WETLAND RESOURCES of Eastern South Dakota





Rex R. Johnson & Kenneth F. Higgins

South Dakota State University and the South Dakota Cooperative Fish and Wildlife Research Unit

in cooperation with the South Dakota Dept. of Game, Fish and Parks, the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service National Wetlands Inventory

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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
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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.

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Executive Summary

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).

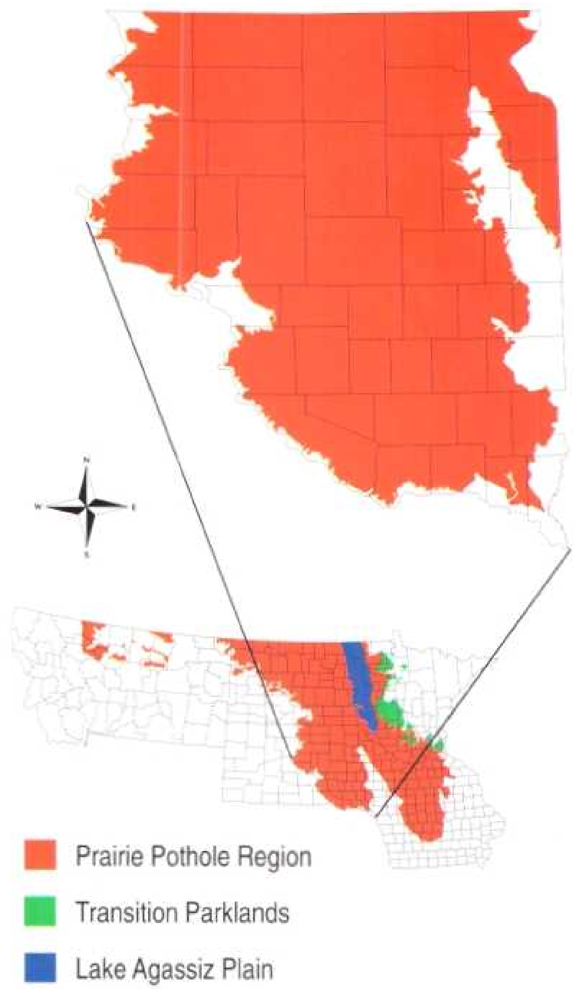

Figure 1. The glaciated prairie pothole region of eastern South Dakota was delineated using the distribution of characteristic soils.

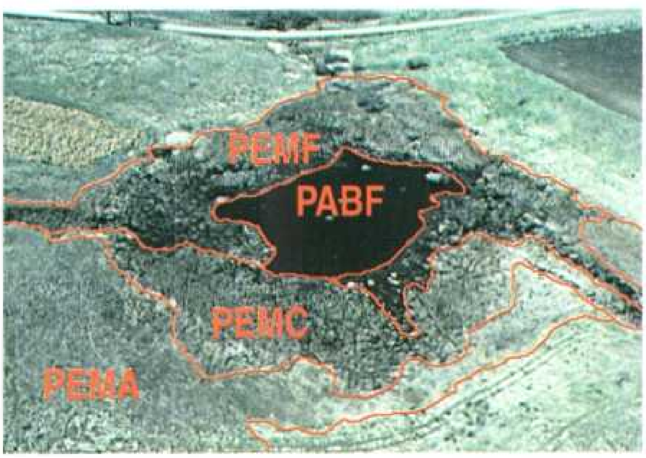

Figure 2. The term "wetland" describes an area with a homogeneous water regime and plant community structure as delineated by the NWI. A "basin" is the depression that contains the wetlands extending upslope to the limit of the wetlands.

History of Wetland Drainage

Basins (for example, potholes) in the glaciated prairie pothole region sometimes number $100/mi^2$ ($40/km^2$) (Kantrud *et al.* 1989) and have been generally regarded as an impediment to agriculture and travel. Hewes and Frandson (1952) included a description of the prairie pothole region landscape from the early 1900s which read as follows:

> ... low knolls are separated by saucer-like [sic] depressions, in which empounded [sic] water often stands the year around ... in the main rainwater which falls upon the uplands has to escape by seepage or evaporation. Little ponds and marshes are found in almost innumerable places scattered all over the county.

Mitchell (1941) noted in recalling trips to town early in South Dakota's settlement period,

> I used four horses and sometimes two. I would sometimes get stuck in sloughs, and if any of us saw anybody else stuck we always got out and helped them.

Much like today, the values of wetlands may not have been universally agreed upon even by early South Dakota settlers. Mitchell (1941) also recognized the value of wetlands and noted that the site of the first settlement in Kingsbury County was selected because of its proximity to emergent wetlands:

> As we came from near New Ulm, Minn., and finding lots of sloughs lying between Lake Badger and Lake Thistad, and [as] these sloughs were covered with muskrat houses, [we] decided to locate here and build these dugouts and spent the winter here trapping.

Dahl (1990) estimated that approximately 35% of the area of natural wetlands in South Dakota prior to European settlement has been destroyed through human modifications. In South Dakota, most of this wetland area has been converted to agricultural production. Tiner (1984) estimated that 87% of wetland losses in the U.S. between the mid-1950s and mid-1970s was due to agriculture. Extent of drainage is correlated with time since European settlement, duration of agricultural land use, land value, and local community attitudes toward wetlands. Staunton (circa 1950) reported that:

> Prior to World War II, potholes ... were considered by most farmers as an asset on his farm, as the drought years of the "thirties" were still fresh in his mind. He [the farmer] remembered well that the only hay he had harvested was on some class B pothole, that the meager income of the family was supplemented by cash revenue from muskrats harvested on his class A pothole. His class C pothole provided good grazing for his livestock, the class D pothole with a small crop of grain either as feed or to sell on the market. The general water table in this area [northeast South Dakota] was down as much as 33 feet.

Although wetland losses began with the development of agriculture in eastern South Dakota, pothole drainage began in earnest in the mid-1940s. The slogan "every acre to its best use" was the justification for draining an unknown number of basins across eastern South Dakota (Staunton circa 1950). Wetland drainage in eastern South Dakota was greatly accelerated by high post-World War II commodity prices (Evans and Black 1956). At the same time, transition from horse-drawn to mechanized farming and increased equipment size resulted in intensified farming practices and larger fields, encouraging even more drainage. As pastures were converted to row-crop and small-grain production,wetlands, which had been sources of forage and water for livestock, were drained because they hindered field operations or reduced crop yields during periods of normal to wet hydrologic conditions.

Acceleration of drainage in the 1940s and 1950s also was due to the creation of a favorable economic climate for drainage through provision of technical and financial assistance by the U.S. Department of Agriculture (USDA) Soil Conservation Service and Production and Marketing Administration (PMA) and to a barrage of propaganda from government agencies painting pothole drainage as responsible land use. Legislation promoting wetland drainage was often disguised under euphemisms such as "conservation," "flood prevention," or even "fish and wildlife enhancement." In official policy, pothole drainage was meant to provide cropland to replace highly erodible uplands, although in practice "worn-out" uplands were seldom retired (Schoenfeld 1949). In Day County, South Dakota, 2,500 basins comprising over 13,500 ac (5,400 ha) were drained during 1948-50 with PMA support (Schoenfeld 1949), and PMA data show that 188,000 ac (76,000 ha) were drained with federal assistance in the Dakotas and Minnesota during 1949 and 1950 (Tiner 1984). Staunton (circa 1950) reported that by 1950 some farmers had drained potholes at government expense, hoping to

> ... get paid for retiring these same drained lands, or receive payments for non-use in the production of

> basic crops when curtailment of crop production becomes necessary because of surpluses.

Federal agricultural programs increased the profitability of draining wetlands in South Dakota through cost sharing, below market-rate credit, and price and income supports to oversupplied agricultural markets (Goldstein *et al.* 1988). Furthermore, tax assessment strategies that valued wetlands based on their potential profitability following conversion, and increased land values following drainage, provided additional economic incentives to drain wetlands. However, Leitch and Danielson (1979) found that farmers were willing to drain wetlands to eliminate the nuisance of tilling around them even when it was uneconomical.

Reduction of direct federal assistance for wetland destruction began in 1978 with issuance of Executive Order 11990, which mandated that the effects of any federally funded or subsidized activity impacting wetlands be evaluated proactively and that steps be taken to minimize or mitigate impacts. In 1979, the U.S. Comptroller General reported that

> ...we may now be paying more to provide these benefits of wetlands through public work projects and environmental programs than we would have paid to preserve the wetlands ... (U.S. General Accounting Office 1979).

Even with curtailment of federal funding for wetland drainage, destruction of natural wetlands continues throughout the prairie pothole region. Surveys of wetland drainage in four major eastern South Dakota watersheds in 1983-84, repeated in 1989, indicated a 3% loss of basins during that 5-6 year period (Mack 1991). Road construction promotes drainage by creating convenient drainage outlets. Smith *et al.* (1989) estimated that 27,781 acres of wetlands (11,243 ha) were illegally drained into federal-aid constructed road rights-of-way (road ditches) in the prairie pothole region of Minnesota, North Dakota, and South Dakota.

Recent federal legislation and programs have reduced rates of natural wetland destruction in South Dakota. "Section 404" of the Clean Water Act (formerly the Federal Water Pollution Control Act, passed in 1972), administered jointly by the U.S. Army Corps of Engineers (COE) and the U.S. Environmental Protection Agency (EPA), prohibits discharging fill into waters of the U.S. "Waters of the U.S." have been variously interpreted to include or exclude prairie potholes over the history of the act.

However, the effectiveness of Section 404 has been diminished by authorizing the COE to issue permits, in consultation with the USFWS and subject to EPA review, which allow landowners to fill wetlands. Nationwide, of approximately 15,000 permit requests received annually, approximately 10,000 (67%) are approved, 4,500 (30%) are withdrawn by the applicant before action on the request is taken, and 500 (3%) are denied (Environmental Laboratory 1987). In addition, approximately 75,000 "minor activities" are authorized each year by the COE under regional and nationwide "general permits" that authorize activities without individual permit review, provided the activity causes only minimal adverse environmental impacts. Until 1997, nationwide, Permit 26 authorized the discharge of up to 10 ac (4 ha) of non-deleterious fill into wetlands of the United States, and notification of intent to fill was not required if the total wetland area to be filled was <1 ac (0.4 ha). Most eastern South Dakota wetlands could be filled under this general permit if not protected by other mechanisms.

Recognition that over 87% (Tiner 1984) of wetland losses are associated with agricultural activities prompted inclusion of the Wetland Conservation Subtitle ("Swampbuster") provisions in the 1985 Food Security Act, the Food and Agriculture Trade Act of 1990, and thge federal Agriculture Improvement and Reform Act of 1996. USDA has authority to withhold a portion of federal commodity price supports and other agricultural subsidies from landowners who illegally convert wetlands.

In 1994, 86% of South Dakota farmers received federal assistance under USDA farm programs (N. Kappel, Consolidated Farm Service Agency, Huron, pers comm). Operators who do not participate in USDA commodity programs are not affected by Swampbuster regulations.

Reaction to Swampbuster regulations by most of the agricultural community is strongly negative. Conflicting philosophies and policies of federal agencies toward wetlands have reduced government efficiency, have fostered a perception of government waste, and have generated landowner animosity. Confusion over USDA jurisdictional wetland definitions and delineations, particularly for small, temporary basins, contributes to this reaction. In part, this is because benefits of wetland functions typically accrue to society at large and not to individual landowners with whom rest the costs of preserving wetlands and the decision to preserve or destroy them.

While USDA and other agencies historically encouraged drainage, the USFWS and private entities like Ducks Unlimited have worked to protect wetlands in South Dakota. The Migratory Bird Hunting Stamp Act of 1934 was amended in 1958 to enable the purchase of small tracts of uplands and wetlands in the prairie pothole region. Wetland acquisition was accelerated in 1961 with passage of the

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 supports 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.

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	**Special Modifiers**
A Temporarily Flooded	b Beaver
B Saturated	d Partially Drained/Ditched
C Seasonally Flooded	h Diked/Impounded
F Semipermanently Flooded	x Excavated
G Intermittently Exposed	
H Permanently Flooded	

Lacustrine system habitats include natural depressional wetlands and deepwater habitats, as well as artificial excavations or impoundments that are more than 6.6 ft deep, regardless of size, or that lack woody or persistent emergent vegetation and are greater than 20 ac in size, or which have a wave-formed or bedrock shoreline. Lacustrine habitats belong to one of two **subsystems**: (1) limnetic wetlands and deepwater habitats that are >6.6 ft deep, and (2) littoral wetlands that are <6.6 ft deep (Table 1).

Riverine wetlands are confined within a channel and lack persistent emergent or woody vegetation. Riverine wetlands in eastern South Dakota belong to one of three **subsystems**: (1) lower perennial wetlands that have low velocity flows and fine substrates, (2) upper perennial wetlands that have high gradient channels, fast flow, and coarse substrates of sand, gravel, or boulders, and (3) intermittent riverine wetlands for which the channel contains water during only part of the year (Table 1).

Classes, the next level in the classification hierarchy, relate to vegetation life form where vegetative cover is greater than 30% of the wetland area or to composition of the substrate in sites without vegetation. Classes are not unique to systems or subsystems, although not all classes occur in each (Table 1). Cowardin *et al.* (1979) described classes used by the NWI in detail. Cowardin *et al.* (1979) subclasses, which provide more detailed information on vegetation life form or substrate were not used by the NWI for classifying South Dakota wetlands.

Modifiers follow classes in the classification hierarchy. Modifiers may provide information on hydrology, water chemistry, pH, and soil needed to clearly describe the characteristics of wetlands (Table 1). Each NWI-delineated wetland is assigned a water regime modifier (Table 1). **Special modifiers** are the lowest level in the classification hierarchy used by the NWI and are not assigned to every wetland and deepwater habitat. In South Dakota, special modifiers were used to describe wetlands partially drained by artificial surface outlets, created by human excavation or impoundment, or created by beaver (*Castor canadensis*) (Table 1).

Wetland Delineation Techniques

The NWI delineated eastern South Dakota wetlands and deepwater habitats by analyzing high altitude, color infrared photography acquired by the National Aeronautics and Space Administration (NASA) and the National High Altitude Photography Program (NHAP). NASA (1:65,000 scale) and NHAP photography (1:58,000 scale) from April-June of 1979-1986 were used to delineate and classify eastern South Dakota wetlands (Fig. 4). Prior to photo acquisition, ground

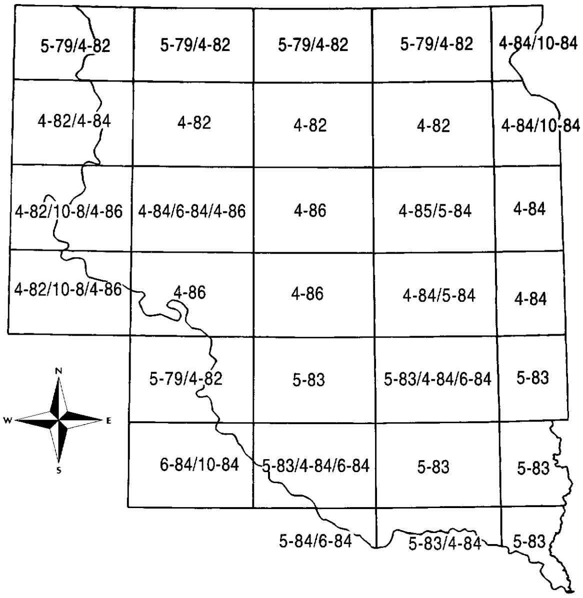

Figure 4. Dates of NASA and NHAP photography used by the NWI to delineate wetlands and deepwater habitats in eastern South Dakota.

reconnaissance is conducted by USFWS personnel to determine when hydrologic conditions were appropriate for accurate wetland identification. Photography is acquired in wet years, when most basins are inundated, but not in excessively wet years. Water conditions at the time of photography usually reflect the normal distribution of wetlands. Collateral data for wetland delineation and classification includes USGS 7.5' topographic quadrangles, published county soil surveys, Water Resources Institute data, and hydrographic maps, when available.

The production of NWI maps (Fig. 5) follows a rigid set of conventions for accurately identifying and classifying wetlands (USFWS 1995):

(1) Aerial photos are reviewed by an NWI contractor, and characteristic wetlands and problematic areas for wetland classification or delineation are identified.

(2) Specific sites with characteristic or problematic photo-signatures are selected for field identification and a field trip route is planned.

(3) Field data, including information on plants, hydrology, and soils, are collected on selected sites and photosignatures are interpreted.

(4) Prior to photointerpretation, these sites are reviewed on aerial photos and data sheets to aid in identification of photosignatures characteristic of the work area.

(5) Photointerpretation is performed for the work area using a stereoscope of at least 4X magnification. Wetlands are delineated on acetate overlays placed on 9-in (22.5 cm) x 9-in aerial photos with black indelible ink using 6x0 pen points. Each delineated wetland is classified

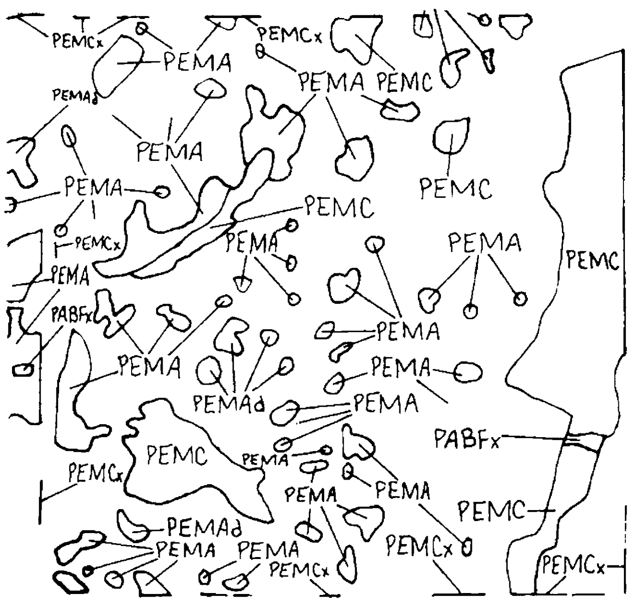

Figure 5. Enlargement of a section of a National Wetlands Inventory final map.

following Cowardin *et al.* (1979) and NWI Photointerpretation Conventions. Collateral data are employed when available.

(6) Subsequent ground truthing is conducted if necessary to resolve problems that arise during photointerpretation.

(7) Following photointerpretation, a 100% quality control check is performed by the contractor. Errors are corrected and the photos are sent to the NWI Regional Office where the NWI Assistant Regional Wetland Coordinator performs another 100% quality control check. Photos are subsequently sent to the NWI National Quality Control Team which reviews 30% of photos for national delineation and classification consistency.

(8) After completion of photointerpretation and quality control, delineated wetlands are transferred to mylar 1:24,000 scale USGS topographic base maps using a zoom transfer scope. Attribute information is transferred to a separate sheet of mylar. The completed product undergoes quality control by the contractor and subsequently by the NWI Cartographic Team. Draft maps are then produced and disseminated for state and federal interagency review and comment.

(9) Draft maps are reviewed in the field by NWI personnel to further increase the accuracy of wetland delineation and classification. Sites identified during photointerpretation, quality control, and interagency review are included in the draft map field review process.

(10) Draft maps are edited, corrections made on acetate overlays, and final maps are submitted for final production and distribution.

Thorough descriptions of photointerpretation and cartographic conventions are distributed by the NWI (USFWS 1994a, 1995).

Digital wetland data are produced by private contractors under NWI supervision using digitizing conventions developed by the NWI (USFWS 1994b) that follow Federal Geographic Data Committee standards. Accuracy of digital data is checked by automatic and manual means. A description of digitizing conventions is distributed by the NWI (USFWS 1994b).

Wetland GIS Development

Individual 7.5' NWI digital wetland coverages were joined with ARC/INFO software to construct polygon, line, and point wetland coverages for each eastern South Dakota county. In the photointerpretation and cartographic processes, polygon wetlands were large enough to be encompassed by a line from a 6x0 pen tip. Linear wetlands were too narrow at the scale of aerial photography to be delineated as polygons and were represented as lines. Point wetlands were too small to be delineated as polygons and were represented as dots.

County boundaries (digitized from 1:100,000 scale maps) (Fig. 6) were extracted from U.S. Census Bureau Topologically Integrated Geographic Encoding and Reference System (TIGER) digital data files. Wetland coverages also were created for eastern South Dakota physiographic regions and hydrologic units. Physiographic

Figure 6. Eastern South Dakota counties.

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.

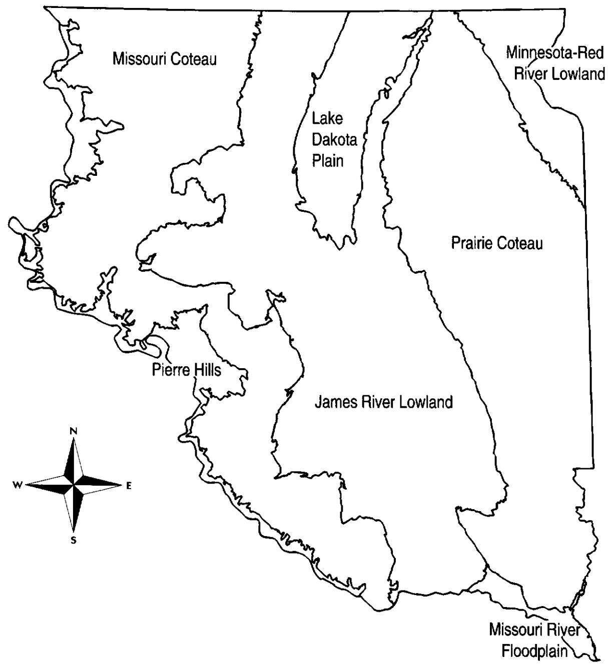

Figure 7. Eastern South Dakota physiographic regions.

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).

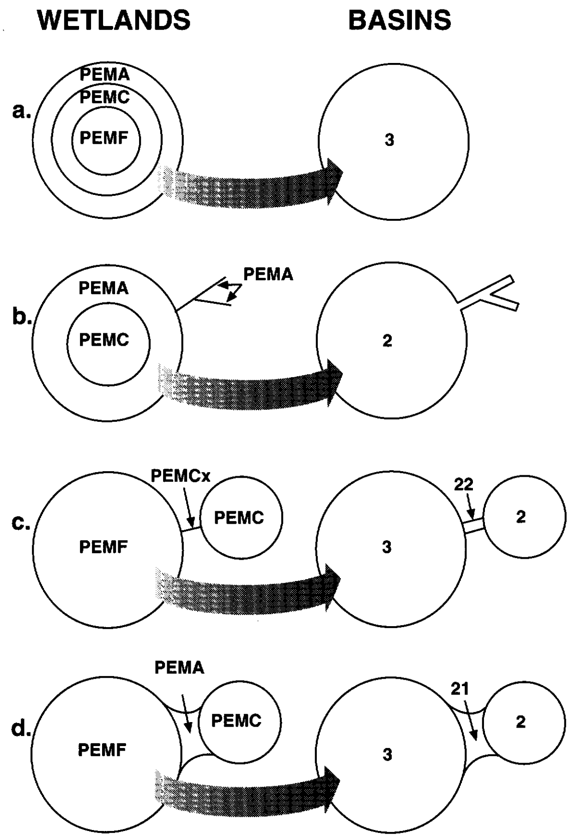

Figure 8. Wetlands delineated by the NWI were converted to basins by dissolving arcs and classifying the basin's water regime by the most permanent wetland within it. **3**=Semipermanant; **2**=Seasonal **22**=Seasonal ditches; **21**=Temporary.

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

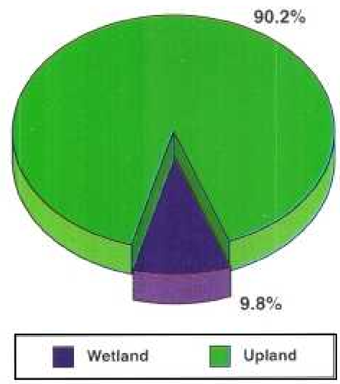

Figure 9. Approximately 2,222,113 ac (899,277 ha) of wetlands were delineated by the NWI in the 35,390 mi^2 (90,600 km^2) that comprise eastern South Dakota.

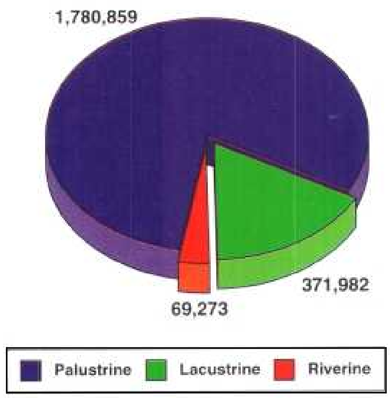

Figure 10. Acres of eastern South Dakota wetlands delineated by the NWI using the Cowardin *et al.* (1979) system.

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—

Table 2. Area of wetlands by classification delineated by the National Wetland Inventory in eastern South Dakota from photography acquired 1979-1986. Attribute is the NWI code for the Cowardin *et al.* (1979) classification.

Polygon Wetlands					
Attribute	*Acres*	*Attribute*	*Acres*	*Attribute*	*Acres*
L1UBFh	1.26	PEM/FOFh	3.39	PSS/EMAd	22.29
L1UBG	29,049.84	PEM/SSA	3,509.64	PSS/EMB	91.92
L1UBGh	20,678.66	PEM/SSAd	27.75	PSS/EMC	308.03
L1UBH	9,640.71	PEM/SSAh	71.63	PSS/EMCd	17.99
L1UBHh	191,512.36	PEM/SSB	610.78	PSS/EMCh	5.09
L1UBHx	688.45	PEM/SSC	1,068.81	PSS/FOA	336.18
L2ABF	12,376.25	PEM/SSCd	74.75	PSS/FOAd	8.50
L2ABFd	339.29	PEM/SSCh	37.14	PSS/FOC	136.70
L2ABFh	703.54	PEM/SSCx	6.97	PSS/FOCd	10.21
L2ABFx	76.16	PEM/UBFh	5.63	PSS/FOCh	3.34
L2ABG	91,269.57	PEM/UBFx	1.93	PSS/FOCx	2.79
L2ABGd	194.44	PEM/UBGh	0.12	PSS/USA	494.72
L2ABGh	9,059.43	PEMA	398,206.05	PSS/USAh	1.73
L2ABGx	509.03	PEMAd	102,206.27	PSS/USC	668.73
L2UBF	37.31	PEMAh	1,967.98	PSSA	1,500.51
L2UBFh	788.77	PEMAx	76.06	PSSAd	64.44
L2UBFx	31.16	PEMB	424.42	PSSAh	154.86
L2UBG	724.82	PEMBd	12.60	PSSAx	0.22
L2UBGh	864.41	PEMC	557,059.92	PSSB	59.75
L2UBGx	54.19	PEMCd	60,236.70	PSSC	972.91
L2USA	598.08	PEMCf	0.82	PSSCd	90.14
L2USAh	8.10	PEMCh	3,659.43	PSSCh	230.07
L2USC	1,366.83	PEMCx	652.44	PSSCx	14.13
L2USCh	1,118.94	PEMF	59,866.08	PUB/EMFh	3.24
PAB/EMCh	10.70	PEMFb	2.64	PUB/FOFh	2.27
PAB/EMF	26,247.01	PEMFd	5,854.84	PUBF	46.83
PAB/EMFd	1,633.38	PEMFh	3,275.34	PUBFh	1,577.91
PAB/EMFh	1,307.50	PEMFx	150.56	PUBFx	3,778.23
PAB/EMFx	91.08	PEMU	113.52	PUBG	1.26
PAB/EMG	26.51	PFO/EMA	2,273.02	PUBGh	426.77
PAB/FOC	3.16	PFO/EMAd	88.83	PUBGx	633.09
PABF	14,049.71	PFO/EMAh	12.23	PUBHh	2.94
PABFd	853.46	PFO/EMAx	1.68	PUBHx	4.10
PABFh	22,889.93	PFO/EMB	20.36	PUS/SSA	181.69
PABFx	18,756.64	PFO/EMC	3,479.49	PUS/SSC	191.77
PABG	162.86	PFO/EMCd	371.09	PUSA	11.74
PABGh	1,635.38	PFO/EMCh	130.27	PUSAh	4.40
PABGx	1,496.07	PFO/EMCx	202.37	PUSAx	1.63
PABHh	0.10	PFO/EMF	21.62	PUSC	6.20
PABHx	0.84	PFO/SSA	127.21	PUSCH	0.15
PEM/ABF	215,691.71	PFO/SSAd	5.56	PUSCh	26.51
PEM/ABFb	11.64	PFO/SSC	155.97	PUSCx	27.65
PEM/ABFd	21,133.47	PFO/SSCd	3.51	R2UBF	626.15
PEM/ABFh	15,462.01	PFO/SSCh	6.40	R2UBG	11,601.52
PEM/ABFx	246.31	PFO/SSCx	6.92	R2UBGx	203.78
PEM/ABGx	3.98	PFOA	7,549.54	R2UBH	19,086.65
PEM/FOA	2,579.25	PFOAd	729.34	R2UBHx	193.26
PEM/FOAd	505.10	PFOAh	216.88	R2USA	952.20
PEM/FOAh	53.10	PFOAx	10.25	R2USAx	22.14
PEM/FOAx	13.84	PFOB	4.65	R2USC	2,207.84
PEM/FOB	0.49	PFOBd	0.99	R3UBG	6.62
PEM/FOC	4,366.28	PFOC	4,058.22	R4SBA	25.87
PEM/FOCd	603.02	PFOCd	587.75	R4SBC	3.16
PEM/FOCh	175.89	PFOCh	293.04	R4SBF	15,571.80
PEM/FOCx	403.51	PFOCx	112.60	R4SBFx	74.65
PEM/FOF	27.77	PSS/EMA	267.58	No Photography[a]	4,266.03

[a] Total area of uplands and wetlands not delineated because of cloud cover (Hanson County).

Table 2, continued.

Linear Wetlands

Attribute	Length (m)	Attribute	Length (m)	Attribute	Length (m)
L2ABFx	846	PEMAx	844,272	PSSAd	536
L2ABGh	1,068	PEMB	19	PSSAh	482
L2UBFh	1,915	PEMC	24,133,421	PSSAx	858
L2UBGH	271	PEMCd	73,879	PSSC	15,657
L2USA	73,401	PEMCh	19,984	PSSCd	307
L2USAh	196	PEMCx	12,611,489	PSSCh	276
L2USC	3,890	PEMF	338,297	PSSCx	1,213
PAB/EMF	2,938	PEMFd	385	PUBF	18
PAB/EMFd	253	PEMFh	17,387	PUBFh	958
PAB/EMFx	4,236	PEMFx	58,363	PUBFx	22,293
PABF	27,265	PEMU	24	PUBGh	169
PABFh	9,434	PFO/EMA	1,959	PUBGx	367
PABFx	38,304	PFO/EMC	18,338	PUSA	26
PEM/ABF	127,567	PFO/EMCx	2,076	PUSAx	57
PEM/ABFd	103	PFO/SSA	835	PUSCh	20
PEM/ABFh	3,922	PFOA	1,885,922	PUSCx	219
PEM/ABFx	19,950	PFOAd	48,650	R2SBA	20,547
PEM/FOA	4,216	PFOAh	128,612	R2UBF	352
PEM/FOC	20,623	PFOAx	75,060	R2UBG	84,938
PEM/FOCh	247	PFOC	769,406	R2UBGx	6,102
PEM/FOCx	3,857	PFOCd	21,047	R2USA	11,792
PEM/SSC	1,144	PFOCh	16,511	R2USC	2,972
PEM/SSCd	36	PFOCx	82,211	R4SBA	577,074
PEMA	2,822,849	PSS/EMC	57	R4SBAx	19,880
PEMAd	116,763	PSS/FOA	6,496	R4SBC	514,730
PEMAh	1,408	PSSA	46,404	R4SBCx	17,403

Point Wetlands

Attribute	Number				
PABF	3	PEMC	24,980	PFOC	22
PABFh	69	PEMCd	406	PFOCx	7
PABFhx	2	PEMCh	138	PSSA	11
PABFx	460	PEMCx	515	PSSC	3
PABGx	4	PEMF	38	PUBF	4
PEM/ABF	8	PEMFh	1	PUBFh	2
PEM/FOA	2	PEMFx	5	PUBFx	749
PEM/FOC	2	PEMU	3	PUBGx	4
PEM/FOCx	9	PFO/EMA	1	PUSAx	2
PEM/SSC	1	PFO/EMC	2	PUSCh	3
PEMA	94,032	PFO/EMCx	4	PUSCx	3
PEMAd	4,129	PFOA	123	R2USC	14
PEMAh	12	PFOAd	4		
PEMAx	235	PFOAx	4		

a few deep potholes, dugouts and small impoundments—cover 731 ac (296 ha) or a trace percentage of the total area of palustrine wetlands in eastern South Dakota (Fig. 12).

Special Modifiers

Palustrine wetlands are either natural or are created by excavation or impoundment. Natural palustrine wetlands comprise 1,648,482 ac (667,131 ha) or 92.5% of total palustrine wetland area in eastern South Dakota. Of this area of natural wetlands, 195,346 ac (79,056 ha) or 11.9% are partially drained by surface ditches. Of the total area of temporary palustrine wetlands, 17.9% (104,444 ac or 42,268 ha) is partially drained. About 8.2% (63,464 ac or 25,683 ha) of seasonal wetlands and 5.8% (24,209 ac or 9,797 ha) of semipermanent wetlands are partially drained.

Created palustrine wetlands cover 132,377 ac (53,572 ha) or 7.5% of the total area of palustrine wetlands. Of this area, excavated wetlands comprise 78,032 ac (31,579 ha), or 4.4%

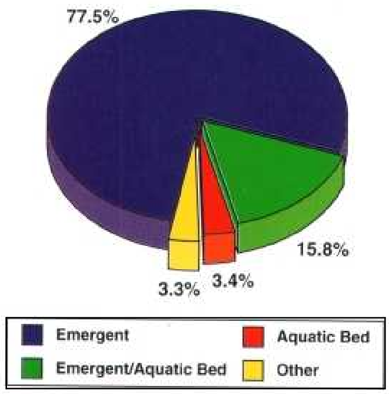

Figure 11. Percent of total acres of eastern South Dakota palustrine wetlands by Cowardin *et al.* (1979) class.

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

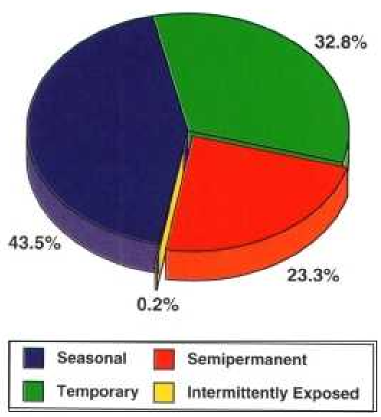

Figure 12. Percent of total acres of eastern South Dakota palustrine wetlands by water regime.

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

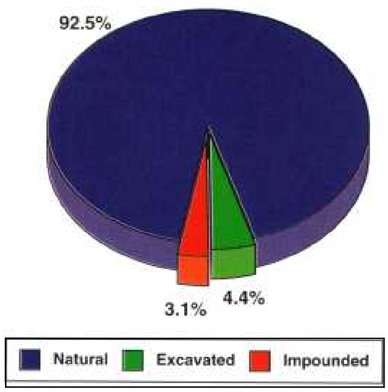

Figure 13. Percent of total acres of eastern South Dakota palustrine wetlands by special modifier.

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

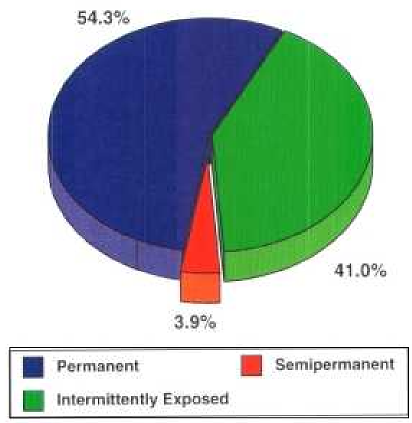

Figure 14. Percent of total acres of eastern South Dakota lacustrine wetlands by water regime. Temporary and seasonal wetlands comprise a trace of total lacustrine wetland area.

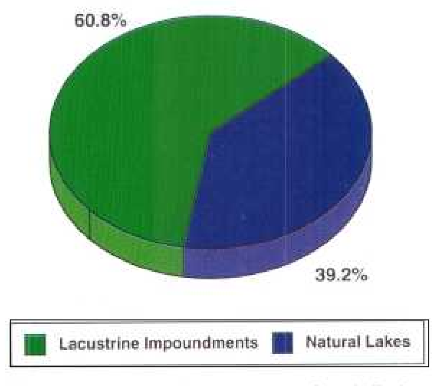

Figure 15. Percent of total acres of eastern South Dakota lacustrine wetlands by special modifier.

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).

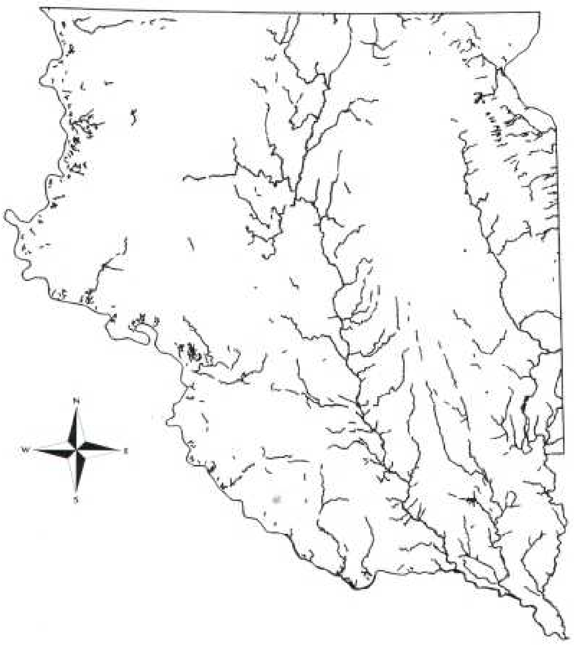

Figure 16. Distribution of riverine wetlands in eastern South Dakota. Discontinuities in river channels indicate impoundments or intervening stretches of palustrine wetland.

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).

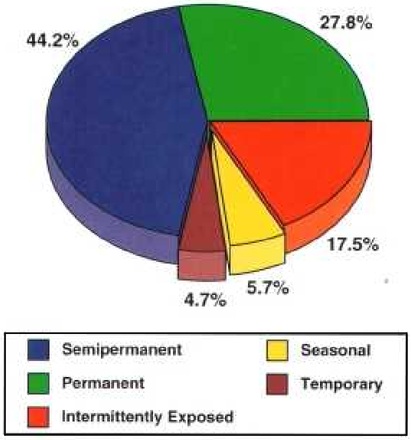

Figure 17. Percent of total acres of eastern South Dakota riverine wetlands by water regime.

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

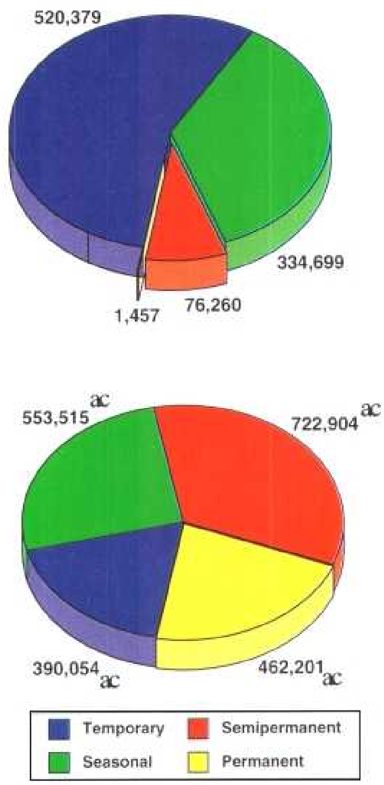

Figure 18. Number and acres of eastern South Dakota basins by water regime.

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

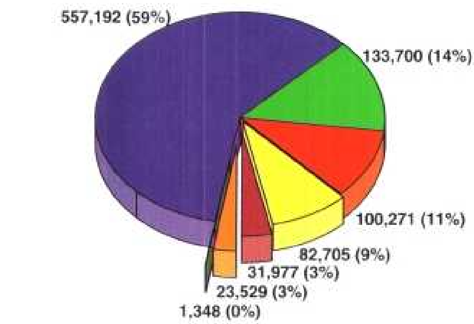

Figure 19. Sizes of all temporary, seasonal, semipermanent, and permanent basins combined.

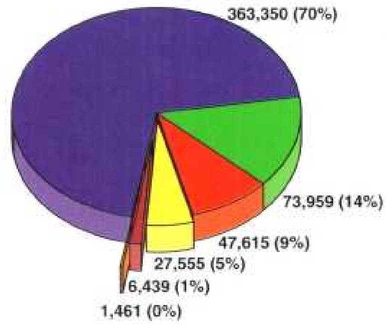

Figure 20. Sizes of temporary basins.

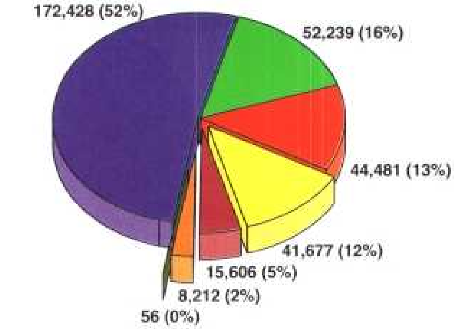

Figure 21. Sizes of seasonal basins.

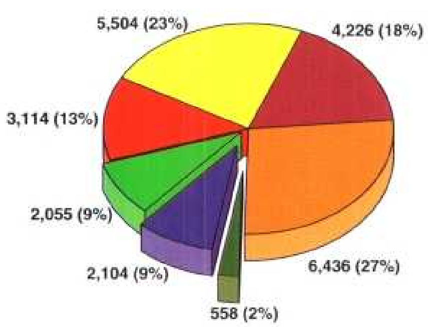

Figure 22. Sizes of natural semipermanent basins.

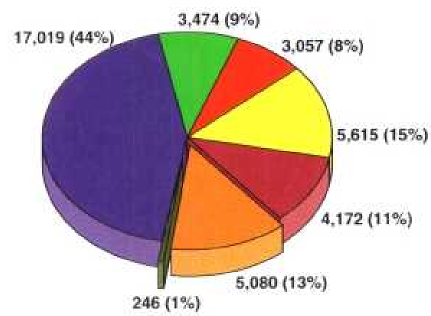

Figure 23. Sizes of basins with semi-permanent water regimes due to dugout excavation.

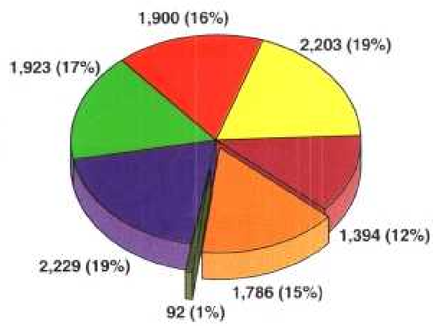

Figure 24. Sizes of impoundments with semipermanent water regimes.

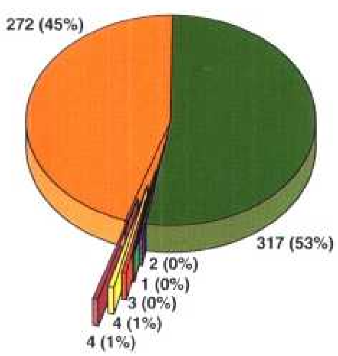

Figure 25. Sizes of natural permanent basins.

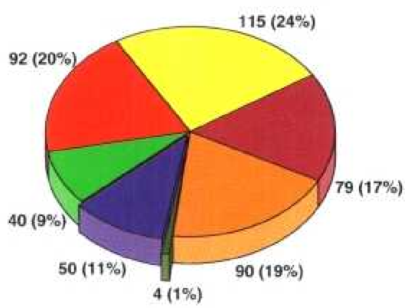

Figure 26. Sizes of basins with permanent water regimes due to dugout excavation.

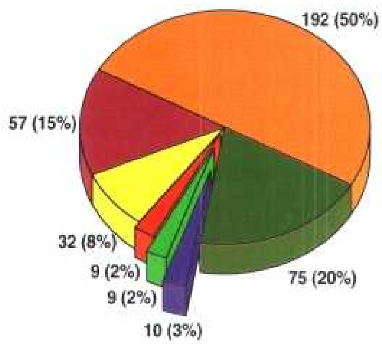

Figure 27. Sizes of impoundments with permanent water regimes.

Legend for figures 19-27.

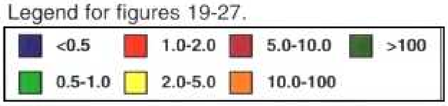

Table 8. Number, acres, and percent of each county comprised of basins by water regime.

	Temporary			Seasonal		
County	*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								
	N[a]			D[b]			I[c]		
County	*Number*	*Acres*	*Percent*	*Number*	*Acres*	*Percent*	*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.

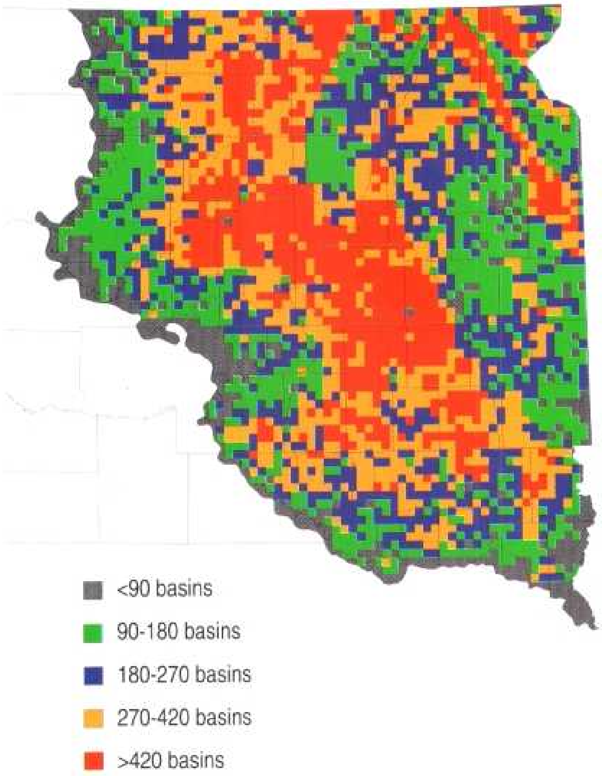

Figure 28. Distribution of basins expressed as number of basins/10 mi^2.

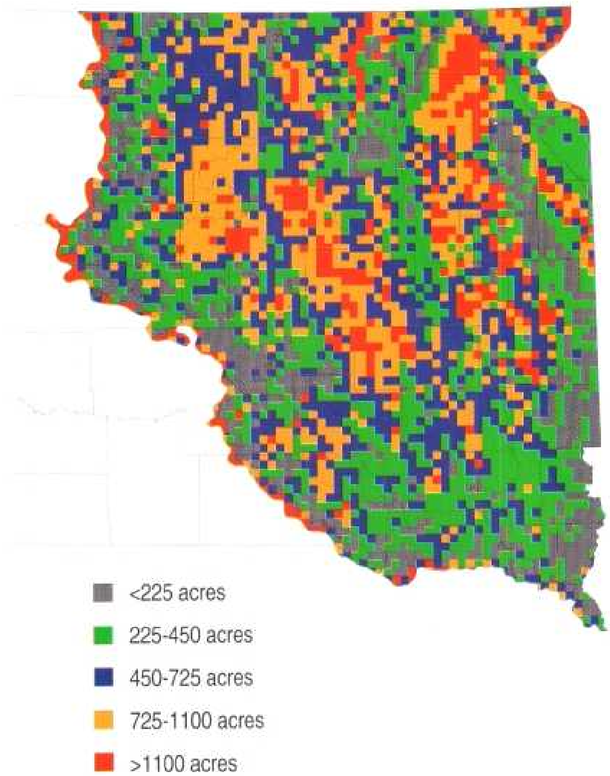

Figure 29. Distribution of basins expressed as acres of basins/10 mi^2.

Temporary Basins

The 520,379 temporary basins in eastern South Dakota cover 390,054 ac (157,853 ha) and comprise from 0.7% to 4.3% of the area of eastern South Dakota counties (Table 8). Temporary basins are numerically the most abundant type of basin in eastern South Dakota, and they exert a strong influence on the patterns of basin density described above; however, they affect patterns of basin acreage to a lesser extent because most are small. Temporary basins reach their highest relative densities in eastern South Dakota in the James River Lowland to the limit of the last advances of Late Wisconsin glaciation (Figs 30, 31). In the James River Lowland, small temporary basins tend to occur on broad, smoothly rolling, low subparallel ridges deposited as recessional moraine in the James River Lowland; however, large basins with broad expanses of temporary wetlands occur in the inter-moraine zones, or within the expansion plains of riverine wetlands.

Temporary basins are the most abundant type of basin in the Lake Dakota Plain physiographic region. During glacial retreat, drainage from the northern James River Lowland flowed northward. Because no outlet for this water existed, glacial Lake Dakota formed in what is now Brown and Spink counties. Many temporary basins within this physiographic region represent remnants of initially deeper basins that were partially filled by silt deposited under glacial Lake Dakota.

Temporary basins are less abundant on the Prairie Coteau where terrain relief is typically greater because of more extensive deposition of glacial debris. Greater relief generally results in deeper basins and may result in reduced upland infiltration and increased runoff. Temporary wetland basins also occur at low density on the western slope of the Missouri Coteau and within the dissected Pierre Hills physiographic region where all types of natural basins are uncommon because of a more ancient glacial history.

Seasonal Basins

The 334,699 seasonal basins that cover 553,515 ac (224,004 ha) comprise from 0.9% to 5.6% of the area of eastern South Dakota counties (Table 8). Seasonal basins occur at high relative densities in scattered regions throughout eastern South Dakota (Figs 32, 33). Small seasonal basins are abundant on end moraine in the James River Lowland. Large seasonal basins also are common in this region and occur in the low areas between recessional moraines.

Seasonal basins also are abundant on the Altamount Moraine (the lateral moraine of the Des Moines lobe of Late Wisconsin glaciers) and on the northeastern Missouri Coteau.

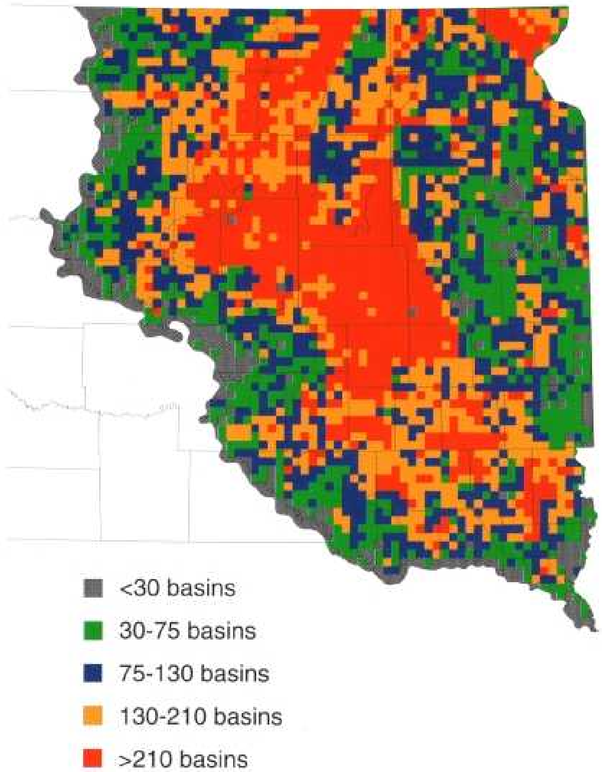

Figure 30. Distribution of temporary basins expressed as number of basins/10 mi^2.

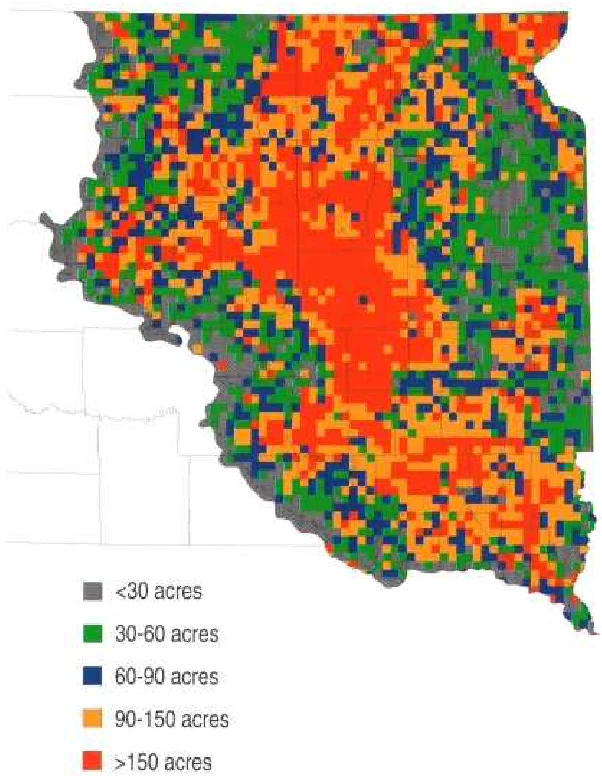

Figure 31. Distribution of temporary basins expressed as acres of basins/10 mi^2.

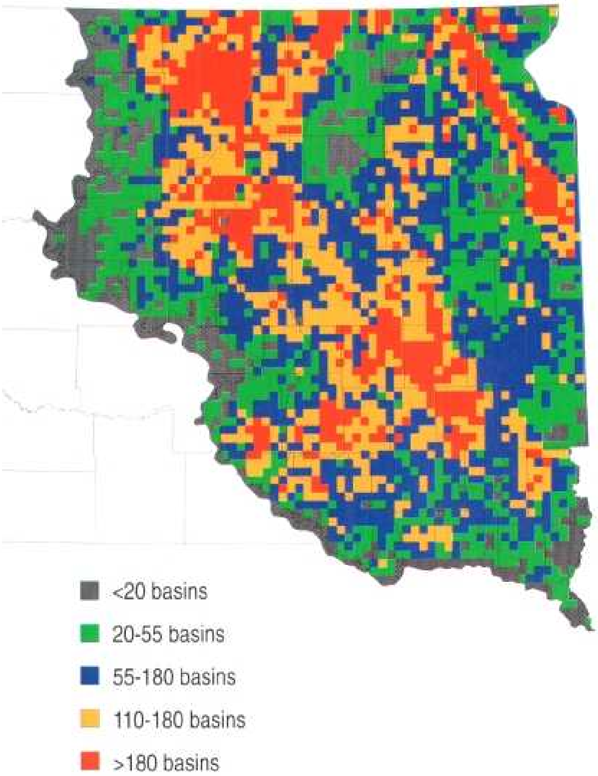

Figure 32. Distribution of seasonal basins expressed as number of basins/10 mi^2.

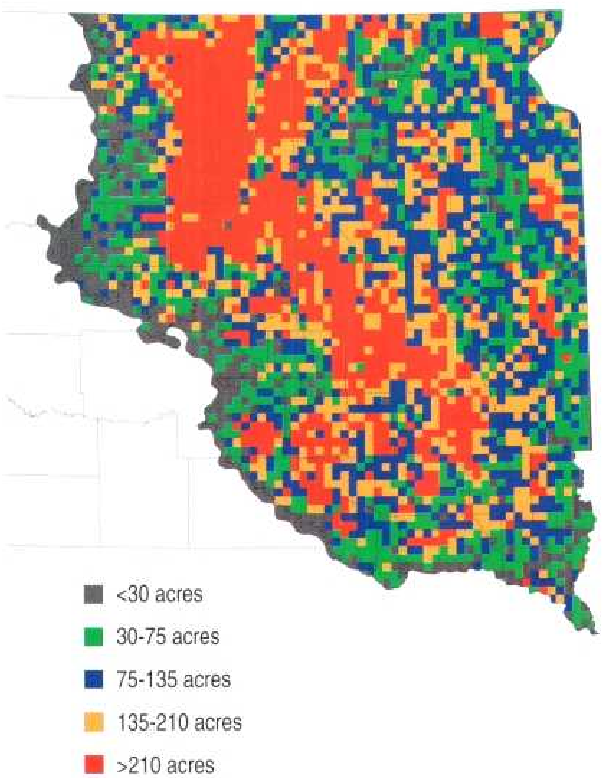

Figure 33. Distribution of seasonal basins expressed as acres of basins/10 mi^2.

Seasonal basins in these areas formed from the melting of ice blocks imbedded in till deposited by stagnant, wasting glaciers. Many basins on the northeastern Missouri Coteau have shallow depth profiles, probably because the amount of till deposited here was relatively small during Late Wisconsin glaciation. The coteau escarpment rises gradually in this area, and the ice/debris mass was thinner near its margin than farther east. Shallow depth profiles and a low regional precipitation:evaporation ratio produce seasonal water regimes in many basins in this area. Seasonal basins have a relatively low abundance over most of the Prairie Coteau, on the Lake Dakota Plain, and on the western half of the Missouri Coteau.

Semipermanent Basins

Semipermanent basins are of three types: natural semi-permanent basins, basins with semipermanent water regimes due to excavation, and constructed impoundments with semipermanent water regimes.

Natural Semipermanent Basins

Natural semipermanent basins (basins containing at least one natural semipermanent wetland) total 23,997, cover 377,660 ac (152,837 ha), and comprise from 0.1% to 6.5% of the total area of eastern South Dakota counties (Table 8). These basins are abundant on the northern Prairie Coteau and Altamount Moraine and in the northern Minnesota-Red River Lowland (Fig. 34). As the James and Des Moines lobes of Late Wisconsin glaciers advanced southward, the thick mass of ice and lithic debris flowed over the northern end and eastern margin of the Prairie Coteau (Appendix A). The steep escarpment in these regions was eroded by the glacial advance, and the ice mass was heavily fractured by shear and compression. Large volumes of till were deposited on the top of the Coteau as the glacier stagnated and underwent wasting. Semipermanent basins on the Prairie Coteau are analogous in formation to seasonal basins on the northeastern Missouri Coteau; however, the volume of lithic debris deposited on the Prairie Coteau was greater, and modern topographic relief is greater. Deep basins with angular profiles developed when thick blocks of ice near the surface of glacial debris melted (Flint 1971). Deep basins in a high-relief landscape with a relatively high precipitation: evaporation ratio result in semi-permanent water regimes for many basins in this area.

The acreage of natural semipermanent basins is relatively great throughout the Prairie Coteau, except east of the Big Sioux River (Fig. 35). In the interior of the Prairie Coteau, semipermanent basins tend to be larger but less numerous than near the Coteau slope, because the ice mass was less compressed and fractured in this area. Consequently,

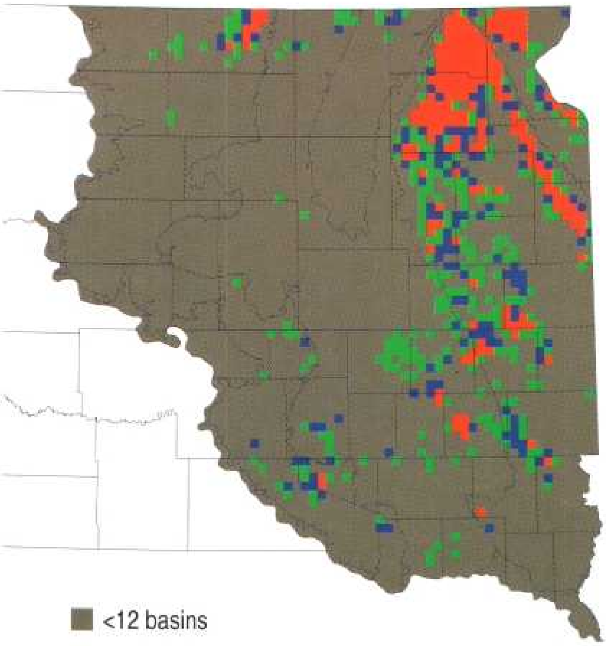

Figure 34. Distribution of natural semipermanent basins expressed as number of basins/10 mi^2.

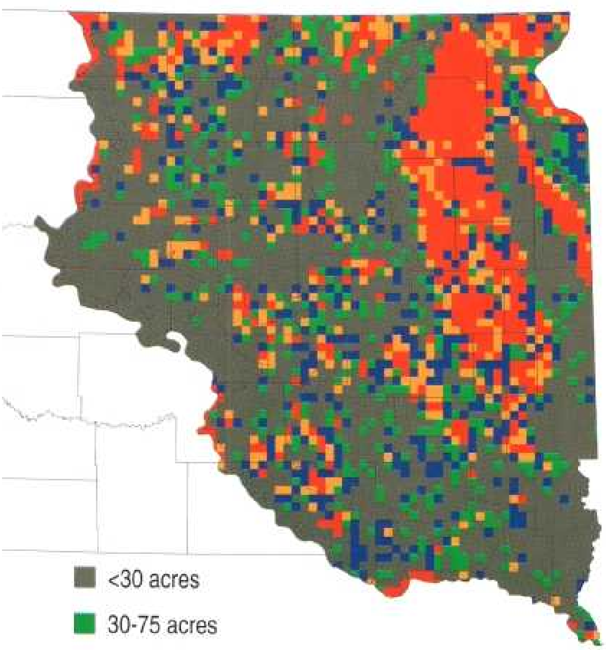

Figure 35. Distribution of natural semipermanent basins expressed as acres of basins/10 mi^2.

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).

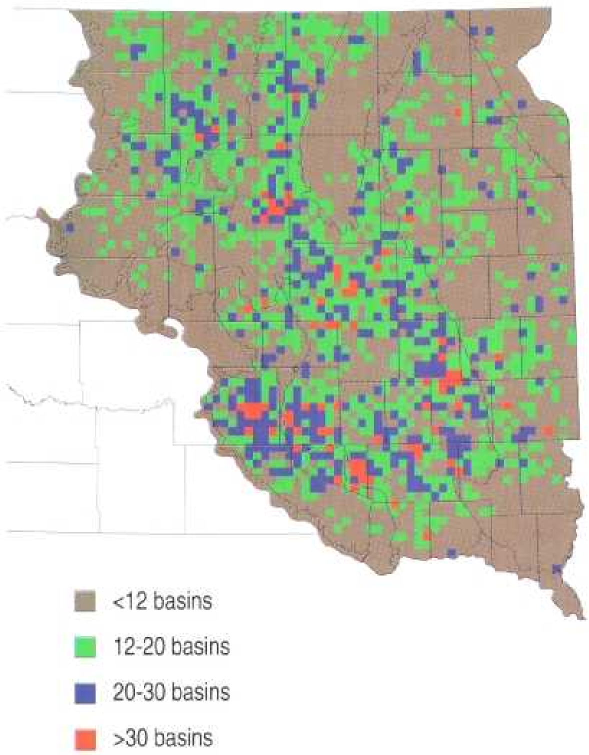

Figure 36. Distribution of semipermanent basins due to dugout excavation expressed as number of basins/10 mi^2.

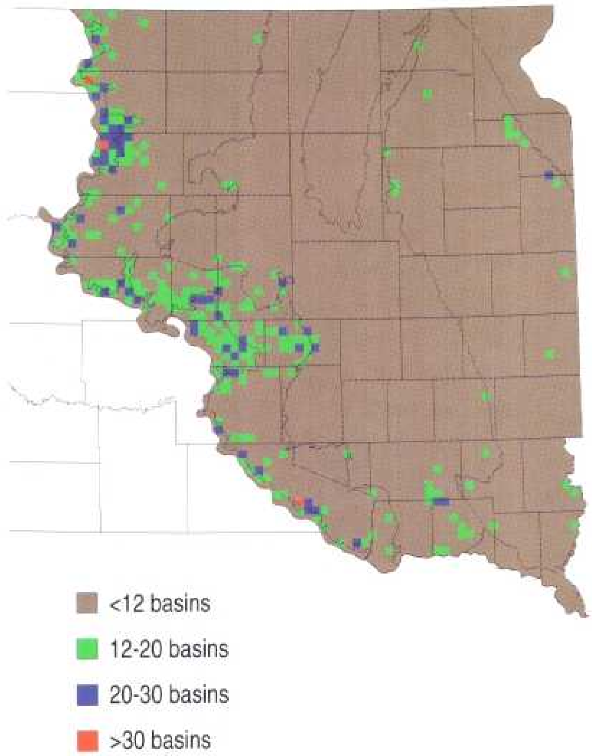

Figure 38. Distribution of semipermanent and permanent impoundments expressed as number of basins/10 mi^2.

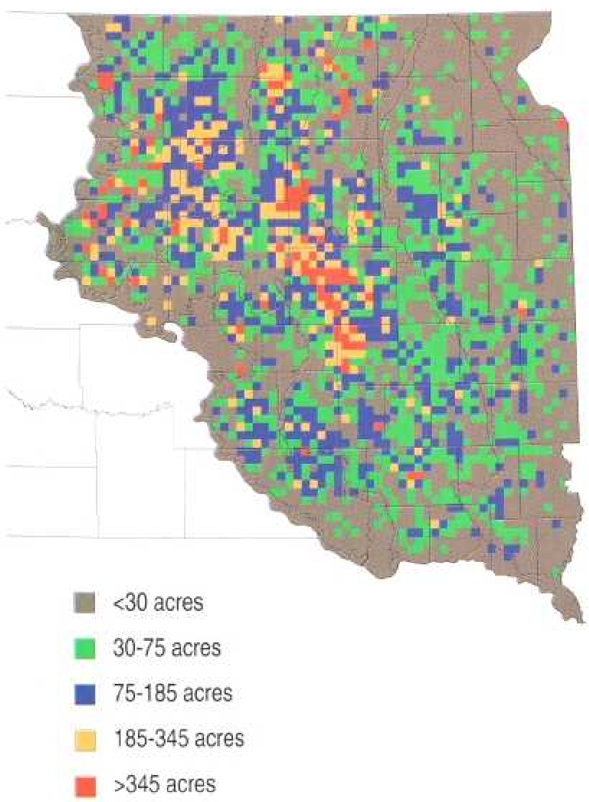

Figure 37. Distribution of semipermanent basins due to dugout excavation expressed as acres of basins/10 mi^2.

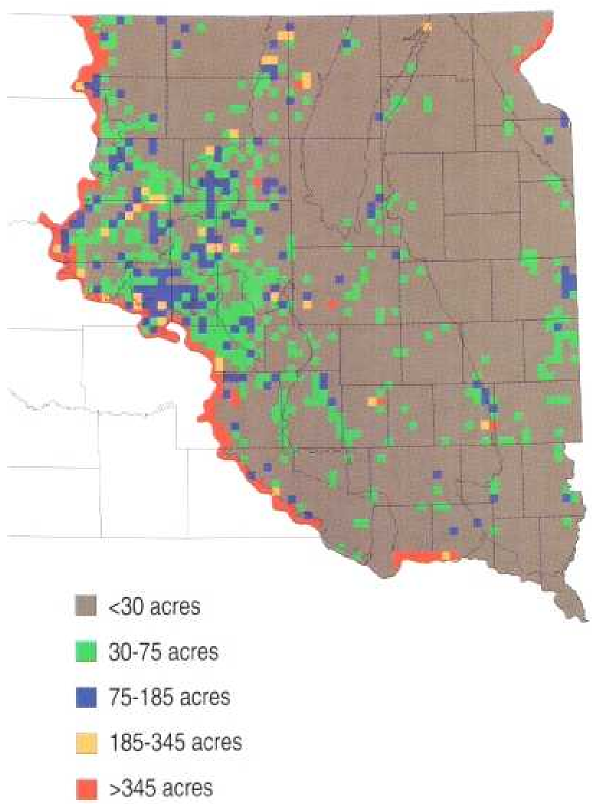

Figure 39. Distribution of semipermanent and permanent impoundments expressed as acres of basins/10 mi^2.

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.).

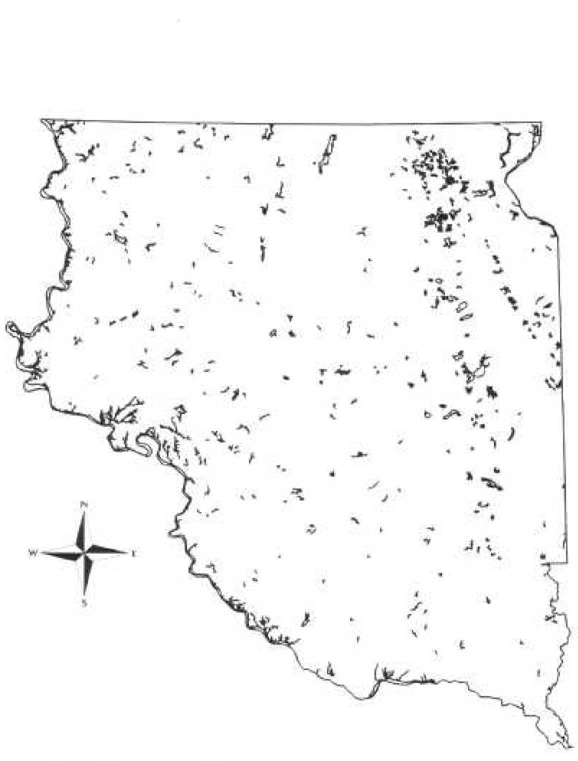

Figure 40. Distribution of permanent basins in eastern South Dakota.

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.

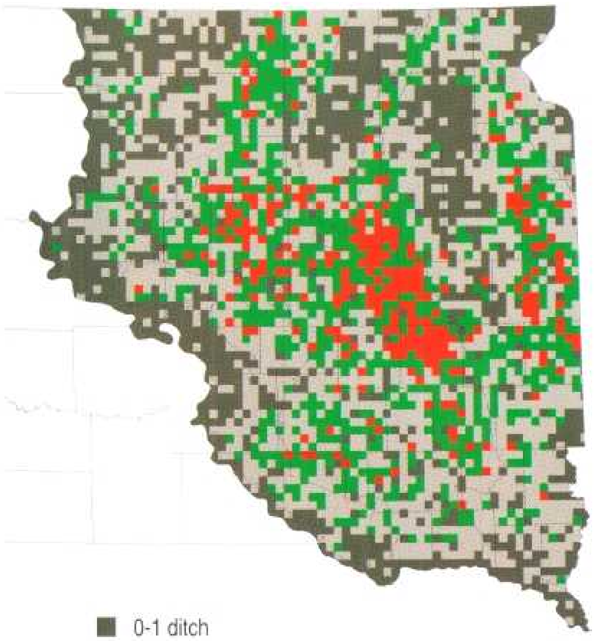

Figure 41. Distribution of channelized streams and drainage ditches with wetland characteristics linking two or more natural basins.

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Appendices

A Formation of eastern South Dakota basins

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

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

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

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

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

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.

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

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.

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

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

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.

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.

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

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.

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

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

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.

Appendix A

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.

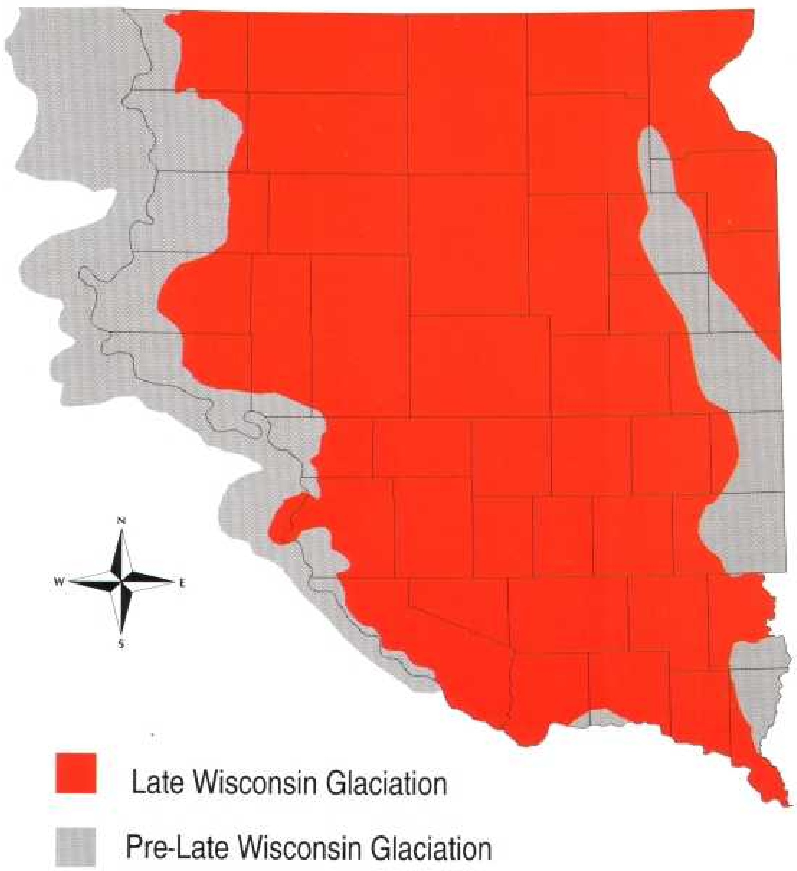

Figure 42. Limits of the drift sheets of Late-Wisconsin glaciers in eastern South Dakota.

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

Aurora

Attribute	Hectares
L1UBGh	43.30
L2ABG	109.53
L2ABGh	17.09
PAB/EMF	177.90
PAB/EMFd	5.70
PAB/EMFh	23.61
PABF	91.80
PABFh	191.42
PABFx	277.50
PABGh	48.27
PABGx	49.56
PEM/ABF	1732.20
PEM/ABFd	163.96
PEM/ABFh	8.46
PEM/ABFx	2.64
PEM/FOA	10.91
PEM/FOAh	0.41
PEM/FOC	27.01
PEM/FOCd	0.24
PEM/FOCx	1.16
PEMA	4493.16
PEMAd	1018.71
PEMAh	2.39
PEMC	4092.08
PEMCd	486.45
PEMCh	4.67
PEMCx	2.94
PEMF	756.66
PEMFh	3.68
PEMFx	1.99
PFO/EMA	0.81
PFO/EMC	18.75
PFO/EMCd	1.72
PFO/EMCh	8.14
PFOA	14.79
PFOAd	3.88
PFOAh	0.44
PFOC	16.45
PFOCd	1.43
PFOCh	6.97
PFOCx	0.50
PUBFh	0.40
PUBFx	24.86
PUBGx	2.15
R4SBF	102.07

Beadle

Attribute	Hectares
L2ABF	295.17
L2ABFx	0.44
L2ABG	1081.91
L2ABGh	140.23
L2ABGx	105.54
L2UBF	13.96
PAB/EMF	548.39
PAB/EMFd	73.34
PAB/EMFh	21.10
PABF	70.32
PABFd	2.03
PABFh	236.01
PABFhx	1.64
PABFx	500.08
PABGh	9.13
PABGx	2.31
PEM/ABF	1238.81
PEM/ABFd	92.47
PEM/ABFh	18.21
PEM/ABFx	2.38
PEM/FOA	70.19
PEM/FOAd	13.79
PEM/FOC	112.36
PEM/FOCd	41.07
PEM/FOCx	4.03
PEM/SSA	0.89
PEM/SSAd	0.25
PEM/SSC	28.69
PEM/SSCd	3.96
PEMA	14192.38
PEMAd	2316.61
PEMAh	2.10
PEMAx	0.22
PEMB	11.72
PEMC	15757.96
PEMCd	1753.30
PEMCh	101.82
PEMCx	15.11
PEMF	168.24
PEMFd	2.68
PEMFh	9.41
PEMFx	1.93
PFO/EMA	21.91
PFO/EMAd	5.79
PFO/EMC	80.71
PFO/EMCd	5.09
PFO/EMCx	1.51
PFO/SSA	3.01
PFO/SSC	6.98
PFO/SSCx	1.70
PFOA	146.25
PFOAd	15.15
PFOAh	0.11
PFOC	67.46
PFOCh	1.63
PFOCx	1.73
PSS/EMA	0.24
PSS/EMC	1.99
PSS/EMCd	0.38
PSS/FOA	2.61
PSSA	22.33
PSSAd	1.81
PSSC	6.32
PSSCd	0.63
PSSCx	0.36
PUBFx	106.91
PUBGx	1.08
PUSCx	3.82
R2UBF	42.16
R2UBG	646.35
R2UBGx	3.62
R4SBF	309.07

Bon Homme

Attribute	Hectares
L1UBGh	15.70
L1UBHh	3330.26
L2ABF	235.85
L2ABFx	0.34
L2ABG	81.29
L2USA	0.17
L2USC	0.80
OUT	46.44
PAB/EMF	28.65
PAB/EMFh	3.59
PABF	163.78
PABFd	2.96
PABFh	96.93
PABFx	80.92
PABG	7.49
PABGh	3.63
PABGx	17.31
PEM/ABF	1270.01
PEM/ABFd	74.87
PEM/ABFh	241.80
PEM/ABFx	0.88
PEM/FOA	12.72
PEM/FOAd	1.65
PEM/FOC	15.43
PEM/FOCd	6.53
PEM/FOCh	0.25
PEM/FOCx	4.92
PEM/SSC	27.24
PEMA	1201.14
PEMAd	580.62
PEMAh	0.24
PEMC	1425.77
PEMCd	274.07
PEMCh	0.41
PEMCx	0.11
PEMF	501.12
PEMFd	21.55
PEMFh	106.30
PFO/EMA	2.82
PFO/EMC	33.26
PFO/EMCd	0.30
PFO/EMCh	0.62
PFO/EMCx	2.78
PFO/EMF	0.64
PFO/SSA	6.27
PFOA	65.70
PFOAd	4.33
PFOAh	0.25
PFOAx	0.14
PFOC	14.77
PFOCd	0.48
PFOCh	0.49
PFOCx	2.83
PSS/EMC	1.19
PSS/FOA	58.74
PSS/USAh	0.70
PSS/USC	192.10
PSSA	35.90
PSSAh	5.50
PSSC	51.34
PUBFx	20.29
PUS/SSC	3.05
R2UBH	1029.28
R2USA	54.94
R2USC	60.34
R4SBA	2.30
R4SBF	17.05

Brookings

Attribute	Hectares
L1UBG	933.79
L2ABG	1934.94
L2ABGh	13.73

Attribute	Hectares
L2UBG	117.03
PAB/EMF	273.36
PAB/EMFd	37.94
PAB/EMFh	3.07
PAB/EMFx	4.08
PABF	64.50
PABFd	7.82
PABFh	53.35
PABFx	171.38
PABGx	26.04
PEM/ABF	2466.61
PEM/ABFd	376.88
PEM/ABFh	12.04
PEM/ABFx	11.59
PEM/FOA	20.19
PEM/FOAd	1.17
PEM/FOAx	4.85
PEM/FOC	163.13
PEM/FOCd	1.43
PEM/FOCx	22.72
PEM/SSA	1.24
PEM/SSC	5.90
PEM/SSCd	0.64
PEMA	3194.66
PEMAd	1063.29
PEMB	5.40
PEMC	2092.54
PEMCd	499.94
PEMCh	4.34
PEMCx	31.96
PEMF	24.25
PEMFd	4.17
PFO/EMA	16.88
PFO/EMC	84.56
PFO/EMCd	3.50
PFO/SSC	1.28
PFOA	74.23
PFOAd	6.78
PFOAh	1.00
PFOAx	0.27
PFOC	115.24
PFOCd	16.02
PFOCh	0.20
PFOCx	3.29
PSS/EMA	11.43
PSS/EMC	10.65
PSS/FOA	11.95
PSS/FOAd	0.76
PSS/FOC	0.27
PSSA	4.27
PSSAd	1.04
PSSC	6.73
PUBFx	45.89

Attribute	Hectares
PUBGx	66.11
R2UBG	66.56
R4SBF	307.79
R4SBFx	1.35

Brown

Attribute	Hectares
L1UBGh	907.10
L2ABF	36.02
L2ABFd	58.69
L2ABG	88.82
L2ABGh	1442.72
PAB/EMF	256.33
PAB/EMFd	100.66
PAB/EMFh	10.95
PABF	47.86
PABFd	9.36
PABFh	53.09
PABFx	361.74
PABGh	1.17
PABGx	46.97
PEM/ABF	2217.85
PEM/ABFd	344.02
PEM/ABFh	4398.34
PEM/ABFx	0.66
PEM/FOA	337.06
PEM/FOAh	7.82
PEM/FOAd	109.03
PEM/FOC	144.85
PEM/FOCh	21.04
PEM/FOCd	23.50
PEM/SSA	7.60
PEM/SSAd	1.35
PEM/UBFx	0.78
PEMA	13242.14
PEMAh	60.37
PEMAd	1502.72
PEMAx	0.89
PEMC	13169.77
PEMCd	1326.82
PEMCh	138.84
PEMCx	17.49
PEMF	221.36
PEMFx	0.12
PEMFd	602.69
PFO/EMA	77.60
PFO/EMAd	8.04
PFO/EMC	200.21
PFO/EMCh	5.27
PFO/SSA	0.14
PFO/SSAd	1.02
PFOA	215.07
PFOAd	8.93
PFOAh	2.34

Attribute	Hectares
PFOC	161.28
PFOCh	7.46
PFOCd	12.06
PSS/EMA	0.27
PSS/EMAd	0.71
PSS/EMC	0.59
PSS/FOA	7.20
PSS/FOAd	1.46
PSS/FOC	6.45
PSSA	4.64
PSSAd	5.84
PSSC	0.91
PUBF	0.15
PUBFx	44.35
PUSCh	0.11
R2UBG	603.92
R4SBF	884.44
R4SBFx	0.29

Brule

Attribute	Hectares
L1UBHh	5684.42
L2ABGh	66.20
L2UBFh	0.00
L2USCh	19.33
PAB/EMF	2.19
PAB/EMFh	3.89
PABF	3.55
PABFh	328.94
PABFx	259.86
PABGh	49.01
PABGx	8.46
PABHx	0.23
PEM/ABF	1044.90
PEM/ABFd	13.66
PEM/FOC	25.12
PEM/FOCd	4.65
PEM/FOCh	3.30
PEM/FOCx	0.26
PEM/FOF	8.11
PEM/SSC	0.39
PEMA	2965.14
PEMAd	755.90
PEMAh	8.17
PEMC	3664.99
PEMCd	298.45
PEMCh	10.25
PEMCx	0.47
PEMF	1677.87
PEMFh	2.60
PEMFx	0.16
PFO/EMA	2.33
PFO/EMC	0.13
PFO/EMCh	1.37

Attribute	Hectares
PFOA	13.52
PFOAh	0.77
PFOC	4.56
PFOCh	3.32
PFOCx	0.25
PSSA	0.17
PUBFh	0.26
PUBFx	0.58
PUBGx	2.03
PUSAh	0.46
R4SBF	19.55

Buffalo

Attribute	Hectares
L1UBGh	127.40
L1UBHh	4116.82
L2ABF	50.26
L2ABFh	12.64
L2ABFx	0.60
L2ABGh	42.17
L2UBGH	18.85
L2USCh	2.67
PAB/EMF	19.30
PAB/EMFh	18.63
PABF	7.27
PABFh	585.29
PABFx	60.92
PABGh	60.99
PABGx	6.57
PEM/ABF	185.00
PEM/ABFH	2.87
PEM/ABFh	4.64
PEM/FOA	4.79
PEM/FOC	0.49
PEM/FOCh	1.70
PEM/SSA	1.00
PEM/SSCh	0.22
PEMA	1042.44
PEMAd	207.91
PEMAh	11.79
PEMC	1299.93
PEMCd	140.66
PEMCh	21.09
PEMCx	0.97
PEMF	17.18
PEMFh	109.68
PFO/EMA	0.94
PFO/EMC	2.71
PFOA	14.32
PFOAd	1.24
PFOAh	5.75
PFOC	4.34
PFOCd	0.56
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
Clay	
L2ABFx	0.14
L2ABG	17.41
PAB/EMF	9.13
PABF	21.91
PABFh	37.33
PABFhx	0.72
PABFx	21.43
PABGh	5.92
PABGx	1.59
PEM/ABF	27.92
PEM/ABFd	85.53
PEM/ABFx	3.21
PEM/FOA	17.65
PEM/FOC	4.28
PEM/FOCx	23.18
PEM/SSA	288.70
PEM/SSC	2.73
PEMA	1260.99
PEMAd	1073.06
PEMAh	0.78
PEMAx	0.10
PEMC	394.01
PEMCd	278.43
PEMCh	1.34
PEMCx	4.56
PEMF	23.28
PEMFd	5.27
PFO/EMA	11.60
PFO/EMAd	1.53
PFO/EMC	12.05
PFO/EMCd	0.33
PFO/EMCx	3.70
PFOA	25.04
PFOAd	1.23
PFOAx	0.22
PFOC	5.08
PFOCd	1.49
PFOCh	0.39
PFOCx	0.54
PSS/USA	44.03
PSSA	102.88
PUBFx	2.89
PUBGx	4.36
PUS/SSA	23.52
PUS/SSC	17.67
PUSA	0.91
R2UBG	88.46
R2UBGx	24.87
R2UBH	1000.53
R2USA	30.30
R2USC	222.38
R4SBC	0.94
R4SBF	4.01

Attribute	Hectares
Codington	
L1UBG	1773.91
L2ABG	4189.33
L2ABGx	23.35
L2UBGx	21.93
L2USA	32.98
PAB/EMF	97.58
PABF	31.59
PABFh	35.12
PABFx	128.60
PABG	0.71
PABGx	2.27
PEM/ABF	5029.00
PEM/ABFx	8.46
PEM/ABFd	63.10
PEM/ABFh	2.66
PEM/FOA	13.43
PEM/FOC	30.06
PEM/FOCx	1.28
PEM/SSA	4.63
PEM/SSC	15.58
PEMA	1380.43
PEMAh	2.33
PEMAd	621.01
PEMC	2753.87
PEMCh	0.75
PEMCd	329.53
PEMCx	1.16
PEMF	658.57
PEMFd	247.91
PEMFh	0.34
PEMFx	1.46
PFO/EMA	3.03
PFO/EMC	7.25
PFO/EMCx	16.37
PFO/SSC	0.18
PFO/SSC	2.17
PFOA	12.26
PFOC	16.48
PFOCd	0.77
PFOCx	0.04
PSS/EMC	3.68
PSS/FOA	2.08
PSS/FOC	1.34
PSSA	6.16
PSSAd	0.51
PSSC	21.11
PUBFx	20.33
PUBGx	25.66
R4SBF	173.49
R4SBFx	4.23

Attribute	Hectares
Davison	
L1UBGh	291.31
L2ABGx	30.90
PAB/EMF	13.47
PAB/EMFd	1.36
PABF	53.74
PABFd	0.12
PABFh	44.60
PABFx	90.36
PABGh	4.75
PABGx	12.99
PEM/ABF	158.08
PEM/ABFd	18.90
PEM/ABFx	4.66
PEM/FOA	12.35
PEM/FOAd	9.22
PEM/FOC	69.26
PEM/FOCd	2.94
PEM/FOCh	1.91
PEM/FOCx	10.40
PEM/SSA	3.03
PEMA	2722.71
PEMAd	1034.91
PEMAh	1.57
PEMAx	0.64
PEMC	2411.78
PEMCd	568.88
PEMCh	0.42
PEMCx	0.31
PEMF	43.80
PEMFh	10.79
PEMFx	0.49
PFO/EMA	0.48
PFO/EMAd	0.66
PFO/EMC	27.07
PFO/EMCd	1.03
PFO/EMCh	1.25
PFOA	63.38
PFOAd	8.34
PFOAh	4.01
PFOC	30.22
PFOCd	2.47
PFOCh	0.38
PSSA	1.80
PSSAh	2.80
PSSC	0.15
PUBFx	72.47
PUSCh	0.14
R2UBG	131.51
R4SBA	0.47
R4SBF	299.50

Attribute	Hectares
Day	
L1UBG	3715.48
L1UBGh	14.03
L1UBH	1204.41
L2ABF	788.55
L2ABG	2038.20
L2ABGh	98.20
L2UBG	15.29
L2USA	195.66
L2USC	505.55
PAB/EMF	1507.39
PAB/EMFd	34.17
PAB/EMFh	30.05
PAB/EMFx	0.10
PABF	270.38
PABFh	54.92
PABFx	149.69
PABGh	4.17
PABGx	26.11
PEM/ABF	12973.82
PEM/ABFd	511.11
PEM/ABFh	5.48
PEM/ABFx	0.20
PEM/FOA	5.24
PEM/FOAd	2.49
PEM/FOC	35.40
PEM/SSA	8.46
PEM/SSB	7.87
PEM/SSC	18.46
PEMA	3481.87
PEMAd	1761.61
PEMAh	11.64
PEMAx	2.47
PEMB	5.33
PEMC	4613.03
PEMCd	935.70
PEMCh	1.50
PEMCx	6.29
PEMF	2710.99
PEMFd	246.26
PEMFh	21.54
PEMFx	0.04
PFO/EMA	2.56
PFO/EMC	7.97
PFO/EMCd	0.47
PFO/EMCx	2.09
PFO/SSA	0.63
PFO/SSC	1.25
PFOA	36.04
PFOAd	2.92
PFOAx	0.42
PFOC	20.58
PFOCd	0.62
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

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

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

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	1005.34
PABFhx	4.69
PABFx	546.67
PABGh	23.94
PABHh	0.04
PEM/ABF	2187.45
PEM/ABFd	6.24
PEM/ABFh	45.68
PEM/FOA	3.37
PEM/FOC	27.69
PEM/FOCh	4.38
PEM/FOCx	3.49
PEM/SSAd	1.83
PEM/SSC	0.92
PEMA	7779.53
PEMAd	1497.36
PEMAh	10.28
PEMC	17731.31
PEMCd	935.43
PEMCh	51.38
PEMCx	5.26
PEMF	108.90
PEMFd	3.71
PEMFh	1.60
PFO/EMA	0.53
PFO/EMC	2.42
PFO/EMCh	3.78
PFO/SSCh	1.74
PFOA	51.66
PFOAd	3.30
PFOAh	1.37
PFOAx	0.10
PFOC	30.73
PFOCd	0.37
PFOCh	11.19
PFOCx	1.35
PSS/EMAd	0.29
PSS/EMC	0.65
PSS/FOA	0.41
PSSA	8.36
PSSC	6.01
PSSCd	0.40
PSSCh	0.78
PUBFx	37.65
PUBGx	0.13
PUSCx	0.30
R2UBF	52.57
R4SBF	266.83
R4SBFx	0.25

Hanson

L2ABF	11.04
L2ABG	50.28

Attribute	Hectares
L2ABGh	59.91
L2ABGx	25.93
NP	1726.44
PAB/EMF	50.10
PAB/EMFd	16.48
PABF	50.76
PABFh	36.25
PABFx	116.21
PABGx	15.83
PEM/ABF	810.34
PEM/ABFd	71.20
PEM/ABFx	0.13
PEM/FOA	1.59
PEM/FOAd	0.85
PEM/FOC	15.63
PEM/FOCd	3.58
PEMA	1708.80
PEMAd	572.57
PEMAh	0.18
PEMAx	0.19
PEMC	2484.65
PEMCd	326.39
PEMCx	1.24
PEMF	22.78
PFO/EMA	1.64
PFO/EMC	45.52
PFO/EMCh	0.70
PFO/EMCx	1.78
PFOA	13.95
PFOAd	1.73
PFOC	6.30
PFOCd	3.47
PSS/EMCd	0.58
PSSA	0.54
PSSC	0.00
PUBFx	14.47
PUBGx	0.05
R2UBG	248.01
R4SBF	95.08

Hughes

Attribute	Hectares
L1UBGh	530.48
L1UBHh	14302.10
L2ABF	83.94
L2ABFx	0.90
L2ABGh	72.51
L2UBFh	2.54
L2USAh	3.29
L2USCh	59.30
PAB/EMF	21.13
PAB/EMFh	6.50
PAB/EMFx	0.48
PABF	22.29
PABFh	819.10
PABFx	126.53
PABGh	22.67
PABGx	2.66
PEM/ABF	10.24
PEM/ABFh	1.25
PEM/ABFx	0.14
PEM/FOC	4.45
PEM/FOCh	1.38
PEM/FOCx	1.49
PEM/SSA	4.39
PEM/SSAh	11.27
PEM/SSC	0.21
PEMA	2139.58
PEMAd	164.31
PEMAh	115.89
PEMAx	0.56
PEMC	2982.79
PEMCd	34.37
PEMCh	103.24
PEMCx	24.04
PEMF	9.38
PEMFh	229.63
PEMFx	0.38
PFO/EMC	1.10
PFO/EMCh	2.38
PFO/SSCh	0.61
PFOA	5.62
PFOAh	3.61
PFOC	6.28
PFOCh	6.59
PSS/FOC	0.15
PSSA	5.21
PSSAh	34.96
PSSC	0.52
PSSCh	7.94
PUBFx	3.31
PUSCh	0.20
R4SBF	149.39

Hutchinson

Attribute	Hectares
L1UBGh	42.55
L2ABF	40.30
L2ABG	162.65
L2ABGh	22.71
PAB/EMF	28.49
PAB/EMFh	1.80
PABF	197.24
PABFd	7.14
PABFh	162.72
PABFx	216.30
PABGh	22.69
PABGx	39.47
PEM/ABF	347.93
PEM/ABFd	36.74
PEM/ABFh	30.41
PEM/FOA	47.57
PEM/FOAd	4.31
PEM/FOAh	2.58
PEM/FOC	34.22
PEM/FOCd	2.52
PEM/SSCh	1.38
PEMA	3463.44
PEMAd	1953.66
PEMAh	0.84
PEMAx	0.32
PEMC	4040.83
PEMCd	590.59
PEMCh	8.52
PEMCx	2.46
PEMF	79.34
PEMFd	23.63
PEMFh	2.50
PFO/EMA	14.25
PFO/EMAd	5.15
PFO/EMC	45.03
PFO/EMCd	24.77
PFO/EMCh	0.49
PFO/EMCx	2.58
PFOA	49.10
PFOAd	11.26
PFOAh	1.71
PFOC	16.08
PFOCd	0.76
PFOCh	2.10
PFOCx	2.27
PSS/EMAd	7.17
PSSA	0.16
PUBF	1.46
PUBFh	0.26
PUBFx	8.86
PUSAh	0.25
PUSCh	0.06
R2UBG	332.03
R2USA	0.10
R2USC	0.30
R4SBF	7.73

Hyde

Attribute	Hectares
L1UBHh	601.49
L2ABF	619.25
L2ABFh	25.94
L2ABFx	1.67
L2ABG	625.63
L2ABGh	77.14
L2USCh	2.94
PAB/EMF	414.08
PAB/EMFh	26.76
PABF	24.99
PABFh	1138.93
PABFx	248.25
PABGh	16.46
PABGx	5.06
PEM/ABF	14.49
PEM/ABFh	25.61
PEM/FOC	1.71
PEM/FOCh	7.79
PEMA	3248.73
PEMAd	308.44
PEMAh	14.51
PEMC	10657.59
PEMCd	175.48
PEMCh	62.41
PEMCx	0.61
PEMF	87.40
PEMFh	4.22
PEMFx	0.07
PFO/EMC	0.84
PFOA	8.24
PFOC	7.28
PFOCh	0.35
PSS/FOCh	1.35
PSSA	2.18
PSSC	1.13
PSSCx	0.10
PUBFx	12.90
R4SBF	4.05

Jerauld

Attribute	Hectares
L2ABF	126.15
L2ABFd	54.10
L2ABFx	1.21
L2ABG	56.66
PAB/EMF	93.17
PAB/EMFd	39.74
PAB/EMFh	2.39
PAB/EMFx	1.55
PABF	49.23
PABFH	42.46
PABFX	31.97
PABFh	230.69
PABFx	89.75
PABGH	3.73
PABGh	8.76
PABGx	13.20
PEM/ABF	1024.46
PEM/ABFd	72.33
PEM/ABFh	6.13
PEM/ABFx	0.18

Attribute	Hectares
PEM/FOA	3.93
PEM/FOAd	1.15
PEM/FOC	9.43
PEM/FOCd	5.76
PEM/FOCh	0.26
PEM/FOCx	7.07
PEM/SSA	0.73
PEM/SSC	1.11
PEMA	3135.01
PEMAd	517.36
PEMAh	3.59
PEMAx	0.10
PEMC	2648.57
PEMCd	424.84
PEMCh	5.18
PEMCx	1.49
PEMF	49.32
PEMFd	0.05
PEMFh	3.35
PEMFx	0.07
PFO/EMA	1.66
PFO/EMC	9.57
PFO/SSA	0.32
PFO/SSC	0.28
PFOA	39.54
PFOAd	14.99
PFOAh	1.14
PFOC	28.47
PFOCd	10.05
PFOCh	0.70
PFOCx	0.38
PSS/EMC	0.14
PSS/FOA	1.36
PSS/FOC	2.38
PSSA	3.56
PSSAd	0.73
PSSC	4.47
PSSCh	0.21
PUBFx	33.24
R4SBF	121.83
Kingsbury	
L2ABG	4307.17
L2ABGh	11.30
PAB/EMF	257.57
PAB/EMFh	8.22
PABF	134.59
PABFd	6.43
PABFh	62.49
PABFx	322.23
PABGh	2.98
PABGx	20.38
PEM/ABF	9813.31

Attribute	Hectares
PEM/ABFd	1059.88
PEM/ABFh	1.91
PEM/ABFx	0.28
PEM/FOA	9.80
PEM/FOAd	0.17
PEM/FOC	59.13
PEM/FOCd	4.34
PEM/FOCh	0.57
PEM/FOCx	0.29
PEM/SSA	1.48
PEM/SSC	14.36
PEM/SSCd	0.38
PEMA	4076.83
PEMAd	857.55
PEMAh	0.71
PEMAx	0.10
PEMC	3703.09
PEMCd	1177.82
PEMCh	1.00
PEMCx	1.92
PEMF	220.78
PEMFd	1.94
PFO/EMA	37.52
PFO/EMAd	0.84
PFO/EMC	23.09
PFO/EMCd	2.80
PFO/SSC	0.83
PFOA	42.50
PFOAd	8.78
PFOAh	0.41
PFOC	119.87
PFOCd	36.12
PFOCh	0.86
PFOCx	0.39
PSS/EMC	9.89
PSS/EMCd	0.95
PSS/FOC	3.47
PSSA	3.08
PSSAd	0.29
PSSAx	0.09
PSSC	4.48
PSSCd	3.39
PUBFh	0.12
PUBFx	15.76
R4SBF	55.40
Lake	
L1UBG	1696.00
L2ABF	98.60
L2ABFx	0.12
L2ABG	914.75
L2ABGx	9.47
L2UBG	26.74

Attribute	Hectares
PAB/EMF	633.69
PAB/EMFd	76.84
PAB/EMFh	1.18
PABF	146.79
PABFh	79.13
PABFx	174.85
PABGx	2.69
PEM/ABF	4054.55
PEM/ABFb	4.15
PEM/ABFd	411.39
PEM/ABFh	1.31
PEM/FOA	1.74
PEM/FOAd	3.40
PEM/FOC	39.23
PEM/FOCd	0.44
PEM/FOCx	4.37
PEM/SSC	0.81
PEM/SSCd	6.09
PEMA	845.95
PEMAd	1205.83
PEMAx	0.12
PEMC	1896.02
PEMCd	1195.67
PEMCh	0.67
PEMCx	2.16
PEMF	33.07
PEMFd	29.05
PFO/EMA	6.52
PFO/EMAd	2.75
PFO/EMC	61.83
PFO/EMCd	36.17
PFO/EMCx	3.16
PFO/SSC	1.29
PFOA	28.02
PFOAd	7.55
PFOAx	0.22
PFOC	63.89
PFOCd	37.76
PFOCx	0.24
PSS/EMA	0.26
PSS/EMC	3.26
PSS/EMCd	2.04
PSS/FOCd	0.75
PSSA	2.41
PSSAd	0.19
PSSC	6.04
PSSCd	0.56
PUBF	8.24
PUBFx	10.61
R4SBF	69.08

Attribute	Hectares
Lincoln	
L1UBGh	20.13
L2ABGh	55.99
PABF	3.10
PABFd	1.31
PABFh	37.95
PABFx	53.49
PABGh	17.50
PABGx	41.80
PEM/ABF	252.60
PEM/ABFd	71.17
PEM/ABFh	5.79
PEM/ABFx	13.88
PEM/FOA	9.76
PEM/FOC	1.49
PEM/SSA	3.66
PEMA	993.65
PEMAd	1514.54
PEMAh	1.12
PEMC	1101.89
PEMCd	512.29
PEMCh	5.09
PEMCx	2.55
PEMF	4.56
PEMFd	1.87
PEMFh	9.23
PEMFx	1.05
PFO/EMA	34.33
PFO/EMAd	0.23
PFO/EMC	45.37
PFO/EMCx	4.55
PFOA	64.21
PFOAd	3.55
PFOAx	0.49
PFOC	13.39
PFOCd	1.44
PFOCh	1.07
PFOCx	1.32
PSS/EMC	0.00
PSSA	1.05
PSSC	0.73
PSSCd	0.97
PUBFx	11.08
PUBGx	5.75
R2UBF	0.33
R2UBG	213.76
R2USA	19.96
R2USC	2.33
R4SBF	0.73
Marshall	
L1UBG	248.55
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
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
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
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
PAB/EMF	137.01
PABF	185.57
PABFd	4.59
PABFh	62.52
PABFx	115.78
PABGh	24.21
PABGx	50.83
PEM/ABF	1139.08
PEM/ABFd	173.01
PEM/ABFh	3.36
PEM/ABFx	0.92
PEM/FOA	21.10
PEM/FOAd	0.94
PEM/FOAx	0.26
PEM/FOC	59.12
PEM/FOCd	4.33
PEM/FOCh	2.13
PEM/FOCx	21.14
PEM/SSA	0.53
PEM/SSAd	1.92
PEM/SSC	3.46
PEM/SSCd	1.77
PEM/SSCh	7.45
PEMA	1594.94
PEMAd	1135.91
PEMAh	14.09
PEMAx	1.56
PEMC	1302.40
PEMCd	587.86
PEMCh	1.92
PEMCx	4.47
PEMF	29.69
PEMFd	10.34
PFO/EMA	5.84
PFO/EMAd	0.77
PFO/EMC	58.95
PFO/EMCd	7.94
PFO/EMCx	3.33
PFO/SSCx	1.09
PFOA	52.67
PFOAd	7.64
PFOAh	0.24
PFOC	42.07
PFOCd	9.04
PFOCh	0.33
PFOCx	0.52
PSS/EMC	2.67
PSS/FOA	16.44
PSS/FOAd	1.22
PSS/FOC	0.42
PSS/FOCd	0.93
PSSA	7.18
PSSAd	0.82

Attribute	Hectares
PSSC	1.81
PUBF	0.09
PUBFh	0.24
PUBFx	45.61
PUBGh	3.86
PUBGx	56.69
PUSAx	0.39
PUSC	0.26
PUSCx	3.24
R2UBG	363.07
R2UBGx	53.96
R2USA	4.55
R2USC	13.67
R3UBG	2.68
R4SBA	6.43
R4SBC	0.33
R4SBF	312.68
R4SBFx	7.08

Moody

L2ABG	173.78
PAB/EMF	127.89
PAB/EMFd	4.46
PAB/EMFh	7.56
PAB/EMFx	0.16
PABF	39.17
PABFh	71.72
PABFx	116.12
PABGx	17.64
PEM/ABF	933.18
PEM/ABFd	215.88
PEM/ABFh	1.17
PEM/ABFx	4.59
PEM/FOA	3.20
PEM/FOAd	11.36
PEM/FOC	122.58
PEM/FOCd	20.76
PEM/FOCx	9.04
PEM/SSAd	0.38
PEM/SSC	1.46
PEMA	950.35
PEMAd	527.75
PEMAh	1.91
PEMC	794.92
PEMCd	323.60
PEMCh	0.90
PEMCx	5.61
PEMF	22.07
PEMFd	11.72
PEMFh	0.17
PEMFx	0.38
PFO/EMA	3.40
PFO/EMAd	1.76

Attribute	Hectares
PFO/EMC	43.14
PFO/EMCd	8.12
PFO/EMCh	1.24
PFO/SSA	0.13
PFO/SSCd	1.42
PFOA	35.12
PFOAd	11.58
PFOAh	0.37
PFOC	77.75
PFOCd	1.90
PSS/EMC	1.86
PSS/FOC	0.95
PSSA	1.70
PSSAd	1.74
PSSC	0.53
PSSCd	0.56
PUBFh	0.29
PUBFx	13.25
PUBGx	0.21
R2UBG	356.78
R2USA	0.19
R2USC	0.42
R4SBA	0.60
R4SBF	54.87

Potter

L1UBFh	0.51
L1UBGh	954.85
L1UBHh	6519.87
L2ABF	82.29
L2ABGh	52.07
L2UBF	0.04
L2UBFh	2.95
L2UBGH	52.54
L2USCh	59.79
PAB/EMF	31.93
PAB/EMFh	9.43
PABF	27.03
PABFh	528.45
PABFx	125.69
PABGh	18.59
PEM/ABF	184.22
PEM/ABFh	8.75
PEM/FOA	1.04
PEM/FOAh	8.14
PEM/FOC	1.09
PEM/FOCh	0.99
PEM/FOCx	0.18
PEM/SSA	0.37
PEM/SSAh	2.82
PEM/SSC	1.28
PEM/SSCh	1.27
PEMA	4029.12

Attribute	Hectares
PEMAx	1.30
PEMAd	318.76
PEMAh	44.16
PEMB	0.16
PEMC	5555.39
PEMCd	151.28
PEMCh	43.94
PEMCx	4.35
PEMF	504.63
PEMFh	2.18
PEMU	30.35
PFO/EMAh	0.45
PFO/EMCh	0.20
PFOA	7.89
PFOAd	1.48
PFOAh	1.40
PFOC	0.52
PFOCh	0.67
PSSA	1.97
PSSAh	1.14
PSSC	2.51
PSSCh	0.14
PUB/EMFh	1.31
PUBFh	169.04
PUBFx	103.98
PUBGh	11.66
PUBGx	6.12
PUSCx	0.42
PUSCh	0.56
R4SBF	0.19

Roberts

L1UBG	81.23
L1UBHh	3938.39
L2ABF	56.21
L2ABFx	18.42
L2ABG	1889.64
L2ABGh	374.43
L2UBGh	139.38
PAB/EMF	670.57
PAB/EMFd	1.74
PAB/EMFh	66.83
PAB/EMFx	15.74
PABF	677.78
PABFd	35.54
PABFh	46.69
PABFx	103.72
PABG	31.32
PABGh	39.14
PABGx	29.21
PEM/ABF	3408.56
PEM/ABFb	0.55
PEM/ABFd	164.99

Attribute	Hectares
PEM/ABFh	1137.50
PEM/ABFx	2.72
PEM/FOA	21.90
PEM/FOAh	1.07
PEM/FOC	28.37
PEM/FOCd	1.02
PEM/FOCh	11.14
PEM/FOCx	0.28
PEM/SSA	22.39
PEM/SSAd	0.69
PEM/SSAh	14.89
PEM/SSB	236.74
PEM/SSC	79.11
PEM/SSCd	0.45
PEM/SSCx	2.27
PEM/UBFh	0.01
PEM/UBGh	0.10
PEMA	6214.97
PEMAd	1434.28
PEMAh	285.05
PEMAx	9.15
PEMB	47.62
PEMC	5573.72
PEMCd	838.53
PEMCf	0.33
PEMCh	501.60
PEMCx	35.69
PEMF	3781.91
PEMFb	1.07
PEMFd	237.86
PEMFh	477.00
PEMFx	36.87
PFO/EMA	7.73
PFO/EMB	8.24
PFO/EMC	15.19
PFO/EMCd	0.33
PFO/EMCh	14.42
PFO/EMCx	0.61
PFO/SSA	4.93
PFO/SSC	1.89
PFOA	156.98
PFOAd	17.79
PFOAh	47.22
PFOBd	0.40
PFOC	61.97
PFOCd	10.97
PFOCh	49.48
PFOCx	5.61
PSS/EMA	4.60
PSS/EMB	37.20
PSS/EMC	53.60
PSS/EMCd	0.76
PSS/EMCh	2.06
PSS/FOC	2.03
PSSA	69.15
PSSAd	1.40
PSSB	24.18
PSSC	53.23
PSSCd	3.85
PSSCh	13.93
PSSCx	4.05
PUBF	0.42
PUBFh	10.34
PUBFx	74.11
PUBGh	2.64
PUBGx	4.08
R2UBHx	7.66
R4SBF	32.18
R4SBFx	2.50

Sanborn

Attribute	Hectares
L2ABF	63.67
L2ABFd	11.16
L2ABFx	0.09
L2ABG	37.75
L2ABGd	63.38
PAB/EMF	234.97
PAB/EMFd	89.63
PAB/EMFx	4.43
PABF	47.67
PABFd	198.00
PABFh	27.14
PABFx	115.44
PABGH	4.05
PABGh	3.49
PABGx	10.81
PEM/ABF	1493.04
PEM/ABFh	0.48
PEM/ABFd	401.16
PEM/ABFx	0.57
PEM/FOA	22.69
PEM/FOAd	7.11
PEM/FOAx	0.47
PEM/FOC	52.15
PEM/FOCd	14.44
PEM/FOCx	0.99
PEM/SSA	1.24
PEM/SSC	7.51
PEM/SSCd	8.34
PEMA	5820.00
PEMAx	0.18
PEMAd	2925.45
PEMAh	0.07
PEMC	7297.47
PEMCd	1651.05
PEMCh	0.31
PEMCx	15.76
PEMF	57.35
PEMFd	82.95
PFO/EMA	11.92
PFO/EMAd	4.08
PFO/EMC	47.06
PFO/EMCd	7.89
PFO/EMF	8.10
PFOA	86.34
PFOAd	12.92
PFOC	66.85
PFOCd	7.39
PFOCx	2.24
PSS/FOA	0.79
PSSA	22.01
PSSAd	2.29
PSSC	2.89
PSSCd	0.50
PUBFx	21.95
PUBGx	3.69
PUSCh	0.06
R2UBG	360.30
R2USA	1.27
R4SBF	288.66

Spink

Attribute	Hectares
L1UBH	539.56
L2ABF	190.78
L2ABG	575.82
L2ABGh	166.79
L2USA	4.68
PAB/EMF	538.04
PAB/EMFh	14.18
PAB/EMFx	2.01
PABF	211.81
PABFd	2.33
PABFh	96.63
PABFx	317.84
PABGh	6.67
PABGx	55.31
PEM/ABF	1080.15
PEM/ABFd	29.25
PEM/ABFh	20.68
PEM/ABFx	1.92
PEM/FOA	62.89
PEM/FOC	64.41
PEM/FOCd	6.42
PEM/FOCh	0.71
PEM/FOCx	11.05
PEM/SSA	11.00
PEM/SSB	0.20
PEM/SSC	1.48
PEMA	14406.17
PEMAd	1220.71
PEMAh	14.61
PEMAx	1.60
PEMB	4.78
PEMBd	2.68
PEMC	11208.41
PEMCd	428.35
PEMCh	1.88
PEMCx	16.83
PEMF	86.45
PEMFd	0.36
PEMFh	5.54
PEMFx	1.66
PEMU	0.48
PFO/EMA	17.03
PFO/EMC	3.39
PFO/EMCx	3.31
PFO/SSAd	1.22
PFO/SSC	1.12
PFOA	285.29
PFOAd	6.82
PFOAh	5.72
PFOC	98.58
PFOCd	2.25
PFOCx	3.62
PSS/FOCx	1.13
PSSA	10.65
PSSC	1.69
PSSCd	0.18
PSSCx	0.59
PUBFx	17.30
R2UBF	149.37
R2UBG	702.09
R4SBF	1331.04
R4SBFx	2.02

Sully

Attribute	Hectares
L1UBGh	1868.14
L1UBHh	12385.15
L2ABF	184.30
L2ABFh	64.07
L2ABG	548.53
L2ABGh	37.32
L2UBFh	12.90
L2USAh	0.08
L2USCh	57.69
PAB/EMF	150.99
PAB/EMFh	6.76
PABF	3.11
PABFh	821.23
PABFhx	0.35
PABFx	227.30
PABGh	41.88

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
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
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
PAB/EMFh	0.97
PABF	63.45
PABFh	320.19
PABFx	73.08
PEM/ABF	384.66
PEM/ABFh	13.30
PEM/FOA	3.12
PEM/FOC	2.99
PEM/FOCx	0.56
PEM/FOCh	4.03
PEM/SSA	0.94
PEMA	3706.91
PEMAx	1.44
PEMAd	153.96
PEMAh	77.87
PEMC	3597.84
PEMCd	92.75
PEMCh	17.32
PEMCx	2.39
PEMF	812.53
PEMFx	6.99
PEMFh	7.11
PFO/EMA	0.52
PFO/EMAx	0.68
PFO/EMC	0.48
PFO/SSA	0.70
PFO/SSC	0.50
PFO/SSCh	0.23
PFOA	24.30
PFOC	4.92
PFOCd	0.75
PSS/EMA	0.78
PSS/EMC	0.31
PSSA	4.78
PSSCh	0.85
PUBF	0.24
PUBFh	52.46
PUBFx	48.96
PUBGh	32.04
PUBGx	0.96
PUBHx	0.09
PUSAh	0.13
PUSAx	0.27
PUSCh	0.18
R4SBF	5.74

Yankton

Attribute	Hectares
L1UBGh	59.12
L1UBHh	1577.92
L2ABF	129.62
L2ABFx	0.16
L2ABG	121.43
L2ABGh	31.82

Attribute	Hectares
PAB/EMF	7.77
PAB/EMFh	0.60
PAB/EMFx	0.96
PABF	124.14
PABFd	4.79
PABFh	145.05
PABFx	67.95
PABGh	27.02
PABGx	5.77
PEM/ABF	176.25
PEM/ABFd	14.54
PEM/ABFh	0.91
PEM/FOA	9.91
PEM/FOAd	4.18
PEM/FOC	7.03
PEM/FOCd	1.34

Attribute	Hectares
PEM/FOCh	0.31
PEM/SSA	8.50
PEMA	1021.30
PEMAd	1161.48
PEMAh	0.32
PEMC	1483.28
PEMCd	398.05
PEMCh	1.02
PEMCx	4.78
PEMF	82.82
PEMFd	19.69
PEMFh	30.33
PFO/EMA	56.99
PFO/EMAd	1.36
PFO/EMAh	4.50
PFO/EMC	39.31

Attribute	Hectares
PFO/EMCd	12.67
PFO/EMCh	1.71
PFOA	43.03
PFOAd	29.15
PFOAh	1.58
PFOC	21.36
PFOCd	1.02
PFOCh	2.26
PFOCx	1.49
PSS/EMA	1.18
PSS/EMC	0.40
PSS/FOA	2.85
PSS/USA	10.69
PSS/USC	40.72
PSSA	2.19
PSSAh	5.57

Attribute	Hectares
PSSC	18.74
PSSCd	0.40
PUBFx	14.06
PUBGx	8.12
PUS/SSA	12.54
PUS/SSC	19.60
PUSAh	0.06
PUSCh	0.20
PUSCx	0.09
R2UBG	326.22
R2UBH	931.56
R2USA	31.84
R2USC	84.38
R4SBF	12.51

Linear Wetlands

Attribute	Length (m)
Aurora	
PABF	2372.4
PABFh	316.3
PABFx	5529.5
PEM/ABF	888.4
PEM/ABFh	147.3
PEM/FOC	299.4
PEM/FOCx	35.0
PEMA	245849.8
PEMAd	1610.4
PEMAx	3462.3
PEMC	395348.8
PEMCd	651.7
PEMCh	388.0
PEMCx	439308.7
PEMF	108.9
PEMFh	1585.2
PFO/EMC	1111.5
PFOA	19077.5
PFOAd	1461.4
PFOAh	11219.4
PFOAx	671.8
PFOC	11963.4
PFOCd	120.4
PFOCh	191.5
PFOCx	2107.0
PUBFx	988.5
R4SBF	74481.5
R4SBFx	130.8
Beadle	
PABFx	365.3
PEM/ABF	771.8
PEM/FOC	175.1
PEM/FOCh	90.5

Attribute	Length (m)
PEMA	410382.4
PEMAd	4020.0
PEMAx	15477.2
PEMC	686668.6
PEMCd	1542.5
PEMCh	410.7
PEMCx	935130.1
PEMF	2218.9
PEMFx	156.7
PFO/EMC	1117.0
PFOA	39935.1
PFOAd	363.8
PFOAh	1772.1
PFOAx	1371.9
PFOC	20428.8
PFOCd	1252.2
PFOCx	620.0
PSSA	1956.4
PSSC	194.7
PUBFx	727.5
PUSCx	28.2
R4SBC	10790.6
R4SBF	181162.8
R4SBFx	840.7
Bon Homme	
PABF	916.8
PABFh	386.8
PABFx	548.1
PEM/ABFh	92.7
PEM/FOA	174.4
PEM/FOC	72.7
PEMA	119401.6
PEMAh	57.5
PEMAd	2596.3

Attribute	Length (m)
PEMAx	9508.3
PEMC	529244.5
PEMCX	8280.8
PEMCd	990.4
PEMCh	209.3
PEMCx	150234.3
PEMF	1645.2
PEMFh	541.2
PEMFx	750.2
PFO/EMC	745.9
PFO/EMCx	255.6
PFOA	46100.9
PFOAX	372.2
PFOAd	434.4
PFOAh	2713.1
PFOAx	1639.2
PFOC	50667.1
PFOCh	208.6
PFOCx	1079.7
PSS/FOA	392.9
PSSA	319.4
PUBFx	209.9
R2USC	145.3
R4SBA	29175.6
R4SBC	17145.4
R4SBF	132038.6
R4SBFx	1141.2
Brookings	
PABFx	56.6
PEM/FOC	286.4
PEMA	454616.0
PEMAd	2503.0
PEMAx	7478.2
PEMC	1085781.4

Attribute	Length (m)
PEMCd	3230.6
PEMCh	211.5
PEMCx	459060.2
PEMF	359.0
PFOA	62817.8
PFOAd	1590.5
PFOAh	1204.9
PFOAx	2424.8
PFOC	13900.8
PFOCd	426.7
PFOCx	2739.5
PSSA	102.6
PUBFx	124.3
R4SBF	39062.2
R4SBFx	2590.7
Brown	
PAB/EMF	356.7
PABF	1658.8
PABFh	350.3
PABFx	2321.3
PEM/ABF	13935.6
PEM/ABFx	297.9
PEM/FOA	414.0
PEM/FOCx	676.2
PEMA	353381.0
PEMAd	967.3
PEMAx	92332.7
PEMC	455743.6
PEMCd	5038.3
PEMCh	106.4
PEMCx	466530.3
PEMF	23217.1
PEMFx	1897.7
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
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
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

Clay

Attribute	Length (m)
PABF	732.4
PABFh	14.0
PABFx	162.0
PEM/ABF	631.3
PEMA	65039.6
PEMAd	1452.4
PEMAx	10347.9
PEMC	200012.0
PEMCd	1504.7
PEMCx	245510.7
PEMF	354.9
PEMFx	2956.8
PFO/EMC	727.9
PFOA	31702.2
PFOAd	259.9
PFOAh	141.9
PFOAx	13162.2
PFOC	23447.5
PFOCh	129.6
PFOCx	2183.2
PSSA	47.1
R2UBG	36782.1
R2UBGx	5487.8
R2USA	1557.9
R2USC	1831.3
R4SBA	835.5
R4SBC	4960.0
R4SBF	45641.3
R4SBFx	47102.4

Codington

Attribute	Length (m)
L2USA	6577.6
PABFh	84.4
PABFx	285.1
PEM/ABF	4219.7
PEM/FOC	583.4
PEMA	293053.9
PEMAd	340.0
PEMAx	4092.9
PEMC	617946.9
PEMCd	950.2
PEMCh	300.7
PEMCx	45252.8
PEMF	7113.9
PEMFx	1749.7
PFOA	39250.3
PFOAD	152.4
PFOAx	3.7
PFOC	3352.6
PSSC	805.2
PUBFx	411.5
R4SBF	66048.8
R4SBFx	693.4

Davison

Attribute	Length (m)
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

Attribute	Length (m)
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

Deuel

Attribute	Length (m)
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

Attribute	Length (m)
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

Attribute	Length (m)
L2USA	2020.6
L2USC	1920.1
PABF	177.9
PABFh	205.9
PABFx	394.0
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

Attribute	Length (m)
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

Attribute	Length (m)
PABFh	60.2
PABFx	339.3
PEM/ABF	391.5
PEMA	361756.2
PEMAd	1581.9
PEMAx	5900.9
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

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

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

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

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

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

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

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

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

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

Aurora

Attribute	Number
PABFx	9
PEMA	975
PEMAd	103
PEMC	727
PEMCd	13
PEMCh	1
PEMCx	8
PUBFx	33

Beadle

Attribute	Number
PABFx	4
PEM/SSC	1
PEMA	5314
PEMAd	147
PEMC	469
PEMCd	5
PEMCx	24
PFOA	3
PFOC	1
PSSA	1
PUBFx	43
0.78	
PUSCx	1

Bon Homme

Attribute	Number
PABFh	3
PABFx	9
PEMA	507
PEMAd	76
PEMAx	3
PEMC	121
PEMCd	4
PEMCh	3
PEMCx	4
PFOA	1
PFOAd	1
PUBFx	1

Brookings

Attribute	Number
PABFx	5
PEMA	675
PEMAd	61
PEMAx	1
PEMC	195
PEMCd	3
PEMCh	1
PEMCx	4
PEMF	1
PFOA	1
PFOCx	1
PUBFx	12

Brown

Attttribute	Number
PABFh	2
PABFx	147
PEMA	8338
PEMAd	51
PEMAh	2
PEMAx	21
PEMC	2163
PEMCd	5
PEMCh	1
PEMCx	60
PFO/EMC	1
PFOA	10
PFOC	2
PUBFx	53

Brule

Attribute	Number
PABFh	13
PABFx	16
PEMA	733
PEMAd	39
PEMC	401
PEMCd	4
PEMCh	30
PEMCx	9
PEMFx	1
PFOA	3
PUBFx	1

Buffalo

Attribute	Number
PABF	1
PABFh	5
PABFx	2
PEMA	332
PEMAd	4
PEMC	60
PEMCh	2
PEMCx	3
PFOA	1
PFOCx	1
PUBFx	8

Campbell

Attribute	Number
PABFx	7
PEMA	1124
PEMAd	2
PEMAh	1
PEMAx	3
PEMC	352
PEMCh	2
PEMFh	1
PSSA	1

Charles Mix

Attribute	Number
PABFh	4
PABFx	20
PEM/ABF	1
PEMA	817
PEMAd	143
PEMAh	1
PEMAx	1
PEMC	379
PEMCd	16
PEMCh	59
PEMCx	21
PFO/EMCx	1
PFOA	1
PFOCx	1
PUBFx	5
PUSCh	2

Clark

Attribute	Number
PABFx	16
PEM/ABF	2
PEMA	2083
PEMAd	61
PEMAx	1
PEMC	839
PEMCd	8
PEMCx	20
PFOA	2
PSSA	1
PUBFx	42

Clay

Attribute	Number
PABFh	1
PABFx	3
PEMA	209
PEMAd	68
PEMAx	5
PEMC	30
PEMCh	1
PEMCx	7
PFOA	3

Codington

Attribute	Number
PABFx	3
PEMA	803
PEMAd	19
PEMC	296
PEMCd	6
PEMCx	1
PFOA	1
PUBFx	18

Davison

Attribute	Number
PABFx	9
PEM/FOC	1
PEMA	1126
PEMAd	172
PEMAx	1
PEMC	637
PEMCd	17
PEMCx	10
PEMFx	4
PFOA	2
PUBFx	44

Day

Attribute	Number
PABFh	1
PABFx	3
PEMA	2814
PEMAd	115
PEMAx	17
PEMC	988
PEMCd	15
PEMCh	1
PEMCx	8
PEMF	1
PFOA	15
PSSA	1
PUBFh	1
PUBFx	19

Deuel

Attribute	Number
PABFx	2
PEMA	1251
PEMAd	127
PEMC	1027
PEMCd	75
PEMCx	11
PFOC	3
PFOCx	1
PSSA	1
PUBFx	2

Douglas

Attribute	Number
PABFx	3
PEMA	294
PEMAd	21
PEMC	91
PEMCd	3
PEMCx	13
PFOA	2
PFOC	1
PUBFx	1

Attribute	Number
Edmunds	
PABFx	35
PEMA	7471
PEMAd	22
PEMAx	49
PEMC	2090
PEMCd	5
PEMCx	28
PFO/EMA	1
PFOA	1
PFOC	1
PUBFx	24
Faulk	
PABFx	16
PEMA	6147
PEMAd	42
PEMAx	30
PEMC	841
PEMCd	5
PEMCx	2
PEMU	1
PUBFx	11
Grant	
PEMA	874
PEMAd	52
PEMC	554
PEMCd	7
PEMCh	1
PEMCx	6
PFOA	4
PFOC	1
PFOCx	1
PUBFx	4
Hamlin	
PABFx	1
PEMA	187
PEMAd	1
PEMC	89
PEMCx	6
PFOC	1
PUBFx	4
Hand	
PABFh	1
PABFx	1
PEMA	8592
PEMAd	139
PEMC	772
PEMCd	3
PEMCx	7
PFOC	3
PSSA	1
PUBFx	29

Atttribute	Number
Hanson	
PABF	1
PABFh	1
PABFx	3
PEMA	1153
PEMAd	122
PEMC	378
PEMCd	13
PEMCx	9
PFO/EMCx	1
PFOA	4
PUBFx	5
Hughes	
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	
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	
PABFh	1
PEMA	5292
PEMAd	26
PEMC	229
PEMCx	12
PUBFx	6
Jerauld	
PABFh	2
PABFx	3
PEM/FOCx	1
PEMA	642
PEMAd	32
PEMC	141
PEMCd	3
PEMCh	1
PEMCx	3
PUBFx	19

Attribute	Number
Kingsbury	
PABFx	6
PEMA	1848
PEMAd	70
PEMC	249
PEMCd	29
PEMCx	7
PFOA	9
PUBFx	28
Lake	
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	
PABFh	1
PABFx	12
PEMA	369
PEMAd	254
PEMAx	3
PEMC	65
PEMCd	11
PEMCh	1
PEMCx	39
PFOA	1
PUBFx	16
Marshall	
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	
PABFx	6
PEM/FOA	2
PEM/FOCx	5
PEMA	1537
PEMAd	382

Attribute	Number
PEMAh	3
PEMC	495
PEMCd	21
PEMCx	26
PFOA	6
PFOAd	1
PUBFx	30
McPherson	
PABFx	20
PEM/ABF	1
PEMA	6364
PEMAd	5
PEMAx	10
PEMC	3188
PEMCd	2
PEMCh	1
PEMCx	14
PEMF	1
PUBFx	15
Miner	
PABFx	5
PEMA	1815
PEMAd	157
PEMC	607
PEMCd	37
PEMCx	20
PEMF	1
PFOA	7
PSSA	1
PUBF	3
PUBFx	26
Minnehaha	
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	
PABFh	1
PABFx	2
PEM/ABF	1
PEMA	404
PEMAd	79
PEMAx	3
PEMC	249
PEMCd	1

Attribute	Number
PEMCx	2
PFOA	6
PFOAd	1
PFOC	1
PSSC	1
PUBFx	5
PUBGx	2
Potter	
PABFh	2
PABFx	4
PEMA	1776
PEMAd	36
PEMAh	2
PEMAx	8
PEMC	209
PEMCd	14
PEMCh	4
PEMCx	6
PEMU	2
PFOA	1
PSSA	1
PUBFx	5
Roberts	
PABF	1
PEM/ABF	1
PEMA	3147
PEMAd	23
PEMAx	14
PEMC	1853
PEMCd	5
PEMCh	1
PEMCx	6
PEMF	4
PFOA	1
PSSC	1
PUBFx	36

Atttribute	Number
Sanborn	
PEMA	1958
PEMAd	231
PEMAx	1
PEMC	368
PEMCd	7
PEMCh	1
PEMCx	4
PFOA	1
PFOC	2
PSSA	1
PUBFx	27
Spink	
PABFh	1
PABFx	24
PEMA	5795
PEMAd	102
PEMAx	5
PEMC	467
PEMCd	5
PEMCx	19
PFOA	1
PFOAx	1
PFOCx	1
PUBFx	31
Sully	
PABFh	3
PABFx	1
PEMA	2011
PEMAd	19
PEMAx	1
PEMC	79
PEMCh	1
PEMCx	1
PSSA	1
PUBFx	37
PUSAx	1

Attribute	Number
Turner	
PABFh	1
PABFx	13
PEMA	695
PEMAd	305
PEMAx	1
PEMC	143
PEMCd	9
PEMCx	6
PFO/EMCx	2
PFOA	3
PFOCx	1
PSSA	1
PUBFx	15
Union	
PABFh	2
PABFx	1
PEMA	57
PEMAd	20
PEMAh	1
PEMC	34
PEMCd	4
PEMCh	1
PEMCx	5
PUBFx	3
R2USC	7

Attribute	Number
Walworth	
PABFh	3
PEMA	1521
PEMAd	3
PEMAx	18
PEMC	316
PEMCd	1
PEMCh	4
PEMCx	4
PFOA	3
PFOAx	1
PUBFx	5
Yankton	
PABFh	11
PABFx	12
PEMA	434
PEMAd	147
PEMAx	1
PEMC	84
PEMCd	5
PEMCh	11
PEMCx	4
PFO/EMC	1
PFOA	4
PUBFx	2

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

County	Palustrine	Lacustrine	Riverine
Aurora	13,777.0	169.9	102.1
Beadle	37,938.4	1,637.3	1,001.2
BonHomme	6,677.6	3,664.4	1,163.9
Brookings	11,133.1	2,999.5	375.7
Brown	39,558.7	2,533.4	1,493.9
Brule	11,209.3	5,770.0	19.6
Buffalo	3,909.6	4,517.7	68.7
Campbell	9,554.9	9,109.1	64.2
Charles Mix	11,678.6	11,651.3	1,269.0
Clark	24,451.2	586.5	2.1
Clay	3,852.7	17.6	1,371.5
Codington	11,601.1	6,041.5	177.7
Davison	7,525.3	322.2	431.5
Day	29,615.1	8,575.4	12.4
Deuel	9,990.6	2,682.9	97.3
Douglas	7,354.9	48.4	1.3
Edmunds	27,807.5	1,119.3	51.4
Faulk	27,326.7	859.7	376.1
Grant	7,727.3	1,064.9	61.1
Hamlin	9,381.5	6,567.6	209.8
Hand	32,991.8	1,192.2	319.7
Hanson	6,396.6	147.2	343.1
Hughes	6,939.0	15,055.1	149.4
Hutchinson	11,543.7	268.2	340.2
Hyde	16,518.1	1,954.1	4.1
Jerauld	8,681.6	238.1	121.8
Kingsbury	22,138.3	4,318.5	55.4
Lake	11,135.3	2,745.7	69.1
Lincoln	4,851.1	76.1	237.1
Marshall	17,397.7	6,299.1	8.1
McCook	10,508.5	711.6	143.1
McPherson	23,972.4	1,702.2	5.8
Miner	11,040.2	280.6	83.2
Minnehaha	7,036.8	1,357.0	764.5
Moody	4,555.0	178.8	412.9
Potter	11,948.6	7,724.9	0.2
Roberts	27,094.4	6,497.7	42.3
Sanborn	20,905.7	176.1	650.2
Spink	30,396.4	1,477.7	2,184.5
Sully	12,533.5	15,158.2	47.8
Turner	7,584.5	113.1	73.2
Union	3,379.9	222.6	1,329.0
Walworth	9,759.2	8,532.4	5.7
Yankton	5,164.2	1,920.1	1,386.5

Linear Wetlands, Length (m)

County	Palustrine	Lacustrine	Riverine
Aurora	1,147,816	0	74,612
Beadle	2,127,179	0	192,174
Bon Homme	922,139	0	179,646
Brookings	2,098,916	0	41,653
Brown	1,620,590	0	234,293
Brule	804,198	0	113,542
Buffalo	823,230	272	253,499
Campbell	621,344	597	152,271
Charles Mix	1,742,472	0	248,241
Clark	1,419,341	0	5,510
Clay	600,522	0	144,199
Codington	1,020,040	6,578	66,742
Davison	884,418	0	83,902
Day	808,654	59,804	46,543
Deuel	1,928,594	0	163,051
Douglas	595,619	0	103,313
Edmunds	1,213,225	3,941	11,972
Faulk	1,506,796	597	98,134
Grant	1,503,508	0	380,697
Hamlin	686,664	0	27,639
Hand	3,585,870	0	33,693
Hanson	657,059	0	87,826
Hughes	962,634	161	143,778
Hutchinson	1,368,736	0	189,040
Hyde	1,704,943	0	43,590
Jerauld	1,167,335	0	62,855
Kingsbury	1,323,295	0	57,897
Lake	851,346	0	85,834
Lincoln	1,015,686	197	122,418
Marshall	1,402,659	5,361	134,018
McCook	1,232,237	0	128,963
McPherson	1,314,357	0	34,180
Miner	1,214,792	0	127,219
Minnehaha	1,701,193	0	194,938
Moody	1,343,873	0	98,672
Potter	803,495	0	163,027
Roberts	1,694,213	1,068	390,991
Sanborn	807,838	0	67,027
Spink	2,180,795	814	85,908
Sully	981,281	637	81,996
Turner	1,114,543	847	241,974
Union	517,974	0	114,074
Walworth	595,900	519	228,189
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)

County	A	C	F	G
Aurora	283,353	852,526	86,549	0
Beadle	475,279	1,658,450	186,244	0
Bon Homme	212,515	751,000	138,271	0
Brookings	532,780	1,565,638	42,192	0
Brown	600,817	975,541	278,526	0
Brule	271,111	557,041	89,587	0
Buffalo	443,048	485,679	148,002	272
Campbell	365,283	310,352	98,758	0
Charles Mix	583,396	1,241,385	175,908	23
Clark	356,168	1,043,937	24,745	0
Clay	124,547	480,307	97,596	0
Codington	343,561	669,192	80,607	0
Davison	152,963	727,887	87,470	0
Day	386,292	432,908	95,801	0
Deuel	356,638	1,558,810	176,198	0
Douglas	135,728	460,713	102,491	0
Edmunds	484,167	719,888	25,082	0
Faulk	584,410	916,045	105,072	0
Grant	500,521	1,142,457	240,475	733
Hamlin	237,958	438,944	37,401	0
Hand	1,046,284	2,544,518	28,761	0
Hanson	104,426	552,013	88,846	0
Hughes	455,797	612,866	37,908	0
Hutchinson	232,255	1,130,007	195,514	0
Hyde	666,079	1,067,037	15,416	0
Jerauld	428,718	741,571	59,901	0
Kingsbury	337,252	984,702	59,238	0
Lake	148,231	701,230	87,720	0
Lincoln	262,285	751,585	124,134	296
Marshall	618,917	652,330	270,323	468
McCook	191,787	1,034,139	135,275	0
McPherson	530,915	699,973	117,649	0
Miner	196,267	1,013,923	131,822	0
Minnehaha	515,990	1,173,438	206,413	290
Moody	319,209	1,016,977	105,529	831
Potter	493,388	431,787	41,322	0
Roberts	549,088	1,183,362	352,754	1,068
Sanborn	162,825	642,059	69,982	0
Spink	651,601	1,524758	91,158	0
Sully	366,043	647,176	50,696	0
Turner	201,631	908,591	205,218	41,923
Union	178,170	321,084	128,051	4,743
Walworth	417,815	363,038	44,756	0
Yankton	184,531	631,032	139,959	0

Point Wetlands, Number

County	A	C	F	G
Aurora	1,078	749	42	0
Beadle	5,465	501	47	0
Bon Homme	588	132	12	0
Brookings	738	204	18	0
Brown	8,422	2,232	202	0
Brule	775	444	31	0
Buffalo	337	66	16	0
Campbell	1,131	354	8	0
Charles Mix	963	479	30	0
Clark	2,148	867	60	0
Clay	285	38	4	0
Codington	823	303	21	0
Davison	1,301	665	57	0
Day	2,962	1,012	25	0
Deuel	1,379	1,117	4	0
Douglas	317	108	4	0
Edmunds	7,544	2,124	59	0
Faulk	6,219	848	27	0
Grant	930	570	4	0
Hamlin	188	96	5	0
Hand	8,732	785	31	0
Hanson	1,279	401	10	0
Hughes	833	40	23	4
Hutchinson	1,549	270	34	0
Hyde	5,318	241	7	0
Jerauld	674	149	24	0
Kingsbury	1,927	285	34	0
Lake	679	131	27	0
Lincoln	627	116	29	0
Marshall	3,184	2,164	46	2
McCook	1,931	547	36	0
McPherson	6,379	3,205	37	0
Miner	1,980	664	35	0
Minnehaha	913	218	33	0
Moody	493	254	9	2
Potter	1,824	233	11	0
Roberts	3,185	1,866	42	0
Sanborn	2,192	382	27	0
Spink	5,904	492	56	0
Sully	2,033	81	41	0
Turner	1,005	161	29	0
Union	78	51	6	0
Walworth	1,546	325	8	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
Aurora	116	50	1
Beadle	152	72	0
BonHomme	81	18	5
Brookings	64	23	1
Brown	56	281	5
Brule	43	27	43
Buffalo	4	14	7
Campbell	2	10	4
Charles Mix	159	49	66
Clark	69	79	0
Clay	68	15	2
Codington	25	22	0
Davison	189	68	0
Day	130	47	3
Deuel	202	16	0
Douglas	24	17	0
Edmunds	27	136	0
Faulk	47	59	0
Grant	59	11	1
Hamlin	1	11	0
Hand	142	37	1
Hanson	135	18	1
Hughes	3	22	12
Hutchinson	226	50	9
Hyde	26	18	1
Jerauld	35	26	3
Kingsbury	99	41	0
Lake	144	30	0
Lincoln	265	70	2
Marshall	32	54	1
McCook	404	67	3
McPherson	7	59	1
Miner	194	51	0
Minnehaha	276	84	3
Moody	81	14	1
Potter	50	23	8
Roberts	28	56	1
Sanborn	238	32	1
Spink	107	81	1
Sully	19	41	4
Turner	314	38	1
Union	24	9	4
Walworth	4	28	7
Yankton	152	19	22

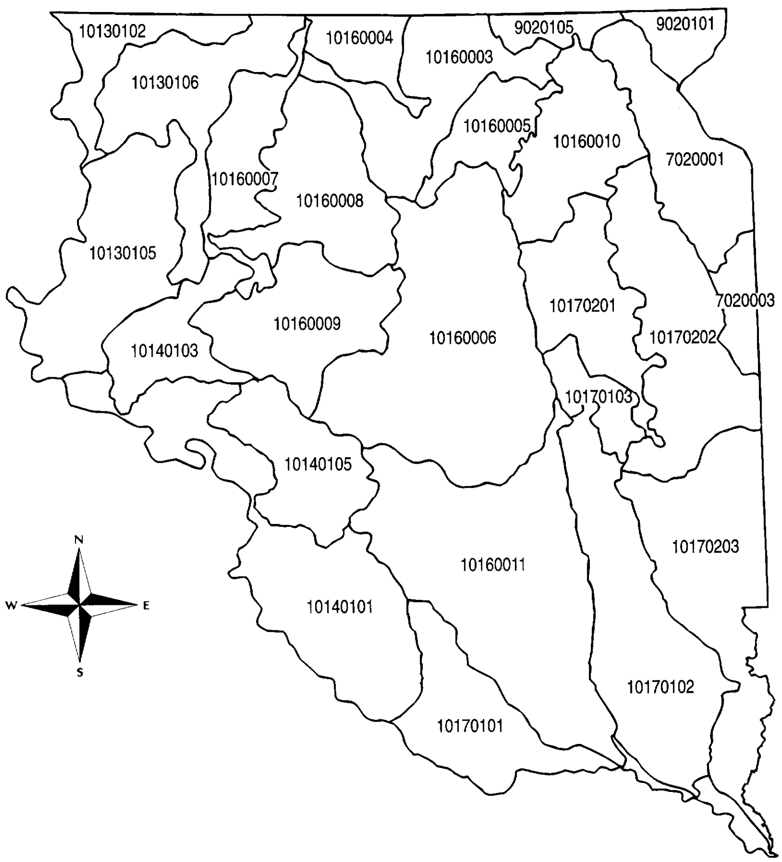

Fig 43. Eastern South Dakota U.S. Geological Survey 8-digit hydrologic units (watersheds).

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

HU 07020001

Attribute	Hectares
L1UBG	217.79
L1UBHh	1,850.49
L1UBHx	278.61
L2ABF	36.61
L2ABFx	18.42
L2ABG	1,081.20
L2ABGh	368.33
L2UBGh	139.00
PAB/EMF	610.66
PAB/EMFd	7.65
PAB/EMFh	19.69
PAB/EMFx	17.06
PAB/FOC	1.28
PABF	641.76
PABFd	39.34
PABFh	139.66
PABFx	149.91
PABG	6.24
PABGh	29.50
PABGx	36.57
PEM/ABF	1,918.38
PEM/ABFb	0.55
PEM/ABFd	167.60
PEM/ABFh	17.33
PEM/ABFx	5.03
PEM/FOA	24.29
PEM/FOB	0.20
PEM/FOC	34.60
PEM/FOCd	3.68
PEM/FOCh	0.65
PEM/FOCx	0.78
PEM/SSA	13.39
PEM/SSAd	0.39
PEM/SSC	86.45
PEM/SSCd	2.85
PEM/SSCh	0.73
PEM/SSCx	2.27
PEMA	3,695.29
PEMAd	1,665.15
PEMAh	4.19
PEMAx	7.54
PEMB	19.03
PEMBd	0.92
PEMC	4,625.55
PEMCd	976.22
PEMCf	0.33
PEMCh	23.86
PEMCx	10.46
PEMF	3,087.34
PEMFd	238.99
PEMFh	52.24
PEMFx	12.85
PFO/EMA	7.82
PFO/EMB	8.24
PFO/EMC	22.99
PFO/EMCd	0.16
PFO/EMCx	0.83
PFO/SSA	6.11
PFO/SSC	3.44
PFOA	527.95
PFOAd	26.49
PFOAh	24.74
PFOAx	0.73
PFOB	1.88
PFOBd	0.40
PFOC	87.52
PFOCd	18.56
PFOCh	5.17
PFOCx	2.46
PSS/EMA	1.52
PSS/EMB	4.18
PSS/EMC	32.61
PSS/EMCd	2.06
PSS/EMCh	0.42
PSS/FOC	2.34
PSS/FOCd	2.43
PSSA	62.14
PSSAd	4.12
PSSB	0.49
PSSC	86.10
PSSCd	9.00
PSSCh	1.79
PSSCx	0.59
PUBF	0.16
PUBFh	10.97
PUBFx	62.64
PUBGh	2.64
PUBGx	9.58
PUSAh	0.77
PUSCx	0.19
R2UBG	0.01
R2UBH	5.45
R4SBF	68.58
R4SBFx	3.86

HU 07020003

Attribute	Hectares
L1UBG	449.76
L1UBH	302.48
L2ABG	1,277.70
L2ABGh	13.73
L2UBG	8.27
PAB/EMF	115.92
PAB/EMFd	121.57
PAB/EMFh	0.75
PABF	142.87
PABFd	4.84
PABFh	42.57
PABFx	55.80
PABGh	13.78
PABHx	0.10
PEM/ABF	1,750.63
PEM/ABFd	839.39
PEM/ABFh	8.31
PEM/ABFx	0.26
PEM/FOA	1.23
PEM/FOAd	5.45
PEM/FOC	10.28
PEM/FOCd	3.82
PEM/FOCx	1.20
PEM/SSA	2.62
PEM/SSC	1.38
PEM/SSCd	3.62
PEMA	669.62
PEMAd	511.53
PEMAh	0.16
PEMB	89.22
PEMBd	1.11
PEMC	1,172.40
PEMCd	977.92
PEMCh	3.98
PEMCx	0.67
PEMF	203.74
PEMFd	32.67
PEMFh	0.42
PEMFx	0.13
PFO/EMA	0.41
PFO/EMC	13.03
PFO/EMCd	4.04
PFO/EMCx	0.21
PFO/SSC	0.43
PFOA	10.55
PFOAd	3.41
PFOC	42.42
PFOCd	26.85
PSS/EMC	0.82
PSS/EMCd	0.55
PSS/FOC	2.62
PSSA	6.45
PSSAd	0.89
PSSC	5.30
PSSCd	4.13
PUBFx	8.39
R4SBF	25.21
R4SBFx	1.35

HU 09020101

Attribute	Hectares
L1UBHh	2,260.29
L2ABF	11.15
L2ABG	608.25
L2ABGh	41.63
L2UBGh	0.38
PAB/EMF	144.06
PAB/EMFd	1.36
PAB/EMFh	63.02
PABF	314.49
PABFd	14.02
PABFh	14.12
PABFx	29.12
PABG	25.07
PABGh	31.63
PABGx	4.63
PEM/ABF	1,916.67
PEM/ABFd	10.71
PEM/ABFh	1,134.04
PEM/ABFx	2.72
PEM/FOA	2.91
PEM/FOAh	1.07
PEM/FOC	4.90
PEM/FOCd	0.56
PEM/FOCh	10.63
PEM/SSA	14.12
PEM/SSAd	0.30
PEM/SSAh	14.89
PEM/SSB	16.87
PEM/SSC	16.54
PEM/UBFh	0.01
PEM/UBGh	0.10
PEMA	3,102.35
PEMAd	486.61
PEMAh	281.04
PEMAx	1.72
PEMB	8.68
PEMC	2,400.49
PEMCd	282.88
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
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
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
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

HU 10130106

Attribute	Hectares
L2ABF	256.72
L2ABG	2,274.27
L2ABGh	56.72
L2UBG	125.97
L2USA	5.65
PAB/EMF	542.99
PABF	508.49
PABFh	165.81
PABFx	252.10
PABG	23.49
PABGh	4.38
PABGx	0.89
PEM/ABF	2,323.24
PEM/FOA	5.46
PEM/FOC	12.64
PEM/FOCd	0.84
PEM/FOCh	1.59
PEM/SSA	2.85
PEM/SSC	0.70
PEMA	6,921.37
PEMAd	266.48
PEMAh	4.09
PEMAx	0.65
PEMC	17,875.45
PEMCd	226.38
PEMCh	19.94
PEMCx	2.99
PEMF	2,603.82
PEMFh	2.43
PEMFx	2.18
PEMU	27.63
PFO/EMA	0.65
PFO/EMC	10.47
PFO/EMCh	0.20
PFO/SSA	1.97
PFO/SSCh	0.23
PFOA	44.74
PFOAd	0.39
PFOAh	0.19
PFOC	22.04
PFOCd	0.75
PFOCh	0.37
PSSA	5.53
PSSC	1.93
PUBFh	38.68
PUBFx	82.14
PUBGh	1.68
PUBGx	4.57
PUSCx	2.73

HU 10140101

Attribute	Hectares
L1UBGh	324.35
L1UBHh	29,187.43
L2ABF	426.55
L2ABFh	29.91
L2ABFx	1.44
L2ABG	895.38
L2ABGh	188.65
L2UBFh	189.98
L2USAh	3.29
L2USCh	160.48
PAB/EMF	199.94
PAB/EMFh	61.85
PAB/EMFx	0.48
PABF	187.86
PABFd	3.90
PABFh	1,536.64
PABFx	723.48
PABG	1.48
PABGh	78.31
PABGx	34.42
PABHx	0.23
PEM/ABF	4,250.06
PEM/ABFd	233.68
PEM/ABFh	87.11
PEM/ABFx	2.63
PEM/FOA	29.14
PEM/FOAd	2.45
PEM/FOAh	1.44
PEM/FOC	154.53
PEM/FOCd	5.72
PEM/FOCh	6.36
PEM/FOCx	2.23
PEM/FOF	8.11
PEM/SSA	3.28
PEM/SSAh	11.27
PEM/SSC	42.65
PEM/SSCh	1.94
PEMA	7,440.98
PEMAd	2,481.66
PEMAh	169.56
PEMB	0.10
PEMC	12,030.48
PEMCd	1,227.49
PEMCh	150.84
PEMCx	20.34
PEMF	2,892.22
PEMFd	22.89
PEMFh	363.07
PEMFx	0.33
PFO/EMA	6.84
PFO/EMC	15.48
PFO/EMCh	3.70
PFO/EMCx	0.62
PFO/SSCh	0.61
PFOA	48.50
PFOAd	5.08
PFOAh	14.57
PFOAx	0.38
PFOC	53.80
PFOCd	2.37
PFOCh	13.96
PFOCx	4.65
PSS/EMA	10.23
PSS/EMC	1.27
PSS/FOA	0.13
PSS/FOC	0.15
PSSA	14.23
PSSAd	1.42
PSSAh	40.78
PSSC	6.51
PSSCh	70.91
PSSCx	0.10
PUBFh	0.26
PUBFx	8.32
PUBGx	5.35
PUSAh	0.46
PUSC	0.17
PUSCh	6.87
R4SBF	10.92

HU 10140103

Attribute	Hectares
L1UBHh	29.61
L2ABF	348.47
L2ABFh	25.95
L2ABG	207.91
L2ABGh	50.93
PAB/EMF	138.92
PAB/EMFh	15.79
PABF	67.11
PABFh	760.37
PABFx	203.14
PABGh	19.05
PABGx	2.66
PEM/ABF	126.03
PEM/ABFh	18.46
PEM/FOC	2.76
PEM/FOCh	0.32
PEM/FOCx	1.49
PEM/SSA	1.40
PEM/SSC	0.83
PEMA	3,662.49
PEMAd	361.83
PEMAh	9.31
PEMAx	1.07
PEMC	7,136.66
PEMCd	181.04
PEMCh	36.04
PEMCx	12.14
PEMF	11.71
PEMFh	8.70
PFO/EMC	0.84
PFO/EMCh	3.21
PFOA	13.80
PFOC	6.77
PFOCh	1.17
PSS/FOCh	1.35
PSSA	0.18
PSSC	0.20
PUBFx	21.31
R4SBF	196.64

HU 10140105

Attribute	Hectares
L1UBGh	127.40
L1UBHh	14.27
L2ABF	432.80
L2ABFd	22.25
L2ABFx	4.60
L2ABG	245.71
L2ABGh	58.71
L2UBGh	18.85
PAB/EMF	175.00
PAB/EMFh	3.45
PABF	29.50
PABFh	1,205.64
PABFx	254.42
PABGh	103.00
PABHh	0.04
PEM/ABF	2,297.33
PEM/ABFd	44.53
PEM/ABFh	33.26
PEM/ABFx	0.33
PEM/FOA	5.44
PEM/FOC	13.07
PEM/FOCh	9.50
PEM/FOCx	5.10
PEM/SSA	1.73
PEM/SSC	0.39
PEM/SSCh	0.22
PEMA	2,628.63
PEMAd	427.93
PEMAh	14.29
PEMC	4,263.02
PEMCd	350.01
PEMCh	23.77
PEMCx	0.78
PEMF	74.58
PEMFh	5.65
PEMFx	0.07
PFO/EMA	2.61
PFO/EMC	2.71
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
PFO/EMC	141.98
PFO/EMCd	8.99
PFO/EMCh	0.63
PFO/EMCx	4.82
PFO/EMF	8.10
PFO/SSA	3.01
PFO/SSC	8.52
PFO/SSCx	1.70
PFOA	475.11
PFOAd	28.89
PFOAh	1.00
PFOC	191.56
PFOCd	4.69
PFOCh	6.47
PFOCx	1.93
PSS/EMA	0.24
PSS/EMC	3.76
PSS/EMCd	0.38
PSS/FOA	5.89
PSS/FOC	2.38
PSS/FOCx	1.13
PSSA	53.16
PSSAd	4.79
PSSC	22.00
PSSCd	0.86
PSSCh	0.71
PSSCx	0.36
PUBFh	0.12
PUBFx	171.70
PUBGx	4.78
PUSCx	4.12
R2UBG	1,487.08
R2UBGx	3.62
R4SBF	1,305.35
R4SBFx	1.07

HU 10160007

L2ABF	77.33
L2ABFh	10.06
L2ABG	239.19
L2UBFh	79.90
L2UBGh	32.00
PAB/EMF	656.32
PAB/EMFh	10.25
PABF	271.27
PABFh	148.65
PABFx	110.22
PEM/ABF	947.14
PEM/ABFh	2.56
PEM/FOA	1.95
PEM/FOC	1.93
PEM/FOCx	0.63
PEMA	4,067.92

Attribute	Hectares
PEMAd	180.61
PEMAh	2.13
PEMAx	5.83
PEMC	18,966.53
PEMCd	137.58
PEMCh	15.69
PEMCx	2.30
PEMF	560.54
PEMFh	10.34
PEMU	1.37
PFO/EMA	1.05
PFO/EMC	1.07
PFO/EMCx	0.39
PFO/SSA	1.34
PFOA	12.27
PFOC	2.87
PSS/EMA	0.60
PSSA	0.37
PSSC	0.55
PUBF	4.24
PUBFh	115.66
PUBFx	158.60
PUBGh	7.73
PUBGx	2.29

HU 10160008

L1UBGh	325.15
L2ABF	88.88
L2ABFh	7.65
L2ABG	861.26
L2ABGh	85.63
L2UBFh	20.01
L2UBGh	76.67
L2USA	7.35
L2USC	46.80
PAB/EMF	420.83
PAB/EMFd	20.11
PAB/EMFh	108.16
PABF	155.30
PABFd	1.81
PABFh	285.17
PABFx	303.50
PABGh	13.66
PABGx	13.17
PEM/ABF	684.41
PEM/ABFh	8.71
PEM/FOA	9.08
PEM/FOC	18.22
PEM/FOCh	1.56
PEM/FOCx	2.04
PEM/FOFh	1.37
PEM/SSA	0.59
PEM/SSC	3.58

Attribute	Hectares
PEM/UBFh	2.28
PEMA	11,641.70
PEMAd	570.15
PEMAh	11.84
PEMAx	2.17
PEMC	19,845.38
PEMCd	405.57
PEMCh	38.84
PEMCx	4.81
PEMF	119.12
PEMFd	0.70
PEMFh	13.74
PEMFx	0.21
PEMU	13.73
PFO/EMA	2.43
PFO/EMC	9.72
PFO/SSA	0.26
PFOA	45.30
PFOAd	0.51
PFOAh	1.11
PFOAx	0.11
PFOC	6.96
PFOCh	3.62
PFOCx	0.30
PSSA	3.40
PSSC	0.78
PSSCx	0.59
PUB/FOFh	0.92
PUBF	0.14
PUBFh	204.30
PUBFx	127.54
PUBGh	84.60
PUBGx	5.72
R4SBF	768.30
R4SBFx	1.83

HU 10160009

L1UBH	539.56
L2ABF	463.87
L2ABFh	8.67
L2ABFx	1.45
L2ABG	1,135.52
L2ABGh	263.31
PAB/EMCh	4.33
PAB/EMF	833.28
PAB/EMFh	66.18
PABF	171.44
PABFh	907.41
PABFx	552.27
PABGh	61.12
PABGx	43.15
PEM/ABF	516.52
PEM/ABFd	4.74

Attribute	Hectares
PEM/ABFh	79.89
PEM/ABFx	1.62
PEM/FOA	8.62
PEM/FOC	14.84
PEM/FOCh	3.33
PEM/FOCx	5.31
PEM/SSA	0.61
PEM/SSC	0.92
PEMA	10,930.60
PEMAd	1,551.71
PEMAh	19.62
PEMAx	0.55
PEMC	23,186.67
PEMCd	816.38
PEMCh	84.08
PEMCx	8.65
PEMF	152.73
PEMFd	0.62
PEMFh	4.82
PEMFx	0.07
PFO/EMA	1.26
PFO/EMC	2.31
PFO/EMCh	3.06
PFO/SSAd	1.22
PFO/SSCh	1.74
PFOA	66.85
PFOAd	3.93
PFOAh	7.10
PFOAx	0.10
PFOC	76.92
PFOCh	8.39
PFOCx	4.65
PSS/EMAd	0.29
PSS/EMC	0.65
PSS/FOA	0.44
PSSA	8.63
PSSC	2.76
PSSCd	0.59
PUBFx	38.34
PUBGx	0.13
R2UBF	244.11
R4SBF	707.05
R4SBFx	0.34

HU 10160010

L1UBG	3,964.03
L1UBH	3,059.49
L2ABF	817.96
L2ABG	6,419.18
L2ABGd	15.30
L2UBG	15.29
L2USA	195.87
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
PSS/USA	100.93
PSS/USAh	0.70
PSS/USC	232.82
PSSA	106.95
PSSAh	5.50
PSSC	84.64
PSSCd	1.95
PUBFx	35.28
PUBGx	21.76
PUBHh	1.07
PUS/SSA	36.06
PUS/SSC	40.33
PUSA	2.37
PUSC	0.93
PUSCh	0.60
R2UBF	8.55
R2UBG	84.83
R2UBH	4,620.66
R2UBHx	8.12
R2USA	199.32
R2USC	504.13
R4SBA	2.67
R4SBF	136.30
R4SBFx	2.98

HU 10170102

Attribute	Hectares
L1UBGh	59.12
L2ABF	192.55
L2ABFx	0.78
L2ABG	689.97
L2ABGh	218.16
L2UBFx	12.61
PAB/EMF	749.32
PAB/EMFd	8.78
PAB/EMFh	0.60
PAB/EMFx	0.96
PABF	360.35
PABFd	15.73
PABFh	313.79
PABFx	498.47
PABG	1.39
PABGh	15.60
PABGx	45.21
PEM/ABF	6,770.51
PEM/ABFb	4.15
PEM/ABFd	410.26
PEM/ABFh	16.18
PEM/ABFx	26.12
PEM/FOA	11.95
PEM/FOAd	1.66
PEM/FOC	70.84
PEM/FOCd	8.25
PEM/FOCx	38.53
PEM/SSA	1.28
PEM/SSC	4.07
PEM/SSCd	0.38
PEMA	7,039.47
PEMAd	6,182.99
PEMAh	4.64
PEMAx	0.34
PEMC	8,019.85
PEMCd	2,920.06
PEMCh	2.53
PEMCx	14.57
PEMF	202.71
PEMFd	150.89
PEMFh	10.90
PEMFx	1.05
PFO/EMA	36.41
PFO/EMAd	8.29
PFO/EMC	277.98
PFO/EMCd	47.59
PFO/EMCh	1.82
PFO/EMCx	27.71
PFO/SSA	0.80
PFO/SSC	0.73
PFOA	118.76
PFOAd	43.14
PFOAh	1.41
PFOAx	0.22
PFOC	163.48
PFOCd	32.17
PFOCh	3.42
PFOCx	2.50
PSS/EMA	1.47
PSS/EMC	7.47
PSS/FOCd	0.30
PSSA	72.93
PSSC	0.60
PSSCd	0.56
PUBFh	2.21
PUBFx	72.62
PUBGx	4.36
PUBHx	1.57
R2UBG	122.96
R2UBGx	24.87
R2USA	2.52
R2USC	1.09
R4SBC	0.94
R4SBF	164.74
R4SBFx	1.08

HU 10170103

Attribute	Hectares
L2ABG	2,811.15
PAB/EMF	101.43
PABF	35.41
PABFd	5.54
PABFh	9.97
PABFx	150.04
PABGx	17.24
PEM/ABF	6,218.12
PEM/ABFd	991.59
PEM/ABFh	2.09
PEM/FOA	1.72
PEM/FOC	48.78
PEM/FOCd	4.51
PEM/SSA	0.55
PEM/SSC	12.35
PEM/SSCd	1.09
PEMA	922.55
PEMAd	519.02
PEMC	1,784.05
PEMCd	737.53
PEMCx	0.11
PEMF	303.66
PEMFd	1.94
PFO/EMA	33.97
PFO/EMAd	0.84
PFO/EMC	24.42
PFO/EMCd	1.36
PFO/SSC	1.29
PFOA	16.85
PFOAd	7.33
PFOC	101.59
PFOCd	29.87
PSS/EMC	3.31
PSS/FOC	0.99
PSS/FOCd	0.45
PSSA	2.25
PSSAx	0.09
PSSC	4.73
PSSCd	3.18
PUBFx	3.46

HU 10170201

Attribute	Hectares
L1UBG	283.17
L2ABF	12.02
L2ABG	7,004.53
L2USA	32.98
PAB/EMF	508.96
PAB/EMFh	15.92
PABF	60.29
PABFd	0.70
PABFh	29.44
PABFx	269.54
PABGx	13.52
PEM/ABF	16,484.23
PEM/ABFd	2,654.81
PEM/ABFh	1.58
PEM/ABFx	1.99
PEM/FOA	38.11
PEM/FOAd	4.00
PEM/FOC	263.01
PEM/FOCd	41.50
PEM/FOCh	0.19
PEM/FOCx	3.05
PEM/FOF	3.13
PEM/SSA	3.24
PEM/SSC	44.55
PEM/SSCd	2.14
PEMA	2,993.86
PEMAd	1,854.39
PEMAh	3.05
PEMAx	0.09
PEMC	8,131.76
PEMCd	1,653.18
PEMCh	0.19
PEMCx	4.23
PEMF	535.95
PEMFd	18.39
PEMFx	0.19
PFO/EMA	18.81
PFO/EMC	72.28
PFO/EMCd	5.47
PFO/EMCx	0.31
PFO/SSA	1.49
PFO/SSC	11.63
PFOA	43.11
PFOAd	6.99
PFOC	105.97
PFOCd	27.00
PFOCx	0.39
PSS/EMA	0.98
PSS/EMC	8.56
PSS/FOA	8.20
PSS/FOC	12.57
PSSA	6.35
PSSC	30.47
PSSCd	1.19
PUBFx	15.83
R4SBF	3.61

HU 10170202

Attribute	Hectares
L1UBG	5,069.12
L2ABFx	0.10
L2ABG	5,945.85
L2ABGx	23.35
L2UBG	143.78
L2UBGx	21.93
PAB/EMF	610.96
PAB/EMFd	67.19
PAB/EMFh	5.86
PAB/EMFx	6.40
PABF	74.99
PABFd	8.58
PABFh	124.24
PABFx	394.86
PABG	0.71
PABGx	36.64
PEM/ABF	5,015.93
PEM/ABFd	677.30
PEM/ABFh	10.04
PEM/ABFx	32.67
PEM/FOA	26.89
PEM/FOAd	9.73
PEM/FOAx	4.85
PEM/FOC	259.04
PEM/FOCd	9.29
PEM/FOCh	0.20
PEM/FOCx	26.40
PEM/SSA	4.75
PEM/SSC	23.42
PEM/SSCd	5.83
PEMA	4,965.91
PEMAd	1,672.95
PEMB	5.72
PEMBd	0.38
PEMC	4,437.96
PEMCd	1,074.39
PEMCh	7.70
PEMCx	37.92
PEMF	446.01
PEMFd	246.48
PEMFh	0.83
PEMFx	3.34
PFO/EMA	21.06
PFO/EMC	118.36
PFO/EMCd	5.39
PFO/EMCx	16.74
PFO/SSC	3.74
PFO/SSCd	1.42
PFOA	96.46
PFOAd	9.22
PFOAh	1.00
PFOAx	0.60
PFOC	177.94
PFOCd	10.58
PFOCh	0.20
PFOCx	4.02
PSS/EMA	11.43
PSS/EMC	18.57
PSS/EMCd	2.04
PSS/FOA	12.55
PSS/FOAd	0.76
PSS/FOC	2.22
PSSA	13.98
PSSAd	2.26
PSSC	19.90
PSSCd	3.41
PUBFx	96.27
PUBGx	92.71
PUSC	1.14
R2UBG	91.09
R4SBF	854.24
R4SBFx	4.23

HU 10170203

Attribute	Hectares
L1UBG	1,772.41
L1UBGh	20.13
L2ABF	226.01
L2ABFx	0.36
L2ABG	1,542.91
L2ABGh	55.99
L2ABGx	9.47
PAB/EMF	320.68
PAB/EMFd	57.70
PAB/EMFh	7.56
PAB/EMFx	0.82
PABF	269.66
PABFd	5.90
PABFh	214.21
PABFx	323.98
PABGh	65.84
PABGx	98.46
PEM/ABF	3,375.48
PEM/ABFd	487.68
PEM/ABFh	6.19
PEM/ABFx	6.42
PEM/FOA	63.72
PEM/FOAd	5.70
PEM/FOAx	0.26
PEM/FOC	150.65
PEM/FOCd	17.23
PEM/FOCh	2.13
PEM/FOCx	38.91
PEM/SSA	4.35
PEM/SSAd	4.37
PEM/SSC	4.92
PEM/SSCd	1.77
PEM/SSCh	7.45
PEM/SSCx	0.27
PEMA	3,514.62
PEMAd	3,032.27
PEMAh	20.50
PEMAx	2.94
PEMC	3,321.89
PEMCd	1,677.86
PEMCh	21.62
PEMCx	14.83
PEMF	64.30
PEMFd	45.27
PEMFh	13.84
PEMFx	0.49
PFO/EMA	249.90
PFO/EMAd	2.59
PFO/EMC	159.69
PFO/EMCd	35.16
PFO/EMCh	1.24
PFO/EMCx	19.55
PFO/SSA	13.15
PFO/SSC	14.94
PFO/SSCx	1.09
PFOA	386.08
PFOAd	39.55
PFOAh	1.06
PFOAx	0.49
PFOC	142.23
PFOCd	33.02
PFOCh	2.80
PFOCx	1.97
PSS/EMA	2.44
PSS/EMC	4.97
PSS/FOA	20.36
PSS/FOAd	1.22
PSS/FOC	9.28
PSS/FOCd	0.93
PSS/USA	0.74
PSSA	20.19
PSSAd	2.18
PSSC	19.80
PSSCd	1.76
PUBF	8.34
PUBFh	0.54
PUBFx	109.53
PUBG	0.51
PUBGh	3.86
PUBGx	80.66
PUS/SSA	0.81
PUSAx	0.39
PUSC	0.26
PUSCh	1.32
PUSCx	3.24
R2UBF	0.33
R2UBG	972.62
R2UBGx	53.96
R2UBH	318.61
R2UBHx	27.46
R2USA	58.05
R2USAx	4.48
R2USC	22.16
R3UBG	2.68
R4SBA	7.04
R4SBC	0.33
R4SBF	356.40
R4SBFx	8.06

Linear Wetlands

Attribute	Lenth (m)
HU 09020101	
L2ABGh	1068.0
PABFx	136.1
PEMA	12848.0
PEMAd	57.7
PEMAx	7537.7
PEMC	51183.3
PEMCd	1008.4
PEMCh	477.3
PEMCx	52303.5
PEMF	9278.9
PEMFx	2314.7
PFOA	10852.4
PFOAd	892.5
PFOAh	2252.3
PFOAx	1130.4
PFOC	1801.6
PFOCd	131.0
PFOCh	4416.8
PFOCx	1554.0
PSSA	3516.6
PSSC	770.1
PSSCh	276.1
R4SBA	1961.2
R4SBAx	3373.8
R4SBC	1218.5
R4SBF	5497.3
R4SBFx	527.4
HU 10130102	
L2UBFh	597.8
PABF	1483.0
PABFh	430.7
PABFx	576.9
PEM/ABF	1323.2
PEM/ABFh	289.3
PEMA	364735.8
PEMAd	35.8
PEMAx	5473.4
PEMC	286942.9
PEMCh	2873.0
PEMCx	19782.6
PEMF	23778.1
PEMFx	860.2
PEMFh	390.6
PFOA	9625.3
PFOAh	2580.6
PFOAx	124.8
PFOC	766.8
PFOCh	129.2
PFOCx	384.0

Attribute	Length (m)
PSSA	4534.2
PSSAx	233.5
PSSC	167.8
R2SBA	20547.4
R4SBA	69950.4
R4SBC	19442.2
R4SBF	115200.1
R4SBFx	1547.0
HU 09020105	
PAB/EMF	77.9
PABFh	47.3
PABFx	177.8
PEM/ABF	453.7
PEM/FOA	302.7
PEM/FOC	373.2
PEMA	162723.0
PEMAd	505.9
PEMAx	26405.0
PEMC	169967.7
PEMCh	46.8
PEMCx	24149.9
PEMF	20863.4
PEMFh	643.6
PEMFx	203.6
PFO/SSA	324.4
PFOA	10700.4
PFOAd	228.6
PFOC	6000.3
PSSA	110.2
PUBFx	196.3
PUBGh	169.6
PUBGx	297.9
R4SBC	7165.0
R4SBF	30029.2
R4SBFx	25583.8
HU 10130106	
L2USA	190.8
PAB/EMF	225.0
PABFh	158.3
PABFx	710.3
PEM/ABF	364.1
PEM/FOA	310.0
PEMA	311092.1
PEMAx	21446.4
PEMC	264104.9
PEMCh	251.4
PEMCd	73.2
PEMCx	58860.3
PEMF	41586.4

Attribute	Length (m)
PEMFh	323.2
PEMFx	251.9
PFO/SSA	449.4
PFOA	18949.5
PFOAx	146.7
PFOAh	599.7
PFOC	1565.0
PSSA	1608.4
PSSC	164.0
PUBFh	44.3
PUBFx	888.0
R4SBC	9760.5
R4SBF	13116.1
HU 10160003	
PAB/EMF	22.8
PABFh	277.6
PABFx	1945.3
PEM/ABF	10757.1
PEM/FOA	814.0
PEM/FOC	3848.7
PEM/FOCx	676.2
PEMA	347841.4
PEMAd	1029.0
PEMAx	65474.8
PEMC	507223.2
PEMCh	297.1
PEMCd	5090.3
PEMCx	362731.1
PEMF	25542.2
PEMFh	520.9
PEMFx	2400.4
PFO/EMC	167.4
PFOA	101925.3
PFOAd	1953.9
PFOAh	1543.2
PFOAx	1260.2
PFOC	25969.7
PFOCd	5874.4
PFOCh	3507.8
PFOCx	3607.1
PUBFx	296.1
R4SBA	305.4
R4SBCx	9033.0
R4SBF	44651.1
R4SBFx	65665.0

Attribute	Length (m)
HU 10160004	
PABF	95.3
PABFx	692.7
PEM/ABF	17357.9
PEM/ABFx	714.8
PEMA	278660.3
PEMAd	116.5
PEMAx	33766.4
PEMC	379745.6
PEMCd	154.9
PEMCh	68.0
PEMCx	139384.0
PEMF	1259.7
PFOA	5847.8
PFOAh	74.5
PFOAx	99.0
PFOC	12418.1
PUBFx	169.8
R4SBF	101545.4
HU 10160007	
PABFx	65.3
PABFh	90.9
PEMA	275439.3
PEMAd	183.8
PEMAx	90227.3
PEMC	187342.0
PEMCd	122.1
PEMCh	193.7
PEMCx	101943.8
PEMF	16254.8
PEMFh	887.3
PFOA	919.4
PFOAx	326.3
PFOC	143.5
PUBFh	334.0
PUBFx	701.0
HU 07020001	
PAB/EMF	245.6
PABF	1532.9
PABFh	216.2
PABFx	345.0
PEM/ABF	4596.7
PEM/FOC	3046.9
PEMA	667977.3
PEMAd	2642.5
PEMAx	36589.3
PEMB	19.3
PEMC	1630491.0
PEMCd	3658.4

Attribute	*Lenth (m)*
PEMCh	205.9
PEMCx	251363.5
PEMF	29170.1
PEMFh	1081.1
PEMFx	6772.2
PFO/EMA	132.3
PFOA	126799.2
PFOAd	903.1
PFOAh	17435.0
PFOAx	596.1
PFOC	21625.3
PFOCd	251.0
PFOCh	926.8
PFOCx	490.5
PSSA	13943.0
PSSC	7059.5
PSSCx	471.4
PUBFx	603.9
R2UBG	572.9
R4SBA	39790.9
R4SBAx	16506.5
R4SBC	176533.7
R4SBCx	3469.8
R4SBF	485944.2
R4SBFx	7723.9

HU 10160010

L2USA	63797.7
L2USC	1366.6
PAB/EMF	61.4
PABFx	4446.0
PEM/ABF	28601.7
PEM/ABFx	259.9
PEM/FOA	206.3
PEM/FOC	1570.2
PEMA	288111.9
PEMAd	4236.9
PEMAx	17007.7
PEMC	287712.7
PEMCd	2098.0
PEMCh	215.0
PEMCx	85970.6
PEMF	126195.5
PEMFd	385.0
PEMFh	612.2
PEMFx	1562.4
PFOA	61362.7
PFOAd	615.3
PFOAx	821.0
PFOC	5331.4
PFOCx	106.3
PSS/EMC	57.8
PSSA	5916.5

Attribute	*Length (m)*
PSSC	185.9
PUBFx	112.7
R2USA	799.2
R4SBF	6443.5

HU 10160005

PAB/EMF	603.3
PABF	1563.4
PABFh	24.0
PABFx	70.2
PEM/ABF	17660.4
PEM/ABFx	513.5
PEM/FOC	332.2
PEMA	260536.0
PEMAX	5149.7
PEMAd	1958.0
PEMAx	19675.7
PEMC	359878.6
PEMCd	679.1
PEMCh	53.2
PEMCx	65623.0
PEMF	6924.2
PEMFh	3199.5
PEMFx	268.3
PFO/SSA	62.0
PFOA	67008.6
PFOAd	355.8
PFOAh	673.4
PFOAx	161.1
PFOC	3142.3
PFOCx	459.9
PSS/FOA	6103.8
PUBFx	112.5
R4SBF	98937.6
R4SBFx	689.2

HU 10160008

L2USA	2834.8
L2USC	2523.4
PABF	2207.5
PABFx	969.2
PEM/ABF	4234.6
PEMA	645462.4
PEMAh	46.0
PEMAd	1427.4
PEMAx	124385.6
PEMC	955316.5
PEMCd	73.4
PEMCh	1026.9
PEMCx	453573.4
PEMF	1608.5
PEMFh	3511.2
PFO/EMC	2455.4

Attribute	*Length (m)*
PFOA	5469.9
PFOAd	258.2
PFOAh	7879.9
PFOAx	945.8
PFOC	1881.8
PFOCh	218.3
PFOCx	1299.4
PUBFh	59.3
PUBFx	443.1
PUSA	26.1
R4SBC	1161.2
R4SBF	158714.9
R4SBFx	96.1

HU 10130105

L2UBFh	1317.3
PABF	934.0
PABFh	1712.9
PABFx	288.5
PEMA	653025.5
PEMAd	476.1
PEMAh	238.3
PEMAx	29420.3
PEMC	614126.8
PEMCd	160.5
PEMCh	1160.2
PEMCx	187120.4
PEMF	1411.1
PEMFh	1426.1
PEMFx	22623.8
PEMU	24.4
PFOA	9471.6
PFOAh	5178.2
PFOAx	511.2
PFOC	850.8
PFOCh	1257.1
PFOCx	131.9
PSSA	366.9
PSSAh	172.6
PSSC	369.5
PUBFh	497.5
PUBFx	1101.0
R4SBA	186566.9
R4SBC	133517.9
R4SBF	77792.8
R4SBFx	2340.6

HU 10170202

PABFh	138.4
PABFx	327.6
PEM/ABF	2104.5
PEM/FOC	869.9
PEMA	1074052.7

Attribute	*Length (m)*
PEMAd	4124.0
PEMAx	17411.0
PEMC	2659066.9
PEMCd	10108.4
PEMCh	471.1
PEMCx	711692.6
PEMF	3755.0
PEMFx	126.8
PFO/EMC	286.0
PFOA	101779.1
PFOAd	2536.0
PFOAh	1172.4
PFOAx	5775.6
PFOC	34720.1
PFOCd	1749.4
PFOCx	3703.9
PSSA	2360.0
PSSC	805.2
PUBFx	628.7
R4SBF	236136.0
R4SBFx	1737.6

HU 10160006

PAB/EMF	1507.6
PABF	494.8
PABFh	163.5
PABFx	2073.1
PEM/ABF	5020.6
PEM/ABFh	2157.3
PEM/ABFx	585.8
PEM/FOA	476.6
PEM/FOC	175.1
PEM/FOCh	90.5
PEM/FOCx	71.1
PEMA	1558947.3
PEMAd	16078.6
PEMAx	43415.2
PEMC	2677077.7
PEMCd	7825.2
PEMCh	1136.8
PEMCx	2454306.4
PEMF	2994.3
PEMFx	285.2
PFO/EMC	1725.7
PFOA	168049.0
PFOAH	3774.8
PFOAd	963.4
PFOAh	992.3
PFOAx	5309.3
PFOC	46052.0
PFOCh	137.7
PFOCd	1323.4
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

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

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

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

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

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

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

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

HU 10170102

Attribute	Lenth (m)
L2ABFx	846.8
PABF	2852.2
PABFh	333.0
PABFx	2617.5
PEM/ABF	6754.8
PEM/ABFh	508.6
PEM/ABFx	64.7
PEM/FOCx	834.4
PEMA	395298.2
PEMAd	20963.0
PEMAx	50545.1
PEMC	1858502.2
PEMCd	10510.9
PEMCh	189.8
PEMCx	1321235.5
PEMF	3200.6
PEMFh	519.3
PEMFx	5629.4
PFO/EMA	737.3
PFO/EMC	6135.6
PFO/EMCx	153.9
PFOA	179063.4
PFOAd	8892.4
PFOAh	4552.9
PFOAx	17674.9
PFOC	149546.6
PFOCd	984.2
PFOCh	375.0
PFOCx	16932.0
PSSA	719.5
PUBFx	1198.8
R2UBG	78386.8
R2UBGx	6102.9
R2USC	71.5
R4SBA	835.5
R4SBC	6396.2
R4SBF	440622.6
R4SBFx	132260.0

HU 10160011

Attribute	Length (m)
PAB/EMFd	253.8
PABF	5251.7
PABFh	2635.1
PABFx	6135.7
PEM/ABF	3761.1
PEM/ABFh	147.3
PEM/ABFd	103.6
PEM/ABFh	274.3
PEM/ABFx	460.0
PEM/FOC	3524.6
PEM/FOCx	36.5
PEMA	956600.3
PEMAd	21914.2
PEMAh	36.8
PEMAx	75984.7
PEMC	2701853.1
PEMCd	13840.9
PEMCh	3025.7
PEMCx	2314948.7
PEMF	3384.2
PEMFh	2102.5
PEMFx	1460.9
PFO/EMA	807.7
PFO/EMC	2026.1
PFO/EMCx	1054.5
PFOA	207759.1
PFOAd	10915.3
PFOAh	21822.2
PFOAx	7283.8
PFOC	107986.8
PFOCd	2608.1
PFOCh	996.7
PFOCx	12206.7
PSSA	745.9
PSSAx	96.7
PSSC	935.3
PUBF	18.3
PUBFx	2141.2
PUSCx	106.8
R2USC	79.0
R4SBA	3367.7
R4SBC	6270.2
R4SBF	627948.2
R4SBFx	29275.3

HU 10170203

Attribute	Length (m)
L2USAh	196.6
PAB/EMFx	2130.3
PABF	2952.8
PABFh	286.6
PABFx	3213.6
PEM/ABF	7258.8
PEM/ABFx	11984.2
PEM/FOA	1250.1
PEM/FOC	4153.0
PEM/FOCx	282.6
PEMA	820682.3
PEMAd	22636.8
PEMAh	23.8
PEMAx	99158.9
PEMC	2105217.8
PEMCd	8297.6
PEMCh	89.3
PEMCx	922059.8
PEMF	2474.9
PEMFh	61.4
PEMFx	2686.4
PFO/EMA	68.9
PFO/EMC	1230.6
PFO/EMCx	612.5
PFOA	314512.5
PFOAd	7277.4
PFOAh	2337.5
PFOAx	19804.2
PFOC	57359.6
PFOCd	2736.5
PFOCh	207.4
PFOCx	11775.3
PSSA	2659.5
PSSAd	536.3
PSSAh	251.6
PSSAx	528.6
PSSC	553.7
PSSCd	307.8
PSSCx	353.9
PUBFx	869.5
PUBGx	46.2
PUSAx	57.4
PUSCx	84.4
R2UBG	1075.1
R2USA	593.5
R2USC	130.7
R4SBA	283.5
R4SBC	3053.0
R4SBCx	389.6
R4SBF	414888.4
R4SBFx	70234.2

HU 10170101

Attribute	Length (m)
PAB/EMF	194.2
PAB/EMFx	2106.1
PABF	4071.1
PABFh	658.6
PABFx	2169.9
PEM/ABF	8441.7
PEM/ABFx	5367.1
PEM/FOA	570.5
PEM/FOC	1069.9
PEM/FOCx	1200.3
PEM/SSCd	36.4
PEMA	407050.9
PEMAh	57.5
PEMAd	3803.8
PEMAx	11168.7
PEMC	1137517.0
PEMCd	1198.5
PEMCh	1908.3
PEMCx	388785.1
PEMF	2077.5
PEMFh	541.2
PEMFx	1907.4
PFO/EMA	212.7
PFO/EMC	2321.1
PFO/EMCx	255.6
PFOA	108490.3
PFOAd	1843.1
PFOAh	10431.6
PFOAx	5459.1
PFOC	135015.4
PFOCh	1450.5
PFOCx	5655.8
PSS/FOA	392.9
PSSA	319.4
PSSC	794.8
PUBFx	802.6
PUBGx	23.1
R2UBF	352.7
R2UBG	4743.4
R2USA	10400.1
R2USC	2691.0
R4SBA	55527.5
R4SBC	23477.3
R4SBCx	3807.9
R4SBF	248411.9
R4SBFx	20264.2

Point Wetlands

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

HU 10160007

Attribute	Number
PABFx	3
PEMA	5,453
PEMAd	10
PEMAx	35
PEMC	1,570
PEMCx	6
PFOC	1
PUBFx	11

HU 10160008

Attribute	Number
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

Attribute	Number
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

Attribute	Number
PABFx	10
PEM/ABF	2
PEMA	3,400
PEMAd	100
PEMAx	19
PEMC	2,327
PEMCd	20
PEMCh	1
PEMCx	27
PEMF	15
PFOA	16
PSSA	1
PUBFh	1
PUBFx	20

HU 10160011

Attribute	Number
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

Attribute	Number
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

HU 10170102

Attribute	Number
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

Attribute	Number
PABFx	3
PEMA	285
PEMAd	17
PEMC	87
PEMCd	3
PEMCx	1
PFOA	1
PUBFx	5

HU 10170201

Attribute	Number
PABFx	6
PEMA	972
PEMAd	34
PEMAx	1
PEMC	332
PEMCd	8
PEMCx	6
PFOA	2
PUBFx	40

HU 10170202

Attribute	Number
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

Attribute	Number
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

Class	Hydrologic Unit 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

Class	Hydrologic Unit 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)

Class	Hydrologic Unit 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

Class	Hydrologic Unit 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

Class	Hydrologic Unit 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

Class	Hydrologic Unit 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

Class	Hydrologic Unit 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	*Temporary*			*Seasonal*			*Semipermanent*[a]			*Permanent*[a]		
Unit	*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

Minnesota-Red River Lowland

Attribute	*Hectares*
L1UBHh	4,108.22
L1UBHx	278.61
L2ABF	11.15
L2ABFx	18.42
L2ABG	1,117.52
L2ABGh	409.02
L2UBG	8.27
L2UBGh	139.33
PAB/EMF	285.55
PAB/EMFd	3.33
PAB/EMFh	71.72
PAB/EMFx	17.06
PABF	537.13
PABFd	52.91
PABFh	38.21
PABFx	99.95
PABG	31.32
PABGh	43.02
PABGx	40.83
PEM/ABF	2,874.00
PEM/ABFb	0.55
PEM/ABFd	108.73
PEM/ABFh	1,137.00
PEM/ABFx	7.75
PEM/FOA	25.35
PEM/FOAh	1.07
PEM/FOB	0.20
PEM/FOC	35.39
PEM/FOCd	1.80
PEM/FOCh	10.63
PEM/FOCx	1.74
PEM/SSA	27.21
PEM/SSAd	0.69
PEM/SSAh	14.89
PEM/SSB	16.87
PEM/SSC	94.99
PEM/SSCd	0.45
PEM/SSCh	0.73
PEM/SSCx	2.27
PEM/UBGh	0.05
PEMA	6,544.63
PEMAd	2,032.72
PEMAh	285.05
PEMAx	9.11
PEMB	11.60
PEMBd	0.92
PEMC	5,373.49
PEMCd	935.18
PEMCf	0.33
PEMCh	504.04
PEMCx	37.65
PEMF	3,389.66
PEMFb	1.07
PEMFd	289.17
PEMFh	505.13
PEMFx	34.34
PFO/EMA	9.01
PFO/EMC	28.60
PFO/EMCd	0.16
PFO/EMCh	14.42
PFO/EMCx	0.83
PFO/SSA	7.88
PFO/SSC	1.64
PFOA	480.75
PFOAd	28.94
PFOAh	47.22
PFOAx	0.73
PFOB	1.88
PFOBd	0.40
PFOC	99.82
PFOCd	18.16
PFOCh	50.90
PFOCx	6.55
PSS/EMA	3.97
PSS/EMB	37.20
PSS/EMC	55.22
PSS/EMCd	1.47
PSS/EMCh	2.06
PSS/FOC	2.34
PSS/FOCd	2.43
PSSA	78.14
PSSAd	4.39
PSSB	24.18
PSSC	83.34
PSSCd	4.90
PSSCh	13.93
PSSCx	4.65
PUBFh	4.73
PUBFx	57.56
PUBGh	2.64
PUBGx	8.16
R2UBG	0.00
R2UBH	5.45
R2UBHx	7.57
R4SBF	70.08
R4SBFx	3.86

Prairie Coteau

Attribute	*Hectares*
L1UBG	11,756.32
L1UBGh	79.26
L1UBH	3,361.98
L2ABF	1,216.03
L2ABFx	1.07
L2ABG	26,316.45
L2ABGd	15.31
L2ABGh	75.01
L2ABGx	32.83
L2UBFx	12.61
L2UBG	159.08
L2UBGh	18.39
L2UBGx	21.94
L2USA	228.86
L2USC	505.55
PAB/EMF	4,400.83
PAB/EMFd	286.32
PAB/EMFh	60.03
PAB/EMFx	6.67
PAB/FOC	1.29
PABF	2,181.59
PABFd	35.75
PABFh	889.30
PABFhx	0.73
PABFx	1,706.08
PABG	2.11
PABGh	118.42
PABGx	214.79
PABHx	0.10
PEM/ABF	56,320.70
PEM/ABFb	4.16
PEM/ABFd	6,556.60
PEM/ABFh	57.19
PEM/ABFx	52.06
PEM/FOA	143.87
PEM/FOAd	36.51
PEM/FOAx	5.13
PEM/FOC	813.55
PEM/FOCd	79.74
PEM/FOCh	3.19
PEM/FOCx	90.78
PEM/FOF	3.14
PEM/SSA	29.22
PEM/SSAd	4.38
PEM/SSB	227.74
PEM/SSC	123.17
PEM/SSCd	16.87
PEM/SSCh	7.45
PEMA	22,931.99
PEMAd	13,708.40
PEMAh	28.56
PEMAx	4.17
PEMB	143.39
PEMBd	1.50
PEMC	31,746.43
PEMCd	9,513.14
PEMCh	45.79
PEMCx	71.12
PEMF	11,249.14
PEMFd	884.06
PEMFh	51.75
PEMFx	9.35
PFO/EMA	182.29
PFO/EMAd	10.64
PFO/EMB	8.25
PFO/EMC	511.43
PFO/EMCd	73.26
PFO/EMCh	3.70
PFO/EMCx	55.36
PFO/SSA	3.51
PFO/SSC	22.13
PFO/SSCd	1.43
PFO/SSCx	1.09
PFOA	605.85
PFOAd	71.47
PFOAh	3.56
PFOAx	1.39
PFOC	696.59
PFOCd	147.86
PFOCh	8.59
PFOCx	8.72
PSS/EMA	21.74
PSS/EMC	55.91
PSS/EMCd	3.89
PSS/FOA	41.00
PSS/FOAd	1.99
PSS/FOC	22.33
PSS/FOCd	1.70
PSSA	82.35
PSSAd	8.15
PSSAx	0.09
PSSC	121.06
PSSCd	22.54
PSSCh	0.99
PUBF	11.90
PUBFh	63.64
PUBFx	364.25

Attribute	Hectares
PUBG	0.51
PUBGh	21.17
PUBGx	180.49
PUBHh	0.12
PUS/SSA	0.16
PUSAh	0.78
PUSAx	0.39
PUSC	1.41
PUSCh	1.32
PUSCx	3.44
R2UBF	0.33
R2UBG	1,127.30
R2UBGx	78.84
R2UBH	41.99
R2USA	32.02
R2USC	20.26
R3UBG	2.68
R4SBA	7.04
R4SBC	1.28
R4SBF	1,279.26
R4SBFx	12.68

Missouri River Floodplain

Attribute	Hectares
L2ABF	101.13
L2ABG	125.20
PAB/EMF	28.05
PAB/EMFx	1.62
PABF	72.26
PABFh	2.80
PABFx	28.09
PABGx	0.82
PEM/ABF	196.48
PEM/ABFd	37.62
PEM/ABFx	7.39
PEM/FOA	92.14
PEM/FOAd	4.18
PEM/FOC	9.89
PEM/FOCx	4.35
PEM/SSA	604.87
PEM/SSC	18.18
PEM/SSCx	0.28
PEMA	793.55
PEMAd	437.46
PEMC	321.19
PEMCd	81.71
PEMCh	0.71
PEMCx	7.74
PEMF	17.38
PEMFd	4.54
PFO/EMA	191.61
PFO/EMC	26.00
PFO/SSA	12.85
PFO/SSC	14.95
PFOA	261.31
PFOAd	30.68
PFOC	8.39
PFOCd	2.33
PFOCx	0.19
PSS/EMA	23.68
PSS/EMC	1.32
PSS/FOA	11.30
PSS/FOC	9.51
PSS/USA	98.60
PSS/USC	37.81
PSSA	144.41
PSSC	39.37
PUBFx	19.68
PUBGx	0.30
PUS/SSA	36.69
PUS/SSC	37.28
PUSA	2.38
R2UBF	0.40
R2UBG	98.04
R2UBH	2,774.37
R2UBHx	35.32
R2USA	127.17
R2USAx	4.48
R2USC	361.53
R4SBFx	2.29

James River Lowland

Attribute	Hectares
L1UBGh	1,717.41
L1UBH	539.57
L1UBHh	4,907.74
L2ABF	1,785.10
L2ABFd	11.16
L2ABFh	16.33
L2ABFx	4.75
L2ABG	4,316.97
L2ABGd	63.39
L2ABGh	1,234.92
L2ABGx	162.38
L2UBF	13.97
L2UBFh	20.01
L2UBGh	105.84
L2USA	7.36
L2USC	47.60
PAB/EMCh	4.33
PAB/EMF	3,414.42
PAB/EMFd	263.86
PAB/EMFh	267.28
PAB/EMFx	7.69
PAB/EMG	10.74
PABF	1,360.55
PABFd	215.57
PABFh	2,476.10
PABFx	3,471.95
PABGh	228.74
PABGx	223.70
PEM/ABF	14,838.32
PEM/ABFd	1,082.05
PEM/ABFh	465.09
PEM/ABFx	23.22
PEM/FOA	238.14
PEM/FOAd	37.57
PEM/FOAh	4.16
PEM/FOAx	0.47
PEM/FOC	491.86
PEM/FOCd	82.67
PEM/FOCh	8.62
PEM/FOCx	50.84
PEM/FOFh	1.37
PEM/SSA	29.73
PEM/SSAd	2.42
PEM/SSB	2.57
PEM/SSC	49.88
PEM/SSCd	12.68
PEM/SSCh	1.60
PEM/UBFx	0.79
PEMA	79,432.11
PEMAd	17,783.00
PEMAh	99.68
PEMAx	6.21
PEMB	16.51
PEMBd	2.69
PEMC	104,278.70
PEMCd	9,781.58
PEMCh	257.83
PEMCx	75.97
PEMF	1,805.23
PEMFd	183.77
PEMFh	255.87
PEMFx	4.43
PEMU	13.68
PFO/EMA	129.29
PFO/EMAd	16.80
PFO/EMAh	4.50
PFO/EMC	553.40
PFO/EMCd	70.26
PFO/EMCh	14.35
PFO/EMCx	24.83
PFO/EMF	8.76
PFO/SSA	9.29
PFO/SSC	8.39
PFO/SSCh	0.93
PFO/SSCx	1.71
PFOA	749.31
PFOAd	102.33
PFOAh	19.13
PFOAx	1.15
PFOC	479.03
PFOCd	45.96
PFOCh	30.21
PFOCx	26.03
PSS/EMA	2.95
PSS/EMAd	8.31
PSS/EMC	6.75
PSS/EMCd	1.93
PSS/FOA	54.53
PSS/FOC	2.75
PSS/FOCx	1.13
PSS/USA	3.00
PSS/USAh	0.71
PSS/USC	30.25
PSSA	82.43
PSSAd	5.28
PSSAh	13.89
PSSC	32.32
PSSCd	2.92
PSSCh	0.93
PSSCx	0.96
PUB/FOFh	0.92
PUBF	2.26
PUBFh	200.13
PUBFx	591.19
PUBGh	30.22
PUBGx	36.42
PUBHx	1.57
PUS/SSC	1.32
PUSAh	0.31
PUSCh	0.60
PUSCx	3.92
R2UBF	244.12
R2UBG	2,074.78
R2UBGx	3.63
R2UBH	302.28
R2USA	16.53
R2USC	15.42
R4SBA	1.15
R4SBF	3,098.35
R4SBFx	3.27
No Photography	1,726.44

Lake Dakota Plain

Attribute	Hectares
L2ABF	23.49
L2ABFd	58.70
L2ABG	53.39
L2ABGh	1,380.37
PAB/EMF	327.06
PAB/EMFd	101.21
PAB/EMFh	12.30

Attribute	Hectares
PABF	151.38
PABFd	11.19
PABFh	31.84
PABFx	273.65
PABGx	81.33
PEM/ABF	1,975.77
PEM/ABFd	437.78
PEM/ABFh	4,391.41
PEM/ABFx	0.35
PEM/ABGx	1.62
PEM/FOA	375.60
PEM/FOAd	113.15
PEM/FOAh	7.83
PEM/FOC	167.97
PEM/FOCd	41.57
PEM/FOCh	21.04
PEM/FOCx	0.19
PEM/SSA	9.15
PEM/SSAd	1.35
PEM/SSC	0.53
PEMA	15,130.36
PEMAd	2,132.53
PEMAh	60.48
PEMAx	1.99
PEMC	10793.45
PEMCd	1453.99
PEMCh	136.99
PEMCx	22.42
PEMF	312.51
PEMFd	935.12
PEMFh	7.90
PEMFx	1.80
PEMU	0.48
PFO/EMA	92.30
PFO/EMAd	8.05
PFO/EMC	196.10
PFO/EMCd	5.13
PFO/EMCh	4.63
PFO/SSA	0.89
PFO/SSAd	2.25
PFO/SSC	0.56
PFOA	382.31
PFOAd	16.99
PFOAh	1.06
PFOC	202.62
PFOCd	13.49
PFOCh	7.47
PSS/EMA	0.28
PSS/EMAd	0.72
PSS/EMC	0.85
PSS/FOA	6.98
PSS/FOAd	1.46
PSS/FOC	7.26

Attribute	Hectares
PSSA	4.00
PSSAd	6.84
PSSC	1.42
PUBF	0.16
PUBFh	5.69
PUBFx	55.24
PUBGx	7.44
R2UBG	1253.10
R4SBF	1313.47
R4SBFx	4.15

Missouri Coteau

Attribute	Hectares
L1UBGh	1,814.86
L1UBHh	5,107.64
L2ABF	1,770.56
L2ABFd	67.45
L2ABFh	99.54
L2ABFx	6.58
L2ABG	4,875.55
L2ABGh	446.30
L2ABGx	10.80
L2UBF	1.10
L2UBFh	88.55
L2UBG	125.98
L2UBGh	67.40
L2USA	5.83
L2USCh	20.35
PAB/EMF	2,138.06
PAB/EMFd	6.30
PAB/EMFh	94.90
PAB/EMFx	1.98
PABF	1,274.28
PABFd	29.97
PABFh	4,489.18
PABFx	1,898.94
PABG	32.48
PABGh	193.99
PABGx	31.49
PABHh	0.04
PABHx	0.24
PEM/ABF	10,886.09
PEM/ABFd	291.61
PEM/ABFh	188.28
PEM/ABFx	1.30
PEM/FOA	58.89
PEM/FOAd	8.83
PEM/FOAh	8.43
PEM/FOC	218.20
PEM/FOCd	38.25
PEM/FOCh	22.02
PEM/FOCx	11.06
PEM/FOF	8.11
PEM/SSA	7.17

Attribute	Hectares
PEM/SSAh	2.82
PEM/SSC	93.05
PEM/SSCd	0.25
PEM/SSCh	5.25
PEM/UBFh	2.29
PEMA	34,285.09
PEMAd	4,622.17
PEMAh	112.86
PEMAx	9.30
PEMB	0.10
PEMC	71,779.32
PEMCd	2,506.51
PEMCh	406.75
PEMCx	35.32
PEMF	7,226.78
PEMFd	68.21
PEMFh	157.68
PEMFx	9.62
PEMU	31.78
PFO/EMA	13.16
PFO/EMAd	0.47
PFO/EMAh	0.45
PFO/EMAx	0.68
PFO/EMC	52.30
PFO/EMCd	1.37
PFO/EMCh	14.70
PFO/EMCx	0.87
PFO/SSA	4.20
PFO/SSC	0.51
PFO/SSCh	1.05
PFOA	235.18
PFOAd	14.06
PFOAh	5.35
PFOAx	0.88
PFOC	134.08
PFOCd	7.74
PFOCh	21.43
PFOCx	1.03
PSS/EMA	2.43
PSS/EMC	3.15
PSS/FOA	10.95
PSS/FOC	1.34
PSS/FOCh	1.36
PSS/USC	164.78
PSSA	57.29
PSSAd	0.42
PSSAh	1.94
PSSC	73.56
PSSCd	6.11
PSSCh	6.35
PSSCx	0.11
PUB/EMFh	1.31
PUBF	4.64

Attribute	Hectares
PUBFh	358.16
PUBFx	415.04
PUBGh	105.15
PUBGx	22.57
PUS/SSC	1.73
PUSAh	0.09
PUSCh	1.08
PUSCx	3.84
R2UBH	862.54
R2USA	42.14
R2USC	53.22
R4SBA	1.92
R4SBF	402.66
R4SBFx	0.68

Pierre Hills

Attribute	Hectares
L1UBFh	0.51
L1UBGh	4,757.03
L1UBHh	63,380.38
L2ABF	101.13
L2ABFh	168.84
L2ABG	131.20
L2ABGh	120.67
L2UBF	0.04
L2UBFh	210.65
L2UBGh	18.86
L2USAh	3.29
L2USCh	432.48
PAB/EMF	28.05
PAB/EMFh	22.91
PAB/EMFx	1.83
PABF	108.65
PABFh	1,335.28
PABFx	112.06
PABGh	77.65
PABGx	12.50
PEM/ABF	197.88
PEM/ABFd	38.19
PEM/ABFh	18.43
PEM/ABFx	7.60
PEM/FOA	109.82
PEM/FOAd	4.18
PEM/FOC	30.14
PEM/FOCh	5.68
PEM/FOCx	4.35
PEM/SSA	712.99
PEM/SSAd	2.39
PEM/SSAh	11.27
PEM/SSC	52.73
PEM/SSCh	0.01
PEM/SSCx	0.28
PEMA	2,034.04
PEMAd	646.02

Attribute	Hectares
PEMAh	209.80
PEMB	0.17
PEMC	1,146.49
PEMCd	105.36
PEMCh	128.85
PEMCx	13.83
PEMF	226.77
PEMFd	4.54
PEMFh	347.18
PEMFx	1.39
PFO/EMA	302.20
PFO/EMC	40.31
PFO/EMCh	0.93
PFO/SSA	12.85
PFO/SSC	14.95

Attribute	Hectares
PFO/SSCh	0.61
PFOA	340.55
PFOAd	30.68
PFOAh	11.46
PFOC	21.82
PFOCd	2.33
PFOCx	3.06
PSS/EMA	53.24
PSS/EMC	1.46
PSS/FOA	11.30
PSS/FOC	9.78
PSS/USA	98.60
PSS/USC	37.81
PSSA	158.63
PSSAd	1.01

Attribute	Hectares
PSSAh	46.85
PSSC	42.65
PSSCh	70.91
PUBFh	6.23
PUBFx	26.079
PUBGh	13.52
PUBGx	0.83
PUBHh	1.07
PUBHx	0.10
PUS/SSA	36.69
PUS/SSC	37.28
PUSA	2.38
PUSAh	0.61
PUSAx	0.27
PUSC	1.11

Attribute	Hectares
PUSCh	7.80
R2UBF	8.56
R2UBG	141.85
R2UBH	3,737.62
R2UBHx	35.32
R2USA	167.49
R2USAx	4.48
R2USC	443.08
R4SBA	0.36
R4SBF	138.01
R4SBFx	3.27

Linear Wetlands

Minnesota-Red River Lowland

Attribute	Length (m)
L2ABGh	1068.0
PAB/EMF	158.7
PABF	1532.9
PABFh	182.7
PABFx	249.5
PEM/ABF	3108.4
PEM/FOC	1993.2
PEMA	247673.3
PEMAd	1973.3
PEMAx	44204.2
PEMC	895394.4
PEMCd	2907.2
PEMCh	683.2
PEMCx	283720.6
PEMF	23805.4
PEMFh	922.0
PEMFx	8454.5
PFO/EMA	132.3
PFOA	116371.9
PFOAd	1547.2
PFOAh	19593.9
PFOAx	1633.5
PFOC	17823.8
PFOCd	382.0
PFOCh	5343.7
PFOCx	1814.5
PSSA	9485.8
PSSC	6036.3
PSSCh	276.1
PSSCx	333.0
PUBFx	647.7
R2UBG	733.1
R4SBA	5597.8
R4SBAx	19599.9
R4SBC	20483.0
R4SBCx	3469.8
R4SBF	473296.8
R4SBFx	8661.9

Prairie Coteau

Attribute	Length (m)
L2USA	70375.4
L2USAh	196.6
L2USC	1366.6
PAB/EMF	751.7
PABF	4675.3
PABFX	2250.1
PABFh	994.1
PABFx	9358.1
PEM/ABF	54239.3
PEM/ABFh	508.6
PEM/ABFx	8868.3
PEM/FOA	1772.0
PEM/FOC	8635.1
PEM/FOCx	521.1
PEMA	3596154.7
PEMAd	5980.52
PEMAh	23.8
PEMAx	188551.5
PEMB	19.3
PEMC	8692505.2
PEMCd	30727.4
PEMCh	1460.3
PEMCx	2808542.6
PEMF	187681.9
PEMFd	385.0
PEMFh	1873.1
PEMFx	16514.9
PFO/EMA	68.9
PFO/EMC	8149.6
PFO/EMCx	766.5
PFO/SSA	324.4
PFO1Cd	64.4
PFO1Cx	583.6
PFOA	855401.6
PFOAd	23029.3
PFOAh	9433.6
PFOAx	43499.3
PFOC	285291.6
PFOCd	10513.5
PFOCh	540.0
PFOCx	40170.9
PSS/EMC	57.8
PSSA	20413.1
PSSAd	536.3
PSSAh	251.6
PSSAx	528.6
PSSC	5819.6
PSSCd	307.8
PSSCx	688.3
PUBFx	10173.1
PUBGh	169.6
PUBGx	344.2
PUSAx	57.4
PUSCx	84.4
R2UBG	79462.0
R2UBGx	6102.9
R2USA	1166.5
R2USC	202.2
R4SBA	37578.8
R4SBAx	280.4
R4SBC	173189.5
R4SBCx	410.6
R4SBF	1037848.8
R4SBFx	146942.4

Missouri River Floodplain

Attribute	Length (m)
PAB/EMF	194.2
PAB/EMFx	4236.5
PABF	254.4
PABFx	25.9
PEM/ABF	241.6
PEM/ABFx	6756.7
PEMA	17861.1
PEMAd	762.1
PEMAx	4440.7
PEMC	20528.2
PEMCd	1498.0
PEMCx	190596.1
PEMF	193.2
PEMFx	1991.9
PFO/EMC	37.1
PFOA	29748.0
PFOAx	3951.1
PFOC	3141.6
PFOCx	1777.9
PUBFx	116.3
R2UBG	4743.4
R2USA	1718.9
R2USC	2020.7
R4SBF	7832.5
R4SBFx	84507.7

James River Lowland

Attribute	Length (m)
L2ABFx	846.8
L2USA	2834.8
L2USC	2523.4
PAB/EMF	1507.6
PAB/EMFd	253.8
PABF	10532.2
PABFh	3385.0
PABFx	17127.7
PEM/ABF	52241.4
PEM/ABFd	103.6
PEM/ABFh	2578.9
PEM/ABFx	1760.6
PEM/FOA	885.9
PEM/FOC	4955.6
PEM/FOCh	90.5
PEM/FOCx	1809.2
PEMA	3981302.2
PEMAd	45858.7
PEMAh	328.7
PEMAx	319416.8
PEMC	8655245.6
PEMCd	26811.0
PEMCh	2313.2
PEMCx	6878820.2
PEMF	14090.1
PEMFh	9598.2
PEMFx	2646.2
PFO/EMA	1545.1
PFO/EMC	7585.7
PFO/EMCx	1054.5
PFOA	418007.0
PFOAd	20034.4
PFOAh	45610.8
PFOAx	17428.9
PFOC	233557.2
PFOCd	4099.7
PFOCh	3855.5
PFOCx	24227.5
PSS/FOA	392.9
PSSA	5271.1
PSSAx	96.7
PSSC	913.1
PUBF	18.3
PUBFx	7683.2
PUSA	26.1
PUSCx	135.1
R2USC	224.4
R4SBA	19345.3
R4SBC	17474.5
R4SBF	1644815.9
R4SBFx	52520.2

Lake Dakota Plain

Attribute	Length (m)
PAB/EMF	100.8
PABF	1355.9
PABFh	206.6
PABFx	2564.1
PEM/ABF	5999.0
PEM/ABFx	513.5
PEM/FOA	1087.4
PEM/FOC	4199.6
PEM/FOCx	676.2
PEMA	386248.7
PEMAd	8709.4
PEMAx	75729.4
PEMC	400292.0
PEMCd	7187.3
PEMCh	24.7
PEMCx	611373.9
PEMF	24319.9
PEMFx	2372.6
PFO/EMC	167.4
PFO/SSA	62.0
PFOA	242303.7
PFOAh	167.6
PFOAd	2355.3
PFOAx	1966.3
PFOC	42182.3
PFOCh	2566.4
PFOCd	5874.4
PFOCx	4941.8
PSS/FOA	6103.8
PSSA	275.2
PUBFx	245.2
R4SBCx	9033.0
R4SBF	88455.3
R4SBFx	108364.6

Missouri Coteau

Attribute	Length (m)
L2UBFh	344.2
PAB/EMF	225.0
PABF	4641.2
PABFh	3730.4
PABFx	6494.9
PEM/ABF	11456.0
PEM/ABFx	589.4
PEM/ABFh	834.8
PEM/FOA	471.3
PEM/FOC	839.6
PEM/FOCh	157.4
PEM/FOCx	850.7
PEM/SSC	1144.2
PEM/SSCd	36.4
PEMA	3833136.2
PEMAd	8644.2
PEMAh	551.3
PEMAx	207612.1
PEMC	4653010.3
PEMCd	4408.7
PEMCh	7726.4
PEMCx	1777222.4
PEMF	89164.5
PEMFh	2874.5
PEMFx	21618.6
PEMU	24.4
PFO/EMC	2398.6
PFO/EMCx	255.6
PFO/SSA	449.4
PFOA	186148.5
PFOAd	1685.2
PFOAh	49647.8
PFOAx	6055.8
PFOC	131434.2
PFOCd	113.7
PFOCh	3106.7
PFOCx	8539.9
PSSA	10358.1
PSSAh	231.1
PSSAx	233.5
PSSC	1779.8
PSSCx	192.1
PUBFh	957.1
PUBFx	3342.3
PUBGx	23.1
R2SBA	2665.4
R4SBA	107359.3
R4SBC	84701.2
R4SBCx	4490.0
R4SBF	499469.3
R4SBFx	38654.6

Pierre Hills

Attribute	Length (m)
L2UBFh	1571.0
L2UBGh	271.6
PABF	4272.9
PABFh	931.3
PABFx	227.0
PEM/ABF	281.0
PEM/ABFx	1461.6
PEMA	762898.3
PEMAd	834.8
PEMAh	604.9
PEMAx	4399.4
PEMC	818853.8
PEMCd	337.2
PEMCh	5406.8
PEMCx	66903.7
PEMF	1250.4
PEMFh	2114.3
PEMFx	4764.7
PFO/EMA	212.7
PFOA	5148.3
PFOAh	4160.7
PFOAx	525.7
PFOC	56022.0
PFOCh	1098.9
PFOCx	156.6
PSSA	600.7
PSSC	1108.9
PUBFx	71.7
PUSCh	20.4
R2SBA	17882.0
R2UBF	352.7
R2USA	8842.1
R2USC	524.8
R4SBA	407192.7
R4SBC	218882.3
R4SBF	234334.4
R4SBFx	5408.3

Point Wetlands

Minnesota-Red River Lowland

Attribute	Number
PABF	1
PEM/ABF	1
PEMA	2,182
PEMAd	64
PEMAx	10
PEMC	281
PEMCd	3
PEMCh	1
PEMCx	6
PEMF	1
PFOA	1
PUBFx	32

Prairie Coteau

Attribute	Number
PABFh	10
PABFx	70
PEM/ABF	5
PEM/FOCx	3
PEMA	12,676
PEMAd	1,448
PEMAh	3
PEMAx	66
PEMC	7,442
PEMCd	179
PEMCh	8
PEMCx	154
PEMF	35
PFO/EMCx	1
PFOA	51
PFOAd	1
PFOAx	2
PFOC	11
PFOCx	3
PSSA	4
PSSC	3
PUBF	1
PUBFh	2
PUBFx	177
PUBGx	4
PUSAx	1
PUSCx	2

Missouri River Floodplain

Attribute	Number
PEMA	95
PEMAd	16
PEMC	20
PEMCx	7
PUBFx	3
R2USC	7

James River Lowland

Attribute	Number
PABF	1
PABFh	17
PABFx	153
PEM/ABF	1
PEM/FOA	2
PEM/FOC	1
PEM/FOCx	6
PEM/SSC	1
PEMA	49,218
PEMAd	2,210
PEMAh	2
PEMAx	54
PEMC	8,863
PEMCd	178
PEMCh	21
PEMCx	226
PEMF	1
PEMFx	4
PFO/EMA	1
PFO/EMC	1
PFO/EMCx	3
PFOA	53
PFOAd	3
PFOAx	1
PFOC	8
PFOCx	1
PSSA	4
PUBF	3
PUBFx	387
PUSCh	1
PUSCx	1

Lake Dakota Plain

Attribute	Number
PABFx	140
PEM/FOC	1
PEMA	4,974
PEMAd	36
PEMAh	1
PEMAx	10
PEMC	1,576
PEMCd	4
PEMCh	1
PEMCx	35
PFO/EMC	1
PFOA	7
PFOC	1
PFOCx	1
PUBFx	22

Missouri Coteau

Attribute	Number
PABF	1
PABFh	18
PABFx	91
PEMA	24,310
PEMAd	335
PEMAh	5
PEMAx	95
PEMC	6,658
PEMCd	40
PEMCh	20
PEMCx	78
PEMF	1
PEMFh	1
PEMFx	1
PEMU	3
PFOA	10
PFOAx	1
PFOC	2
PFOCx	1
PSSA	3
PUBFx	124
PUSAx	1

Pierre Hills

Attribute	Number
PABFh	26
PABFx	6
PABGx	4
PEM/ABF	1
PEMA	577
PEMAd	20
PEMAh	1
PEMC	140
PEMCd	2
PEMCh	87
PEMCx	9
PFOA	1
PFOCx	1
PUBFx	4
PUSCh	2
R2USC	7

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.

	Temporary			Seasonal			Semipermanent[a]			Permanent[a]		
Region	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.