	1.67	0.11	11.00
SS/EM	0.00	8.80	2.43	20.11	3.80
EM/SS	0.39	1.23	21.87	155.13	40.81
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Class	Clay	Codington	Davison	Day	Deuel
EM	3,041.88	5,997.46	6,796.36	13,798.34	5,346.45
AB	106.49	4,411.02	237.49	3,430.26	2,550.13
UB	1,121.15	1,841.87	495.31	5,003.76	522.19
US	253.60	32.98	0.15	701.22	0.11
FO	34.02	29.58	108.83	61.81	99.40
SS	102.88	27.80	4.77	24.97	27.34
SB	4.96	177.73	299.98	12.40	97.28
EM/AB	116.68	5,103.24	181.65	13,490.63	3,762.08
AB/EM	9.13	97.59	14.84	1,571.73	306.44
EM/FO	45.13	44.78	106.11	43.15	34.04
FO/EM	29.23	26.66	30.52	13.11	10.06
FO/SS	0.00	2.36	0.00	1.89	1.87
SS/FO	0.00	3.42	0.00	2.47	3.83
SS/EM	0.00	3.69	0.00	12.43	1.65
EM/SS	291.44	20.22	3.04	34.79	7.91
US/SS	41.19	0.00	0.00	0.00	0.00
SS/US	44.09	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Polygon Wetlands, Hectares

Class	Douglas	Edmunds	Faulk	Grant	Hamlin
EM	5,801.87	25,921.38	24,978.64	5,544.47	4,403.05
AB	360.89	1,093.45	1,402.20	1,167.23	3,660.92
UB	38.83	750.16	624.55	476.80	3,041.46
US	0.00	46.72	5.49	0.97	1.04
FO	63.71	31.10	30.34	479.34	89.32
SS	6.72	1.66	3.67	85.65	10.12
SB	1.35	51.42	376.06	55.62	209.78
EM/AB	894.29	597.74	398.61	622.27	4,430.54
AB/EM	73.14	453.22	722.44	321.58	104.63
EM/FO	107.70	12.48	17.33	24.85	128.57
FO/EM	15.78	12.93	0.79	14.92	39.12
FO/SS	0.00	0.00	0.27	1.85	9.87
SS/FO	1.01	0.00	0.00	2.75	6.85
SS/EM	2.71	0.61	0.00	4.43	8.79
EM/SS	36.63	2.99	1.22	41.82	14.77
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.92	0.00	0.00

Class	Hand	Hanson	Hughes	Hutchinson	Hyde
EM	28,124.82	5,116.84	5,804.22	10,166.19	14,559.51
AB	2,940.17	366.25	1,150.63	871.28	2,783.37
UB	90.35	262.54	14.838.45	385.18	614.40
US	0.30	0.00	62.81	0.73	2.94
FO	100.11	25.46	22.11	83.32	15.88
SS	15.58	0.54	48.65	0.16	3.43
SB	267.09	95.09	149.39	7.73	4.05
EM/AB	2,239.38	881.68	11.65	415.09	40.12
AB/EM	674.27	66.60	28.13	30.29	440.85
EM/FO	38.94	21.67	7.34	91.23	9.51
FO/EM	6.75	49.66	3.49	92.30	0.84
FO/SS	1.75	0.00	0.61	0.00	0.00
SS/FO	0.41	0.00	0.15	0.00	1.36
SS/EM	0.95	0.58	0.00	7.18	0.00
EM/SS	2.76	0.00	15.88	1.38	0.00
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Class	Jerauld	Kingsbury	Lake	Lincoln	Marshall
EM	6,789.01	10,041.79	5,208.59	4,147.89	13,365.73
AB	707.99	4,867.62	1,426.45	211.18	4,787.39
UB	33.24	15.89	1,741.61	251.08	2,401.39
US	0.00	0.00	0.00	22.30	0.20
FO	95.31	208.98	137.68	85.51	68.43
SS	8.99	11.36	9.22	2.76	20.11
SB	121.84	55.41	69.08	0.73	8.10
EM/AB	1,103.12	10,875.39	4,471.43	343.47	2,648.92
AB/EM	136.87	265.80	711.72	0.00	231.68
EM/FO	27.62	74.33	49.21	11.26	54.82
FO/EM	11.25	64.26	110.46	84.50	25.63
FO/SS	0.60	0.84	1.29	0.00	2.84
SS/FO	3.75	3.48	0.76	0.00	2.85
SS/EM	0.14	10.86	5.57	0.00	6.10
EM/SS	1.85	16.23	6.91	3.66	10.77
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Polygon Wetlands, Hectares

Class	McCook	McPherson	Miner	Minnehaha	Moody
EM	7,866.50	20,621.30	7,262.66	4,683.22	2,639.45
AB	1,142.92	2,503.03	705.40	1,724.16	418.45
UB	32.05	80.92	22.07	602.66	370.56
US	0.00	0.00	0.00	22.13	0.63
FO	66.29	16.80	88.20	112.54	126.74
SS	5.53	0.28	3.92	9.83	4.56
SB	136.85	5.78	83.23	326.55	55.48
EM/AB	1,466.89	2,174.85	3,035.60	1,316.40	1,154.84
AB/EM	539.28	259.49	120.18	137.02	140.09
EM/FO	23.47	8.14	19.48	109.07	166.97
FO/EM	141.52	6.62	59.60	76.88	57.68
FO/SS	0.00	1.34	0.00	1.09	1.57
SS/FO	0.00	0.00	0.36	19.03	0.96
SS/EM	1.86	0.00	0.19	2.68	1.87
EM/SS	0.00	1.76	2.96	15.15	1.85
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Class	Potter	Roberts	Sanborn	Spink	Sully
EM	10,685.72	19,475.73	17,850.66	27,400.58	10,856.99
AB	834.17	3,302.16	582.74	1,624.03	1,928.14
UB	7,821.61	4,258.28	385.96	1,408.35	14,279.43
US	60.79	0.00	1.34	4.68	58.24
FO	11.99	350.45	175.78	402.31	15.48
SS	5.78	169.83	27.72	13.14	5.14
SB	0.20	34.68	288.66	1,333.07	47.82
EM/AB	192.97	4,714.33	1,895.28	1,132.01	378.16
AB/EM	41.37	754.90	329.03	554.25	157.76
EM/FO	11.47	63.80	97.88	145.51	6.30
FO/EM	0.66	45.55	79.08	23.74	3.56
FO/SS	0.00	6.83	0.00	2.35	0.00
SS/FO	0.00	2.04	0.79	1.13	0.00
SS/EM	0.00	98.23	0.00	0.00	0.65
EM/SS	5.75	356.57	1.71	12.69	1.87
US/SS	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00

Class	Turner	Union	Walworth	Yankton
EM	6,590.17	1,726.76	8,477.19	4,203.13
AB	347.08	389.99	1,492.11	657.79
UB	87.80	1,222.63	7,516.71	2,917.02
US	3.61	151.44	115.69	116.59
FO	97.78	347.89	29.99	99.92
SS	1.57	66.04	5.63	26.92
SB	29.68	7.59	5.74	12.52
EM/AB	465.73	202.36	397.97	191.71
AB/EM	0.00	28.09	240.22	9.34
EM/FO	48.66	96.91	10.73	22.80
FO/EM	95.87	244.35	1.69	116.55
FO/SS	0.81	27.96	1.45	0.00
SS/FO	0.00	18.13	0.00	2.86
SS/EM	0.00	27.05	1.10	1.59
EM/SS	2.06	326.64	0.95	8.51
US/SS	0.00	0.81	0.00	32.16
SS/US	0.00	46.95	0.00	51.42
EM/US	0.00	0.00	0.95	0.00
UB/FO	0.00	0.00	0.00	0.00

Linear Wetlands, Length (m)

Class	Aurora	Beadle	Bon Homme	Brookings	Brown
EM	1,088,314	2,056,007	815,180	2,013,241	1,399,215
AB	81,218	365	1,852	56	4,331
UB	989	726	210	124	197
US	0	28	145	0	0
FO	46,813	65,744	102,844	85,105	0
SS	0	2,151	319	103	0
SB	74,612	192,794	179,501	41,653	234,293
EM/AB	1,036	772	93	0	14,234
AB/EM	0	0	0	0	357
EM/FO	334	266	247	286	1,090
FO/EM	1,112	1,117	1,002	0	167
FO/SS	0	0	0	0	62
SS/FO	0	0	0	0	6,104
SS/EM	0	0	393	0	0
EM/SS	0	0	0	0	0

Class	Brule	Buffalo	Campbell	Charles Mix	Clark
EM	758,644	789,140	592,382	1,522,489	1,296,788
AB	1,759	1,094	2,999	4,773	6,031
UB	0	518	598	441	259
US	0	0	0	9,387	0
FO	43,335	30,305	19,060	209,005	100,444
SS	0	2,230	4,702	1,369	1,920
SB	133,542	253,500	152,271	238,542	5,510
EM/AB	0	215	1,977	10,872	8,736
AB/EM	0	0	225	0	0
EM/FO	460	0	0	1,000	0
FO/EM	0	0	0	1,654	0
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	118	0

Class	Clay	Codington	Davison	Day	Deuel
EM	281,668	674,825	842,632	706,214	1,842,801
AB	909	370	2,241	824	382
UB	42,270	412	497	187	7,753
US	3,389	6,578	0	60,603	0
FO	71,027	42,849	38,870	47,208	64,288
SS	47	805	143	4,563	4,518
SB	98,539	66,742	83,902	45,744	16,351
EM/AB	631	4,220	0	28,850	2,147
AB/EM	0	0	0	1,685	0
EM/FO	0	583	37	0	279
FO/EM	728	0	0	0	286
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	58	0
EM/SS	0	0	0	0	0

Linear Wetlands, Length (m)

Class	Douglas	Edmunds	Faulk	Grant	Hamlin
EM	444,021	803,889	1,494,806	1,225,980	424,459
AB	2,813	778	2,387	400	22
UB	51	1,589	674	993	50
US	0	3,941	623	0	0
FO	25,773	11,627	7,160	107,791	105,638
SS	0	0	0	16,566	274
SB	103,313	11,972	98,134	379,964	27,639
EM/AB	0	2,404	1,743	392	2,336
AB/EM	0	0	0	0	0
EM/FO	1,572	0	0	0	928
FO/EM	1,086	2,449	0	0	159
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Hand	Hanson	Hughes	Hutchinson	Hyde
EM	2,519,084	342,618	0	1,160,468	1,696,795
AB	615	604	3,033	3,884	57
UB	597	70	194	276	141
US	0	0	0	31	0
FO	56,565	49,283	13,276	92,201	7,948
SS	1,826	97	1,566	0	0
SB	33,693	87,826	143,778	189,040	43,590
EM/AB	0	346	0	211	0
AB/EM	0	0	0	0	0
EM/FO	521	0	0	2,959	0
FO/EM	327	188	0	1,341	0
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Jerauld	Kingsbury	Lake	Lincoln	Marshall
EM	1,113,367	1,182,967	760,778	908,935	1,355,361
AB	1,861	942	1,041	2,133	225
UB	300	266	193	634	815
US	0	0	0	530	5,361
FO	49,216	138,048	87,592	102,341	32,483
SS	1,306	335	597	1,434	460
SB	62,855	57,897	85,835	121,787	134,018
EM/AB	229	134	190	65	6,198
AB/EM	0	0	0	0	162
EM/FO	1,056	238	956	373	6,630
FO/EM	0	365	0	69	0
FO/SS	0	0	0	0	324
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Linear Wetlands, Length (m)

Class	McCook	McPherson	Miner	Minnehaha	Moody
EM	1,161,805	1,289,732	1,161,190	1,505,597	1,280,929
AB	414	641	654	2,472	1,696
UB	418	156	663	618	870
US	0	0	0	265	0
FO	65,739	7,457	49,000	181,213	53,416
SS	1,101	0	0	2,273	937
SB	128,963	34,180	127,219	194,524	97,887
EM/AB	2,106	16,371	3,031	5,245	4,530
AB/EM	0	0	254	0	0
EM/FO	0	0	0	3,076	1,280
FO/EM	655	0	0	843	1,001
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Potter	Roberts	Sanborn	Spink	Sully
EM	794,251	1,581,432	756,827	2,039,155	97,087
AB	126	2,922	188	1,984	1,906
UB	1,193	434	647	646	762
US	0	0	0	814	0
FO	7,558	83,575	48,433	137,804	8,422
SS	367	9,564	384	455	542
SB	163,027	390,991	67,027	85,908	81,996
EM/AB	0	13,745	1,360	135	0
AB/EM	0	246	0	69	0
EM/FO	0	3,232	0	548	0
FO/EM	0	132	0	0	0
FO/SS	0	0	0	0	0
SS/FO	0	0	0	0	0
SS/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Turner	Union	Walworth	Yankton
EM	1,005,121	414,299	581,118	663,860
AB	3,270	404	943	2,297
UB	42,485	4,860	1,013	563
US	72	456	0	155
FO	103,584	84,061	10,589	137,647
SS	15,084	241	2,006	320
SB	199,979	108,874	228,189	143,611
EM/AB	2,071	14,421	0	413
AB/EM	0	4,431	0	0
EM/FO	0	0	310	396
FO/EM	631	0	0	6,261
FO/SS	0	0	449	0
SS/FO	0	0	0	0
SS/EM	0	0	0	0
EM/SS	0	0	0	0

Point Wetlands, Number

Class	Aurora	Beadle	Bon Homme	Brookings	Brown
EM	1,827	5,959	718	941	10,641
AB	9	4	12	5	149
UB	33	43	1	12	53
US	0	1	0	0	0
FO	0	4	2	2	12
SS	0	1	0	0	0
SB	0	0	0	0	0
EM/AB	0	0	0	0	0
EM/FO	0	0	0	0	0
FO/EM	0	0	0	0	1
EM/SS	0	5	0	0	0

Class	Brule	Buffalo	Campbell	Charles Mix	Clark
EM	1,217	401	1,485	1,437	3,012
AB	29	8	7	24	16
UB	1	8	0	5	42
US	0	0	0	2	0
FO	3	2	0	2	2
SS	0	0	1	0	1
SB	0	0	0	0	0
EM/AB	0	0	0	1	2
EM/FO	0	0	0	0	0
FO/EM	0	0	0	1	0
EM/SS	0	0	0	0	0

Class	Clay	Codington	Davison	Day	Deuel
EM	320	1,125	1,967	3,959	2,491
AB	4	3	9	4	2
UB	0	18	44	20	2
US	0	0	0	0	0
FO	3	1	2	15	4
SS	0	0	0	1	1
SB	0	0	0	0	0
EM/AB	0	0	0	0	0
EM/FO	0	0	1	0	0
FO/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Douglas	Edmunds	Faulk	Grant	Hamlin
EM	422	9,665	7,068	1,494	283
AB	3	35	16	0	1
UB	1	24	11	4	4
US	0	0	0	0	0
FO	3	2	0	6	1
SS	0	0	0	0	0
SB	0	0	0	0	0
EM/AB	0	0	0	0	0
EM/FO	0	0	0	0	0
FO/EM	0	1	0	0	0
EM/SS	0	0	0	0	0

Point Wetlands, Number

Class	Hand	Hanson	Hughes	Hutchinson	Hyde
EM	9,513	1,675	871	1,809	5,556
AB	2	5	16	21	1
UB	29	5	12	13	6
US	0	0	0	1	0
FO	3	4	2	9	0
SS	1	0	0	0	0
SB	0	0	0	0	0
EM/AB	0	0	0	0	0
EM/FO	0	0	0	0	0
FO/EM	0	1	0	0	0
EM/SS	0	0	0	0	0

Class	Jerauld	Kingsbury	Lake	Lincoln	Marshall
EM	822	2,203	800	742	5,371
AB	5	6	3	13	8
UB	19	28	23	16	9
US	0	0	0	0	0
FO	0	9	8	1	5
SS	0	0	0	0	1
SB	0	0	0	0	0
EM/AB	0	0	1	0	1
EM/FO	1	0	2	0	1
FO/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	McCook	McPherson	Miner	Minnehaha	Moody
EM	2,464	9,585	2,637	1,116	738
AB	6	20	5	5	3
UB	30	15	29	28	7
US	0	0	0	3	0
FO	7	0	7	11	8
SS	0	0	1	0	1
SB	0	0	0	0	0
EM/AB	0	1	0	0	1
EM/FO	7	0	0	1	0
FO/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Potter	Roberts	Sanborn	Spink	Sully
EM	2,057	5,053	2,570	6,396	2,112
AB	6	1	0	25	4
UB	5	36	27	31	37
US	0	0	0	0	1
FO	1	1	3	3	0
SS	1	1	1	0	1
SB	0	0	1	0	0
EM/AB	0	1	0	0	0
EM/FO	0	0	0	0	0
FO/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class	Turner	Union	Walworth	Yankton
EM	1,159	122	1,867	686
AB	14	3	3	23
UB	15	3	5	2
US	0	7	0	0
FO	4	0	4	4
SS	1	0	0	0
SB	0	0	0	0
EM/AB	0	0	0	0
EM/FO	0	0	0	0
FO/EM	2	0	0	1
EM/SS	0	0	0	0

Appendix B4. Summary of wetlands, by water regime, delineated by the National Wetlands Inventory in eastern South Dakota counties from photography acquired 1979-1986.

Polygon Wetlands, Hectares

County	A	B	C	F	G	H
Aurora	5,545.54	0.00	4,668.58	3,564.93	269.94	0.00
Beadle	16,816.17	11.72	8,002.80	3,754.34	1,990.23	0.00
Bon Homme	2,034.23	0.00	2,119.19	2,867.62	125.44	4,359.55
Brookings	4,414.09	5.40	3,064.41	3,866.16	3,158.22	0.00
Brown	15,602.45	0.00	5,237.73	9,652.93	3,090.74	0.00
Brule	3,750.14	0.00	4,037.10	3,392.25	125.73	5,684.67
Buffalo	1,320.02	0.00	1,544.43	1,142.28	256.01	4,263.11
Campbell	3,297.90	0.00	4,722.19	1,683.92	2,159.67	6,864.51
Charles Mix	3,254.44	0.00	5,361.79	3,765.69	1,385.10	10,831.83
Clark	3,749.41	2.37	7,261.29	13,433.99	592.65	0.00
Clay	2,882.60	0.00	973.19	242.11	142.64	1,000.54
Codington	2,078.91	0.00	3,201.73	6,502.55	6,037.21	0.00
Davison	3,866.44	0.00	3,128.70	812.41	471.47	0.00
Day	5,521.29	13.21	6,180.84	19,371.69	5,911.52	1,204.42
Deuel	1,583.56	91.04	3,547.37	4,845.35	2,400.86	302.58
Douglas	2,437.04	0.10	3,344.77	1,568.59	54.14	0.00
Edmunds	7,048.26	0.00	8,457.90	2,485.30	984.24	0.00
Faulk	6,967.03	0.00	17,900.32	2,916.25	751.40	0.00
Grant	2,238.85	10.09	2,557.41	2,949.79	640.56	456.49
Hamlin	1,229.35	0.00	3,357.96	4,997.67	6,573.85	0.00
Hand	9,358.46	0.00	18,824.03	5,738.39	578.39	0.04
Hanson	2,302.08	0.00	2,889.89	1,294.91	400.03	0.00
Hughes	2,488.75	0.00	3,237.12	1,485.71	628.34	14,302.11
Hutchinson	5,561.96	0.00	4,775.05	1,192.93	622.13	0.00
Hyde	3,582.14	0.00	10,919.64	2,648.21	724.30	601.50
Jerauld	3,725.27	0.00	3,160.46	2,073.24	82.37	0.00
Kingsbury	5,040.25	0.00	5,169.13	11,960.98	4,341.86	0.00
Lake	2,105.04	0.00	3,362.64	5,832.11	2,649.68	0.00
Lincoln	2,646.60	0.00	1,694.56	468.22	354.96	0.00
Marshall	4,868.01	0.00	2,930.25	9,569.83	4,411.53	1,855.20
McCook	3,166.99	0.00	4,910.89	2,695.63	649.63	0.00
McPherson	6,242.40	0.00	12,068.87	5,709.35	1,654.63	0.00
Miner	2,736.26	0.00	4,655.23	3,754.66	256.29	0.00
Minnehaha	2,875.54	0.00	2,142.79	2,481.72	1,658.33	0.00
Moody	1,551.64	0.00	1,416.87	1,624.59	548.43	0.00
Potter	4,420.13	0.17	5,824.67	1,775.05	1,095.87	6,519.88
Roberts	8,314.27	354.42	7,366.61	11,062.28	2,591.21	3,946.05
Sanborn	8,918.92	0.00	9,183.02	3,146.25	483.51	0.00
Spink	16,049.24	7.68	11,855.51	4,098.68	1,506.71	539.57
Sully	5,466.34	0.00	5,454.58	1,937.52	2,495.89	12,385.16
Turner	3,749.12	0.00	2,856.05	1,006.84	158.81	0.00
Union	2,335.29	0.00	733.64	526.15	257.68	0.00
Walworth	3,976.50	0.00	3,841.46	2,211.64	2,182.47	0.00
Yankton	2,409.30	0.00	2,140.29	832.22	579.53	0.00

Linear Wetlands, Length (m)					Point Wetlands, Number				
County	*A*	*C*	*F*	*G*	*County*	*A*	*C*	*F*	*G*
Aurora	283,353	852,526	86,549	0	Aurora	1,078	749	42	0
Beadle	475,279	1,658,450	186,244	0	Beadle	5,465	501	47	0
Bon Homme	212,515	751,000	138,271	0	Bon Homme	588	132	12	0
Brookings	532,780	1,565,638	42,192	0	Brookings	738	204	18	0
Brown	600,817	975,541	278,526	0	Brown	8,422	2,232	202	0
Brule	271,111	557,041	89,587	0	Brule	775	444	31	0
Buffalo	443,048	485,679	148,002	272	Buffalo	337	66	16	0
Campbell	365,283	310,352	98,758	0	Campbell	1,131	354	8	0
Charles Mix	583,396	1,241,385	175,908	23	Charles Mix	963	479	30	0
Clark	356,168	1,043,937	24,745	0	Clark	2,148	867	60	0
Clay	124,547	480,307	97,596	0	Clay	285	38	4	0
Codington	343,561	669,192	80,607	0	Codington	823	303	21	0
Davison	152,963	727,887	87,470	0	Davison	1,301	665	57	0
Day	386,292	432,908	95,801	0	Day	2,962	1,012	25	0
Deuel	356,638	1,558,810	176,198	0	Deuel	1,379	1,117	4	0
Douglas	135,728	460,713	102,491	0	Douglas	317	108	4	0
Edmunds	484,167	719,888	25,082	0	Edmunds	7,544	2,124	59	0
Faulk	584,410	916,045	105,072	0	Faulk	6,219	848	27	0
Grant	500,521	1,142,457	240,475	733	Grant	930	570	4	0
Hamlin	237,958	438,944	37,401	0	Hamlin	188	96	5	0
Hand	1,046,284	2,544,518	28,761	0	Hand	8,732	785	31	0
Hanson	104,426	552,013	88,846	0	Hanson	1,279	401	10	0
Hughes	455,797	612,866	37,908	0	Hughes	833	40	23	4
Hutchinson	232,255	1,130,007	195,514	0	Hutchinson	1,549	270	34	0
Hyde	666,079	1,067,037	15,416	0	Hyde	5,318	241	7	0
Jerauld	428,718	741,571	59,901	0	Jerauld	674	149	24	0
Kingsbury	337,252	984,702	59,238	0	Kingsbury	1,927	285	34	0
Lake	148,231	701,230	87,720	0	Lake	679	131	27	0
Lincoln	262,285	751,585	124,134	296	Lincoln	627	116	29	0
Marshall	618,917	652,330	270,323	468	Marshall	3,184	2,164	46	2
McCook	191,787	1,034,139	135,275	0	McCook	1,931	547	36	0
McPherson	530,915	699,973	117,649	0	McPherson	6,379	3,205	37	0
Miner	196,267	1,013,923	131,822	0	Miner	1,980	664	35	0
Minnehaha	515,990	1,173,438	206,413	290	Minnehaha	913	218	33	0
Moody	319,209	1,016,977	105,529	831	Moody	493	254	9	2
Potter	493,388	431,787	41,322	0	Potter	1,824	233	11	0
Roberts	549,088	1,183,362	352,754	1,068	Roberts	3,185	1,866	42	0
Sanborn	162,825	642,059	69,982	0	Sanborn	2,192	382	27	0
Spink	651,601	1,524758	91,158	0	Spink	5,904	492	56	0
Sully	366,043	647,176	50,696	0	Sully	2,033	81	41	0
Turner	201,631	908,591	205,218	41,923	Turner	1,005	161	29	0
Union	178,170	321,084	128,051	4,743	Union	78	51	6	0
Walworth	417,815	363,038	44,756	0	Walworth	1,546	325	8	0
Yankton	184,531	631,032	139,959	0	Yankton	586	105	25	0

Appendix B5. Summary of wetlands, by special modifier, delineated by the National Wetlands Inventory in eastern South Dakota counties from photography acquired 1979-1986.

Polygon Wetlands, Hectares

County	d	x	h	b
Aurora	1,682.1	363.3	359.3	0.0
Beadle	4,328.4	755.6	539.8	0.0
BonHomme	967.4	130.6	4,836.0	0.0
Brookings	2,021.4	389.6	87.8	0.0
Brown	4,117.6	475.6	7,054.5	0.0
Brule	1,072.7	281.3	6,208.4	0.0
Buffalo	334.4	75.6	4,082.8	0.0
Campbell	119.1	121.9	8,972.2	0.0
Charles Mix	1,699.8	266.2	12,030.6	0.0
Clark	3,821.9	282.1	251.8	0.0
Clay	1,446.9	91.6	1,046.3	0.0
Codington	1,262.9	255.2	41.2	0.0
Davison	1,648.9	223.3	364.0	0.0
Day	3,497.4	235.3	249.4	0.0
Deuel	2,859.3	150.6	411.1	0.0
Douglas	1,528.9	231.8	103.2	0.0
Edmunds	344.1	342.7	639.7	0.0
Faulk	1,094.6	368.0	1,134.1	0.0
Grant	1,393.8	416.3	409.4	0.0
Hamlin	1,506.5	137.8	18.9	0.0
Hand	2,465.2	605.3	1,352.5	0.0
Hanson	996.9	175.9	97.1	0.0
Hughes	198.7	162.0	16,336.1	0.0
Hutchinson	2,667.8	272.3	303.7	0.0
Hyde	483.9	269.2	2,005.5	0.0
Jerauld	1,141.2	180.5	308.4	0.0
Kingsbury	3,161.7	361.5	90.6	0.0
Lake	3,016.6	208.7	81.7	4.2
Lincoln	2,107.4	136.0	153.9	0.0
Marshall	1,912.0	147.3	2,144.5	0.0
McCook	2,218.1	218.6	325.4	0.0
McPherson	136.0	274.4	383.6	0.0
Miner	1,501.2	292.9	188.7	0.0
Minnehaha	1,949.2	367.8	120.4	0.0
Moody	1,143.1	167.2	85.2	0.0
Potter	471.5	249.7	8,490.4	0.0
Roberts	2,750.7	352.8	7,173.4	1.7
Sanborn	5,488.0	177.1	35.3	0.0
Spink	1,712.5	437.0	872.3	0.0
Sully	628.1	246.2	15,496.8	0.0
Turner	3,117.2	194.7	93.2	0.0
Union	681.3	152.2	1,120.3	0.0
Walworth	247.5	152.6	8,226.1	0.0
Yankton	1,648.7	103.4	2,821.9	0.0

Linear Wetlands, Length (m)

County	x	d	h
Aurora	452,234	3,844	14,848
Beadle	954,718	7,179	2,274
Bon Homme	165,367	4,021	4,210
Brookings	474,475	7,751	1,417
Brown	608,909	12,758	4,931
Brule	266,378	1,921	12,641
Buffalo	50,853	320	4,225
Campbell	25,690	36	5,989
Charles Mix	370,713	4,434	19,850
Clark	255,236	4,272	6,129
Clay	326,913	3,217	285
Codington	52,580	1,443	385
Davison	368,806	12,678	4,203
Day	131,279	6,519	3,577
Deuel	270,297	13,487	187
Douglas	266,473	1,765	1,400
Edmunds	340,429	493	9,532
Faulk	368,860	1,551	4,651
Grant	170,275	3,898	1,727
Hamlin	84,905	6,009	0
Hand	873,924	4,793	9,323
Hanson	343,727	6,131	80
Hughes	155,057	0	6,897
Hutchinson	340,873	9,516	6,260
Hyde	309,598	563	3,105
Jerauld	250,933	7,145	6,719
Kingsbury	407,696	9,784	2,449
Lake	236,775	16,893	644
Lincoln	437,217	9,618	509
Marshall	181,097	5,409	4,129
McCook	462,556	6,532	932
McPherson	116,746	86	951
Miner	466,737	9,999	560
Minnehaha	363,223	12,552	2,125
Moody	291,464	11,935	757
Potter	115,968	269	4,263
Roberts	246,035	5,656	26,607
Sanborn	488,036	8,768	0
Spink	1,035,792	15,133	1,496
Sully	222,839	525	7,845
Turner	359,614	11,635	2,286
Union	249,103	5,040	605
Walworth	50,674	0	3,484
Yankton	248,900	6,379	8,372

Point Wetlands, Number

County	d	x	h	County	d	x	h
Aurora	116	50	1	Hughes	3	22	12
Beadle	152	72	0	Hutchinson	226	50	9
BonHomme	81	18	5	Hyde	26	18	1
Brookings	64	23	1	Jerauld	35	26	3
Brown	56	281	5	Kingsbury	99	41	0
Brule	43	27	43	Lake	144	30	0
Buffalo	4	14	7	Lincoln	265	70	2
Campbell	2	10	4	Marshall	32	54	1
Charles Mix	159	49	66	McCook	404	67	3
Clark	69	79	0	McPherson	7	59	1
Clay	68	15	2	Miner	194	51	0
Codington	25	22	0	Minnehaha	276	84	3
Davison	189	68	0	Moody	81	14	1
Day	130	47	3	Potter	50	23	8
Deuel	202	16	0	Roberts	28	56	1
Douglas	24	17	0	Sanborn	238	32	1
Edmunds	27	136	0	Spink	107	81	1
Faulk	47	59	0	Sully	19	41	4
Grant	59	11	1	Turner	314	38	1
Hamlin	1	11	0	Union	24	9	4
Hand	142	37	1	Walworth	4	28	7
Hanson	135	18	1	Yankton	152	19	22
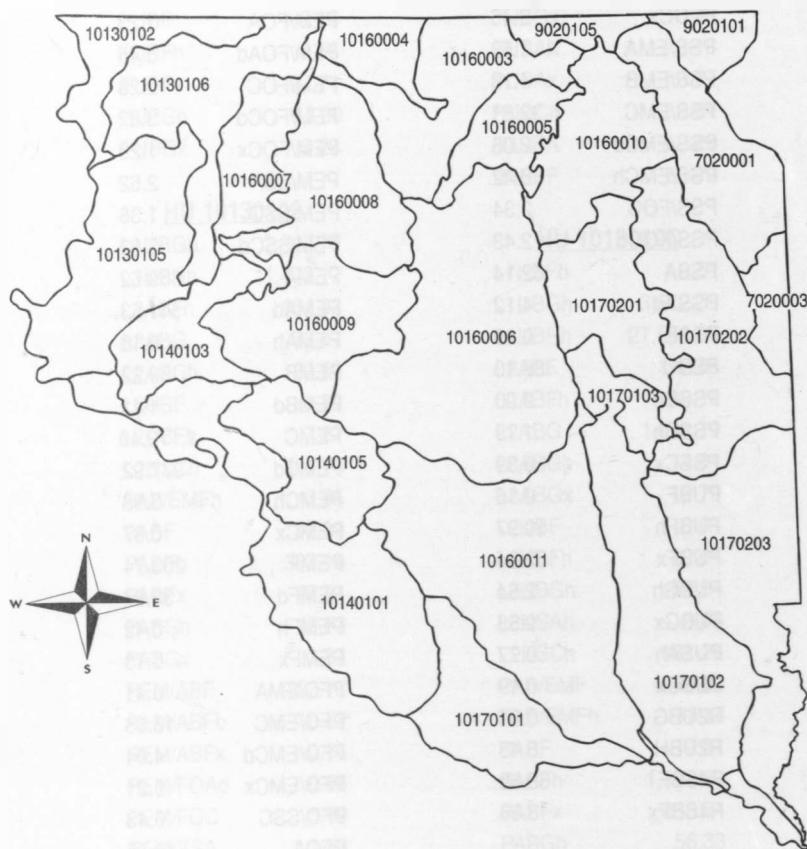
Fig 43. Eastern South Dakota U.S. Geological Survey 8-digit hydrologic units (watersheds).

Appendix C1. Wetlands delineated by the National Wetlands Inventory in eastern South Dakota hydrologic units from photography acquired 1979-1986. Attribute is the NWI code for Cowardin *et al.* (1979) classification.

Polygon Wetlands

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectare
HU 07020001		PEMFd	238.99	**HU 07020003**		PSS/EMCd	0.55
L1UBG	217.79	PEMFh	52.24	L1UBG	449.76	PSS/FOC	2.62
L1UBHh	1,850.49	PEMFx	12.85	L1UBH	302.48	PSSA	6.45
L1UBHx	278.61	PFO/EMA	7.82	L2ABG	1,277.70	PSSAd	0.89
L2ABF	36.61	PFO/EMB	8.24	L2ABGh	13.73	PSSC	5.30
L2ABFx	18.42	PFO/EMC	22.99	L2UBG	8.27	PSSCd	4.13
L2ABG	1,081.20	PFO/EMCd	0.16	PAB/EMF	115.92	PUBFx	8.39
L2ABGh	368.33	PFO/EMCx	0.83	PAB/EMFd	121.57	R4SBF	25.21
L2UBGh	139.00	PFO/SSA	6.11	PAB/EMFh	0.75	R4SBFx	1.35
PAB/EMF	610.66	PFO/SSC	3.44	PABF	142.87		
PAB/EMFd	7.65	PFOA	527.95	PABFd	4.84	**HU 09020101**	
PAB/EMFh	19.69	PFOAd	26.49	PABFh	42.57	L1UBHh	2,260.29
PAB/EMFx	17.06	PFOAh	24.74	PABFx	55.80	L2ABF	11.15
PAB/FOC	1.28	PFOAx	0.73	PABGh	13.78	L2ABG	608.25
PABF	641.76	PFOB	1.88	PABHx	0.10	L2ABGh	41.63
PABFd	39.34	PFOBd	0.40	PEM/ABF	1,750.63	L2UBGh	0.38
PABFh	139.66	PFOC	87.52	PEM/ABFd	839.39	PAB/EMF	144.06
PABFx	149.91	PFOCd	18.56	PEM/ABFh	8.31	PAB/EMFd	1.36
PABG	6.24	PFOCh	5.17	PEM/ABFx	0.26	PAB/EMFh	63.02
PABGh	29.50	PFOCx	2.46	PEM/FOA	1.23	PABF	314.49
PABGx	36.57	PSS/EMA	1.52	PEM/FOAd	5.45	PABFd	14.02
PEM/ABF	1,918.38	PSS/EMB	4.18	PEM/FOC	10.28	PABFh	14.12
PEM/ABFb	0.55	PSS/EMC	32.61	PEM/FOCd	3.82	PABFx	29.12
PEM/ABFd	167.60	PSS/EMCd	2.06	PEM/FOCx	1.20	PABG	25.07
PEM/ABFh	17.33	PSS/EMCh	0.42	PEM/SSA	2.62	PABGh	31.63
PEM/ABFx	5.03	PSS/FOC	2.34	PEM/SSC	1.38	PABGx	4.63
PEM/FOA	24.29	PSS/FOCd	2.43	PEM/SSCd	3.62	PEM/ABF	1,916.67
PEM/FOB	0.20	PSSA	62.14	PEMA	669.62	PEM/ABFd	10.71
PEM/FOC	34.60	PSSAd	4.12	PEMAd	511.53	PEM/ABFh	1,134.04
PEM/FOCd	3.68	PSSB	0.49	PEMAh	0.16	PEM/ABFx	2.72
PEM/FOCh	0.65	PSSC	86.10	PEMB	89.22	PEM/FOA	2.91
PEM/FOCx	0.78	PSSCd	9.00	PEMBd	1.11	PEM/FOAh	1.07
PEM/SSA	13.39	PSSCh	1.79	PEMC	1,172.40	PEM/FOC	4.90
PEM/SSAd	0.39	PSSCx	0.59	PEMCd	977.92	PEM/FOCd	0.56
PEM/SSC	86.45	PUBF	0.16	PEMCh	3.98	PEM/FOCh	10.63
PEM/SSCd	2.85	PUBFh	10.97	PEMCx	0.67	PEM/SSA	14.12
PEM/SSCh	0.73	PUBFx	62.64	PEMF	203.74	PEM/SSAd	0.30
PEM/SSCx	2.27	PUBGh	2.64	PEMFd	32.67	PEM/SSAh	14.89
PEMA	3,695.29	PUBGx	9.58	PEMFh	0.42	PEM/SSB	16.87
PEMAd	1,665.15	PUSAh	0.77	PEMFx	0.13	PEM/SSC	16.54
PEMAh	4.19	PUSCx	0.19	PFO/EMA	0.41	PEM/UBFh	0.01
PEMAx	7.54	R2UBG	0.01	PFO/EMC	13.03	PEM/UBGh	0.10
PEMB	19.03	R2UBH	5.45	PFO/EMCd	4.04	PEMA	3,102.35
PEMBd	0.92	R4SBF	68.58	PFO/EMCx	0.21	PEMAd	486.61
PEMC	4,625.55	R4SBFx	3.86	PFO/SSC	0.43	PEMAh	281.04
PEMCd	976.22			PFOA	10.55	PEMAx	1.72
PEMCf	0.33			PFOAd	3.41	PEMB	8.68
PEMCh	23.86			PFOC	42.42	PEMC	2,400.49
PEMCx	10.46			PFOCd	26.85	PEMCd	282.88
PEMF	3,087.34			PSS/EMC	0.82	PEMCh	488.64

Attribute	Hectares
PEMCx	27.54
PEMF	1,741.78
PEMFb	1.07
PEMFd	75.05
PEMFh	456.29
PEMFx	25.56
PFO/EMA	1.29
PFO/EMC	5.87
PFO/EMCh	14.42
PFO/SSA	0.66
PFO/SSC	0.31
PFOA	24.07
PFOAd	3.15
PFOAh	22.47
PFOC	21.21
PFOCd	0.85
PFOCh	45.73
PFOCx	4.42
PSS/EMA	3.51
PSS/EMB	33.01
PSS/EMC	24.14
PSS/EMCh	1.63
PSSA	25.07
PSSAd	0.42
PSSB	23.69
PSSC	22.91
PSSCd	0.95
PSSCh	13.13
PSSCx	4.05
PUBFx	4.26
R2UBHx	7.65

HU 09020105

Attribute	Hectares
L1UBGh	37.51
L2ABF	9.63
L2ABG	203.81
L2ABGh	33.80
L2UBGh	18.39
PAB/EMF	28.94
PAB/EMFd	0.53
PABF	129.44
PABFh	8.22
PABFx	8.73
PABGh	6.45
PEM/ABF	233.93
PEM/ABFd	81.56
PEM/ABFh	2.98
PEM/FOA	5.88
PEM/FOC	8.52
PEM/SSA	2.79
PEM/SSC	0.48
PEMA	1,159.85
PEMAd	303.30

Attribute	Hectares
PEMAh	3.25
PEMAx	0.13
PEMC	989.25
PEMCd	122.02
PEMCh	1.96
PEMCx	0.08
PEMF	879.99
PEMFd	301.66
PEMFh	44.41
PFO/EMA	2.21
PFO/EMC	1.56
PFO/SSA	1.94
PFO/SSC	0.56
PFOA	12.06
PFOAd	0.83
PFOC	9.77
PFOCd	0.28
PFOCx	0.26
PSS/EMC	0.26
PSS/FOA	0.50
PSS/FOC	0.80
PSSA	2.90
PSSC	3.20
PUBF	0.16
PUBFh	6.56
PUBFx	22.71
PUBGh	13.20
PUBGx	9.28

HU 10130102

Attribute	Hectares
L1UBGh	2,547.75
L1UBHh	11,473.17
L2ABFh	164.33
L2ABG	73.67
L2ABGh	50.50
L2UBF	1.09
L2UBFh	7.27
L2USCh	111.16
PAB/EMFh	3.85
PABF	39.39
PABFh	339.18
PABFx	79.91
PABGh	19.53
PABGx	1.33
PEM/ABF	102.12
PEM/ABFh	18.53
PEM/ABFx	0.16
PEM/FOAd	0.56
PEM/FOC	5.69
PEM/SSA	1.53
PEM/SSC	17.56
PEM/SSCh	1.34
PEMA	2,640.08

Attribute	Hectares
PEMAd	77.02
PEMAh	60.06
PEMC	1,615.06
PEMCd	43.64
PEMCh	206.19
PEMF	213.46
PEMFh	100.67
PFO/EMC	6.11
PFO/SSA	0.29
PFO/SSC	0.50
PFOA	8.41
PFOC	11.93
PFOCh	0.14
PSS/EMA	1.04
PSS/EMC	2.17
PSS/FOA	0.32
PSS/FOC	1.34
PSSA	5.43
PSSAh	0.22
PSSC	4.26
PSSCd	4.15
PSSCh	4.09
PUBFx	0.96
PUBGx	0.46
PUSAh	0.13
PUSAx	0.27
PUSCh	0.61
R4SBA	0.28
R4SBF	69.70

HU 10130105

Attribute	Hectares
L1UBFh	0.51
L1UBGh	3,572.39
L1UBHh	27,561.90
L2ABF	197.86
L2ABFh	38.12
L2ABG	1,004.19
L2ABGh	74.91
L2ABGx	10.79
L2UBF	0.04
L2UBFh	22.04
L2UBGh	52.54
L2USAh	0.08
L2USCh	181.25
PAB/EMF	40.62
PAB/EMFh	11.17
PABF	19.91
PABFh	1,192.66
PABFx	258.54
PABGh	56.33
PEM/ABF	354.32
PEM/ABFh	27.29
PEM/FOA	4.26

Attribute	Hectares
PEM/FOAh	8.14
PEM/FOC	2.90
PEM/FOCh	7.08
PEM/FOCx	0.75
PEM/SSA	0.96
PEM/SSAh	2.82
PEM/SSC	2.07
PEM/SSCh	1.73
PEMA	8,303.47
PEMAd	561.64
PEMAh	96.69
PEMAx	2.33
PEMB	0.16
PEMC	6,651.96
PEMCd	147.79
PEMCh	81.81
PEMCx	5.72
PEMF	1,107.03
PEMFh	15.42
PEMFx	6.03
PEMU	2.72
PFO/EMA	0.16
PFO/EMAh	0.45
PFO/EMAx	0.68
PFO/EMC	0.20
PFO/EMCh	2.51
PFOA	16.93
PFOAd	1.48
PFOAh	1.20
PFOAx	0.76
PFOC	2.19
PFOCh	1.40
PSS/EMC	0.96
PSSA	7.57
PSSAh	7.77
PSSC	3.79
PSSCh	2.18
PUB/EMFh	1.31
PUBF	0.24
PUBFh	186.14
PUBFx	102.27
PUBGh	42.03
PUBGx	6.35
PUBHx	0.09
PUSAh	0.09
PUSCh	0.86
PUSCx	0.79
R4SBF	6.50

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
HU 10130106		**HU 10140101**		PFO/SSCh	0.61	PEMCx	12.14
L2ABF	256.72	L1UBGh	324.35	PFOA	48.50	PEMF	11.71
L2ABG	2,274.27	L1UBHh	29,187.43	PFOAd	5.08	PEMFh	8.70
L2ABGh	56.72	L2ABF	426.55	PFOAh	14.57	PFO/EMC	0.84
L2UBG	125.97	L2ABFh	29.91	PFOAx	0.38	PFO/EMCh	3.21
L2USA	5.65	L2ABFx	1.44	PFOC	53.80	PFOA	13.80
PAB/EMF	542.99	L2ABG	895.38	PFOCd	2.37	PFOC	6.77
PABF	508.49	L2ABGh	188.65	PFOCh	13.96	PFOCh	1.17
PABFh	165.81	L2UBFh	189.98	PFOCx	4.65	PSS/FOCh	1.35
PABFx	252.10	L2USAh	3.29	PSS/EMA	10.23	PSSA	0.18
PABG	23.49	L2USCh	160.48	PSS/EMC	1.27	PSSC	0.20
PABGh	4.38	PAB/EMF	199.94	PSS/FOA	0.13	PUBFx	21.31
PABGx	0.89	PAB/EMFh	61.85	PSS/FOC	0.15	R4SBF	196.64
PEM/ABF	2,323.24	PAB/EMFx	0.48	PSSA	14.23		
PEM/FOA	5.46	PABF	187.86	PSSAd	1.42	**HU 10140105**	
PEM/FOC	12.64	PABFd	3.90	PSSAh	40.78	L1UBGh	127.40
PEM/FOCd	0.84	PABFh	1,536.64	PSSC	6.51	L1UBHh	14.27
PEM/FOCh	1.59	PABFx	723.48	PSSCh	70.91	L2ABF	432.80
PEM/SSA	2.85	PABG	1.48	PSSCx	0.10	L2ABFd	22.25
PEM/SSC	0.70	PABGh	78.31	PUBFh	0.26	L2ABFx	4.60
PEMA	6,921.37	PABGx	34.42	PUBFx	8.32	L2ABG	245.71
PEMAd	266.48	PABHx	0.23	PUBGx	5.35	L2ABGh	58.71
PEMAh	4.09	PEM/ABF	4,250.06	PUSAh	0.46	L2UBGh	18.85
PEMAx	0.65	PEM/ABFd	233.68	PUSC	0.17	PAB/EMF	175.00
PEMC	17,875.45	PEM/ABFh	87.11	PUSCh	6.87	PAB/EMFh	3.45
PEMCd	226.38	PEM/ABFx	2.63	R4SBF	10.92	PABF	29.50
PEMCh	19.94	PEM/FOA	29.14			PABFh	1,205.64
PEMCx	2.99	PEM/FOAd	2.45	**HU 10140103**		PABFx	254.42
PEMF	2,603.82	PEM/FOAh	1.44	L1UBHh	29.61	PABGh	103.00
PEMFh	2.43	PEM/FOC	154.53	L2ABF	348.47	PABHh	0.04
PEMFx	2.18	PEM/FOCd	5.72	L2ABFh	25.95	PEM/ABF	2,297.33
PEMU	27.63	PEM/FOCh	6.36	L2ABG	207.91	PEM/ABFd	44.53
PFO/EMA	0.65	PEM/FOCx	2.23	L2ABGh	50.93	PEM/ABFh	33.26
PFO/EMC	10.47	PEM/FOF	8.11	PAB/EMF	138.92	PEM/ABFx	0.33
PFO/EMCh	0.20	PEM/SSA	3.28	PAB/EMFh	15.79	PEM/FOA	5.44
PFO/SSA	1.97	PEM/SSAh	11.27	PABF	67.11	PEM/FOC	13.07
PFO/SSCh	0.23	PEM/SSC	42.65	PABFh	760.37	PEM/FOCh	9.50
PFOA	44.74	PEM/SSCh	1.94	PABFx	203.14	PEM/FOCx	5.10
PFOAd	0.39	PEMA	7,440.98	PABGh	19.05	PEM/SSA	1.73
PFOAh	0.19	PEMAd	2,481.66	PABGx	2.66	PEM/SSC	0.39
PFOC	22.04	PEMAh	169.56	PEM/ABF	126.03	PEM/SSCh	0.22
PFOCd	0.75	PEMB	0.10	PEM/ABFh	18.46	PEMA	2,628.63
PFOCh	0.37	PEMC	12,030.48	PEM/FOC	2.76	PEMAd	427.93
PSSA	5.53	PEMCd	1,227.49	PEM/FOCh	0.32	PEMAh	14.29
PSSC	1.93	PEMCh	150.84	PEM/FOCx	1.49	PEMC	4,263.02
PUBFh	38.68	PEMCx	20.34	PEM/SSA	1.40	PEMCd	350.01
PUBFx	82.14	PEMF	2,892.22	PEM/SSC	0.83	PEMCh	23.77
PUBGh	1.68	PEMFd	22.89	PEMA	3,662.49	PEMCx	0.78
PUBGx	4.57	PEMFh	363.07	PEMAd	361.83	PEMF	74.58
PUSCx	2.73	PEMFx	0.33	PEMAh	9.31	PEMFh	5.65
		PFO/EMA	6.84	PEMAx	1.07	PEMFx	0.07
		PFO/EMC	15.48	PEMC	7,136.66	PFO/EMA	2.61
		PFO/EMCh	3.70	PEMCd	181.04	PFO/EMC	2.71
		PFO/EMCx	0.62	PEMCh	36.04	PFO/EMCh	0.72

Attribute	Hectares
PFOA	26.11
PFOAd	2.17
PFOAh	0.71
PFOC	11.92
PFOCd	0.94
PFOCh	1.86
PSSA	4.69
PSSC	0.91
PSSCh	0.07
PUBFh	1.68
PUBFx	9.89
PUBGx	0.14
PUSCh	0.12
R4SBF	111.71

HU 10160003

Attribute	Hectares
L1UBGh	334.26
L2ABF	36.02
L2ABFd	58.69
L2ABG	55.57
L2ABGh	1,429.09
PAB/EMF	242.62
PAB/EMFd	100.66
PAB/EMFh	0.75
PABF	30.99
PABFd	9.37
PABFh	68.60
PABFx	272.12
PABGh	1.17
PABGx	47.90
PEM/ABF	2,207.51
PEM/ABFd	335.75
PEM/ABFh	4,405.01
PEM/ABFx	0.43
PEM/FOA	335.84
PEM/FOAd	113.14
PEM/FOAh	7.82
PEM/FOC	142.16
PEM/FOCd	35.14
PEM/FOCh	21.04
PEM/SSA	7.55
PEM/SSAd	1.35
PEMA	10,262.66
PEMAd	1422.03
PEMAh	59.48
PEMAx	0.55
PEMC	11,649.92
PEMCd	1,246.16
PEMCh	139.33
PEMCx	10.93
PEMF	382.59
PEMFd	626.61
PEMFh	7.73
PEMFx	1.56
PFO/EMA	77.19

Attribute	Hectares
PFO/EMAd	8.04
PFO/EMC	191.41
PFO/EMCd	5.12
PFO/EMCh	5.27
PFO/SSAd	1.02
PFOA	206.54
PFOAd	12.12
PFOAh	2.13
PFOC	155.85
PFOCd	11.92
PFOCh	9.21
PSS/EMA	0.65
PSS/EMAd	0.71
PSS/EMC	0.59
PSS/FOA	1.49
PSS/FOAd	1.46
PSS/FOC	6.45
PSSA	3.89
PSSAd	5.84
PSSC	0.20
PUBF	0.15
PUBFh	28.32
PUBFx	48.70
PUBGh	16.94
PUBGx	7.43
R2UBG	670.80
R4SBF	376.64
R4SBFx	2.77

HU 10160004

Attribute	Hectares
L1UBGh	613.54
PAB/EMF	96.30
PAB/EMFh	8.15
PABF	20.17
PABFh	33.14
PABFx	146.08
PABGh	2.39
PEM/ABF	554.17
PEM/ABFd	1.18
PEM/ABFh	25.94
PEM/FOA	13.82
PEM/FOC	5.35
PEM/SSA	3.92
PEM/SSC	0.57
PEM/UBFx	0.78
PEMA	3,790.29
PEMAd	87.36
PEMAh	1.82
PEMAx	0.29
PEMC	2,441.61
PEMCd	38.47
PEMCh	2.84
PEMCx	7.27
PEMF	69.15
PEMFh	2.31
PFO/EMC	1.22

Attribute	Hectares
PFOA	16.18
PFOC	3.60
PSSA	1.12
PSSC	0.46
PUBFx	29.28
PUSCh	0.11
R4SBF	293.27

HU 10160005

Attribute	Hectares
L1UBGh	14.03
L2ABG	69.99
L2ABGh	119.84
L2UBGh	12.02
PAB/EMF	68.66
PAB/EMFh	16.11
PABF	43.36
PABFh	23.37
PABFx	57.18
PABGh	1.66
PABGx	7.65
PEM/ABF	550.60
PEM/ABFd	60.37
PEM/ABFh	1.60
PEM/ABFx	0.06
PEM/ABGx	1.61
PEM/FOA	13.55
PEM/FOAd	1.20
PEM/FOC	10.49
PEM/SSA	4.30
PEM/SSC	0.14
PEMA	3,438.59
PEMAd	697.05
PEMAh	8.41
PEMAx	2.00
PEMC	1,422.90
PEMCd	275.63
PEMCh	0.49
PEMCx	1.18
PEMF	399.88
PEMFd	97.53
PEMFh	9.62
PFO/EMA	0.98
PFO/EMC	9.49
PFO/EMCx	2.09
PFO/SSA	0.78
PFOA	24.55
PFOAd	4.01
PFOAx	0.36
PFOC	11.39
PFOCd	0.76
PFOCx	1.19
PSS/EMCd	0.70
PSS/FOA	4.54
PSSA	2.56
PSSAd	0.98
PUBFh	16.39

Attribute	Hectares
PUBFx	42.96
R2UBG	0.80
R4SBF	210.85
R4SBFx	0.29

HU 10160006

Attribute	Hectares
L2ABF	568.72
L2ABFx	2.48
L2ABG	1,253.85
L2ABGh	338.79
L2ABGx	105.54
L2UBF	13.96
PAB/EMF	1,239.89
PAB/EMFd	81.31
PAB/EMFh	76.00
PAB/EMFx	6.44
PABF	341.26
PABFd	2.54
PABFh	779.30
PABFx	1,106.92
PABGh	27.56
PABGx	17.02
PEM/ABF	4,217.50
PEM/ABFd	256.57
PEM/ABFh	64.25
PEM/ABFx	4.59
PEM/FOA	138.15
PEM/FOAd	16.91
PEM/FOAx	0.47
PEM/FOC	233.21
PEM/FOCd	59.48
PEM/FOCh	2.34
PEM/FOCx	11.49
PEM/SSA	11.30
PEM/SSAd	2.09
PEM/SSB	2.56
PEM/SSC	39.65
PEM/SSCd	4.67
PEM/SSCh	0.21
PEMA	30,782.88
PEMAd	4,583.73
PEMAh	8.85
PEMAx	0.15
PEMB	16.50
PEMBd	2.68
PEMC	31,275.15
PEMCd	3,103.05
PEMCh	109.30
PEMCx	41.11
PEMF	334.98
PEMFd	9.24
PEMFh	24.68
PEMFx	2.17
PEMU	0.48
PFO/EMA	47.66
PFO/EMAd	5.79

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PFO/EMC	141.98	PEMAd	180.61	PEM/UBFh	2.28	PEM/ABFh	79.89
PFO/EMCd	8.99	PEMAh	2.13	PEMA	11,641.70	PEM/ABFx	1.62
PFO/EMCh	0.63	PEMAx	5.83	PEMAd	570.15	PEM/FOA	8.62
PFO/EMCx	4.82	PEMC	18,966.53	PEMAh	11.84	PEM/FOC	14.84
PFO/EMF	8.10	PEMCd	137.58	PEMAx	2.17	PEM/FOCh	3.33
PFO/SSA	3.01	PEMCh	15.69	PEMC	19,845.38	PEM/FOCx	5.31
PFO/SSC	8.52	PEMCx	2.30	PEMCd	405.57	PEM/SSA	0.61
PFO/SSCx	1.70	PEMF	560.54	PEMCh	38.84	PEM/SSC	0.92
PFOA	475.11	PEMFh	10.34	PEMCx	4.81	PEMA	10,930.60
PFOAd	28.89	PEMU	1.37	PEMF	119.12	PEMAd	1,551.71
PFOAh	1.00	PFO/EMA	1.05	PEMFd	0.70	PEMAh	19.62
PFOC	191.56	PFO/EMC	1.07	PEMFh	13.74	PEMAx	0.55
PFOCd	4.69	PFO/EMCx	0.39	PEMFx	0.21	PEMC	23,186.67
PFOCh	6.47	PFO/SSA	1.34	PEMU	13.73	PEMCd	816.38
PFOCx	1.93	PFOA	12.27	PFO/EMA	2.43	PEMCh	84.08
PSS/EMA	0.24	PFOC	2.87	PFO/EMC	9.72	PEMCx	8.65
PSS/EMC	3.76	PSS/EMA	0.60	PFO/SSA	0.26	PEMF	152.73
PSS/EMCd	0.38	PSSA	0.37	PFOA	45.30	PEMFd	0.62
PSS/FOA	5.89	PSSC	0.55	PFOAd	0.51	PEMFh	4.82
PSS/FOC	2.38	PUBF	4.24	PFOAh	1.11	PEMFx	0.07
PSS/FOCx	1.13	PUBFh	115.66	PFOAx	0.11	PFO/EMA	1.26
PSSA	53.16	PUBFx	158.60	PFOC	6.96	PFO/EMC	2.31
PSSAd	4.79	PUBGh	7.73	PFOCh	3.62	PFO/EMCh	3.06
PSSC	22.00	PUBGx	2.29	PFOCx	0.30	PFO/SSAd	1.22
PSSCd	0.86			PSSA	3.40	PFO/SSCh	1.74
PSSCh	0.71	**HU 10160008**		PSSC	0.78	PFOA	66.85
PSSCx	0.36	L1UBGh	325.15	PSSCx	0.59	PFOAd	3.93
PUBFh	0.12	L2ABF	88.88	PUB/FOFh	0.92	PFOAh	7.10
PUBFx	171.70	L2ABFh	7.65	PUBF	0.14	PFOAx	0.10
PUBGx	4.78	L2ABG	861.26	PUBFh	204.30	PFOC	76.92
PUSCx	4.12	L2ABGh	85.63	PUBFx	127.54	PFOCh	8.39
R2UBG	1,487.08	L2UBFh	20.01	PUBGh	84.60	PFOCx	4.65
R2UBGx	3.62	L2UBGh	76.67	PUBGx	5.72	PSS/EMAd	0.29
R4SBF	1,305.35	L2USA	7.35	R4SBF	768.30	PSS/EMC	0.65
R4SBFx	1.07	L2USC	46.80	R4SBFx	1.83	PSS/FOA	0.44
		PAB/EMF	420.83			PSSA	8.63
HU 10160007		PAB/EMFd	20.11	**HU 10160009**		PSSC	2.76
L2ABF	77.33	PAB/EMFh	108.16	L1UBH	539.56	PSSCd	0.59
L2ABFh	10.06	PABF	155.30	L2ABF	463.87	PUBFx	38.34
L2ABG	239.19	PABFd	1.81	L2ABFh	8.67	PUBGx	0.13
L2UBFh	79.90	PABFh	285.17	L2ABFx	1.45	R2UBF	244.11
L2UBGh	32.00	PABFx	303.50	L2ABG	1,135.52	R4SBF	707.05
PAB/EMF	656.32	PABGh	13.66	L2ABGh	263.31	R4SBFx	0.34
PAB/EMFh	10.25	PABGx	13.17	PAB/EMCh	4.33		
PABF	271.27	PEM/ABF	684.41	PAB/EMF	833.28	**HU 10160010**	
PABFh	148.65	PEM/ABFh	8.71	PAB/EMFh	66.18	L1UBG	3,964.03
PABFx	110.22	PEM/FOA	9.08	PABF	171.44	L1UBH	3,059.49
PEM/ABF	947.14	PEM/FOC	18.22	PABFh	907.41	L2ABF	817.96
PEM/ABFh	2.56	PEM/FOCh	1.56	PABFx	552.27	L2ABG	6,419.18
PEM/FOA	1.95	PEM/FOCx	2.04	PABGh	61.12	L2ABGd	15.30
PEM/FOC	1.93	PEM/FOFh	1.37	PABGx	43.15	L2UBG	15.29
PEM/FOCx	0.63	PEM/SSA	0.59	PEM/ABF	516.52	L2USA	195.87
PEMA	4,067.92	PEM/SSC	3.58	PEM/ABFd	4.74	L2USC	505.55

Attribute	Hectares
PAB/EMF	1,805.45
PAB/EMFd	34.17
PAB/EMFh	13.58
PAB/EMFx	0.10
PABF	831.76
PABFd	4.65
PABFh	29.07
PABFx	161.00
PABGh	2.50
PABGx	25.09
PEM/ABF	17,125.87
PEM/ABFd	557.32
PEM/ABFh	2.92
PEM/ABFx	0.24
PEM/FOA	24.20
PEM/FOAd	9.55
PEM/FOC	54.78
PEM/SSA	12.14
PEM/SSB	227.73
PEM/SSC	24.05
PEMA	4,252.38
PEMAd	1,837.91
PEMAh	3.65
PEMAx	0.46
PEMB	32.32
PEMC	6,264.40
PEMCd	1,068.76
PEMCh	1.47
PEMCx	6.37
PEMF	6,880.19
PEMFd	317.48
PEMFh	14.80
PEMFx	0.04
PFO/EMA	25.92
PFO/EMC	10.67
PFO/EMCd	0.64
PFO/SSA	0.33
PFO/SSC	1.76
PFOA	49.53
PFOAd	2.38
PFOAh	0.52
PFOAx	0.06
PFOC	26.59
PFOCd	0.89
PSS/EMA	5.46
PSS/EMC	10.64
PSS/FOA	3.28
PSS/FOC	3.30
PSSA	22.24
PSSAd	2.51
PSSC	22.85
PSSCd	3.79
PUBF	3.23

Attribute	Hectares
PUBFh	24.02
PUBFx	64.89
PUBGx	0.22
PUBHh	0.12
R4SBF	11.67

HU 10160011

Attribute	Hectares
L1UBGh	392.88
L2ABF	378.41
L2ABFd	56.35
L2ABFx	0.65
L2ABG	618.51
L2ABGd	63.38
L2ABGh	126.44
L2ABGx	56.83
PAB/EMF	661.55
PAB/EMFd	154.23
PAB/EMFh	17.48
PAB/EMFx	1.55
PAB/EMG	10.73
PABF	598.85
PABFd	202.34
PABFh	648.51
PABFx	963.21
PABGh	96.90
PABGx	139.04
PEM/ABF	5,196.32
PEM/ABFd	612.45
PEM/ABFh	40.94
PEM/ABFx	5.82
PEM/FOA	76.85
PEM/FOAd	19.56
PEM/FOAh	3.00
PEM/FOC	159.45
PEM/FOCd	16.52
PEM/FOCh	2.18
PEM/FOCx	18.13
PEM/SSA	7.78
PEM/SSAd	0.32
PEM/SSC	1.42
PEM/SSCd	7.63
PEM/SSCh	1.38
PEMA	18,805.96
PEMAd	8,353.73
PEMAh	8.36
PEMAx	1.44
PEMC	21,572.30
PEMCd	4,108.00
PEMCh	14.82
PEMCx	12.43
PEMF	273.74
PEMFd	109.15
PEMFh	45.80

Attribute	Hectares
PEMFx	2.49
PFO/EMA	50.00
PFO/EMAd	9.91
PFO/EMAh	4.50
PFO/EMC	239.79
PFO/EMCd	34.82
PFO/EMCh	12.07
PFO/EMCx	5.80
PFO/EMF	0.64
PFO/SSA	0.32
PFO/SSC	0.28
PFOA	237.99
PFOAd	56.14
PFOAh	7.75
PFOC	138.61
PFOCd	29.49
PFOCh	10.94
PFOCx	8.36
PSS/EMA	1.18
PSS/EMAd	8.00
PSS/EMCd	1.54
PSS/FOC	0.36
PSSA	11.23
PSSAd	0.61
PSSAh	8.38
PSSC	9.44
PSSCd	0.90
PSSCh	0.21
PUBF	2.26
PUBFh	2.64
PUBFx	171.37
PUBGx	0.05
PUSAh	0.31
PUSCh	0.27
PUSCx	0.09
R2UBG	1,191.77
R2UBH	34.68
R2USA	3.48
R2USC	5.96
R4SBA	0.47
R4SBF	624.01

HU 10170101

Attribute	Hectares
L1UBHh	5,155.99
L2ABF	325.83
L2ABFx	0.49
L2ABG	291.38
L2ABGh	91.97
L2USA	0.17
L2USC	0.80
PAB/EMF	280.56
PAB/EMFd	5.70
PAB/EMFh	3.06

Attribute	Hectares
PAB/EMFx	1.39
PABF	267.72
PABFd	26.05
PABFh	240.76
PABFx	237.94
PABG	7.49
PABGh	11.37
PABGx	19.97
PEM/ABF	1,956.52
PEM/ABFd	87.38
PEM/ABFh	242.29
PEM/ABFx	1.12
PEM/FOA	111.06
PEM/FOAd	10.26
PEM/FOC	74.40
PEM/FOCd	37.42
PEM/FOCh	2.03
PEM/FOCx	2.83
PEM/SSA	708.61
PEM/SSAd	2.39
PEM/SSC	85.57
PEM/SSCd	0.24
PEMA	2,722.76
PEMAd	1,235.65
PEMAh	1.32
PEMAx	0.41
PEMC	4,037.60
PEMCd	497.61
PEMCh	4.23
PEMCx	8.76
PEMF	669.05
PEMFd	69.24
PEMFh	116.82
PEMFx	2.08
PFO/EMA	142.77
PFO/EMAd	0.46
PFO/EMC	42.89
PFO/EMCd	1.37
PFO/EMCh	3.83
PFO/EMCx	2.78
PFO/SSA	6.27
PFOA	271.22
PFOAd	7.17
PFOAh	0.73
PFOAx	0.29
PFOC	58.83
PFOCd	4.46
PFOCh	3.65
PFOCx	8.21
PSS/EMA	43.79
PSS/EMC	2.51
PSS/FOA	66.99
PSS/FOC	0.93

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectare
PSS/USA	100.93	PEM/SSA	1.28	**HU 10170103**		PABGx	13.52
PSS/USAh	0.70	PEM/SSC	4.07	L2ABG	2,811.15	PEM/ABF	16,484.23
PSS/USC	232.82	PEM/SSCd	0.38	PAB/EMF	101.43	PEM/ABFd	2,654.81
PSSA	106.95	PEMA	7,039.47	PABF	35.41	PEM/ABFh	1.58
PSSAh	5.50	PEMAd	6,182.99	PABFd	5.54	PEM/ABFx	1.99
PSSC	84.64	PEMAh	4.64	PABFh	9.97	PEM/FOA	38.11
PSSCd	1.95	PEMAx	0.34	PABFx	150.04	PEM/FOAd	4.00
PUBFx	35.28	PEMC	8,019.85	PABGx	17.24	PEM/FOC	263.01
PUBGx	21.76	PEMCd	2,920.06	PEM/ABF	6,218.12	PEM/FOCd	41.50
PUBHh	1.07	PEMCh	2.53	PEM/ABFd	991.59	PEM/FOCh	0.19
PUS/SSA	36.06	PEMCx	14.57	PEM/ABFh	2.09	PEM/FOCx	3.05
PUS/SSC	40.33	PEMF	202.71	PEM/FOA	1.72	PEM/FOF	3.13
PUSA	2.37	PEMFd	150.89	PEM/FOC	48.78	PEM/SSA	3.24
PUSC	0.93	PEMFh	10.90	PEM/FOCd	4.51	PEM/SSC	44.55
PUSCh	0.60	PEMFx	1.05	PEM/SSA	0.55	PEM/SSCd	2.14
R2UBF	8.55	PFO/EMA	36.41	PEM/SSC	12.35	PEMA	2,993.86
R2UBG	84.83	PFO/EMAd	8.29	PEM/SSCd	1.09	PEMAd	1,854.39
R2UBH	4,620.66	PFO/EMC	277.98	PEMA	922.55	PEMAh	3.05
R2UBHx	8.12	PFO/EMCd	47.59	PEMAd	519.02	PEMAx	0.09
R2USA	199.32	PFO/EMCh	1.82	PEMC	1,784.05	PEMC	8,131.76
R2USC	504.13	PFO/EMCx	27.71	PEMCd	737.53	PEMCd	1,653.18
R4SBA	2.67	PFO/SSA	0.80	PEMCx	0.11	PEMCh	0.19
R4SBF	136.30	PFO/SSC	0.73	PEMF	303.66	PEMCx	4.23
R4SBFx	2.98	PFOA	118.76	PEMFd	1.94	PEMF	535.95
		PFOAd	43.14	PFO/EMA	33.97	PEMFd	18.39
HU 10170102		PFOAh	1.41	PFO/EMAd	0.84	PEMFx	0.19
L1UBGh	59.12	PFOAx	0.22	PFO/EMC	24.42	PFO/EMA	18.81
L2ABF	192.55	PFOC	163.48	PFO/EMCd	1.36	PFO/EMC	72.28
L2ABFx	0.78	PFOCd	32.17	PFO/SSC	1.29	PFO/EMCd	5.47
L2ABG	689.97	PFOCh	3.42	PFOA	16.85	PFO/EMCx	0.31
L2ABGh	218.16	PFOCx	2.50	PFOAd	7.33	PFO/SSA	1.49
L2UBFx	12.61	PSS/EMA	1.47	PFOC	101.59	PFO/SSC	11.63
PAB/EMF	749.32	PSS/EMC	7.47	PFOCd	29.87	PFOA	43.11
PAB/EMFd	8.78	PSS/FOCd	0.30	PSS/EMC	3.31	PFOAd	6.99
PAB/EMFh	0.60	PSSA	72.93	PSS/FOC	0.99	PFOC	105.97
PAB/EMFx	0.96	PSSC	0.60	PSS/FOCd	0.45	PFOCd	27.00
PABF	360.35	PSSCd	0.56	PSSA	2.25	PFOCx	0.39
PABFd	15.73	PUBFh	2.21	PSSAx	0.09	PSS/EMA	0.98
PABFh	313.79	PUBFx	72.62	PSSC	4.73	PSS/EMC	8.56
PABFx	498.47	PUBGx	4.36	PSSCd	3.18	PSS/FOA	8.20
PABG	1.39	PUBHx	1.57	PUBFx	3.46	PSS/FOC	12.57
PABGh	15.60	R2UBG	122.96			PSSA	6.35
PABGx	45.21	R2UBGx	24.87	**HU 10170201**		PSSC	30.47
PEM/ABF	6,770.51	R2USA	2.52	L1UBG	283.17	PSSCd	1.19
PEM/ABFb	4.15	R2USC	1.09	L2ABF	12.02	PUBFx	15.83
PEM/ABFd	410.26	R4SBC	0.94	L2ABG	7,004.53	R4SBF	3.61
PEM/ABFh	16.18	R4SBF	164.74	L2USA	32.98		
PEM/ABFx	26.12	R4SBFx	1.08	PAB/EMF	508.96		
PEM/FOA	11.95			PAB/EMFh	15.92		
PEM/FOAd	1.66			PABF	60.29		
PEM/FOC	70.84			PABFd	0.70		
PEM/FOCd	8.25			PABFh	29.44		
PEM/FOCx	38.53			PABFx	269.54		

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
HU 10170202		PFO/EMC	118.36	PABFh	214.21	PFOAh	1.06
L1UBG	5,069.12	PFO/EMCd	5.39	PABFx	323.98	PFOAx	0.49
L2ABFx	0.10	PFO/EMCx	16.74	PABGh	65.84	PFOC	142.23
L2ABG	5,945.85	PFO/SSC	3.74	PABGx	98.46	PFOCd	33.02
L2ABGx	23.35	PFO/SSCd	1.42	PEM/ABF	3,375.48	PFOCh	2.80
L2UBG	143.78	PFOA	96.46	PEM/ABFd	487.68	PFOCx	1.97
L2UBGx	21.93	PFOAd	9.22	PEM/ABFh	6.19	PSS/EMA	2.44
PAB/EMF	610.96	PFOAh	1.00	PEM/ABFx	6.42	PSS/EMC	4.97
PAB/EMFd	67.19	PFOAx	0.60	PEM/FOA	63.72	PSS/FOA	20.36
PAB/EMFh	5.86	PFOC .	177.94	PEM/FOAd	5.70	PSS/FOAd	1.22
PAB/EMFx	6.40	PFOCd	10.58	PEM/FOAx	0.26	PSS/FOC	9.28
PABF	74.99	PFOCh	0.20	PEM/FOC	150.65	PSS/FOCd	0.93
PABFd	8.58	PFOCx	4.02	PEM/FOCd	17.23	PSS/USA	0.74
PABFh	124.24	PSS/EMA	11.43	PEM/FOCh	2.13	PSSA	20.19
PABFx	394.86	PSS/EMC	18.57	PEM/FOCx	38.91	PSSAd	2.18
PABG	0.71	PSS/EMCd	2.04	PEM/SSA	4.35	PSSC	19.80
PABGx	36.64	PSS/FOA	12.55	PEM/SSAd	4.37	PSSCd	1.76
PEM/ABF	5,015.93	PSS/FOAd	0.76	PEM/SSC	4.92	PUBF	8.34
PEM/ABFd	677.30	PSS/FOC	2.22	PEM/SSCd	1.77	PUBFh	0.54
PEM/ABFh	10.04	PSSA	13.98	PEM/SSCh	7.45	PUBFx	109.53
PEM/ABFx	32.67	PSSAd	2.26	PEM/SSCx	0.27	PUBG	0.51
PEM/FOA	26.89	PSSC	19.90	PEMA	3,514.62	PUBGh	3.86
PEM/FOAd	9.73	PSSCd	3.41	PEMAd	3,032.27	PUBGx	80.66
PEM/FOAx	4.85	PUBFx	96.27	PEMAh	20.50	PUS/SSA	0.81
PEM/FOC	259.04	PUBGx	92.71	PEMAx	2.94	PUSAx	0.39
PEM/FOCd	9.29	PUSC	1.14	PEMC	3,321.89	PUSC	0.26
PEM/FOCh	0.20	R2UBG	91.09	PEMCd	1,677.86	PUSCh	1.32
PEM/FOCx	26.40	R4SBF	854.24	PEMCh	21.62	PUSCx	3.24
PEM/SSA	4.75	R4SBFx	4.23	PEMCx	14.83	R2UBF	0.33
PEM/SSC	23.42			PEMF	64.30	R2UBG	972.62
PEM/SSCd	5.83	**HU 10170203**		PEMFd	45.27	P2UBGx	53.96
PEMA	4,965.91	L1UBG	1,772.41	PEMFh	13.84	R2UBH	318.61
PEMAd	1,672.95	L1UBGh	20.13	PEMFx	0.49	R2UBHx	27.46
PEMB	5.72	L2ABF	226.01	PFO/EMA	249.90	R2USA	58.05
PEMBd	0.38	L2ABFx	0.36	PFO/EMAd	2.59	R2USAx	4.48
PEMC	4,437.96	L2ABG	1,542.91	PFO/EMC	159.69	R2USC	22.16
PEMCd	1,074.39	L2ABGh	55.99	PFO/EMCd	35.16	R3UBG	2.68
PEMCh	7.70	L2ABGx	9.47	PFO/EMCh	1.24	R4SBA	7.04
PEMCx	37.92	PAB/EMF	320.68	PFO/EMCx	19.55	R4SBC	0.33
PEMF	446.01	PAB/EMFd	57.70	PFO/SSA	13.15	R4SBF	356.40
PEMFd	246.48	PAB/EMFh	7.56	PFO/SSC	14.94	R4SBFx	8.06
PEMFh	0.83	PAB/EMFx	0.82	PFO/SSCx	1.09		
PEMFx	3.34	PABF	269.66	PFOA	386.08		
PFO/EMA	21.06	PABFd	5.90	PFOAd	39.55		

Attribute	Lenth (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
HU 09020101		PSSA	4534.2	PEMFh	323.2	**HU 10160004**	
L2ABGh	1068.0	PSSAx	233.5	PEMFx	251.9	PABF	95.3
PABFx	136.1	PSSC	167.8	PFO/SSA	449.4	PABFx	692.7
PEMA	12848.0	R2SBA	20547.4	PFOA	18949.5	PEM/ABF	17357.9
PEMAd	57.7	R4SBA	69950.4	PFOAx	146.7	PEM/ABFx	714.8
PEMAx	7537.7	R4SBC	19442.2	PFOAh	599.7	PEMA	278660.3
PEMC	51183.3	R4SBF	115200.1	PFOC	1565.0	PEMAd	116.5
PEMCd	1008.4	R4SBFx	1547.0	PSSA	1608.4	PEMAx	33766.4
PEMCh	477.3			PSSC	164.0	PEMC	379745.6
PEMCx	52303.5			PUBFh	44.3	PEMCd	154.9
PEMF	9278.9	**HU 09020105**		PUBFx	888.0	PEMCh	68.0
PEMFx	2314.7	PAB/EMF	77.9	R4SBC	9760.5	PEMCx	139384.0
PFOA	10852.4	PABFh	47.3	R4SBF	13116.1	PEMF	1259.7
PFOAd	892.5	PABFx	177.8			PFOA	5847.8
PFOAh	2252.3	PEM/ABF	453.7			PFOAh	74.5
PFOAx	1130.4	PEM/FOA	302.7	**HU 10160003**		PFOAx	99.0
PFOC	1801.6	PEM/FOC	373.2	PAB/EMF	22.8	PFOC	12418.1
PFOCd	131.0	PEMA	162723.0	PABFh	277.6	PUBFx	169.8
PFOCh	4416.8	PEMAd	505.9	PABFx	1945.3	R4SBF	101545.4
PFOCx	1554.0	PEMAx	26405.0	PEM/ABF	10757.1		
PSSA	3516.6	PEMC	169967.7	PEM/FOA	814.0		
PSSC	770.1	PEMCh	46.8	PEM/FOC	3848.7	**HU 10160007**	
PSSCh	276.1	PEMCx	24149.9	PEM/FOCx	676.2	PABFx	65.3
R4SBA	1961.2	PEMF	20863.4	PEMA	347841.4	PABFh	90.9
R4SBAx	3373.8	PEMFh	643.6	PEMAd	1029.0	PEMA	275439.3
R4SBC	1218.5	PEMFx	203.6	PEMAx	65474.8	PEMAd	183.8
R4SBF	5497.3	PFO/SSA	324.4	PEMC	507223.2	PEMAx	90227.3
R4SBFx	527.4	PFOA	10700.4	PEMCh	297.1	PEMC	187342.0
		PFOAd	228.6	PEMCd	5090.3	PEMCd	122.1
		PFOC	6000.3	PEMCx	362731.1	PEMCh	193.7
HU 10130102		PSSA	110.2	PEMF	25542.2	PEMCx	101943.8
L2UBFh	597.8	PUBFx	196.3	PEMFh	520.9	PEMF	16254.8
PABF	1483.0	PUBGh	169.6	PEMFx	2400.4	PEMFh	887.3
PABFh	430.7	PUBGx	297.9	PFO/EMC	167.4	PFOA	919.4
PABFx	576.9	R4SBC	7165.0	PFOA	101925.3	PFOAx	326.3
PEM/ABF	1323.2	R4SBF	30029.2	PFOAd	1953.9	PFOC	143.5
PEM/ABFh	289.3	R4SBFx	25583.8	PFOAh	1543.2	PUBFh	334.0
PEMA	364735.8			PFOAx	1260.2	PUBFx	701.0
PEMAd	35.8			PFOC	25969.7		
PEMAx	5473.4	**HU 10130106**		PFOCd	5874.4	**HU 07020001**	
PEMC	286942.9	L2USA	190.8	PFOCh	3507.8	PAB/EMF	245.6
PEMCh	2873.0	PAB/EMF	225.0	PFOCx	3607.1	PABF	1532.9
PEMCx	19782.6	PABFh	158.3	PUBFx	296.1	PABFh	216.2
PEMF	23778.1	PABFx	710.3	R4SBA	305.4	PABFx	345.0
PEMFx	860.2	PEM/ABF	364.1	R4SBCx	9033.0	PEM/ABF	4596.7
PEMFh	390.6	PEM/FOA	310.0	R4SBF	44651.1	PEM/FOC	3046.9
PFOA	9625.3	PEMA	311092.1	R4SBFx	65665.0	PEMA	667977.3
PFOAh	2580.6	PEMAx	21446.4			PEMAd	2642.5
PFOAx	124.8	PEMC	264104.9			PEMAx	36589.3
PFOC	766.8	PEMCh	251.4			PEMB	19.3
PFOCh	129.2	PEMCd	73.2			PEMC	1630491.0
PFOCx	384.0	PEMCx	58860.3			PEMCd	3658.4
		PEMF	41586.4				

Attribute	Lenth (m)		Attribute	Length (m)		Attribute	Length (m)		Attribute	Length (m)
PEMCh	205.9		PSSC	185.9		PFOA	5469.9		PEMAd	4124.0
PEMCx	251363.5		PUBFx	112.7		PFOAd	258.2		PEMAx	17411.0
PEMF	29170.1		R2USA	799.2		PFOAh	7879.9		PEMC	2659066.9
PEMFh	1081.1		R4SBF	6443.5		PFOAx	945.8		PEMCd	10108.4
PEMFx	6772.2					PFOC	1881.8		PEMCh	471.1
PFO/EMA	132.3		**HU 10160005**			PFOCh	218.3		PEMCx	711692.6
PFOA	126799.2		PAB/EMF	603.3		PFOCx	1299.4		PEMF	3755.0
PFOAd	903.1		PABF	1563.4		PUBFh	59.3		PEMFx	126.8
PFOAh	17435.0		PABFh	24.0		PUBFx	443.1		PFO/EMC	286.0
PFOAx	596.1		PABFx	70.2		PUSA	26.1		PFOA	101779.1
PFOC	21625.3		PEM/ABF	17660.4		R4SBC	1161.2		PFOAd	2536.0
PFOCd	251.0		PEM/ABFx	513.5		R4SBF	158714.9		PFOAh	1172.4
PFOCh	926.8		PEM/FOC	332.2		R4SBFx	96.1		PFOAx	5775.6
PFOCx	490.5		PEMA	260536.0					PFOC	34720.1
PSSA	13943.0		PEMAX	5149.7		**HU 10130105**			PFOCd	1749.4
PSSC	7059.5		PEMAd	1958.0		L2UBFh	1317.3		PFOCx	3703.9
PSSCx	471.4		PEMAx	19675.7		PABF	934.0		PSSA	2360.0
PUBFx	603.9		PEMC	359878.6		PABFh	1712.9		PSSC	805.2
R2UBG	572.9		PEMCd	679.1		PABFx	288.5		PUBFx	628.7
R4SBA	39790.9		PEMCh	53.2		PEMA	653025.5		R4SBF	236136.0
R4SBAx	16506.5		PEMCx	65623.0		PEMAd	476.1		R4SBFx	1737.6
R4SBC	176533.7		PEMF	6924.2		PEMAh	238.3			
R4SBCx	3469.8		PEMFh	3199.5		PEMAx	29420.3		**HU 10160006**	
R4SBF	485944.2		PEMFx	268.3		PEMC	614126.8		PAB/EMF	1507.6
R4SBFx	7723.9		PFO/SSA	62.0		PEMCd	160.5		PABF	494.8
			PFOA	67008.6		PEMCh	1160.2		PABFh	163.5
HU 10160010			PFOAd	355.8		PEMCx	187120.4		PABFx	2073.1
L2USA	63797.7		PFOAh	673.4		PEMF	1411.1		PEM/ABF	5020.6
L2USC	1366.6		PFOAx	161.1		PEMFh	1426.1		PEM/ABFh	2157.3
PAB/EMF	61.4		PFOC	3142.3		PEMFx	22623.8		PEM/ABFx	585.8
PABFx	4446.0		PFOCx	459.9		PEMU	24.4		PEM/FOA	476.6
PEM/ABF	28601.7		PSS/FOA	6103.8		PFOA	9471.6		PEM/FOC	175.1
PEM/ABFx	259.9		PUBFx	112.5		PFOAh	5178.2		PEM/FOCh	90.5
PEM/FOA	206.3		R4SBF	98937.6		PFOAx	511.2		PEM/FOCx	71.1
PEM/FOC	1570.2		R4SBFx	689.2		PFOC	850.8		PEMA	1558947.3
PEMA	288111.9					PFOCh	1257.1		PEMAd	16078.6
PEMAd	4236.9		**HU 10160008**			PFOCx	131.9		PEMAx	43415.2
PEMAx	17007.7		L2USA	2834.8		PSSA	366.9		PEMC	2677077.7
PEMC	287712.7		L2USC	2523.4		PSSAh	172.6		PEMCd	7825.2
PEMCd	2098.0		PABF	2207.5		PSSC	369.5		PEMCh	1136.8
PEMCh	215.0		PABFx	969.2		PUBFh	497.5		PEMCx	2454306.4
PEMCx	85970.6		PEM/ABF	4234.6		PUBFx	1101.0		PEMF	2994.3
PEMF	126195.5		PEMA	645462.4		R4SBA	186566.9		PEMFx	285.2
PEMFd	385.0		PEMAh	46.0		R4SBC	133517.9		PFO/EMC	1725.7
PEMFh	612.2		PEMAd	1427.4		R4SBF	77792.8		PFOA	168049.0
PEMFx	1562.4		PEMAx	124385.6		R4SBFx	2340.6		PFOAH	3774.8
PFOA	61362.7		PEMC	955316.5					PFOAd	963.4
PFOAd	615.3		PEMCd	73.4		**HU 10170202**			PFOAh	992.3
PFOAx	821.0		PEMCh	1026.9		PABFh	138.4		PFOAx	5309.3
PFOC	5331.4		PEMCx	453573.4		PABFx	327.6		PFOC	46052.0
PFOCx	106.3		PEMF	1608.5		PEM/ABF	2104.5		PFOCh	137.7
PSS/EMC	57.8		PEMFh	3511.2		PEM/FOC	869.9		PFOCd	1323.4
PSSA	5916.5		PFO/EMC	2455.4		PEMA	1074052.7		PFOCx	6557.2

Attribute	Lenth (m)
PSSA	4060.2
PSSC	194.7
PSSCx	64.1
PUBFx	1900.4
PUSCx	28.2
R4SBA	2009.0
R4SBC	11060.4
R4SBF	321042.0
R4SBFx	18258.4

HU 10170201

Attribute	Length (m)
L2USA	6577.6
PABF	52.1
PABFx	2432.2
PEM/ABF	5766.9
PEM/FOA	286.1
PEM/FOC	927.6
PEMA	135125.4
PEMAd	659.9
PEMAx	7437.8
PEMC	287060.2
PEMCd	330.4
PEMCx	143733.3
PEMF	8896.9
PEMFx	7766.8
PFO/EMC	346.3
PFO1Ax	111.7
PFOA	161093.2
PFOAx	1218.1
PFOAd	6257.4
PFOC	21271.2
PFOCd	2088.9
PFOCx	4360.0
PSSA	778.7
PSSC	313.6
PUBFx	202.5
R4SBF	3809.6

HU 07020003

Attribute	Length (m)
PABFh	99.7
PABFx	127.9
PEM/ABF	2409.7
PEM/FOC	60.6
PEMA	142320.7
PEMAd	4148.6
PEMAx	1184.9
PEMC	571137.3
PEMCd	2889.1
PEMCh	211.5
PEMCx	154570.8
PEMF	3407.9
PFOA	26526.3
PFOAd	1895.1

Attribute	Length (m)
PFOAh	32.7
PFOC	18616.9
PFOCd	639.0
PFOCx	1287.7
PSSA	359.5
PSSC	1841.0
PUBFx	7759.7
R2UBG	160.1
R4SBC	28.8
R4SBCx	20.9
R4SBF	122365.6
R4SBFx	4697.1

HU 10160009

Attribute	Length (m)
PABFh	388.4
PABFx	270.6
PEM/FOC	520.6
PEMA	791340.6
PEMAd	3723.4
PEMAh	291.9
PEMAx	24222.7
PEMC	1502452.3
PEMCd	1665.0
PEMCh	442.7
PEMCx	947254.9
PEMF	1306.2
PFO/EMC	327.0
PFOA	30126.8
PFOAd	182.8
PFOAh	6217.5
PFOAx	1558.6
PFOC	18400.8
PFOCh	608.4
PFOCx	2165.2
PSSA	1174.2
PUBFx	937.9
R4SBA	2041.6
R4SBC	2460.6
R4SBF	20965.0

HU 10140103

Attribute	Length (m)
PABF	2414.4
PABFh	30.5
PABFx	191.6
PEMA	395733.2
PEMAd	24.7
PEMAx	14732.6
PEMC	421952.2
PEMCd	84.3
PEMCh	283.7
PEMCx	246152.6
PFOA	7274.4
PFOAh	2626.5

Attribute	Length (m)
PFOAx	712.6
PFOC	1427.8
PSSA	116.5
PSSAh	58.5
PUBFx	166.6
R4SBA	13534.5
R4SBC	13798.7
R4SBF	38373.7
R4SBFx	233.6

HU 10170103

Attribute	Length (m)
PABF	93.3
PEM/FOCx	135.3
PEMA	44646.7
PEMAd	516.7
PEMAx	2304.1
PEMC	163099.9
PEMCd	547.7
PEMCx	130906.7
PFO/EMC	364.9
PFOA	58551.1
PFOAd	1847.1
PFOC	19473.6
PFOCd	2427.3
PFOCx	5216.9
PSSC	326.6
PSSCx	131.8
R4SBFx	23514.8

HU 10140101

Attribute	Length (m)
PABFh	1041.1
PABFx	7934.7
PABFh	484.6
PEM/ABF	254.6
PEM/ABFh	545.5
PEM/FOC	150.2
PEM/FOCh	157.4
PEM/FOCx	562.0
PEM/SSC	1144.2
PEMA	946376.1
PEMAd	4268.7
PEMAh	604.9
PEMAx	10810.9
PEMC	1357722.5
PEMCd	1278.5
PEMCh	5186.3
PEMCx	845159.4
PEMF	4345.3
PEMFh	1150.3
PEMFx	886.5
PFO/EMC	951.8
PFOA	70447.5
PFOAd	136.7

Attribute	Length (m)
PFOAh	19270.2
PFOAx	2701.9
PFOC	49068.9
PFOCd	234.2
PFOCh	1181.7
PFOCx	3843.9
PSSA	1324.3
PSSC	805.9
PUBFx	676.9
PUBFh	21.8
PUSCh	20.4
R4SBA	200899.3
R4SBC	87736.7
R4SBCx	682.0
R4SBF	126548.4
R4SBFx	40411.2

HU 10140105

Attribute	Length (m)
L2UBGh	271.6
PABF	1266.0
PABFh	212.4
PABFx	385.9
PEM/ABF	443.9
PEM/FOCx	58.8
PEMA	890327.1
PEMAd	1229.9
PEMAh	209.3
PEMAx	3671.9
PEMC	1002005.0
PEMCd	2180.8
PEMCh	165.0
PEMCx	252879.6
PEMF	808.6
PEMFh	416.8
PEMFx	356.0
PFOA	23246.5
PFOAd	696.5
PFOAh	12009.5
PFOAx	1327.5
PFOC	29026.2
PFOCh	1097.2
PFOCx	474.2
PSSA	1789.8
PSSC	369.6
PSSCx	192.1
PUBFx	377.4
R4SBC	11649.0
R4SBF	247114.7

Attribute	Lenth (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
HU 10170102		PEM/ABFd	103.6	PEM/FOA	1250.1	**HU 10170101**	
L2ABFx	846.8	PEM/ABFh	274.3	PEM/FOC	4153.0	PAB/EMF	194.2
PABF	2852.2	PEM/ABFx	460.0	PEM/FOCx	282.6	PAB/EMFx	2106.1
PABFh	333.0	PEM/FOC	3524.6	PEMA	820682.3	PABF	4071.1
PABFx	2617.5	PEM/FOCx	36.5	PEMAd	22636.8	PABFh	658.6
PEM/ABF	6754.8	PEMA	956600.3	PEMAh	23.8	PABFx	2169.9
PEM/ABFh	508.6	PEMAd	21914.2	PEMAx	99158.9	PEM/ABF	8441.7
PEM/ABFx	64.7	PEMAh	36.8	PEMC	2105217.8	PEM/ABFx	5367.1
PEM/FOCx	834.4	PEMAx	75984.7	PEMCd	8297.6	PEM/FOA	570.5
PEMA	395298.2	PEMC	2701853.1	PEMCh	89.3	PEM/FOC	1069.9
PEMAd	20963.0	PEMCd	13840.9	PEMCx	922059.8	PEM/FOCx	1200.3
PEMAx	50545.1	PEMCh	3025.7	PEMF	2474.9	PEM/SSCd	36.4
PEMC	1858502.2	PEMCx	2314948.7	PEMFh	61.4	PEMA	407050.9
PEMCd	10510.9	PEMF	3384.2	PEMFx	2686.4	PEMAh	57.5
PEMCh	189.8	PEMFh	2102.5	PFO/EMA	68.9	PEMAd	3803.8
PEMCx	1321235.5	PEMFx	1460.9	PFO/EMC	1230.6	PEMAx	11168.7
PEMF	3200.6	PFO/EMA	807.7	PFO/EMCx	612.5	PEMC	1137517.0
PEMFh	519.3	PFO/EMC	2026.1	PFOA	314512.5	PEMCd	1198.5
PEMFx	5629.4	PFO/EMCx	1054.5	PFOAd	7277.4	PEMCh	1908.3
PFO/EMA	737.3	PFOA	207759.1	PFOAh	2337.5	PEMCx	388785.1
PFO/EMC	6135.6	PFOAd	10915.3	PFOAx	19804.2	PEMF	2077.5
PFO/EMCx	153.9	PFOAh	21822.2	PFOC	57359.6	PEMFh	541.2
PFOA	179063.4	PFOAx	7283.8	PFOCd	2736.5	PEMFx	1907.4
PFOAd	8892.4	PFOC	107986.8	PFOCh	207.4	PFO/EMA	212.7
PFOAh	4552.9	PFOCd	2608.1	PFOCx	11775.3	PFO/EMC	2321.1
PFOAx	17674.9	PFOCh	996.7	PSSA	2659.5	PFO/EMCx	255.6
PFOC	149546.6	PFOCx	12206.7	PSSAd	536.3	PFOA	108490.3
PFOCd	984.2	PSSA	745.9	PSSAh	251.6	PFOAd	1843.1
PFOCh	375.0	PSSAx	96.7	PSSAx	528.6	PFOAh	10431.6
PFOCx	16932.0	PSSC	935.3	PSSC	553.7	PFOAx	5459.1
PSSA	719.5	PUBF	18.3	PSSCd	307.8	PFOC	135015.4
PUBFx	1198.8	PUBFx	2141.2	PSSCx	353.9	PFOCh	1450.5
R2UBG	78386.8	PUSCx	106.8	PUBFx	869.5	PFOCx	5655.8
R2UBGx	6102.9	R2USC	79.0	PUBGx	46.2	PSS/FOA	392.9
R2USC	71.5	R4SBA	3367.7	PUSAx	57.4	PSSA	319.4
R4SBA	835.5	R4SBC	6270.2	PUSCx	84.4	PSSC	794.8
R4SBC	6396.2	R4SBF	627948.2	R2UBG	1075.1	PUBFx	802.6
R4SBF	440622.6	R4SBFx	29275.3	R2USA	593.5	PUBGx	23.1
R4SBFx	132260.0			R2USC	130.7	R2UBF	352.7
		HU 10170203		R4SBA	283.5	R2UBG	4743.4
HU 10160011		L2USAh	196.6	R4SBC	3053.0	R2USA	10400.1
PAB/EMFd	253.8	PAB/EMFx	2130.3	R4SBCx	389.6	R2USC	2691.0
PABF	5251.7	PABF	2952.8	R4SBF	414888.4	R4SBA	55527.5
PABFh	2635.1	PABFh	286.6	R4SBFx	70234.2	R4SBC	23477.3
PABFx	6135.7	PABFx	3213.6			R4SBCx	3807.9
PEM/ABF	3761.1	PEM/ABF	7258.8			R4SBF	248411.9
PEM/ABFh	147.3	PEM/ABFx	11984.2			R4SBFx	20264.2

Attribute	Number
HU 07020001	
PABF	1
PEM/ABF	1
PEMA	2,409
PEMAd	77
PEMAx	15
PEMC	1,541
PEMCd	23
PEMCh	1
PEMCx	11
PEMF	1
PFOA	1
PFOCx	1
PSSC	2
PUBFx	32
HU 07020003	
PABFx	3
PEMA	807
PEMAd	105
PEMC	578
PEMCd	46
PEMCx	7
PFOC	3
PSSA	1
PUBFx	1
HU 09020101	
PEMA	657
PEMAd	9
PEMAx	1
PEMC	61
PEMCh	1
PEMCx	2
HU 09020105	
PABFx	7
PEM/ABF	1
PEM/FOC	1
PEMA	1,131
PEMAd	12
PEMAx	3
PEMC	753
PEMCd	5
PEMCx	8
PEMF	19
PFOA	3
PUBFx	2
PUBGx	2

Attribute	Number
HU 10130102	
PABFh	3
PABFx	8
PEMA	1,152
PEMAd	1
PEMAh	1
PEMAx	3
PEMC	385
PEMCh	4
PSSA	1
HU 10130105	
PABFh	6
PABFx	3
PEMA	2,464
PEMAd	21
PEMAh	1
PEMAx	17
PEMC	238
PEMCd	1
PEMCh	5
PEMCx	8
PEMU	2
PFOA	1
PFOAx	1
PSSA	2
PUBFx	46
PUSAx	1
HU 10130106	
PABFx	37
PEMA	4,820
PEMAd	27
PEMAh	1
PEMAx	17
PEMC	2,126
PEMCd	14
PEMCh	2
PEMCx	10
PEMF	1
PEMFh	1
PFOA	3
PUBFx	8
HU 10140101	
PABFh	25
PABFx	36
PABGx	4
PEMA	2,226
PEMAd	142
PEMAh	2

Attribute	Number
PEMC	907
PEMCd	21
PEMCh	90
PEMCx	28
PEMFx	1
PFO/EMCx	1
PFOA	4
PFOCx	2
PUBFx	17
PUSCh	2
HU 10140103	
PABFx	2
PEMA	3,027
PEMAd	27
PEMAh	1
PEMAx	1
PEMC	125
PEMCh	1
PEMCx	3
PFOA	2
PUBFx	16
HU 10140105	
PABF	1
PABFh	5
PABFx	4
PEMA	1,365
PEMAd	12
PEMC	235
PEMCh	1
PEMCx	7
PFOA	2
PUBFx	14
HU 10160003	
PABFx	137
PEMA	6,352
PEMAd	26
PEMAh	1
PEMAx	15
PEMC	2,305
PEMCd	3
PEMCh	1
PEMCx	50
PFO/EMC	1
PFOA	7
PFOC	1
PUBFx	50

Attribute	Number
HU 10160004	
PABFh	2
PABFx	5
PEM/ABF	1
PEMA	3,773
PEMAd	13
PEMAh	1
PEMAx	8
PEMC	1,049
PEMCd	1
PEMCx	17
PFOA	3
PFOC	1
PUBFx	21
HU 10160005	
PABFx	5
PEMA	1,716
PEMAd	32
PEMAx	10
PEMC	289
PEMCd	4
PEMCx	3
PFOA	1
PUBFh	1
PUBFx	9
HU 10160006	
PABFh	1
PABFx	21
PEM/SSC	1
PEMA	14,755
PEMAd	390
PEMAx	1
PEMC	1,626
PEMCd	22
PEMCx	49
PFOA	16
PFOC	2
PFOCx	1
PSSA	3
PUBFx	110
PUSCx	1

Attribute	Number
HU 10160007	
PABFx	3
PEMA	5,453
PEMAd	10
PEMAx	35
PEMC	1,570
PEMCx	6
PFOC	1
PUBFx	11
HU 10160008	
PABFx	47
PEMA	9,947
PEMAd	52
PEMAx	45
PEMC	2,173
PEMCd	11
PEMCx	24
PEMU	1
PFO/EMA	1
PFOA	1
PUBFx	9
HU 10160009	
PABFh	1
PABFx	1
PEMA	11,682
PEMAd	161
PEMAx	2
PEMC	963
PEMCd	5
PEMCx	19
PFOA	1
PFOAx	1
PFOC	3
PSSA	1
PUBFx	42
HU 10160010	
PABFx	10
PEM/ABF	2
PEMA	3,400
PEMAd	100
PEMAx	19
PEMC	2,327
PEMCd	20
PEMCh	1

Attribute	Number
PEMCx	27
PEMF	15
PFOA	16
PSSA	1
PUBFh	1
PUBFx	20
HU 10160011	
PABF	1
PABFh	12
PABFx	48
PEM/FOC	1
PEM/FOCx	1
PEMA	8,150
PEMAd	1,031
PEMAx	5
PEMC	2,856
PEMCd	86
PEMCh	14
PEMCx	76
PEMFx	4
PFO/EMC	1
PFO/EMCx	1
PFOA	22
PFOAd	2
PFOC	1
PSSA	1
PUBF	3
PUBFx	128
PUSCh	1
HU 10170101	
PABFh	6
PABFhx	1
PABFx	17
PEM/ABF	1
PEMA	757
PEMAd	134
PEMAx	4
PEMC	247
PEMCd	10
PEMCh	11
PEMCx	26
PFOA	2
PFOC	1
PUBFx	8
R2USC	7

Attribute	Number
HU 10170102	
PABFh	3
PABFx	32
PEM/ABF	1
PEM/FOA	2
PEM/FOCx	5
PEMA	3,013
PEMAd	1,039
PEMAh	3
PEMAx	5
PEMC	740
PEMCd	67
PEMCh	1
PEMCx	50
PEMF	1
PFO/EMCx	2
PFOA	14
PFOAd	1
PFOC	2
PFOCx	1
PSSA	1
PUBFx	65
HU 10170103	
PABFx	3
PEMA	285
PEMAd	17
PEMC	87
PEMCd	3
PEMCx	1
PFOA	1
PUBFx	5
HU 10170201	
PABFx	6
PEMA	972
PEMAd	34
PEMAx	1
PEMC	332
PEMCd	8
PEMCx	6
PFOA	2
PUBFx	40

Attribute	Number
HU 10170202	
PABFx	7
PEMA	2,134
PEMAd	97
PEMC	909
PEMCd	22
PEMCh	1
PEMCx	13
PEMF	1
PFOA	5
PFOC	2
PFOCx	2
PUBFx	26
HU 10170203	
PABFh	6
PABFx	18
PEM/ABF	1
PEM/FOCx	3
PEMA	1,463
PEMAd	542
PEMAh	1
PEMAx	26
PEMC	534
PEMCd	34
PEMCh	4
PEMCx	57
PFOA	16
PFOAd	1
PFOAx	2
PFOC	5
PSSC	1
PUBF	1
PUBFx	66
PUBGx	2
PUSAx	1
PUSCx	2

Appendix C2. Palustrine, lacustrine, and riverine wetlands delineated by the National Wetlands Inventory in eastern South Dakota hydrologic units from photography acquired 1979-1986.

Polygon Wetlands, Hectares

Hydrologic Unit	Palustrine	Lacustrine	Riverine
07020001	19,441.14	3,990.49	77.91
07020003	6,920.73	2,051.97	26.57
09020101	13,469.76	2,921.73	7.66
09020105	4,413.63	303.17	0.00
10130102	5,639.89	14,428.98	69.99
10130105	19,365.01	32,716.67	6.51
10130106	32,018.39	2,719.35	0.00
10140101	34,809.21	31,407.51	10.93
10140103	12,828.33	662.89	196.65
10140105	12,038.16	924.64	111.71
10160003	35,005.37	1,913.66	1,050.23
10160004	7,405.54	613.54	293.27
10160005	7,339.16	215.89	211.96
10160006	80,256.26	2,283.38	2,797.14
10160007	26,410.98	438.50	0.00
10160008	35,220.10	1,519.45	770.14
10160009	40,261.67	2,412.40	951.52
10160010	41,912.50	14,992.72	0.00
10160011	64,038.93	1,693.49	1,860.39
10170101	15,131.08	5,866.66	5,567.60
10170102	34,855.23	1,173.23	318.24
10170103	12,105.46	2,811.16	0.00
10170201	36,017.05	7,332.73	3.61
10170202	21,080.68	11,204.16	949.58
10170203	18,670.97	3,627.30	1,832.25

Point Wetlands, Number

Hydrologic Unit	Palustrine	Lacustrine	Riverine
07020001	4,116	0	0
07020003	1,551	0	0
09020101	731	0	0
09020105	1,947	0	0
10130102	1,558	0	0
10130105	2,817	0	0
10130106	7,067	0	0
10140101	3,508	0	0
10140103	3,205	0	0
10140105	1,646	0	0
10160003	8,949	0	0
10160004	4,895	0	0
10160005	2,070	0	0
10160006	16,999	0	0
10160007	7,089	0	0
10160008	12,311	0	0
10160009	12,882	0	0
10160010	5,959	0	0
10160011	12,445	0	0
10170101	1,225	0	7
10170102	5,048	0	0
10170103	402	0	0
10170201	1,041	0	0
10170202	3,219	0	0
10170203	2,786	0	0

Linear Wetlands, Length (m)

Hydrologic Unit	Palustrine	Lacustrine	Riverine
09020101	164,740.42	1,068.04	12,578.43
10130102	727,523.13	597.89	226,687.44
09020105	424,970.43	0.00	62,778.08
10130106	724,173.66	190.81	22,876.70
10160003	1,482,599.29	0.00	119,654.66
10160004	870,626.06	0.00	101,545.46
10160007	675,175.00	0.00	0.00
07020001	2,831,192.67	0.00	730,542.30
10160010	923,764.34	65,164.46	7,242.79
10160005	822,793.34	0.00	99,626.82
10160008	2,214,781.32	5,358.33	159,972.33
10130105	1,534,059.01	1,317.37	400,218.59
10170202	4,639,766.97	0.00	237,873.79
10160006	7,021,173.82	0.00	352,370.05
10170201	798,518.84	6,577.65	3,809.64
07020003	941,527.91	0.00	127,272.83
10160009	3,335,579.86	0.00	25,467.35
10140103	1,093,983.47	0.00	65,940.63
10170103	411,874.31	0.00	23,514.84
10140101	3,340,751.99	0.00	456,277.99
10140105	2,227,225.01	271.67	258,763.84
10170102	4,067,527.24	846.85	664,675.87
10160011	6,497,250.17	0.00	666,940.63
10170203	4,441,074.49	196.66	490,648.33
10170101	2,255,372.30	0.00	369,676.61

Appendix C3. Wetlands delineated by the National Wetlands Inventory in eastern South Dakota hydrologic units by Cowardin *et al.* (1979) classes. Photography used to delineate wetlands was acquired 1979-1986.

Polygon Wetlands, Hectares

			Hydrologic Unit			
Class	*07020001*	*07020003*	*09020101*	*09020105*	*10130102*	*10130105*
EM	14,420.03	3,663.64	9,379.76	3,805.96	4,956.22	16,982.84
AB	2,547.60	1,551.43	1,094.16	400.13	767.88	2,853.35
UB	2,577.39	768.92	2,272.60	107.84	14,030.72	31,546.60
US	0.97	0.00	0.00	0.00	112.20	183.09
FO	695.96	83.24	121.93	23.22	20.49	24.00
SS	164.27	16.79	90.25	6.11	18.18	21.32
SB	72.45	26.57	0.00	0.00	69.99	6.51
EM/AB	2,108.92	2,598.61	3,064.15	318.49	120.83	381.62
AB/EM	655.07	238.26	208.45	29.49	3.85	51.80
EM/FO	64.23	22.00	20.09	14.41	6.25	23.15
FO/EM	40.06	17.72	21.60	3.79	6.12	4.02
FO/SS	9.56	0.44	0.98	2.51	0.80	0.00
SS/FO	4.78	2.63	0.00	1.31	1.67	0.00
SS/EM	40.82	1.37	62.32	0.26	3.22	0.97
EM/SS	106.11	7.64	62.74	3.28	20.44	7.61
US/SS	0.00	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00	0.00

			Hydrologic Unit			
Class	*10130106*	*10140101*	*10140103*	*10140105*	*10160003*	*10160004*
EM	27,953.48	26,800.02	11,421.04	7,788.79	25,809.59	6,441.46
AB	3,542.92	4,108.33	1,685.64	2,356.73	2,009.56	201.81
UB	253.07	29,715.73	50.93	172.26	1,106.64	642.83
US	8.39	171.30	0.00	0.12	0.00	0.12
FO	68.52	143.35	21.75	43.74	397.80	19.79
SS	7.47	133.99	0.40	5.69	9.94	1.59
SB	0.00	10.93	196.65	111.71	379.43	293.27
EM/AB	2,323.24	4,573.51	144.50	2,375.47	6,948.71	581.32
AB/EM	543.00	262.29	154.72	178.46	344.04	104.47
EM/FO	20.55	210.01	4.58	33.12	655.17	19.18
FO/EM	11.34	26.65	4.06	6.05	287.06	1.23
FO/SS	2.21	0.61	0.00	0.00	1.02	0.00
SS/FO	0.00	0.28	1.36	0.00	9.42	0.00
SS/EM	0.00	11.52	0.00	0.00	1.96	0.00
EM/SS	3.56	59.16	2.24	2.36	8.91	4.50
US/SS	0.00	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00	0.79
UB/FO	0.00	0.00	0.00	0.00	0.00	0.00

| | | | | Hydrologic Unit | | | |
Class	10160005	10160006	10160007	10160008	10160009	10160010	10160011
EM	6,353.34	70,295.05	23,950.91	32,668.04	36,756.55	20,680.28	53,308.28
AB	323.08	4,544.05	856.74	1,816.10	3,608.25	8,306.57	3,949.48
UB	86.22	1,681.29	400.45	844.16	822.16	7,131.32	1,795.67
US	0.00	4.13	0.00	54.16	0.00	701.42	10.12
FO	42.29	709.67	15.15	57.94	167.97	80.00	489.31
SS	3.56	81.91	0.93	4.79	12.00	51.41	30.79
SB	211.15	1,306.43	0.00	770.14	707.40	11.67	624.50
EM/AB	614.27	4,542.93	949.72	693.13	602.79	17,686.37	5,855.54
AB/EM	84.78	1,403.66	666.58	549.12	903.81	1,853.32	845.57
EM/FO	25.25	462.09	4.53	32.30	32.11	88.55	295.72
FO/EM	12.58	218.02	2.53	12.16	6.65	37.25	357.56
FO/SS	0.78	13.25	1.34	0.27	2.98	2.10	0.60
SS/FO	4.55	9.41	0.00	0.00	0.44	6.59	0.36
SS/EM	0.70	4.39	0.61	0.00	0.95	16.10	10.74
EM/SS	4.46	60.51	0.00	4.18	1.54	263.94	18.56
US/SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SS/US	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EM/US	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.92	0.00	0.00	0.00

| | | | Hydrologic Unit | | | |
Class	10170101	10170102	10170103	10170201	10170202	10170203
EM	9,365.60	24,550.08	4,268.89	15,195.34	12,899.67	11,730.50
AB	1,521.02	2,352.08	3,029.39	7,390.08	6,609.37	2,812.84
UB	9,936.29	300.36	3.46	299.01	5,514.93	3,371.70
US	708.36	3.61	0.00	32.98	1.15	89.93
FO	354.61	365.15	155.67	183.49	300.07	607.24
SS	199.07	74.10	10.26	38.04	39.57	43.94
SB	141.96	166.78	0.00	3.61	858.49	371.84
EM/AB	2,287.34	7,227.24	7,211.82	19,142.63	5,735.95	3,875.80
AB/EM	290.74	759.68	101.43	524.89	690.43	386.78
EM/FO	238.03	131.25	55.03	353.02	336.44	278.64
FO/EM	194.12	399.83	60.61	96.90	161.56	468.17
FO/SS	6.27	1.54	1.29	13.13	5.17	29.19
SS/FO	67.93	0.30	1.45	20.77	15.56	31.81
SS/EM	46.32	8.95	3.31	9.56	32.05	7.42
EM/SS	796.81	5.74	14.00	49.94	34.01	23.16
US/SS	76.40	0.00	0.00	0.00	0.00	0.81
SS/US	334.47	0.00	0.00	0.00	0.00	0.75
EM/US	0.00	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.00	0.00	0.00

Linear Wetlands, Length (m)

					Hydrologic Unit			
Class	09020101	10130102	09020105	10130106	10160003	10160004	10160007	07020001
EM	137,010.01	704,872.88	405,509.49	697,990.40	1,318,151.15	833,155.79	672,595.00	2,629,971.15
AB	36.14	2,490.88	225.18	868.76	2,223.02	788.09	156.00	2,094.31
UB	0.00	597.89	663.96	932.46	296.16	169.87	1,035.00	1,176.97
US	0.00	0.00	0.00	190.81	0.00	0.00	0.00	0.00
FO	23,031.39	13,611.06	16,929.43	21,260.99	145,642.53	18,439.54	1,389.00	169,027.41
SS	4,562.88	4,935.66	110.23	1,772.42	0.00	0.00	0.00	21,474.13
SB	0.00	226,687.44	62,778.08	22,876.70	0.00	0.00	0.00	729,969.32
EM/AB	0.00	1,612.63	453.73	364.15	10,757.15	18,072.77	0.00	4,596.76
AB/EM	0.00	0.00	77.94	225.02	22.85	0.00	0.00	245.66
EM/FO	0.00	0.00	675.99	310.05	5,338.98	0.00	0.00	3,046.94
FO/EM	0.00	0.00	0.00	0.00	167.45	0.00	0.00	132.32
FO/SS	0.00	0.00	324.48	449.42	0.00	0.00	0.00	0.00
SS/FO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SS/EM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EM/SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

					Hydrologic Unit			
Class	10160010	10160005	0160008	10130105	10170202	10160006	10170201	07020003
EM	814,108.39	723,945.94	2,186,432.02	1,511,214.35	4,480,809.25	6,762,067.39	591,011.40	879,871.37
AB	4,446.07	1,657.78	3,176.81	2,935.55	466.14	2,731.64	2,484.36	227.73
UB	112.78	112.56	502.58	2,916.03	628.75	1,900.57	202.57	7,919.90
US	65,963.74	0.00	5,384.48	0.00	0.00	28.23	6,577.65	0.00
FO	68,236.91	71,801.45	17,953.65	17,401.33	151,436.95	238,315.89	196,400.90	48,998.04
SS	6,102.56	0.00	0.00	909.11	3,165.34	4,319.19	1,092.46	2,200.61
SB	6,443.51	99,626.82	159,972.33	400,218.59	237,873.79	352,370.05	3,809.64	127,112.64
EM/AB	28,861.70	18,174.08	4,234.66	0.00	2,104.59	7,763.88	5,766.98	2,409.79
AB/EM	61.50	603.36	0.00	0.00	0.00	1,507.66	0.00	0.00
EM/FO	1,776.57	332.28	0.00	0.00	869.94	813.60	1,213.86	60.67
FO/EM	0.00	0.00	2,455.45	0.00	286.00	1,725.79	346.30	0.00
FO/SS	0.00	62.03	0.00	0.00	0.00	0.00	0.00	0.00
SS/FO	0.00	6,103.87	0.00	0.00	0.00	0.00	0.00	0.00
SS/EM	57.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EM/SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Hydrologic Unit		
Class	10160009	10140103	10170103	10140101	10140105
EM	3,272,700.21	1,078,963.68	323,305.84	3,177,790.17	2,154,250.61
AB	659.14	2,636.60	93.31	9,460.52	1,864.42
UB	937.97	166.64	0.00	698.79	649.14
US	0.00	0.00	0.00	20.49	0.00
FO	59,260.56	12,041.45	87,516.34	146,885.72	67,878.08
SS	1,174.28	175.10	458.52	2,130.25	2,351.63
SB	25,467.35	65,940.63	23,514.84	456,277.99	258,763.84
EM/AB	0.00	0.00	0.00	800.17	443.93
AB/EM	0.00	0.00	0.00	0.00	0.00
EM/FO	520.62	0.00	135.31	869.75	58.87
FO/EM	327.08	0.00	364.99	951.88	0.00
FO/SS	0.00	0.00	0.00	0.00	0.00
SS/FO	0.00	0.00	0.00	0.00	0.00
SS/EM	0.00	0.00	0.00	0.00	0.00

		Hydrologic Unit		
Class	10170102	10160011	10170203	10170101
EM	3,666,594.40	6,095,152.99	3,983,389.57	1,956,016.80
AB	6,649.75	14,022.89	6,453.19	6,899.81
UB	85,688.63	2,159.69	1,990.94	5,922.10
US	71.55	185.95	1,062.85	13,091.14
FO	378,021.71	371,579.37	416,010.87	268,346.32
SS	719.56	1,778.06	5,191.77	1,114.23
SB	580,114.54	666,861.58	488,848.90	351,489.28
EM/AB	7,328.34	4,746.64	19,243.05	13,808.93
AB/EM	0.00	253.88	2,130.35	2,300.45
EM/FO	834.44	3,561.22	5,685.84	2,840.90
FO/EM	7,027.04	3,888.54	1,912.15	2,789.58
FO/SS	0.00	0.00	0.00	0.00
SS/FO	0.00	0.00	0.00	392.98
SS/EM	0.00	0.00	0.00	0.00
EM/SS	0.00	0.00	0.00	36.40

Point Wetlands, Number

			Hydrologic Unit		
Class	07020001	07020003	09020101	09020105	10130102
EM	4,078	1,543	731	1,931	1,546
AB	1	3	0	7	11
UB	32	1	0	4	0
US	0	0	0	0	0
FO	2	3	0	3	0
SS	2	1	0	0	1
SB	0	0	0	0	0
EM/AB	1	0	0	1	0
EM/FO	0	0	0	1	0
FO/EM	0	0	0	0	0
EM/SS	0	0	0	0	0

Class			Hydrologic Unit		
	10130105	10130106	10140101	10140103	10140105
EM	2,757	7,019	3,417	3,185	1,620
AB	9	37	65	2	10
UB	46	8	17	16	14
US	1	0	2	0	0
FO	2	3	6	2	2
SS	2	0	0	0	0
SB	0	0	0	0	0
EM/AB	0	0	0	0	0
EM/FO	0	0	0	0	0
FO/EM	0	0	1	0	0
EM/SS	0	0	0	0	0

Class			Hydrologic Unit		
	10160003	10160004	10160005	10160006	10160007
EM	8,753	4,862	2,054	16,843	7,074
AB	137	7	5	22	3
UB	50	21	10	110	11
US	0	0	0	1	0
FO	8	4	1	19	1
SS	0	0	0	3	0
SB	0	0	0	0	0
EM/AB	0	1	0	0	0
EM/FO	0	0	0	0	0
FO/EM	1	0	0	0	0
EM/SS	0	0	0	1	0

Class			Hydrologic Unit		
	10160008	10160009	10160010	10160011	10170101
EM	12,253	12,832	5,909	12,222	1,189
AB	47	2	10	61	24
UB	9	42	21	131	8
US	0	0	0	1	7
FO	1	5	16	25	3
SS	0	1	1	1	0
SB	0	0	0	0	0
EM/AB	0	0	2	0	1
EM/FO	0	0	0	2	0
FO/EM	1	0	0	2	0
EM/SS	0	0	0	0	0

Class			Hydrologic Unit		
	10170102	10170103	10170201	10170202	10170203
EM	4,919	393	1,353	3,177	2,661
AB	35	3	6	7	24
UB	65	5	40	26	69
US	0	0	0	0	3
FO	18	1	2	9	24
SS	1	0	0	0	1
SB	0	0	0	0	0
EM/AB	1	0	0	0	1
EM/FO	7	0	0	0	3
FO/EM	2	0	0	0	0
EM/SS	0	0	0	0	0

Appendix C4. Summary of wetlands, by water regime, delineated by the National Wetlands Inventory in eastern South Dakota hydrologic units from photography acquired 1979-1986.

Polygon Wetlands, Hectares

Hydrologic unit	A	B	C	F	G	H
07020001	6,072.71	35.40	6,048.56	7,327.73	1,890.91	2,134.57
07020003	1,212.39	90.33	2,275.77	3,354.92	1,763.27	302.58
09020101	3,985.73	82.27	3,391.89	5,959.59	711.73	2,267.95
09020105	1,495.71	0.00	1,139.07	1,759.55	322.48	0.00
10130102	2,795.72	0.00	2,036.02	1,140.68	2,693.28	11,473.17
10130105	9,017.57	0.17	7,098.04	3,588.11	4,819.57	27,562.01
10130106	7,260.10	0.00	18,179.34	6,788.65	2,492.02	0.00
10140101	10,285.78	0.11	13,984.36	11,240.26	1,527.99	29,187.68
10140103	4,050.11	0.00	7,384.89	1,942.68	280.57	29.61
10140105	3,114.35	0.00	4,685.20	4,706.80	553.85	14.31
10160003	12,531.60	0.00	13,630.78	9,243.69	2,563.20	0.00
10160004	3,914.85	0.00	2,501.56	1,280.01	615.94	0.00
10160005	4,203.95	0.00	1,736.53	1,598.91	227.63	0.00
10160006	36,170.17	21.77	35,286.80	10,619.30	3,238.28	0.00
10160007	4,274.12	0.00	19,129.59	3,163.16	281.23	0.00
10160008	12,296.08	0.00	20,388.85	3,345.13	1,465.90	0.00
10160009	12,601.61	0.00	24,225.65	4,755.52	1,503.25	539.57
10160010	6,448.48	260.07	8,006.57	28,700.50	10,441.66	3,059.62
10160011	27,677.38	0.00	26,413.31	10,770.88	2,696.57	34.68
10170101	5,786.97	0.00	5,746.50	4,717.24	528.81	9,785.86
10170102	13,528.38	0.00	11,647.55	9,986.77	1,181.70	1.57
10170103	1,505.21	0.00	2,759.70	7,823.31	2,828.40	0.00
10170201	5,015.74	0.00	10,419.75	20,616.66	7,301.24	0.00
10170202	6,854.49	6.10	6,267.96	8,680.64	11,425.22	0.00
10170203	7,459.59	0.00	5,735.42	5,909.87	4,679.56	346.08

Linear Wetlands, Length (m)

Hydrologic Unit	A	B	C	F	G
09020101	44,423.20	0.00	115,141.07	17,754.58	1,068.04
10130102	477,841.82	0.00	330,488.93	146,477.70	0.00
09020105	201,300.72	0.00	207,703.15	78,277.06	467.59
10130106	354,793.24	0.00	334,779.74	57,668.19	0.00
10160003	522,148.07	0.00	928,026.70	152,079.17	0.00
10160004	318,564.76	0.00	531,770.82	121,835.94	0.00
10160007	367,096.00	0.00	289,745.00	18,333.00	0.00
07020001	923,315.91	19.34	2,099,594.34	538,232.40	572.98
10160010	442,875.73	0.00	384,614.96	168,680.90	0.00
10160005	361,684.63	0.00	430,168.75	130,566.79	0.00
10160008	788,736.67	0.00	1,419,530.30	171,845.02	0.00
10130105	885,428.53	0.00	938,695.65	111,446.30	0.00
10170202	1,209,211.41	0.00	3,423,474.15	244,955.19	0.00
10160006	1,809,232.75	0.00	5,207,827.23	356,483.88	0.00
10170201	319,546.48	0.00	460,432.19	28,927.46	0.00
07020003	176,468.23	0.00	751,304.33	140,867.99	160.19
10160009	860,880.70	0.00	2,476,298.03	23,868.47	0.00
10140103	434,813.85	0.00	683,699.59	41,410.67	0.00
10170103	107,866.11	0.00	303,914.89	23,608.15	0.00
10140101	1,256,841.25	0.00	2,355,887.08	184,173.73	0.00
10140105	934,508.55	0.00	1,300,098.13	251,382.17	271.67
10170102	679,282.63	0.00	3,371,868.41	597,409.13	84,489.78
10160011	1,307,335.37	0.00	5,171,500.96	685,354.48	0.00
10170203	1,292,860.42	0.00	3,118,896.03	519,041.62	1,121.41
10170101	615,729.02	0.00	1,707,186.00	297,367.25	4,766.64

Point Wetlands, Number

Hydrologic Unit	A	C	F	G
07020001	2,502	1,579	35	0
07020003	913	634	4	0
09020101	667	64	0	0
09020105	1,149	767	29	2
10130102	1,158	389	11	0
10130105	2,508	252	55	0
10130106	4,868	2,152	47	0
10140101	2,374	1,051	78	4
10140103	3,058	129	18	0
10140105	1,379	243	24	0
10160003	6,401	2,361	187	0
10160004	3,798	1,068	29	0
10160005	1,759	296	15	0
10160006	15,165	1,702	132	0
10160007	5,498	1,577	14	0
10160008	10,046	2,208	56	0
10160009	11,848	990	44	0
10160010	3,536	2,375	48	0
10160011	9,211	3,038	196	0
10170101	897	302	32	0
10170102	4,078	868	102	0
10170103	303	91	8	0
10170201	1,009	346	46	0
10170202	2,236	949	34	0
10170203	2,052	640	92	2

Appendix C5. Summary of wetlands, by special modifier, delineated by the National Wetlands Inventory in eastern South Dakota hydrologic units from photography acquired 1979-1986.

Polygon Wetlands, Hectares

Hydrologic Unit	d	x	h	b
07020001	3,166.09	620.50	2,692.26	0.55
07020003	2,541.87	68.16	83.74	0.00
09020101	876.92	111.70	4,895.24	1.08
09020105	810.22	41.22	176.79	0.00
10130102	125.39	83.12	15,108.81	0.00
10130105	710.93	395.18	33,247.46	0.00
10130106	494.86	348.30	296.37	0.00
10140101	3,986.71	806.57	32,703.26	0.00
10140103	542.88	241.85	980.33	0.00
10140105	847.87	275.36	1,623.31	0.00
10160003	3,995.23	392.43	6,536.23	0.00
10160004	127.03	183.73	690.30	0.00
01060005	1,138.28	116.63	223.60	0.00
10160006	8,176.76	1,493.73	1,440.28	0.00
10160007	318.21	280.30	435.02	0.00
10160008	998.88	462.05	1,295.10	0.00
10160009	2,379.53	656.67	1,523.13	0.00
10160010	3,855.42	258.51	92.69	0.00
10160011	13,845.17	1,387.32	1,445.89	0.00
10170101	1,987.43	354.49	5,886.02	0.00
10170102	9,831.11	774.39	649.74	4.16
10170103	2,304.33	170.95	12.07	0.00
10170201	6,269.82	309.19	50.40	0.00
10170202	3,807.29	803.13	150.12	0.00
10170203	5,452.26	808.21	446.35	0.00

Point Wetlands, Number

Hydrologic Unit	d	x	h
07020001	100	59	1
07020003	151	11	0
09020101	9	3	1
09020105	17	22	0
10130102	1	11	8
10130105	22	76	12
10130106	41	72	4
10140101	163	90	118
10140103	27	22	2
10140105	12	25	6
10160003	29	252	2
10160004	14	51	3
10160005	36	27	1
10160006	412	183	1
10160007	10	55	0
10160008	63	125	0
10160009	166	65	1
10160010	120	76	2
10160011	1,119	263	27
10170101	144	56	17
10170102	1,107	160	7
10170103	20	9	0
10170201	42	53	0
10170202	119	48	1
10170203	577	177	11

Linear Wetlands, Length (m)

Hydrologic Unit	d	x	h	b
09020101	2,089.82	68,877.90	8,490.71	0.00
10130102	35.87	28,982.89	7,291.69	0.00
09020105	734.60	77,014.66	907.46	0.00
10130106	73.27	82,304.07	1,377.19	0.00
10160003	13,947.90	513,090.09	6,147.04	0.00
10160004	271.52	174,827.00	142.53	0.00
10160007	306.07	193,264.00	1,506.00	0.00
07020001	7,455.13	324,932.82	19,865.31	0.00
10160010	7,335.33	110,287.05	827.36	0.00
10160005	2,993.09	92,723.68	3,950.26	0.00
10160008	1,759.12	581,713.15	12,742.03	0.00
10130105	636.75	243,538.38	12,960.92	0.00
10170202	18,518.15	741,404.35	1,782.14	0.00
10160006	26,190.93	2,532,855.21	13,609.73	0.00
10170201	9,336.89	167,263.00	0.00	0.00
07020003	9,572.10	169,649.35	344.05	0.00
10160009	5,571.46	976,410.17	7,949.26	0.00
10140103	109.14	262,189.97	2,999.30	0.00
10170103	5,339.06	143,493.65	0.00	0.00
10140101	5,918.33	913,798.16	29,537.08	0.00
10140105	4,107.33	259,724.03	14,382.28	0.00
10170102	41,350.63	1,556,096.48	6,479.07	0.00
10160011	49,636.54	2,451,192.89	31,041.27	0.00
10170203	41,792.73	1,146,272.51	3,454.68	0.00
10170101	6,882.07	448,974.15	15,048.19	0.00

Appendix C6. Basin number and area (ha), by water regime, in eastern South Dakota hydrologic units. Presented is percent of total area of each hydrologic unit covered by basins.

Hydrologic Unit	Temporary			Seasonal			Semipermanent[a]			Permanent[a]		
	Number	Hectares	%	Number	Hectares	%	Number	Hectares	%	Number	Hectares	%
07020001	16,586	4,357.2	1.30	16,830	6,443.2	1.93	4,796	10,298.3	3.08	78	6,212.6	1.86
07020003	5,096	1,049.5	1.14	5,936	2,179.5	2.37	1,040	4,415.4	4.80	31	2,687.8	2.92
09020101	8,833	2,627.1	2.74	2,726	2,033.7	2.18	881	3,789.0	3.96	17	8,150.4	8.51
09020105	4,387	1,173.1	1.58	3,165	1,423.5	1.92	1,402	2,244.1	3.02	25	534.8	0.72
10130102	3,961	1,622.7	0.92	2,211	1,566.2	0.88	1,133	2,197.3	1.24	34	15,675.9	8.84
10130105	12,420	5,632.8	1.18	3,994	3,274.5	0.68	3,143	11,340.3	2.38	70	33,952.9	7.12
10130106	15,589	4,271.5	1.11	18,710	14,430.2	3.75	2,840	12,627.1	3.28	74	4,449.5	1.16
10140101	18,729	7,401.2	1.08	17,298	11,597.0	1.70	5,972	18,913.8	2.76	75	33,118.5	4.84
10140103	11,429	3,647.9	1.70	5,154	5,650.1	2.63	1,279	5,225.7	2.43	12	575.5	0.27
10140105	8,176	2,625.4	0.91	5,351	3,708.4	1.29	2,615	8,457.6	2.93	53	1,395.1	0.48
10160003	24,570	8,492.8	2.32	15,421	10,792.9	2.95	2,254	13,050.7	3.56	41	6,606.2	1.80
10160004	10,391	2,842.2	2.19	5,968	3,325.7	2.49	1,167	2,557.0	1.97	4	675.9	0.52
10160005	10,270	3,702.6	2.20	2,967	2,043.1	1.03	939	2,638.8	1.57	13	320.3	0.19
10160006	101,998	29,473.6	3.13	39,247	29,277.1	3.11	6,851	30,185.3	3.21	73	3,330.7	0.35
10160007	15,725	3,032.1	1.30	16,986	15,562.1	6.68	1,910	8,774.3	3.77	15	548.3	0.24
10160008	34,685	8,582.5	2.20	24,719	17,846.3	4.58	2,521	11,639.4	2.99	62	1,914.0	0.49
10160009	44,258	10,836.7	2.79	22,657	19,115.5	4.93	2,623	14,788.2	3.81	44	2,822.5	0.73
10160010	12,787	3,753.0	1.16	17,108	6,293.9	1.95	6,698	28,057.9	8.69	172	20,109.5	6.27
10160011	68,196	22,468.9	2.42	44,756	25,673.1	2.77	8,277	24,197.1	2.61	147	2,648.0	0.29
10170101	10,262	4,480.4	1.17	7,786	5,759.8	1.50	2,529	6,195.7	1.61	68	7,732.9	2.01
10170102	33,949	10,980.0	1.86	20,541	12,169.8	2.06	4,661	17,096.2	2.89	59	1,453.2	0.25
10170103	3,171	1,004.2	0.93	2,826	1,974.6	1.84	988	8,250.8	7.67	10	4,208.1	3.91
10170201	10,778	3,641.7	1.15	7,332	6,032.8	1.91	3,109	25,359.0	8.04	61	9,331.0	2.96
10170202	16,079	5,023.2	0.99	13,732	8,356.2	1.65	3,406	12,373.5	2.45	81	13,045.6	2.58
10170203	18,638	6,846.8	1.19	12,002	8,045.8	1.40	3,495	8,585.8	1.49	159	4,871.3	0.56

[a] Natural basins, basins due to dugouts or other excavations, and impoundments

Appendix D1. Summary of wetlands delineated in eastern South Dakota physiographic regions by the National Wetlands Inventory (NWI) from photography acquired 1979-1986. Attribute is the NWI code for Cowardin et al. (1979) classification.

Polygon Wetlands

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
Minnesota-Red River Lowland		PEMCd	935.18	**Prairie Coteau**		PEMA	22,931.99
		PEMCf	0.33			PEMAd	13,708.40
L1UBHh	4,108.22	PEMCh	504.04	L1UBG	11,756.32	PEMAh	28.56
L1UBHx	278.61	PEMCx	37.65	L1UBGh	79.26	PEMAx	4.17
L2ABF	11.15	PEMF	3,389.66	L1UBH	3,361.98	PEMB	143.30
L2ABFx	18.42	PEMFb	1.07	L2ABF	1,216.03	PEMBd	1.50
L2ABG	1,117.52	PEMFd	289.17	L2ABFx	1.07	PEMC	31,746.42
L2ABGh	409.02	PEMFh	505.13	L2ABG	26,316.45	PEMCd	9,513.14
L2UBG	8.27	PEMFx	34.34	L2ABGd	15.31	PEMCh	45.79
L2UBGh	139.33	PFO/EMA	9.01	L2ABGh	75.01	PEMCx	71.12
PAB/EMF	285.55	PFO/EMC	28.60	L2ABGx	32.83	PEMF	11,249.14
PAB/EMFd	3.33	PFO/EMCd	0.16	L2UBFx	12.61	PEMFd	884.06
PAB/EMFh	71.72	PFO/EMCh	14.42	L2UBG	159.08	PEMFh	51.75
PAB/EMFx	17.06	PFO/EMCx	0.83	L2UBGh	18.39	PEMFx	9.35
PABF	537.13	PFO/SSA	7.88	L2UBGx	21.94	PFO/EMA	182.29
PABFd	52.91	PFO/SSC	1.64	L2USA	228.86	PFO/EMAd	10.64
PABFh	38.21	PFOA	480.75	L2USC	505.55	PFO/EMB	8.25
PABFx	99.95	PFOAd	28.94	PAB/EMF	4,400.83	PFO/EMC	511.43
PABG	31.32	PFOAh	47.22	PAB/EMFd	286.32	PFO/EMCd	73.26
PABGh	43.02	PFOAx	0.73	PAB/EMFh	60.03	PFO/EMCh	3.70
PABGx	40.83	PFOB	1.88	PAB/EMFx	6.67	PFO/EMCx	55.36
PEM/ABF	2,874.00	PFOBd	0.40	PAB/FOC	1.29	PFO/SSA	3.51
PEM/ABFb	0.55	PFOC	99.82	PABF	2,181.59	PFO/SSC	22.13
PEM/ABFd	108.73	PFOCd	18.16	PABFd	35.75	PFO/SSCd	1.43
PEM/ABFh	1,137.00	PFOCh	50.90	PABFh	889.30	PFO/SSCx	1.09
PEM/ABFx	7.75	PFOCx	6.55	PABFhx	0.73	PFOA	605.85
PEM/FOA	25.35	PSS/EMA	3.97	PABFx	1,706.08	PFOAd	71.47
PEM/FOAh	1.07	PSS/EMB	37.20	PABG	2.11	PFOAh	3.56
PEM/FOB	0.20	PSS/EMC	55.22	PABGh	118.42	PFOAx	1.39
PEM/FOC	35.39	PSS/EMCd	1.47	PABGx	214.79	PFOC	696.59
PEM/FOCd	1.80	PSS/EMCh	2.06	PABHx	0.10	PFOCd	147.86
PEM/FOCh	10.63	PSS/FOC	2.34	PEM/ABF	56,320.70	PFOCh	8.59
PEM/FOCx	1.74	PSS/FOCd	2.43	PEM/ABFb	4.16	PFOCx	8.72
PEM/SSA	27.21	PSSA	78.14	PEM/ABFd	6,556.60	PSS/EMA	21.74
PEM/SSAd	0.69	PSSAd	4.39	PEM/ABFh	57.19	PSS/EMC	55.91
PEM/SSAh	14.89	PSSB	24.18	PEM/ABFx	52.06	PSS/EMCd	3.89
PEM/SSB	16.87	PSSC	83.34	PEM/FOA	143.87	PSS/FOA	41.00
PEM/SSC	94.99	PSSCd	4.90	PEM/FOAd	36.51	PSS/FOAd	1.99
PEM/SSCd	0.45	PSSCh	13.93	PEM/FOAx	5.13	PSS/FOC	22.33
PEM/SSCh	0.73	PSSCx	4.65	PEM/FOC	813.55	PSS/FOCd	1.70
PEM/SSCx	2.27	PUBFh	4.73	PEM/FOCd	79.74	PSSA	82.35
PEM/UBGh	0.05	PUBFx	57.56	PEM/FOCh	3.19	PSSAd	8.15
PEMA	6,544.63	PUBGh	2.64	PEM/FOCx	90.78	PSSAx	0.09
PEMAd	2,032.72	PUBGx	8.16	PEM/FOF	3.14	PSSC	121.06
PEMAh	285.05	R2UBG	0.00	PEM/SSA	29.22	PSSCd	22.54
PEMAx	9.11	R2UBH	5.45	PEM/SSAd	4.38	PSSCh	0.99
PEMB	11.60	R2UBHx	7.57	PEM/SSB	227.74	PUBF	11.90
PEMBd	0.92	R4SBF	70.08	PEM/SSC	123.17	PUBFh	63.64
PEMC	5,373.49	R4SBFx	3.86	PEM/SSCd	16.87	PUBFx	364.25
				PEM/SSCh	7.45		

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PUBG	0.51	PFO/SSC	14.95	PABFh	2,476.10	PFOAh	19.13
PUBGh	21.17	PFOA	261.31	PABFx	3,471.95	PFOAx	1.15
PUBGx	180.49	PFOAd	30.68	PABGh	228.74	PFOC	479.03
PUBHh	0.12	PFOC	8.39	PABGx	223.70	PFOCd	45.96
PUS/SSA	0.16	PFOCd	2.33	PEM/ABF	14,838.32	PFOCh	30.21
PUSAh	0.78	PFOCx	0.19	PEM/ABFd	1,082.05	PFOCx	26.03
PUSAx	0.39	PSS/EMA	23.68	PEM/ABFh	465.09	PSS/EMA	2.95
PUSC	1.41	PSS/EMC	1.32	PEM/ABFx	23.22	PSS/EMAd	8.31
PUSCh	1.32	PSS/FOA	11.30	PEM/FOA	238.14	PSS/EMC	6.75
PUSCx	3.44	PSS/FOC	9.51	PEM/FOAd	37.57	PSS/EMCd	1.93
R2UBF	0.33	PSS/USA	98.60	PEM/FOAh	4.16	PSS/FOA	54.53
R2UBG	1,127.30	PSS/USC	37.81	PEM/FOAx	0.47	PSS/FOC	2.75
R2UBGx	78.84	PSSA	144.41	PEM/FOC	491.86	PSS/FOCx	1.13
R2UBH	41.99	PSSC	39.37	PEM/FOCd	82.67	PSS/USA	3.00
R2USA	32.02	PUBFx	19.68	PEM/FOCh	8.62	PSS/USAh	0.71
R2USC	20.26	PUBGx	0.30	PEM/FOCx	50.84	PSS/USC	30.25
R3UBG	2.68	PUS/SSA	36.69	PEM/FOFh	1.37	PSSA	82.43
R4SBA	7.04	PUS/SSC	37.28	PEM/SSA	29.73	PSSAd	5.28
R4SBC	1.28	PUSA	2.38	PEM/SSAd	2.42	PSSAh	13.89
R4SBF	1,279.26	R2UBF	0.40	PEM/SSB	2.57	PSSC	32.32
R4SBFx	12.68	R2UBG	98.04	PEM/SSC	49.88	PSSCd	2.92
		R2UBH	2,774.37	PEM/SSCd	12.68	PSSCh	0.93
Missouri River Floodplain		R2UBHx	35.32	PEM/SSCh	1.60	PSSCx	0.96
L2ABF	101.13	R2USA	127.17	PEM/UBFx	0.79	PUB/FOFh	0.92
L2ABG	125.20	R2USAx	4.48	PEMA	79,432.11	PUBF	2.26
PAB/EMF	28.05	R2USC	361.53	PEMAd	17,783.00	PUBFh	200.13
PAB/EMFx	1.62	R4SBFx	2.29	PEMAh	99.68	PUBFx	591.19
PABF	72.26			PEMAx	6.21	PUBGh	30.22
PABFh	2.80	**James River Lowland**		PEMB	16.51	PUBGx	36.42
PABFx	28.09	L1UBGh	1,717.41	PEMBd	2.69	PUBHx	1.57
PABGx	0.82	L1UBH	539.57	PEMC	104,278.70	PUS/SSC	1.32
PEM/ABF	196.48	L1UBHh	4,907.74	PEMCd	9,781.58	PUSAh	0.31
PEM/ABFd	37.62	L2ABF	1,785.10	PEMCh	257.83	PUSCh	0.60
PEM/ABFx	7.39	L2ABFd	11.16	PEMCx	75.97	PUSCx	3.92
PEM/FOA	92.14	L2ABFh	16.33	PEMF	1,805.23	R2UBF	244.12
PEM/FOAd	4.18	L2ABFx	4.75	PEMFd	183.77	R2UBG	2,074.78
PEM/FOC	9.89	L2ABG	4,316.97	PEMFh	255.87	R2UBGx	3.63
PEM/FOCx	4.35	L2ABGd	63.39	PEMFx	4.43	R2UBH	302.28
PEM/SSA	604.87	L2ABGh	1,234.92	PEMU	13.68	R2USA	16.53
PEM/SSC	18.18	L2ABGx	162.38	PFO/EMA	129.29	R2USC	15.42
PEM/SSCx	0.28	L2UBF	13.97	PFO/EMAd	16.80	R4SBA	1.15
PEMA	793.55	L2UBFh	20.01	PFO/EMAh	4.50	R4SBF	3,098.35
PEMAd	437.46	L2UBGh	105.84	PFO/EMC	553.40	R4SBFx	3.27
PEMC	321.19	L2USA	7.36	PFO/EMCd	70.26	No Photography	1,726.44
PEMCd	81.71	L2USC	47.60	PFO/EMCh	14.35		
PEMCh	0.71	PAB/EMCh	4.33	PFO/EMCx	24.83	**Lake Dakota Plain**	
PEMCx	7.74	PAB/EMF	3,414.42	PFO/EMF	8.76	L2ABF	23.49
PEMF	17.38	PAB/EMFd	263.86	PFO/SSA	9.29	L2ABFd	58.70
PEMFd	4.54	PAB/EMFh	267.28	PFO/SSC	8.39	L2ABG	53.39
PFO/EMA	191.61	PAB/EMFx	7.69	PFO/SSCh	0.93	L2ABGh	1,380.37
PFO/EMC	26.00	PAB/EMG	10.74	PFO/SSCx	1.71	PAB/EMF	327.06
PFO/SSA	12.85	PABF	1,360.55	PFOA	749.31	PAB/EMFd	101.21
		PABFd	215.57	PFOAd	102.33	PAB/EMFh	12.30

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PABF	151.38	PSSA	4.00	PEM/SSAh	2.82	PUBFh	358.16
PABFd	11.19	PSSAd	6.84	PEM/SSC	93.05	PUBFx	415.04
PABFh	31.84	PSSC	1.42	PEM/SSCd	0.25	PUBGh	105.15
PABFx	273.65	PUBF	0.16	PEM/SSCh	5.25	PUBGx	22.57
PABGx	81.33	PUBFh	5.69	PEM/UBFh	2.29	PUS/SSC	1.73
PEM/ABF	1,975.77	PUBFx	55.24	PEMA	34,285.09	PUSAh	0.09
PEM/ABFd	437.78	PUBGx	7.44	PEMAd	4,622.17	PUSCh	1.08
PEM/ABFh	4,391.41	R2UBG	1253.10	PEMAh	112.86	PUSCx	3.84
PEM/ABFx	0.35	R4SBF	1313.47	PEMAx	9.30	R2UBH	862.54
PEM/ABGx	1.62	R4SBFx	4.15	PEMB	0.10	R2USA	42.14
PEM/FOA	375.60			PEMC	71,779.32	R2USC	53.22
PEM/FOAd	113.15	**Missouri Coteau**		PEMCd	2,506.51	R4SBA	1.92
PEM/FOAh	7.83	L1UBGh	1,814.86	PEMCh	406.75	R4SBF	402.66
PEM/FOC	167.97	L1UBHh	5,107.64	PEMCx	35.32	R4SBFx	0.68
PEM/FOCd	41.57	L2ABF	1,770.56	PEMF	7,226.78		
PEM/FOCh	21.04	L2ABFd	67.45	PEMFd	68.21	**Pierre Hills**	
PEM/FOCx	0.19	L2ABFh	99.54	PEMFh	157.68	L1UBFh	0.51
PEM/SSA	9.15	L2ABFx	6.58	PEMFx	9.62	L1UBGh	4,757.03
PEM/SSAd	1.35	L2ABG	4,875.55	PEMU	31.78	L1UBHh	63,380.38
PEM/SSC	0.53	L2ABGh	446.30	PFO/EMA	13.16	L2ABF	101.13
PEMA	15,130.36	L2ABGx	10.80	PFO/EMAd	0.47	L2ABFh	168.84
PEMAd	2,132.53	L2UBF	1.10	PFO/EMAh	0.45	L2ABG	131.20
PEMAh	60.48	L2UBFh	88.55	PFO/EMAx	0.68	L2ABGh	120.67
PEMAx	1.99	L2UBG	125.98	PFO/EMC	52.30	L2UBF	0.04
PEMC	10793.45	L2UBGh	67.40	PFO/EMCd	1.37	L2UBFh	210.65
PEMCd	1453.99	L2USA	5.83	PFO/EMCh	14.70	L2UBGh	18.86
PEMCh	136.99	L2USCh	20.35	PFO/EMCx	0.87	L2USAh	3.29
PEMCx	22.42	PAB/EMF	2,138.06	PFO/SSA	4.20	L2USCh	432.48
PEMF	312.51	PAB/EMFd	6.30	PFO/SSC	0.51	PAB/EMF	28.05
PEMFd	935.12	PAB/EMFh	94.90	PFO/SSCh	1.05	PAB/EMFh	22.91
PEMFh	7.90	PAB/EMFx	1.98	PFOA	235.18	PAB/EMFx	1.83
PEMFx	1.80	PABF	1,274.28	PFOAd	14.06	PABF	108.65
PEMU	0.48	PABFd	29.97	PFOAh	5.35	PABFh	1,335.28
PFO/EMA	92.30	PABFh	4,489.18	PFOAx	0.88	PABFx	112.06
PFO/EMAd	8.05	PABFx	1,898.94	PFOC	134.08	PABGh	77.65
PFO/EMC	196.10	PABG	32.48	PFOCd	7.74	PABGx	12.50
PFO/EMCd	5.13	PABGh	193.99	PFOCh	21.43	PEM/ABF	197.88
PFO/EMCh	4.63	PABGx	31.49	PFOCx	1.03	PEM/ABFd	38.19
PFO/SSA	0.89	PABHh	0.04	PSS/EMA	2.43	PEM/ABFh	18.43
PFO/SSAd	2.25	PABHx	0.24	PSS/EMC	3.15	PEM/ABFx	7.60
PFO/SSC	0.56	PEM/ABF	10,886.09	PSS/FOA	10.95	PEM/FOA	109.82
PFOA	382.31	PEM/ABFd	291.61	PSS/FOC	1.34	PEM/FOAd	4.18
PFOAd	16.99	PEM/ABFh	188.28	PSS/FOCh	1.36	PEM/FOC	30.14
PFOAh	1.06	PEM/ABFx	1.30	PSS/USC	164.78	PEM/FOCh	5.68
PFOC	202.62	PEM/FOA	58.89	PSSA	57.29	PEM/FOCx	4.35
PFOCd	13.49	PEM/FOAd	8.83	PSSAd	0.42	PEM/SSA	712.99
PFOCh	7.47	PEM/FOAh	8.43	PSSAh	1.94	PEM/SSAd	2.39
PSS/EMA	0.28	PEM/FOC	218.20	PSSC	73.56	PEM/SSAh	11.27
PSS/EMAd	0.72	PEM/FOCd	38.25	PSSCd	6.11	PEM/SSC	52.73
PSS/EMC	0.85	PEM/FOCh	22.02	PSSCh	6.35	PEM/SSCh	0.01
PSS/FOA	6.98	PEM/FOCx	11.06	PSSCx	0.11	PEM/SSCx	0.28
PSS/FOAd	1.46	PEM/FOF	8.11	PUB/EMFh	1.31	PEMA	2,034.04
PSS/FOC	7.26	PEM/SSA	7.17	PUBF	4.64	PEMAd	646.02

Attribute	Hectares	Attribute	Hectares	Attribute	Hectares	Attribute	Hectares
PEMAh	209.80	PFO/SSCh	0.61	PSSAh	46.85	PUSCh	7.80
PEMB	0.17	PFOA	340.55	PSSC	42.65	R2UBF	8.56
PEMC	1,146.49	PFOAd	30.68	PSSCh	70.91	R2UBG	141.85
PEMCd	105.36	PFOAh	11.46	PUBFh	6.23	R2UBH	3,737.62
PEMCh	128.85	PFOC	21.82	PUBFx	26.079	R2UBHx	35.32
PEMCx	13.83	PFOCd	2.33	PUBGh	13.52	R2USA	167.49
PEMF	226.77	PFOCx	3.06	PUBGx	0.83	R2USAx	4.48
PEMFd	4.54	PSS/EMA	53.24	PUBHh	1.07	R2USC	443.08
PEMFh	347.18	PSS/EMC	1.46	PUBHx	0.10	R4SBA	0.36
PEMFx	1.39	PSS/FOA	11.30	PUS/SSA	36.69	R4SBF	138.01
PFO/EMA	302.20	PSS/FOC	9.78	PUS/SSC	37.28	R4SBFx	3.27
PFO/EMC	40.31	PSS/USA	98.60	PUSA	2.38		
PFO/EMCh	0.93	PSS/USC	37.81	PUSAh	0.61		
PFO/SSA	12.85	PSSA	158.63	PUSAx	0.27		
PFO/SSC	14.95	PSSAd	1.01	PUSC	1.11		

Linear Wetlands

Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
Minnesota-Red River Lowland		R4SBA	5597.8	PEMFx	16514.9	R4SBC	173189.5
		R4SBAx	19599.9	PFO/EMA	68.9	R4SBCx	410.6
L2ABGh	1068.0	R4SBC	20483.0	PFO/EMC	8149.6	R4SBF	1037848.8
PAB/EMF	158.7	R4SBCx	3469.8	PFO/EMCx	766.5	R4SBFx	146942.4
PABF	1532.9	R4SBF	473296.8	PFO/SSA	324.4		
PABFh	182.7	R4SBFx	8661.9	PFO1Cd	64.4	**Missouri River Floodplain**	
PABFx	249.5			PFO1Cx	583.6		
PEM/ABF	3108.4	**Prairie Coteau**		PFOA	855401.6	PAB/EMF	194.2
PEM/FOC	1993.2	L2USA	70375.4	PFOAd	23029.3	PAB/EMFx	4236.5
PEMA	247673.3	L2USAh	196.6	PFOAh	9433.6	PABF	254.4
PEMAd	1973.3	L2USC	1366.6	PFOAx	43499.3	PABFx	25.9
PEMAx	44204.2	PAB/EMF	751.7	PFOC	285291.6	PEM/ABF	241.6
PEMC	895394.4	PABF	4675.3	PFOCd	10513.5	PEM/ABFx	6756.7
PEMCd	2907.2	PABFX	2250.1	PFOCh	540.0	PEMA	17861.1
PEMCh	683.2	PABFh	994.1	PFOCx	40170.9	PEMAd	762.1
PEMCx	283720.6	PABFx	9358.1	PSS/EMC	57.8	PEMAx	4440.7
PEMF	23805.4	PEM/ABF	54239.3	PSSA	20413.1	PEMC	20528.2
PEMFh	922.0	PEM/ABFh	508.6	PSSAd	536.3	PEMCd	1498.0
PEMFx	8454.5	PEM/ABFx	8868.3	PSSAh	251.6	PEMCx	190596.1
PFO/EMA	132.3	PEM/FOA	1772.0	PSSAx	528.6	PEMF	193.2
PFOA	116371.9	PEM/FOC	8635.1	PSSC	5819.6	PEMFx	1991.9
PFOAd	1547.2	PEM/FOCx	521.1	PSSCd	307.8	PFO/EMC	37.1
PFOAh	19593.9	PEMA	3596154.7	PSSCx	688.3	PFOA	29748.0
PFOAx	1633.5	PEMAd	5980.52	PUBFx	10173.1	PFOAx	3951.1
PFOC	17823.8	PEMAh	23.8	PUBGh	169.6	PFOC	3141.6
PFOCd	382.0	PEMAx	188551.5	PUBGx	344.2	PFOCx	1777.9
PFOCh	5343.7	PEMB	19.3	PUSAx	57.4	PUBFx	116.3
PFOCx	1814.5	PEMC	8692505.2	PUSCx	84.4	R2UBG	4743.4
PSSA	9485.8	PEMCd	30727.4	R2UBG	79462.0	R2USA	1718.9
PSSC	6036.3	PEMCh	1460.3	R2UBGx	6102.9	R2USC	2020.7
PSSCh	276.1	PEMCx	2808542.6	R2USA	1166.5	R4SBF	7832.5
PSSCx	333.0	PEMF	187681.9	R2USC	202.2	R4SBFx	84507.7
PUBFx	647.7	PEMFd	385.0	R4SBA	37578.8		
R2UBG	733.1	PEMFh	1873.1	R4SBAx	280.4		

Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
James River Lowland		PUSCx	135.1	**Missouri Coteau**		R2SBA	2665.4
L2ABFx	846.8	R2USC	224.4	L2UBFh	344.2	R4SBA	107359.3
L2USA	2834.8	R4SBA	19345.3	PAB/EMF	225.0	R4SBC	84701.2
L2USC	2523.4	R4SBC	17474.5	PABF	4641.2	R4SBCx	4490.0
PAB/EMF	1507.6	R4SBF	1644815.9	PABFh	3730.4	R4SBF	499469.3
PAB/EMFd	253.8	R4SBFx	52520.2	PABFx	6494.9	R4SBFx	38654.6
PABF	10532.2			PEM/ABF	11456.0		
PABFh	3385.0	**Lake Dakota Plain**		PEM/ABFx	589.4	**Pierre Hills**	
PABFx	17127.7	PAB/EMF	100.8	PEM/ABFh	834.8	L2UBFh	1571.0
PEM/ABF	52241.4	PABF	1355.9	PEM/FOA	471.3	L2UBGh	271.6
PEM/ABFd	103.6	PABFh	206.6	PEM/FOC	839.6	PABF	4272.9
PEM/ABFh	2578.9	PABFx	2564.1	PEM/FOCh	157.4	PABFh	931.3
PEM/ABFx	1760.6	PEM/ABF	5999.0	PEM/FOCx	850.7	PABFx	227.0
PEM/FOA	885.9	PEM/ABFx	513.5	PEM/SSC	1144.2	PEM/ABF	281.0
PEM/FOC	4955.6	PEM/FOA	1087.4	PEM/SSCd	36.4	PEM/ABFx	1461.6
PEM/FOCh	90.5	PEM/FOC	4199.6	PEMA	3833136.2	PEMA	762898.3
PEM/FOCx	1809.2	PEM/FOCx	676.2	PEMAd	8644.2	PEMAd	834.8
PEMA	3981302.2	PEMA	386248.7	PEMAh	551.3	PEMAh	604.9
PEMAd	45858.7	PEMAd	8709.4	PEMAx	207612.1	PEMAx	4399.4
PEMAh	328.7	PEMAx	75729.4	PEMC	4653010.3	PEMC	818853.8
PEMAx	319416.8	PEMC	400292.0	PEMCd	4408.7	PEMCd	337.2
PEMC	8655245.6	PEMCd	7187.3	PEMCh	7726.4	PEMCh	5406.8
PEMCd	26811.0	PEMCh	24.7	PEMCx	1777222.4	PEMCx	66903.7
PEMCh	2313.2	PEMCx	611373.9	PEMF	89164.5	PEMF	1250.4
PEMCx	6878820.2	PEMF	24319.9	PEMFh	2874.5	PEMFh	2114.3
PEMF	14090.1	PEMFx	2372.6	PEMFx	21618.6	PEMFx	4764.7
PEMFh	9598.2	PFO/EMC	167.4	PEMU	24.4	PFO/EMA	212.7
PEMFx	2646.2	PFO/SSA	62.0	PFO/EMC	2398.6	PFOA	5148.3
PFO/EMA	1545.1	PFOA	242303.7	PFO/EMCx	255.6	PFOAh	4160.7
PFO/EMC	7585.7	PFOAh	167.6	PFO/SSA	449.4	PFOAx	525.7
PFO/EMCx	1054.5	PFOAd	2355.3	PFOA	186148.5	PFOC	56022.0
PFOA	418007.0	PFOAx	1966.3	PFOAd	1685.2	PFOCh	1098.9
PFOAd	20034.4	PFOC	42182.3	PFOAh	49647.8	PFOCx	156.6
PFOAh	45610.8	PFOCh	2566.4	PFOAx	6055.8	PSSA	600.7
PFOAx	17428.9	PFOCd	5874.4	PFOC	131434.2	PSSC	1108.9
PFOC	233557.2	PFOCx	4941.8	PFOCd	113.7	PUBFx	71.7
PFOCd	4099.7	PSS/FOA	6103.8	PFOCh	3106.7	PUSCh	20.4
PFOCh	3855.5	PSSA	275.2	PFOCx	8539.9	R2SBA	17882.0
PFOCx	24227.5	PUBFx	245.2	PSSA	10358.1	R2UBF	352.7
PSS/FOA	392.9	R4SBCx	9033.0	PSSAh	231.1	R2USA	8842.1
PSSA	5271.1	R4SBF	88455.3	PSSAx	233.5	R2USC	524.8
PSSAx	96.7	R4SBFx	108364.6	PSSC	1779.8	R4SBA	407192.7
PSSC	913.1			PSSCx	192.1	R4SBC	218882.3
PUBF	18.3			PUBFh	957.1	R4SBF	234334.4
PUBFx	7683.2			PUBFx	3342.3	R4SBFx	5408.3
PUSA	26.1			PUBGx	23.1		

Point Wetlands

Attribute	Number		Attribute	Number		Attribute	Number		Attribute	Number
Minnesota-Red River Lowland			PSSC	3		PFO/EMA	1		PEMAd	335
			PUBF	1		PFO/EMC	1		PEMAh	5
PABF	1		PUBFh	2		PFO/EMCx	3		PEMAx	95
PEM/ABF	1		PUBFx	177		PFOA	53		PEMC	6,658
PEMA	2,182		PUBGx	4		PFOAd	3		PEMCd	40
PEMAd	64		PUSAx	1		PFOAx	1		PEMCh	20
PEMAx	10		PUSCx	2		PFOC	8		PEMCx	78
PEMC	281					PFOCx	1		PEMF	1
PEMCd	3		**Missouri River Floodplain**			PSSA	4		PEMFh	1
PEMCh	1					PUBF	3		PEMFx	1
PEMCx	6					PUBFx	387		PEMU	3
PEMF	1		PEMA	95		PUSCh	1		PFOA	10
PFOA	1		PEMAd	16		PUSCx	1		PFOAx	1
PUBFx	32		PEMC	20					PFOC	2
			PEMCx	7		**Lake Dakota Plain**			PFOCx	1
Prairie Coteau			PUBFx	3		PABFx	140		PSSA	3
			R2USC	7		PEM/FOC	1		PUBFx	124
PABFh	10					PEMA	4,974		PUSAx	1
PABFx	70		**James River Lowland**			PEMAd	36			
PEM/ABF	5		PABF	1		PEMAh	1		**Pierre Hills**	
PEM/FOCx	3		PABFh	17		PEMAx	10		PABFh	26
PEMA	12,676		PABFx	153		PEMC	1,576		PABFx	6
PEMAd	1,448		PEM/ABF	1		PEMCd	4		PABGx	4
PEMAh	3		PEM/FOA	2		PEMCh	1		PEM/ABF	1
PEMAx	66		PEM/FOC	1		PEMCx	35		PEMA	577
PEMC	7,442		PEM/FOCx	6		PFO/EMC	1		PEMAd	20
PEMCd	179		PEM/SSC	1		PFOA	7		PEMAh	1
PEMCh	8		PEMA	49,218		PFOC	1		PEMC	140
PEMCx	154		PEMAd	2,210		PFOCx	1		PEMCd	2
PEMF	35		PEMAh	2		PUBFx	22		PEMCh	87
PFO/EMCx	1		PEMAx	54					PEMCx	9
PFOA	51		PEMC	8,863		**Missouri Coteau**			PFOA	1
PFOAd	1		PEMCd	178		PABF	1		PFOCx	1
PFOAx	2		PEMCh	21		PABFh	18		PUBFx	4
PFOC	11		PEMCx	226		PABFx	91		PUSCh	2
PFOCx	3		PEMF	1		PEMA	24,310		R2USC	7
PSSA	4		PEMFx	4						

Appendix D2. Palustrine, lacustrine, and riverine wetlands delineated by the National Wetlands Inventory in eastern South Dakota physiographic regions from photography acquired 1979-1986.

Polygon Wetlands, Hectares

Physiographic Region	Palustrine	Lacustrine	Riverine
Minnesota-Red River Lowland	26,727.10	6,090.59	86.98
Prairie Coteau	168,318.66	43,800.69	2,603.69
Missouri River Floodplain	3,783.90	226.33	3,403.61
James River Lowland	246,781.83	14,954.51	5,759.53
Lake Dakota Plain	40,557.48	1,515.95	2,570.72
Missouri Coteau	145,048.15	14,508.49	1,363.17
Pierre Hills	5,423.35	69,098.75	1,276.43

Linear Wetlands, Length (m)

Physiographic Region	Palustrine	Lacustrine	Riverine
Minnesota-Red River Lowland	1,698,386.9	1,068.0	531,842.8
Prairie Coteau	16,984,266.0	71,938.7	1,483,184.5
Missouri River Floodplain	288,353.5	0.0	100,823.4
James River Lowland	20,827,564.0	6,205.1	1,734,380.5
Lake Dakota Plain	1,842,174.4	0.0	205,853.0
Missouri Coteau	11,044,420.0	344.0	737,340.0
Pierre Hills	1,774,670.4	1,842.6	893,419.7

Point Wetlands, Number

Physiographic Region	Palustrine	Lacustrine	Riverine
Minnesota Red-River Lowland	2,583	0	0
Prairie Coteau	22,362	0	0
Missouri River Floodplain	141	0	7
James River Lowland	61,426	0	0
Lake Dakota Plain	6,810	0	0
Missouri Coteau	31,799	0	0
Pierre Hills	740	0	0

Appendix D3. Wetlands delineated by the National Wetlands Inventory in eastern South Dakota physiographic regions by Cowardin *et al.* (1979) classes. Photography used to delineate wetlands was acquired 1979-1986.

Region abbreviations are: MRRL - Minnesota-Red River Lowland
PCOT - Prairie Coteau
MRFL - Missouri River Floodplain
JRL - James River Lowland
LDP - Lake Dakota Plain
MCOT - Missouri Coteau
PH - Pierre Hills

Polygon Wetlands, Hectares

Class	MRRL	PCOT	MRFL	JRL	LDP	MCOT	PH
EM	19,954.17	90,388.78	1,664.28	213,997.27	30,990.02	121,251.49	3,200.15
AB	2,399.55	32,805.58	330.30	15,571.60	2,065.34	15,227.41	1,837.68
UB	4,620.59	17,302.80	2,928.11	10,791.60	1,321.62	8,973.63	69,410.54
US	0.00	794.03	495.56	91.74	0.00	126.55	567.42
FO	735.40	1,544.02	302.90	1,453.15	623.94	419.73	107.01
SS	213.57	235.19	183.78	138.74	12.26	145.78	136.27
SB	73.95	1,300.26	2.29	3,102.76	1,317.62	405.27	139.35
EM/AB	4,128.06	62,990.71	241.50	16,408.67	6,806.94	11,367.28	20.59
AB/EM	377.69	4,753.85	29.67	3,968.32	440.56	2,241.25	23.12
EM/FO	76.21	1,175.90	110.56	915.72	727.36	373.79	43.61
FO/EM	53.04	844.93	217.61	822.19	306.21	84.00	125.83
FO/SS	9.53	28.16	27.80	20.32	3.71	5.76	0.61
SS/FO	4.78	67.01	20.81	58.41	15.70	13.64	0.27
SS/EM	99.93	81.54	24.99	19.94	1.85	5.58	29.08
EM/SS	158.13	408.83	623.32	98.89	11.03	108.54	156.35
US/SS	0.00	0.16	73.96	1.32	0.00	1.73	0.01
SS/US	0.00	0.00	136.41	33.96	0.00	164.78	0.00
EM/US	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UB/FO	0.00	0.00	0.00	0.92	0.00	0.00	0.00

Linear Wetlands, Length (m)

Class	MRRL	PCOT	MRFL	JRL	LDP	MCOT	PH
EM	1,509,738.57	15,574,421.04	237,871.64	19,938,786.54	1,516,258.54	10,605,995.00	1,668,369.03
AB	3,033.34	17,277.89	280.35	31,892.08	4,126.88	14,867.00	5,431.46
UB	1,380.96	96,252.03	4,859.82	7,701.65	245.28	4,667.00	2,267.18
US	0.00	73,449.52	3,739.7	5,744.05	0.00	0.00	9,387.47
FO	164,511.04	1,268,528.41	38,618.84	766,821.68	302,358.38	386,733.00	97,112.49
SS	16,131.44	28,545.66	0.00	6,281.09	275.20	12,795.00	1,709.71
SB	531,109.60	1,396,250.83	0.00	1,734,156.14	205,853.06	737,340.00	883,700.01
EM/AB	3,108.41	63,616.48	6,998.37	56,684.94	6,512.63	12,880.00	1,742.71
AB/EM	158.76	751.76	4,430.81	1,761.54	100.88	0.00	0.00
EM/FO	1,993.28	10,928.34	0.00	7,741.56	5,963.33	2,319.00	0.00
FO/EM	132.32	8,985.06	37.20	10,185.53	167.45	2,654.00	212.74
FO/SS	0.00	324.48	0.00	0.00	62.03	449.00	0.00
SS/FO	0.00	0.00	0.00	392.98	6,103.87	0.00	0.00
SS/EM	0.00	57.86	0.00	0.00	0.00	0.00	0.00
EM/SS	0.00	0.00	0.00	0.00	0.00	1,181.00	0.00

Point Wetlands, Number

Class	MRRL	PCOT	MRFL	JRL	LDP	MCOT	PH
EM	2,548	22,011	138	60,777	6,637	31,547	689
AB	1	80	0	171	140	111	36
UB	32	184	3	390	22	124	1
US	0	3	7	2	0	1	2
FO	1	68	0	66	9	14	2
SS	0	7	0	4	0	3	0
SB	0	0	0	0	0	0	0
EM/AB	1	5	0	1	0	0	1
EM/FO	0	3	0	9	1	0	0
FO/EM	0	1	0	5	1	0	0
EM/SS	0	0	0	1	0	0	0

Appendix D4. Summary of wetlands, by water regime, delineated by National Wetlands Inventory in eastern South Dakota physiographic regions from photography acquired 1979-1986.

Polygon Wetlands, Hectares

Region	A	B	C	F	G	H
Minnesota-Red River Lowland	9,601.83	93.29	7,390.26	9,619.53	1,791.81	4,399.87
Prairie Coteau	38,195.49	379.37	44,804.35	87,716.51	40,220.90	3,404.09
Missouri River Floodplain	2,877.37	0.00	982.71	519.73	224.36	2,809.69
James River Lowland	98,861.78	21.77	116,500.47	36,137.86	10,209.14	5,751.17
Lake Dakota Plain	18,356.57	0.00	13,077.69	10,432.18	2,777.23	0.00
Missouri Coteau	39,513.01	0.10	75,688.01	31,988.36	7,726.58	5,970.18
Pierre Hills	2,226.10	0.17	1,673.35	3,114.07	5,049.75	64,344.81

Linear Wetlands, Length (m)

Physiographic Region	A	B	C	F	G
Minnesota-Red River Lowland	467,813.66	0.00	1,240,661.62	521,021.23	1,801.22
Prairie Coteau	4,899,625.77	19.34	12,070,599.70	1,483,065.78	86,078.78
Missouri River Floodplain	58,482.19	0.00	219,600.02	106,351.28	4,743.49
James River Lowland	4,878,386.61	0.00	15,868,051.97	1,821,711.21	0.00
Lake Dakota Plain	725,009.40	0.00	1,088,519.80	234,498.31	0.00
Missouri Coteau	4,415,250.00	0.00	6,682,409.00	684,398.00	23.00
Pierre Hills	1,243,303.10	0.00	1,169,316.04	257,042.00	271.67

Point Wetlands, Number

Physiographic Region	A	C	F	G
Minnesota-Red River Lowland	2,257	291	35	0
Prairie Coteau	14,252	7,806	300	4
Missouri River Floodplain	111	34	3	0
James River Lowland	51,548	9,311	567	0
Lake Dakota Plain	5,028	1,620	162	0
Missouri Coteau	24,760	6,799	235	0
Pierre Hills	488	214	34	4

Appendix D5. Summary of wetlands, by special modifier, delineated by the National Wetlands Inventory in eastern South Dakota physiographic regions from photography acquired 1979-1986.

Polygon Wetlands. Hectares

Physiographic Region	d	x	h	b
Minnesota-Red River Lowland	3,486.84	646.15	7,395.96	1.63
Prairie Coteau	31,481.49	2,936.19	1,538.20	4.16
Missouri River Floodplain	598.52	112.55	3.51	0.00
James River Lowland	29,776.20	4,728.20	12,389.79	0.00
Lake Dakota Plain	5,341.41	450.18	6,069.01	0.00
Missouri Coteau	7,669.73	2,463.83	13,846.06	0.00
Pierre Hills	236.19	114.69	71,406.24	0.00

Linear Wetlands, Length (m)

Physiographic Region	d	x	h
Minnesota-Red River Lowland	6,809.88	372,789.71	28,070.01
Prairie Coteau	115,544.61	3,285,240.61	15,451.88
Missouri River Floodplain	2,260.16	298,401.28	0.00
James River Lowland	97,161.78	7,325,575.00	70,116.43
Lake Dakota Plain	24,126.68	817,781.54	2,965.64
Missouri Coteau	14,889.00	2,076,304.00	70.034.00
Pierre Hills	1,172.21	83,919.38	16,180.52

Point Wetlands, Number

Physiographic Region	d	x	h
Minnesota-Red River Lowland	67	45	1
Prairie Coteau	1,628	483	23
Missouri River Floodplain	16	10	0
James River Lowland	2,391	836	41
Lake Dakota Plain	40	208	2
Missouri Coteau	375	394	42
Pierre Hills	6	14	116

Appendix D6. Basin area (ha) and number by water regime in eastern South Dakota physiographic regions, and the percent of the region covered by that basin type.

Region	Temporary			Seasonal			Semipermanent[a]			Permanent[a]		
	Number	Hectares	%	Number	Hectares	%	Number	Hectares	%	Number	Hectares	%
Minnesota-Red River Lowland	22,302	6,354.4	1.95	9,034	6,174.3	1.90	2,885	9,480.8	2.91	67	12,986.4	3.99
Prairie Coteau	93,232	29,332.5	1.18	84,020	42,999.9	1.73	25,689	106,420.6	4.29	607	57,066.0	2.30
Missouri River Floodplain	1,266	1,702.2	1.82	648	1,336.7	1.43	194	875.8	0.94	8	402.4	0.43
James River Lowland	275,078	78,624.3	2.63	147,425	102,687.1	4.14	24,203	91,166.9	3.67	334	18,887.3	0.63
Lake Dakota Plain	29,818	13,426.2	2.53	10,818	10,325.1	1.95	2,222	14,576.3	2.75	43	6,123.6	1.16
Missouri Coteau	95,459	28,292.8	1.21	81,001	59,842.5	2.57	18,443	67,476.5	2.89	421	19,959.9	0.64
Pierre Hills	3,224	1,792.0	0.43	1,753	1,072.8	0.25	2,624	3,257.6	0.79	101	70,996.2	17.14

[a] Natural basins, basins due to dugouts or other excavations, and impoundments.