2004

Demographics of Western South Dakota Wetlands and Basins

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DEMOGRAPHICS OF WESTERN SOUTH DAKOTA WETLANDS AND BASINS

BY

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A thesis submitted in partial fulfillment of the requirements of the

Master of Science

Major in Wildlife and Fisheries Sciences

South Dakota State University

2004

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This thesis is approved as creditable and independent investigation by a candidate for the Master of Science degree and is acceptable for meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ACKNOWLEDGEMENTS

Project W-114-R (Study No. 1802) was funded by the Federal Aid in Wildlife Restoration Act (Pittman Robertson Act), administered by South Dakota Department of Game, Fish and Parks, through South Dakota State University.

I would like to thank Mike Kjellsen, SDSU Wetland Inventory, for his help and persistence in resolving contract problems and acquiring wetlands information. Also, thanks to Dennis Hanson and Pete Bergmann, SDSU Wetland Inventory Office, for their contributions to this project. I would like to thank Mike Estey and Dr. Rex Johnson, USFWS Hapet Office, for their assistance and advice. Also, thanks to Chad Kopplin and Steve Wall, SDSU, for their GIS advise. Thank you to my graduate committee members, Dr. R.L. Erion and Dr. K.C. Jensen. Finally, I give special thanks to the co-principle investigators on this project, Dr. Jonathan Jenks and Dr. Kenneth Higgins.

Abstract

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BRYAN RIEGER

04/01/2004

Wetlands, whether natural or man-made in origin, are an important feature of the semi-arid landscape of western South Dakota. These wetlands have numerous social and economic values and functions for both landowners and non-owners, as well as for fish and wildlife species. For this reason, accurate information about wetland abundance, characteristics and distribution is important. These demographic summaries of wetland resources of western South Dakota were based on digital wetland data, as delineated by the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) office. Surface water covers approximately 257,006 ha or about 2.4% of the 10,810,700 ha of western South Dakota. Palustrine systems constitute 50.2%, lacustrine systems constitute 41.8%, and riverine systems constitute 8.1% of the surface water area in western South Dakota. There are 30% fewer hectares of NWI-delineated wetlands in western South Dakota than in eastern South Dakota. A total of 172,867 basins exist in western South Dakota. Of these basins, 61,757 (35.7%) are classified as temporary, 50,447 (29.2%) as seasonal, 59,340 (34.3%) as semipermanent, and 1,323 (0.8%) as permanent basins. There are 86,927 created basins, which is 50.3% of the total number of basins. Of these basins, 72,562 are impounded basins, 14,054 are dugouts, and 311 were created by beaver *(Castor canadensis)* activity. There are five-fold fewer basins in western South Dakota than in eastern South Dakota. The wetlands and basins GIS created for this project and the resulting demographic summaries provide a temporal and spatial data baseline to which past and future changes in wetland demographics can be compared. Demographic summaries also will benefit resource managers in their efforts to conserve native species of

flora and fauna, and to understand the role that wetlands have in western South Dakota landscapes.

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INTRODUCTION

Wetlands, whether natural or man-made in origin, are an important feature of the semi-arid landscape of western South Dakota. These wetlands have many values and functions for both landowners and non-owners, as well as for fish and wildlife species. Hubbard (1988) provided a detailed review of prairie wetland functions and values. Kantrud et al. (1989) described a community profile synopsis that detailed the origin, hydrology, function, and biota of prairie wetlands in the Dakotas. Johnson et al. (1997) identified over 200 species of wildlife that use eastern South Dakota wetland habitats. Although a similar list of wildlife species that use western South Dakota wetlands has not been compiled, several studies have identified their importance to fish (Guy 1990), amphibians (Fischer et al. 1999), and wetland birds (May 2002, Rumble and Flake 1983, Ruwaldt et al. 1979).

Because wetlands have numerous social and economic values, accurate information about wetland abundance, characteristics and distribution is important. Johnson and Higgins (1997) published demographic data for the remaining wetlands of eastern South Dakota. Until now, similar demographic data were not available for wetland resources occurring in western South Dakota.

This publication summarizes the abundance, general distribution, and characteristics of wetland resources of western South Dakota as delineated and mapped by the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) office. This publication will serve as an informational baseline, which to compare past and future temporal and spatial changes of wetland resources in western South Dakota. With this information, in combination with the wetlands demographic information provided by Johnson and Higgins (1997), South Dakota will be one of only a few states with a total wetland resources demographic data file, GIS, and summary.

Throughout this document the following terms are frequently used with text, tables, figures and data:

Wetlands:

> " Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface of the land or the land is covered by shallow water. [...] 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" (Cowardin et al. 1979).

Deepwater Habitats:

> "Deepwater Habitats are permanently flooded lands lying below the deepwater boundary of wetlands" (Cowardin et al. 1979).

Basin:

> "A land feature capable of holding water because of topography or soil type" (Cowardin 1982). Cowardin (1982) called it a *wetland basin*.

Understanding these terms is important. Traditionally, the definition of wetlands has not included deep permanent water. Rivers, streams, and linear wetlands also were not traditionally included in the definition of wetlands. The Cowardin et al. (1979) classification system addresses these issues and classifies these ecologically related 'waters'. Basins are comprised of one or more wetlands and are classified on the basis of wetland zones as described by Stewart and Kantrud (1971). The zone having the most permanent water regime determines the water regime of the basin.

Classification of Wetlands and Deepwater Habitats of the United States

The Cowardin et al. (1979) wetland classification is arranged in a hierarchical order (Table 1). It classifies wetlands and deep water habitats with similar hydrologic, geomorphic, biotic, and chemical characteristics. This section is a synopsis of the classification design. For a detailed description of the design, see Cowardin et al. (1979).

The System level is the highest level in the classification hierarchy (Table 1). Three of the five systems in this classification occur in South Dakota: Palustrine, Lacustrine, and Riverine. The Palustrine system includes shallow wetlands less than 8 ha (≈ 20 acres) in size and dominated by trees, shrubs, or emergents. These wetlands are traditionally called ponds, marshes, swamps, fens, or wet meadow prairies. The Lacustrine system typically includes wetlands and deepwater habitats without trees, shrubs, or persistent emergent vegetation, and with evidence of wave action. These habitats are typically referred to as lakes or reservoirs. The Riverine system includes all wetlands and deepwater habitats contained within a channel without dominant trees, shrubs, or persistent emergents. Palustrine wetlands may occur in the channel, but they are not included in the Riverine system.

The Subsystem level further categorizes habitats within each System. This level may or may not be used. Lacustrine and Riverine systems each have Subsystems. The Palustrine system does not include the subsystem level.

The Class level of the hierarchical structure describes the dominant vegetative cover, where it is equal to or greater than 30% of the areal coverage. Where the vegetation is less than 30% coverage, the Class level describes the composition of the substrate.

Modifier and Special Modifier codes may be attached to the Class level and any lower level (Figure 1). These modifier codes include specific information about water regimes, water chemistry, and soil characteristics. The water regime modifier is the most commonly used Modifier code for wetlands in western South Dakota. Special Modifier codes provide more

Table 1. Elements of the Cowardin et al. (1979) classification system used in South Dakota and the NWI codes for systems, subsystems, classes and modifiers (from Johnson and Higgins 1997).

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	

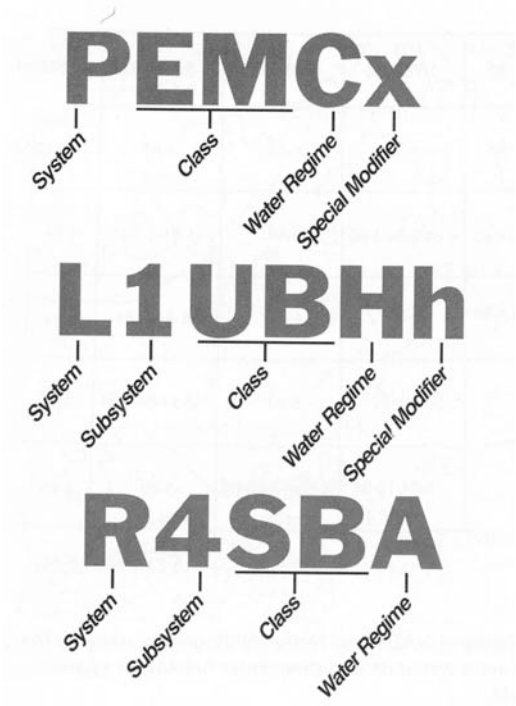

Figure 1. Elements of the Cowardin et al. (1979) classification and the corresponding NWI codes (from Johnson and Higgins 1997

information about the nature of the habitat; whether the habitat was natural or created, whether it was man-made or created by beaver activity *(Castor canadensis)*, or whether the habitat was partially drained.

The National Wetlands Inventory

In the mid 1970's, the USFWS began planning for an inventory of the nation's wetlands. The National Wetland Inventory (NWI) would be the resulting office charged with gathering and mapping the characteristics, extent and, distribution of wetlands. As the NWI became organized, the USFWS adopted the Cowardin et al. (1979) wetlands classification system. NWI uses three criteria (hydrological information, hydrophytes, and hydric soils) to delineate and classify wetlands and deepwater habitats.

Wetland Delineation Techniques (adapted from Johnson and Higgins 1997)

The NWI delineated western South Dakota wetlands and deepwater habitats by analyzing high altitude, color infrared photography acquired by the National Aeronautics and Space Administration (NASA) and the High Altitude Photography Program (HAP). Photography from August 1980 through August 1991 was used as the base photography to delineate and classify western South Dakota wetlands and deep water habitats (Figure 2).

Prior to photo acquisition, ground reconnaissance was conducted by USFWS personnel to determine when hydrologic conditions were appropriate for accurate wetlands identification. Photography was acquired in wet years, when most basins were inundated. Photography during excessively wet years was avoided. Auxiliary data for wetland delineation and classification included United States Geological Survey (USGS) 7.5' topographic quadrangles, published county soil surveys, Water Resource Institute data, and hydrographic maps, when available.

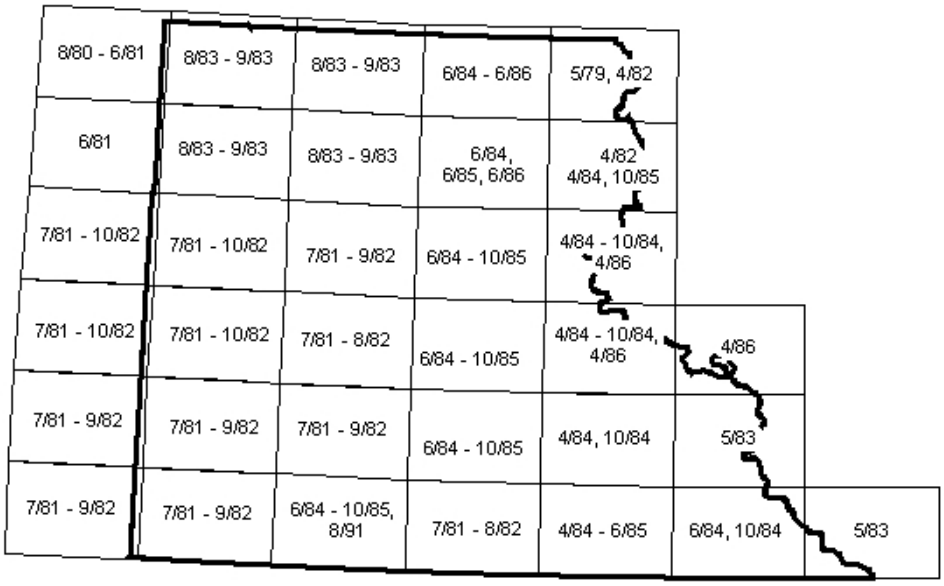

Figure 2. Date (mm/yy) of photography used in delineating the wetlands of western South Dakota.

The production of NWI maps followed a rigid set of conventions for identifying and classifying wetlands and deep water habitats (USFWS 1995):

1. Aerial photos were reviewed by a NWI contractor. Characteristic wetlands and problematic areas were identified.
2. Specific sites with characteristic wetlands and problematic areas were selected for field identification. A field trip to these sites was planned.
3. Field data, including plant information, hydrology, and soil information were collected on the selected sites.
4. Aerial photos were obtained and photo-signatures were interpreted to assist in the photointerpretation of the work area.
5. Photointerpretation began on the work areas using a stereoscope. Wetlands and deepwater habitats were identified, delineated, and labeled according to the NWI photo interpretation conventions. Collateral data and maps were referenced, when such information was available. When necessary, ground-truthing was conducted to resolve photo interpretation problems.
6. Photointerpreation quality control measures were performed.
7. NWI draft maps were created using USGS 1:24,000 topographic quadrangles as base maps. Draft maps were disseminated for state and federal interagency review and comment.
8. Draft maps were reviewed in the field by NWI personnel. Sites identified during photointerpretation, quality control, and interagency review were included in the field review process.
9. Draft maps were edited and final maps (Figure 3) were submitted for production and distribution.

When these steps were completed, digital versions of the NWI final maps for western South Dakota were created to the specifications set forth by NWI procedures.

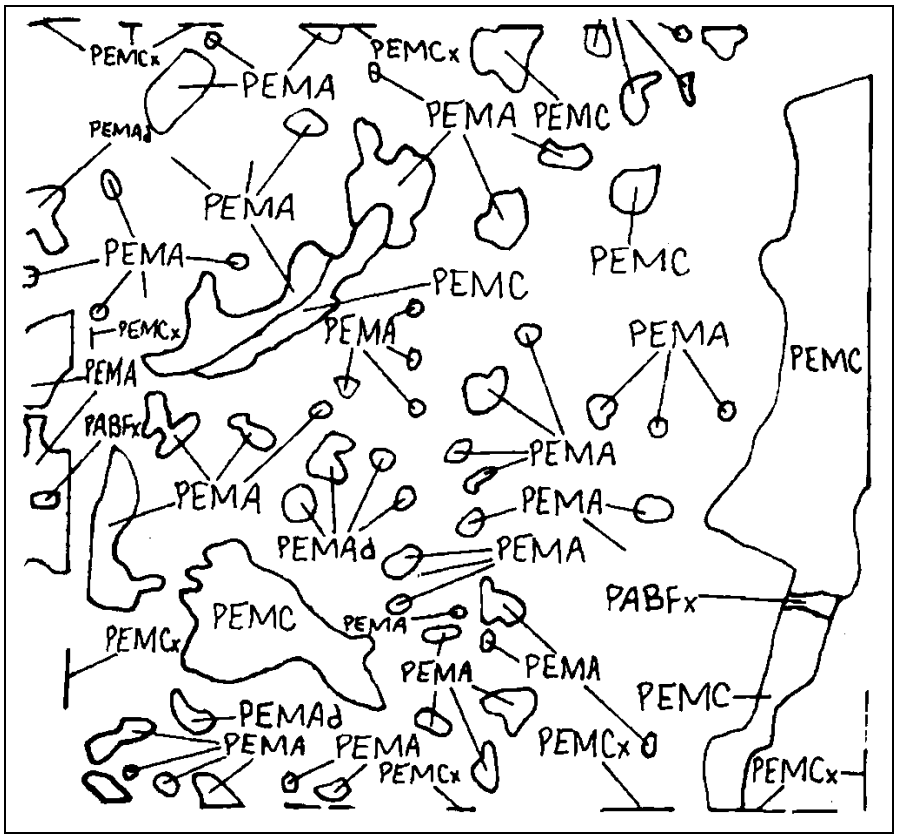

Figure 3. Enlargement of a section of a National Wetlands Inventory final map (from Johnson and Higgins 1997).

METHODS

Digital wetland data for western South Dakota were obtained from National Wetlands Inventory. NWI final maps, in the form of ArcGIS interchange files, were downloaded onto an IBM RS/6000 F80 Unix workstation. Files were imported into ArcGIS Workstation version 8.0.2 software and coverages were created. Unix scripts and Arc Macro Language scripts (AMLs) were written to automate the processing. All GIS processing occurred on this workstation.

Digital 7.5' quadrangle maps contained point, line, and polygon features. Point features from all western South Dakota quadrangles were combined into a single point coverage. Line and polygon features from all western South Dakota quadrangles were combined into a single line/polygon coverage. These two coverages were the initial base layers for all subsequent coverages.

When photointerpreters delineated wetlands, polygons were drawn around wetlands where possible. Wetland signatures too narrow or small to be enclosed by a polygon were delineated with a line segment or point. Only polygon features have area; point and line features do not. To create area for these features, buffers were calculated around points and lines.

NWI Wetland Processing

AMLs used to process the NWI wetland coverage were similar to those used by Johnson and Higgins (1997). Before execution, buffer widths were adjusted to better represent the wetlands of the western South Dakota landscape. A buffer distance of 7.62 m was calculated around point features and a buffer distance of 1.5 m was calculated around line features. The 1.5 m buffer setting was selected to better represent the narrow drainages and streams of western South Dakota. The 7.62 m buffer setting was identical to the distance used by Johnson and Higgins (1997).

Basin Processing

Protocols, AMLs, and INFO programs to process basins were originally developed for the Prairie Pothole Region (PPR) of South Dakota, North Dakota, and Montana (Cowardin et al. 1995, Johnson and Higgins 1997). Preliminary tests on the NWI coverage for western South Dakota revealed that the PPR model could not be realistically applied to the topography of western South Dakota. A new model (WSD) for western South Dakota was created. This model incorporated the entire basin processing of the PPR model (Figure 4), but also included additional processing that addressed the long integrated drainage networks that occur in the western South Dakota landscape. The term *dendritic* was used to describe and label these drainages.

The WSD model accounted for dendritic drainages, which contain riverine and riverine-like wetlands by labeling them as dendritic. All wetland polygon features directly adjacent to dendritic polygons, received dendritic labels and shared arcs were dissolved. This step was repeated until no adjacent polygons remained. This resulted in long dendritic polygons with dendritic labels. In addition, the WSD model identified all non-dendritic buffered line features greater than 1.0 km and labeled these as dendritic. Once again, wetland polygons directly adjacent to dendritic polygons received a dendritic label and the shared arcs were dissolved. This step was repeated until no adjacent polygons remained. When completed, this coverage became the final basin coverage for western South Dakota.

Wetlands on the NWI coverage were uniquely numbered. Basins on the WSD coverage were uniquely numbered. Basins were also labeled as temporary, seasonal, semipermanent, and permanent. Dendritic polygons and upland polygons (islands) remained and were labeled as such.

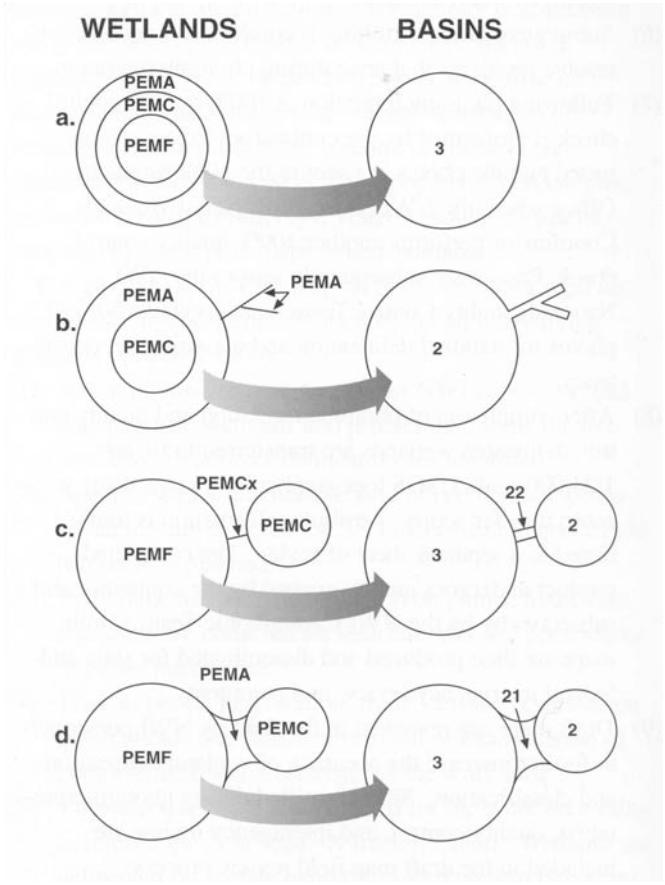

Figure 4. Conversion of NWI-delineated wetlands to basins. Wetlands delineated by the NWI were converted to basins by dissolving arcs and classifying the basin's water regime by the most permanent wetland within it. Basins codes:
3 = Semipermanent, 2 = Seasonal ditches,
21 = Temporary, 22 = Temporary ditch
(Adapted from Johnson and Higgins 1997.)

. File and sorting limitations within of the ArcGIS Workstation software did not directly allow the union of the NWI wetlands coverage with the WSD basin coverage. Therefore, the two coverages were clipped to make four smaller coverages. A union of these clipped coverages was performed. Unioned coverages were then joined at their edges. The result was WSDNWIBAS, a single coverage containing NWI wetlands and basin information for western South Dakota.

Additional AMLs were written to summarize NWI wetland and basin data for western South Dakota. South Dakota county (Figure 5), Physiographic Region (Figure 6), and Hydrologic Unit (Figure 7) coverages were each unioned with the WSDNWIBAS coverage (Appendix 1 – 5).

Assumptions of the WSD Model

1. Riverine wetlands delineated by NWI with a line or a polygon were labeled as dendritic and, therefore, were not part of basin summaries (These wetlands function more like a dendritic system than a basin).
2. Wetlands delineated with a line feature having a length of 1.0 km or greater, function more like a dendritic system than a basin (recall that all line features have a buffered width of 3 m).
3. Wetlands adjacent (and sharing a common edge) to a dendritic system function more like a dendritic system than a basin.
4. Wetlands delineated as impoundments within these dendritic systems function more as basins than part of a dendritic system.

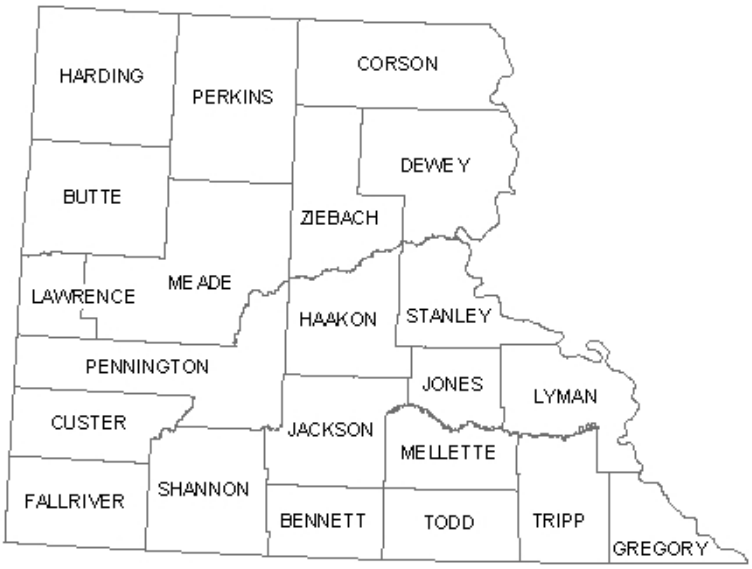

Figure 5. Counties of western South Dakota.

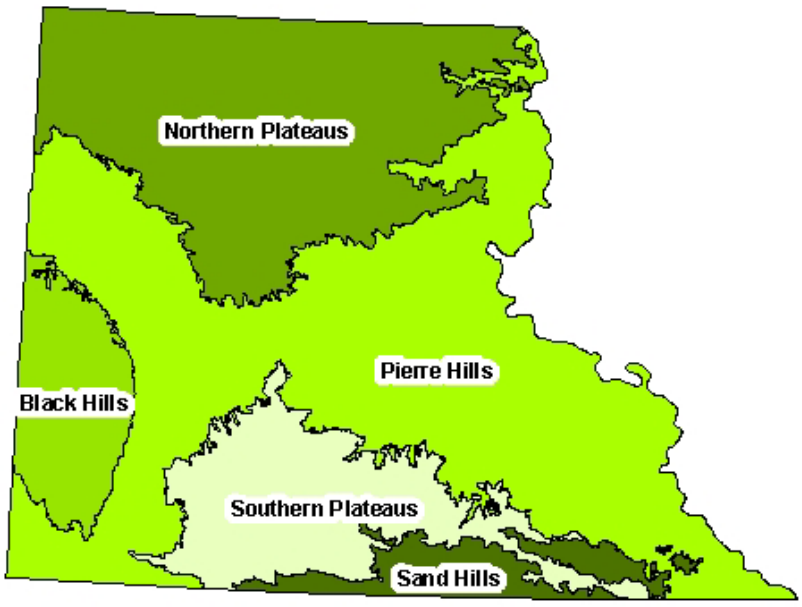

Figure 6. Physiographic regions of western South Dakota (Johnson et al. 1995).

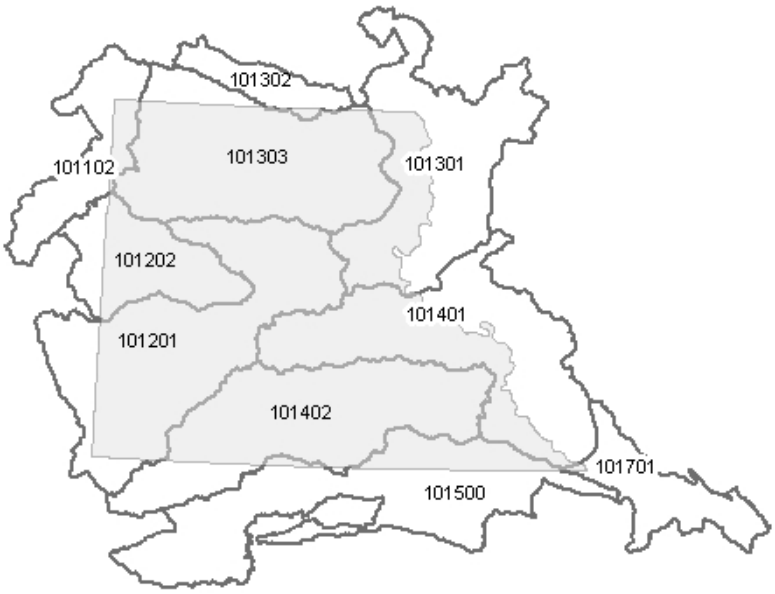

Figure 7. Six-digit (6-digit) Hydrologic Units of western South Dakota (Smith et al. 2002).

As with most models, the WSD basin model likely resulted in some omission and commission errors. Undoubtedly, this model may have labeled some buffered line features as dendritic, although these features may function more like a basin. These omission errors may have occurred in the riverine (dendritic polygons), where pools and segments within the river may function much like a basin with no apparent flow. Commission errors may have occurred by erroneously labeling non-basins as basins. Isolated line features less than 1.0 km that were labeled as a basin may function more like a dendritic system, but were labeled as basins.

RESULTS

The Results Section is divided into two parts. The first part uses the nomenclature of Cowardin et al. (1979) and is entitled *Western South Dakota Wetlands and Deep Water Habitats*. It summarizes NWI wetland demographics. The second part uses basin nomenclature and is entitled *Western South Dakota Basins*. It summarizes basin demographics by number and area. Summaries of wetland area of these two parts are not comparable because each basin is comprised of one or more wetlands according to Cowardin et al. (1979).

Important Note: Western South Dakota wetland summaries have been generated by a GIS containing NWI-mapped wetlands and deepwater habitats. Western South Dakota basin summaries have been generated from the above NWI-mapped wetlands and deepwater habitats to form a basin coverage. The methodology used to make this conversion is described in the methods section of this document. Although the terminology for wetland (and deep water habitats) and basin water regimes are the same, the number and area of NWI-mapped wetlands (and deep water habitats) are not comparable because basins are composite features of one or more wetlands.

Part 1: Western South Dakota Wetlands and Deepwater Habitats

Wetlands Systems: Palustrine, Lacustrine and Riverine

Surface water covered approximately 257,006 ha (635,054 acres) or about 2.4% of the 10,810,700 ha (26,712,806 acres) of western South Dakota. (These values include all of the area within the state lying west of the centerline of the Missouri River (Figure 5). The western half of the Missouri River and its impoundments were included in wetland summaries.) Surface water was categorized into one of three systems; Palustrine, Lacustrine, or Riverine. Palustrine

systems constituted 50.2%, Lacustrine systems 41.8%, and Riverine systems 8.1% of the surface water area in western South Dakota. (Table 2; Figure 8).

Palustrine Wetlands

System, Subsystems, and Classes

Wetlands in the Palustrine system accounted for 128,940 ha (318,605 acres) of surface water in western South Dakota. The Palustrine system has no subsystems. Palustrine wetlands in the Emergent Class comprised 79,219 ha (195,747 acres) or 61.4% of the total Palustrine wetland area (Table 3; Figure 9). Palustrine wetlands in the Aquatic Bed class occupied 34,443 ha (85,107 acres) or 26.7% of the total Palustrine wetland area. Palustrine wetlands in the Forested and Scrub-Shrub classes collectively amounted to 8,475 ha (20,940 acres) or 6.6% of the total Palustrine wetland area. The remaining classes and all the mixed classes, such as Emergent/Aquatic Bed, collectively occupied 5.2% of the total Palustrine wetland area.

Water Regimes

Palustrine wetlands with a Temporary regime constituted 53,608 ha (131,605 acres) or 41.3% of the total Palustrine wetland area (Table 4; Figure 10). Palustrine wetlands with a Semipermanent water regime occupied 37,842 ha (93,507 acres) or 29.4% of the total Palustrine wetland area. Seasonal wetlands constituted 35,490 ha (87,697 acres) or 27.5% of the total Palustrine wetland area. The remaining water regimes constituted less than 2% of the total Palustrine wetland area (Table 4; Figure 10).

Special Modifiers

Natural Palustrine wetlands occupied 76,933 ha (190,098 acres) or 59.7 % of the total Palustrine wetland area (Table 5; Figure 11). Created Palustrine wetlands were created by

Table 2. Area of all NWI-delineated wetlands in western South Dakota summed by system.

System	Area (ha)	Area (ac)	% Area
Palustrine	128,939.6	318,605.4	50.2%
Lacustrine	107,351.5	265,262.0	41.8%
Riverine	20,715.2	51,186.6	8.1%
	257,006.4	635,054.1	100.0%

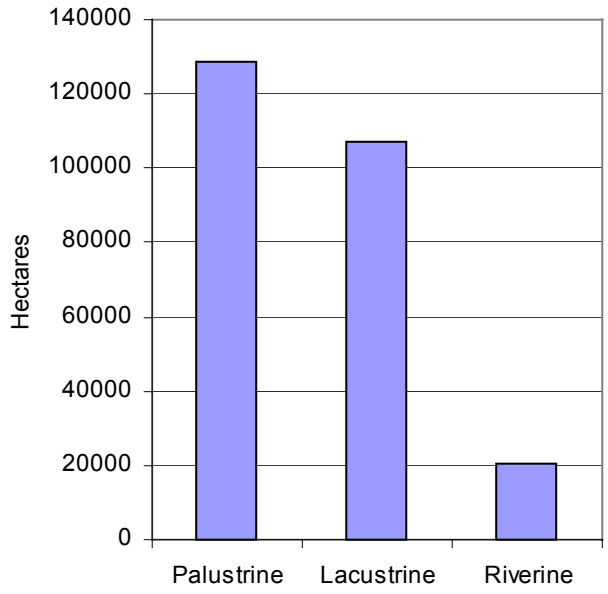

Figure 8. Area of all NWI-delineated wetlands in western South Dakota summed by system.

Table 3. Area of palustrine wetlands in western South Dakota summed by class.

Class	Area (ha)	Area (ac)	% Area
Emergent	79,218.8	195,747.0	61.4%
Aquatic Bed	34,442.8	85,106.9	26.7%
Forested	4,600.1	11,366.8	3.6%
Scrub-Shrub	3,874.4	9,573.4	3.0%
Unconsolidated Shore	2,888.4	7,137.0	2.2%
All Other	3,915.2	9,674.3	3.0%
	128,939.6	318,605.4	100.0%

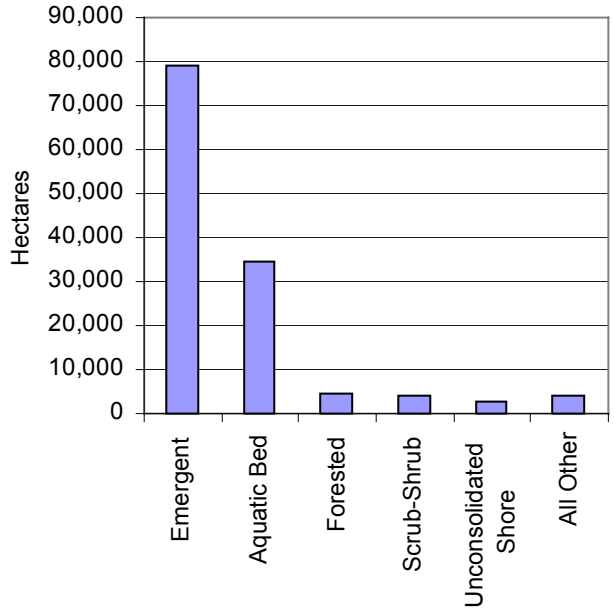

Figure 9. Area of palustrine wetlands in western South Dakota summed by class.

Table 4. Area of palustrine wetlands in western South Dakota summed by water regime.

Water Regime	Area (ha)	Area (ac)	% Area
Temporarily Flooded	53,260.8	131,605.7	41.3%
Seasonally Flooded	35,490.9	87,696.8	27.5%
Semipermanently Flooded	37,842.3	93,507.0	29.3%
All Other	2,345.6	5,795.9	1.8%
	128,939.6	318,605.4	100.0%

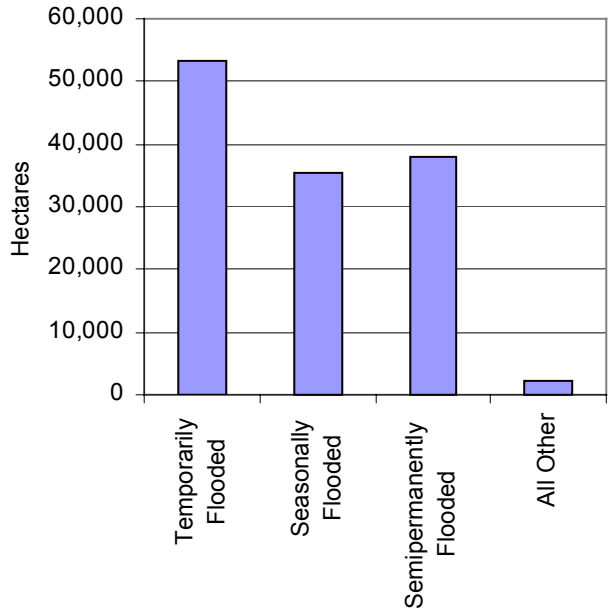

Figure 10. Area of palustrine wetlands in western South Dakota summed by water regime.

Table 5. Area of natural palustrine wetlands and created palustrine wetlands in western South Dakota.

Palustrine Wetlands	Area (ha)	Area (ac)	% Area
Natural Palustrine Wetlands	76,932.5	190,097.5	59.7%
Created Palustrine Wetlands	52,007.2	128,508.0	40.3%
	128,939.6	318,605.4	100.0%

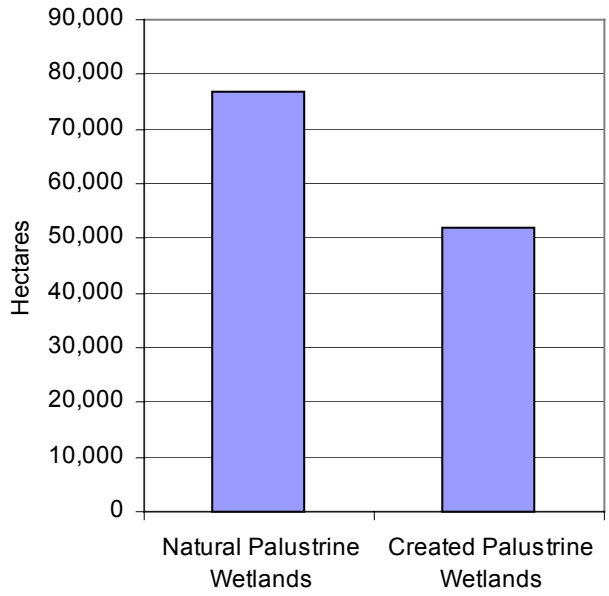

Figure 11. Area of natural palustrine wetlands and created palustrine wetlands in western South Dakota.

impoundment, excavation, or beaver activity. Impounded wetlands in the Palustrine system accounted for 49,594 ha (122,545 acres) or 38.5% of the total Palustrine wetland area. Excavated wetlands in the Palustrine system accounted for 2,375 ha (5,868 acres) or 1.8% of the total Palustrine wetland area. Palustrine wetlands created by beaver activity accounted for a trace (0.0%) amount of the total Palustrine wetland area.

Lacustrine Wetlands

System and Subsystems

Wetlands in the Lacustrine system accounted for 107,351 ha (265,262 acre) of surface water in western South Dakota. The Lacustrine system has two subsystems; Limnetic deep water and Littoral. The Limnetic subsystem comprised 90.5% of the total Lacustrine wetland area; the remaining 9.5% of the total Lacustrine wetland area was in the Littoral subsystem (Table 6; Figure 12).

Classes

All 97,132 ha (240,009 acres) of the Lacustrine Limnetic habitat were in the Unconsolidated Bottom class. Lacustrine Littoral wetlands were assigned to one of three classes; Aquatic Bed, Unconsolidated Shore or Unconsolidated Bottom. Aquatic Bed class accounted for 5,545 ha (13,701 acres), Unconsolidated Shore class for 2,880 ha (7,115 acres), and Unconsolidated Bottom class for 1,796 ha (4,436 acres) of the Lacustrine Littoral wetland area (Table 7; Figure 13).

Water Regimes

Most of the area delineated as Lacustrine wetland or deepwater habitat had a Permanently Flooded or Intermittently Exposed water regime. Exactly 79,330 ha (196,021 acres) were assigned to a Permanently Flooded regime (Table 8; Figure 14). A total of 21,818

Table 6. Area of lacustrine wetlands in western South Dakota summed by subsystem.

Subsystem	Area (ha)	Area (ac)	% Area
Limnetic	97,131.8	240,009.5	90.48%
Littoral	10,219.7	25,252.5	9.52%
	107,351.5	265,262.0	100.00%

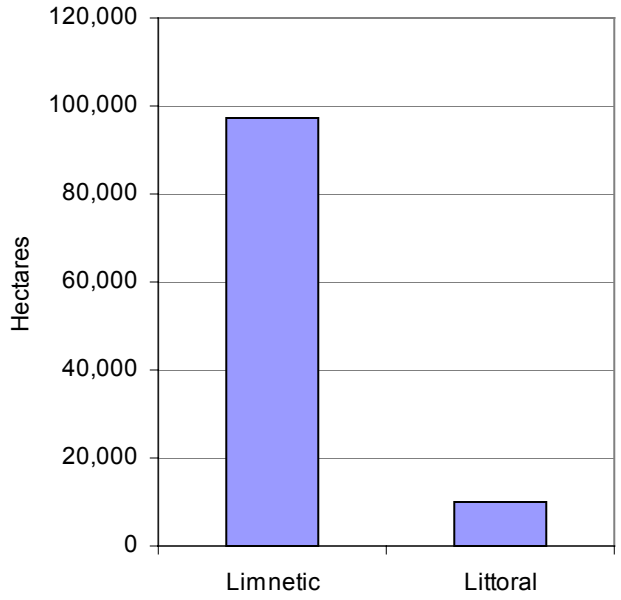

Figure 12. Area of lacustrine wetlands in western South Dakota summed by subsystem.

Table 7. Area of littoral lacustrine wetlands in western South Dakota summed by class.

Class	Area (ha)	Area (ac)	% Area
Aquatic Bed	5,544.6	13,700.6	54.3%
Unconsolidated Shore	2,879.5	7,115.1	28.2%
Unconsolidated Bottom	1,795.6	4,436.8	17.6%
	10,219.7	25,252.5	100.0%

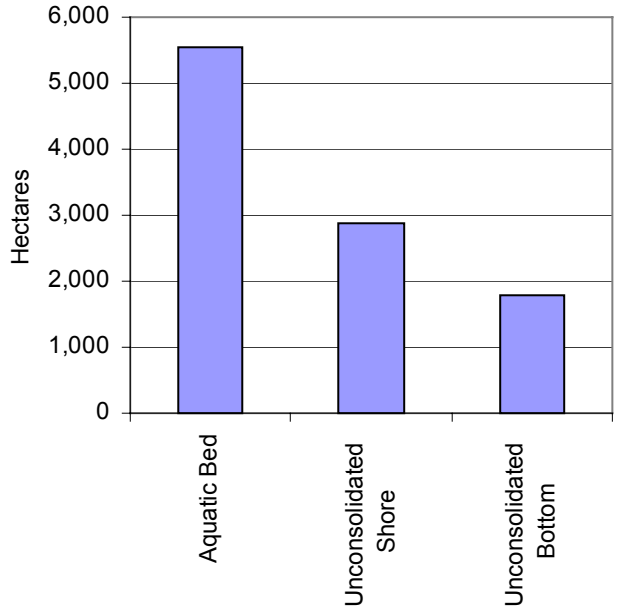

Figure 13. Area of littoral lacustrine wetlands in western South Dakota summed by class.

Table 8. Area of lacustrine wetlands in western South Dakota summed by water regime.

Water Regime	Area (ha)	Area (ac)	% Area
Permanently Flooded	79,329.8	196,021.3	73.9%
Intermittently Exposed	21,817.7	53,910.9	20.3%
Semi-permanently Flooded	3,314.0	8,188.8	3.1%
All Other	2,890.0	7,141.1	2.7%
	107,351.5	265,262.0	100.0%

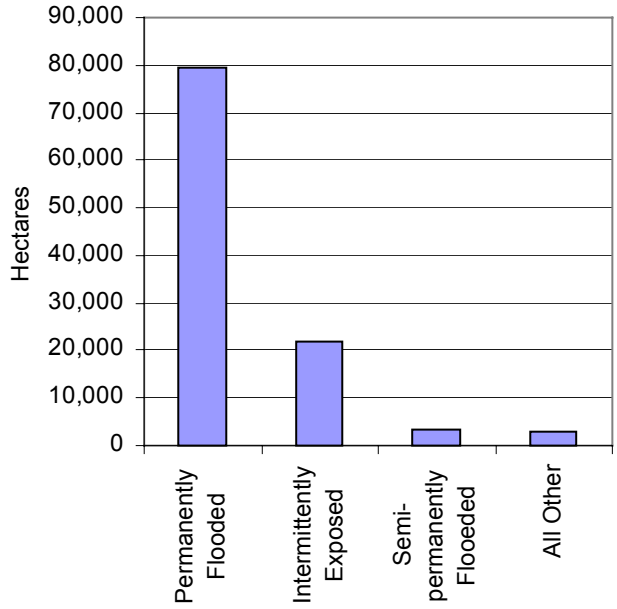

Figure 14. Area of lacustrine wetlands in western South Dakota summed by water regime.

ha (53,911 acres) were assigned to an Intermittently Exposed water regime. All other water regimes (Temporarily Flooded, Seasonally Flooded, Semipermanently Flooded and Artificially Flooded) accounted for 6,204 ha (11,079 acres) of the total Lacustrine area.

Natural Lacustrine wetlands and deep water habitats occupied 2,212 ha (5,465 acres) or 2.1% of the total Lacustrine area (Table 9; Figure 15). Created Lacustrine wetlands and deep water habitats occupied 105,140 ha (259,797 acres) or 97.9% of the total Lacustrine area. Impoundments accounted for 99.99% of the created Lacustrine area. Excavated wetlands and deep water habitats accounted for 0.01% of the created Lacustrine area.

Riverine Wetlands

System and Subsystems

Wetlands in the Riverine system comprised 20,715 ha (51,187 acres) of surface water in western South Dakota. Three Riverine subsystems existed; Upper Perennial, Lower Perennial, and Intermittent. Lower Perennial wetlands (habitats) accounted for 13,127 ha (32,435 acres) or 63.4% of total Riverine habitat in western South Dakota (Table 10; Figure 16). Intermittent wetlands (habitats) accounted for 7,377 ha (18,228 acres) or 35.6% of the total Riverine habitat. Next in order, Upper Perennial wetlands accounted for 211 ha (523 acres) or 1.0% of the total Riverine habitat in western South Dakota. Nearly the entire Upper Perennial habitat existed in the Black Hills physiographic region.

Classes

All Riverine habitats were assigned to one of three classes: Stream Bed, Unconsolidated Bottom and Unconsolidated Shore. The Stream Bed class was limited to Intermittenent Riverine Subsystems and comprised 7,377 ha (18,229 acres) or 35.6% of the Riverine wetland habitat (Table 11; Figure 17). Approximately 7,935 ha (19,607 acres) or 38.3% of the Riverine wetland area was assigned to the Unconsolidated Bottom class and

Table 9. Area of natural lacustrine wetlands and created lacustrine wetlands in western South Dakota.

Lacustrine	Area (ha)	Area (ac)	% Area
Natural	2,211.6	5,464.9	2.1%
Created	105,139.9	259,797.1	97.9%
	107,351.5	265,262.0	100.0%

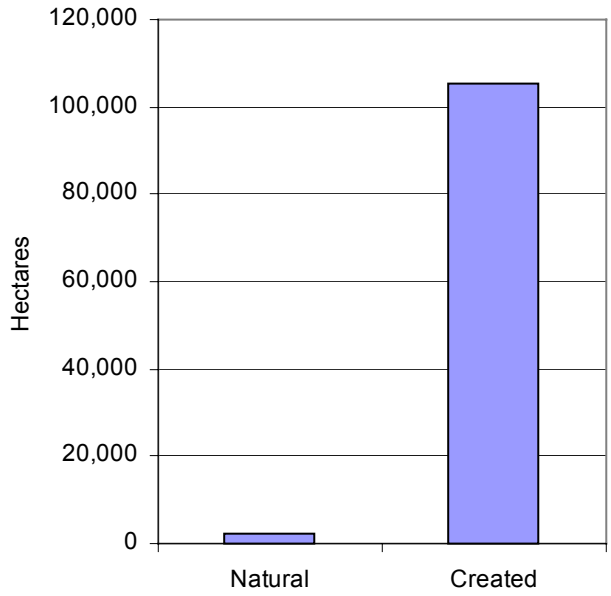

Figure 15. Area of natural lacustrine wetlands and created lacustrine wetlands in western South Dakota.

Table 10. Area of riverine wetlands in western South Dakota summed by subsystem.

Subsystem	Area (ha)	Area (ac)	% Area
Lower Perennial	13,126.5	32,435.2	63.37%
Intermittent	7,377.2	18,228.7	35.61%
Upper Perennial	211.5	522.7	1.02%
	20,715.2	51,186.6	100.00%

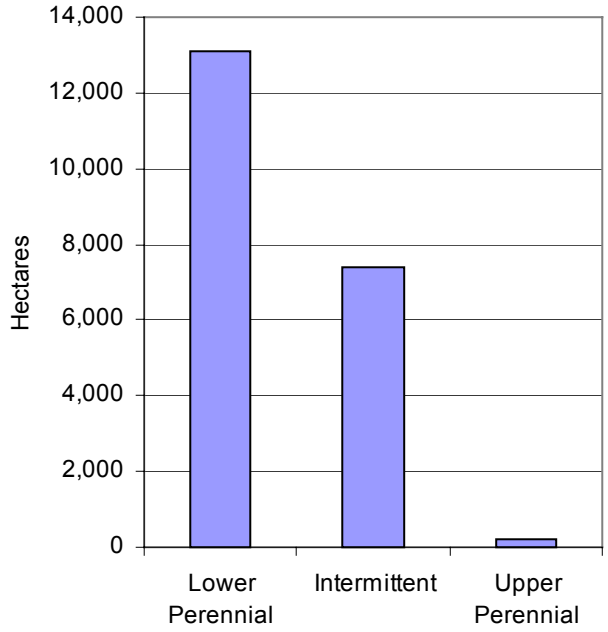

Figure 16. Area of riverine wetlands in western South Dakota summed by subsystem.

Table 11. Area of riverine wetlands in western South Dakota summed by class.

Class	Area (ha)	Area (ac)	% Area
Stream Bed	7,377.2	18,228.7	35.61%
Unconsolidated Bottom	7,934.7	19,606.5	38.30%
Unconsolidated Shore	5,403.3	13,351.4	26.08%
	20,715.2	51,186.6	100.00%

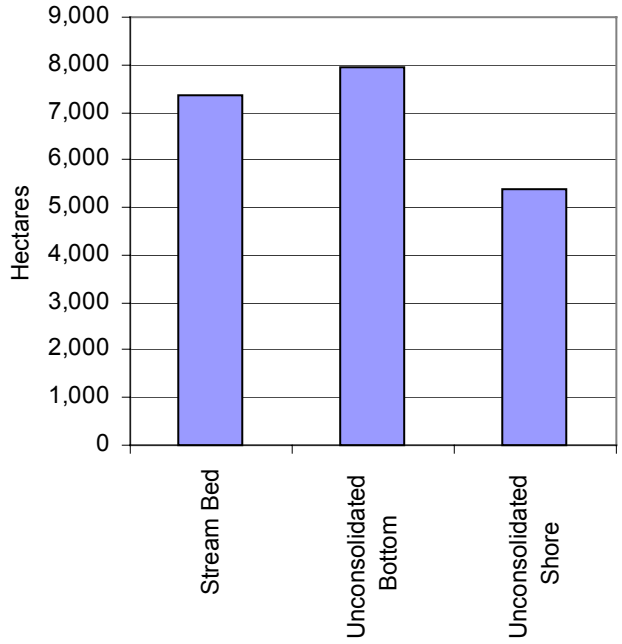

Figure 17. Area of riverine wetlands in western South Dakota summed by class.

5,403 ha (13,514 acres) or 26.1% of the Riverine wetland area was assigned to the Unconsolidated Shore class.

Water Regimes

Temporarily Flooded riverine habitat comprised 8,164 ha (20,173 acres) or 39.4% of the total riverine habitat (Table 12; Figure 18). Semipermanently Flooded riverine habitat covered 6,062 ha (14,980 acres) or 29.3% of the total riverine habitat. Seasonally Flooded Riverine habitat covered 3,207 ha (7,926 acres). Intermittently Flooded Riverine habitat comprised 3,000 ha (7,415 acres). Permanently Flooded riverine habitat covered the remaining area of 280 ha (693 acres).

Special Modifiers

Overall, 99.3% of the area of riverine habitats was natural; 0.7% is recorded as excavated or impounded.

Table 12. Area of riverine wetlands in western South Dakota summed by water regime.

Water Regime	Area (ha)	Area (ac)	% Area
Temporarily Flooded	8,164.0	20,172.9	39.4%
Seasonally Flooded	3,207.8	7,926.3	15.5%
Semipermanently Flooded	6,062.4	14,979.9	29.3%
Permanently Flooded	280.5	693.0	1.4%
Intermittently Flooded	3,000.6	7,414.5	14.5%
	20,715.2	51,186.6	100.0%

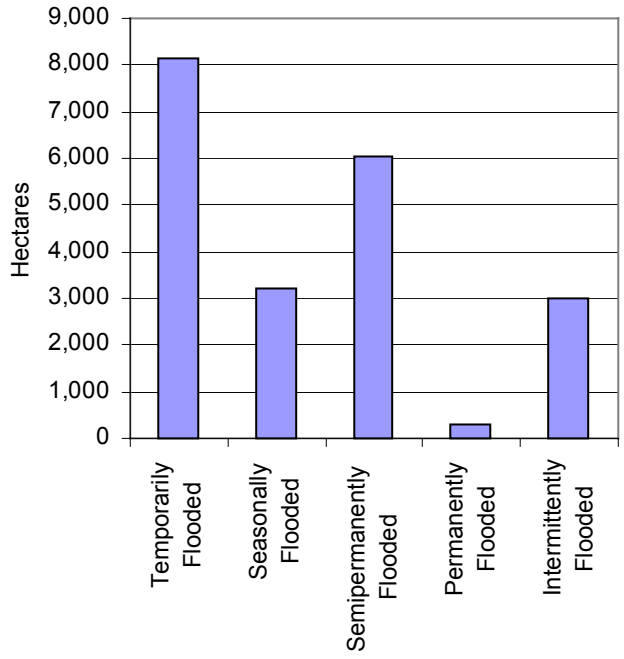

Figure 18. Area of riverine wetlands in western South Dakota summed by water regime.

Part 2: Western South Dakota Basins

A total of 172,867 basins existed in western South Dakota (Table 13). This number included natural wetland depressions, dugout/excavated basins, impoundments, and beaver dams. Riverine or riverine-like wetlands, such as pools in creeks and streams, were not included. Areas impounded by Missouri River mainstem dams also were not included.

Of the 172,867 basins, 61,757 (35.7%) were classified as temporary basins, 50,447 (29.2%) were seasonal basins, 59,340 (34.3%) were semipermanent basins, and 1,323 (0.8%) were permanent basins (Table 13; Figure 19). Of the total number of basins, 107,488 or 62.2% were < 0.2 ha (0.49 acres), 129,295 or 74.8% were < 0.4 ha (0.99 acres), 147,392 or 85.3% were < 0.8 ha (2.0 acres), 163,130 or 94.4% were < 2.0 ha (4.9 acres), and 168, 875 or 97.7% of all basins were < 4.0 ha (9.8 acres) in area. Number and area of basins were summed by water regime or size category in a non-cumulative manner (Figure 20; Table 14; Figure 21; Figure 22).

There were 86,927 created basins, which was 50.3% of the total number of basins. Of these basins, 72,562 were impoundments, 14,054 were dugouts, and 311 were created by beaver activity.

Mean size of all 172,867 basins in western South Dakota was 0.7 ha (1.7 acres). The size range was from 0.0 ha to 2,610.7 ha (6,451.0 acres). The four largest basins in western South Dakota, the Belle Fourche Reservoir, Angostura Reservoir, Shadehill Reservoir, and Lacreek Lake, were included in these calculations (Table 15).

When summed by water regime, mean size of temporary basins was 0.3 ha (0.7 acres). Mean size of seasonal basins was 0.4 ha (1.0 acre). Mean size of semipermanent and permanent basins was 0.9 ha (2.2 acres) and 15.1 ha (37.3 acres), respectively (Table 15).

Table 13. Number and area of basins in western South Dakota summed by water regime. Impoundments, excavated basins, and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included.

Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Temporary	61,757	35.7%	17,888.6	44,202.1	15.8%
Seasonal	50,447	29.2%	21,123.4	52,195.2	18.6%
Semipermanent	59,340	34.3%	54,532.5	134,748.0	48.0%
Permanent	1,323	0.8%	19,949.2	49,293.8	17.6%
	172,867	100.0%	113,493.7	280,439.0	100.0%

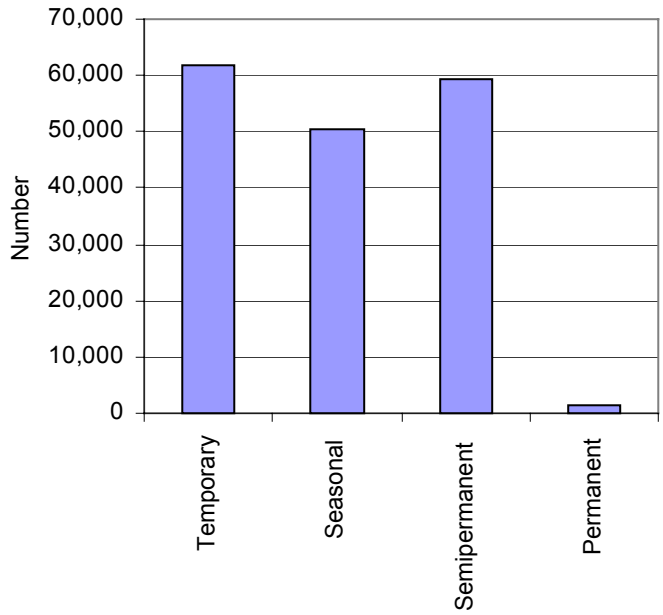

Figure 19. Number of basins in western South Dakota summed by water regime. Impoundments, excavated basins, and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included.

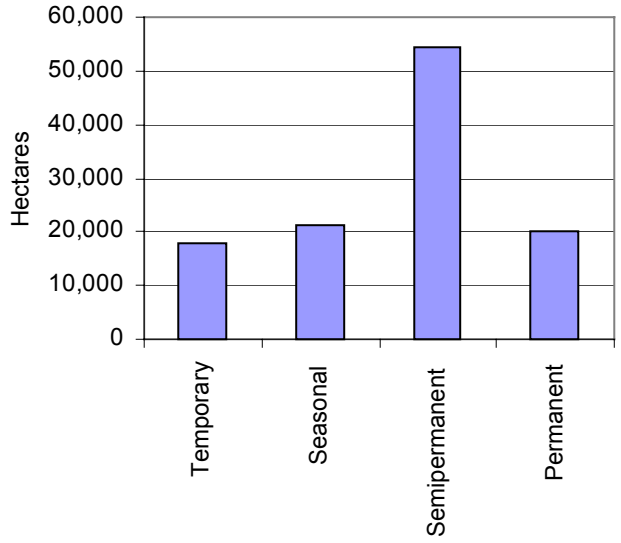

Figure 20. Area of basins in western South Dakota summed by water regime. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included.

Table 14. Number and area of basins in western South Dakota summed size category. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. Size Category key: 0.2 represents basins < 0.2 ha, 0.4 represents basins ≥ 0.2 ha and < 0.4 ha, 0.8 represents basins ≥ 0.4 ha and < 0.8 ha, 2.0 represents basins ≥ 0.8 ha and < 2.0 ha, 4.0 represents basins ≥ 2.0 ha and < 4.0 ha, 4.0+ represents basins ≥ 4.0 ha.

Size Category	Number	% Number	Hectares	Acres	% Area
0.2	107,488	62.2%	6,803.1	16,810.3	6.0%
0.4	21,807	12.6%	6,232.8	32,211.2	5.5%
0.8	18,097	10.5%	10,292.4	57,643.4	9.1%
2.0	15,738	9.1%	19,608.4	106,095.1	17.3%
4.0	5,745	3.3%	15,894.2	145,369.2	14.0%
4.0+	3,992	2.3%	54,662.7	280,439.0	48.2%
	172,867	100.0%	113,493.7	280,439.0	100.0%

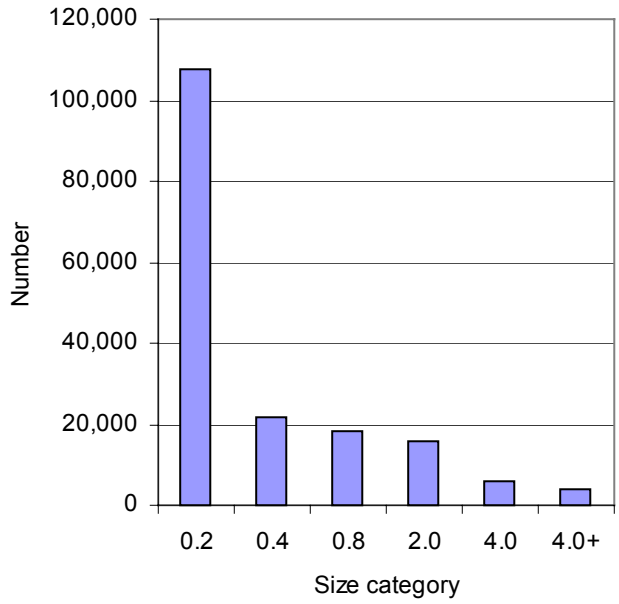

Figure 21. Number of basins in western South Dakota within each size category.
Size Category key:

0.2 represents basins < 0.2 ha,
0.4 represents basins ≥ 0.2 ha and < 0.4 ha,
0.8 represents basins ≥ 0.4 ha and < 0.8 ha,
2.0 represents basins ≥ 0.8 ha and < 2.0 ha,
4.0 represents basins ≥ 2.0 ha and < 4.0 ha,
4.0+ represents basins ≥ 4.0 ha.

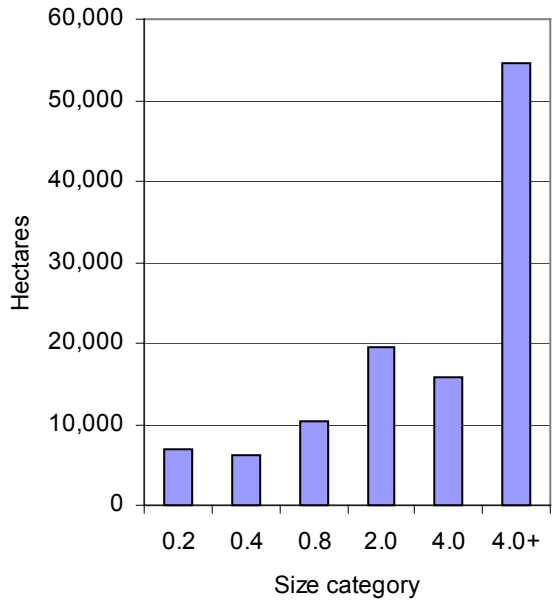

Figure 22. Area of basins in western South Dakota within each size category.
Size Category key:

0.2 represents basins < 0.2 ha,
0.4 represents basins ≥ 0.2 ha and < 0.4 ha,
0.8 represents basins ≥ 0.4 ha and < 0.8 ha,
2.0 represents basins ≥ 0.8 ha and < 2.0 ha,
4.0 represents basins ≥ 2.0 ha and < 4.0 ha,
4.0+ represents basins ≥ 4.0 ha.

Table 15. Mean, range and standard deviation of basin area in western South Dakota by water regime. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included.

Water Regime	Number	Area (ha)	Min (ha)	Max (ha)	Mean (ha)	Std (ha)
Temporary	61,757	17,888.6	0.0+	293.4	0.3	2.0
Seasonal	50,447	21,123.4	0.0+	89.5	0.4	1.9
Semipermanent	59,340	54,532.5	0.0+	450.8	0.9	4.5
Permanent	1,323	19,949.2	0.0+	2,610.7	15.1	114.5
All Regimes	172,867	113,493.7	0.0+	2,610.7	0.7	10.6

Temporary Basins

Of the 61,757 temporary basins in western South Dakota, 48,362 or 78.3% were < 0.2 ha, 53,922 or 87.3% were < 0.4 ha, 57,523 or 93.1% were < 0.8ha, 60,170 or 97.4% were < 2.0ha, and 61,162 or 99% of all temporary basins were < 4.0 ha. In addition, temporary basins were summed by water regime and size category (Table 16).

Exactly 2,393 ha (5,913 acres) or 13.4% of the surface area of temporary basins was in basins < 0.2 ha, 3,959 ha (9,782 acres) or 22.1% of the surface area of temporary basins was in basins < 0.4 ha, 5,972 ha (14, 757 acres) or 33.4% of the surface area of temporary basins was in basins < 0.8 ha, 9,256 ha (22,870 acres) or 51.7% of the surface area of temporary basins was in basins < 2.0 ha, 12,030 ha (29,726 acres) or 67.3% of the surface area of temporary basins was in basins < 4.0 ha. The remaining one third (32.7%) of the surface area of temporary basins or 5,858 ha (14,476 acres) was in basins $\geq$ 4.0 ha. In addition, the area of all temporary basins was summed by water regime and size category (Table 16).

Seasonal Basins

Of the 50,447 seasonal basins in western South Dakota, 38,117 or 75.6% were < 0.2 ha, 42,836 or 84.9% were < 0.4 ha, 45,871 or 90.9% were < 0.8 ha, 48,329 or 95.8% were < 2.0 ha, and 49,442 or 98% of all seasonal basins were < 4.0 ha. In addition, all seasonal basins were summed by water regime and size category (Table 16).

Exactly, 2,107 ha (5,205 acres) or 10.0% of the surface area of seasonal basins was in basins < 0.2 ha, 3,432 ha (8,480 acres) or 16.3% of the surface area of seasonal basins was in basins < 0.4 ha, 5,132 ha (12,682 acres) or 24.3% of the surface area of seasonal basins was in basin < 0.8 ha, 8,209 ha (20,284 acres) or 38.9% of the surface area of seasonal basins was in basins < 2.0 ha, 11,348 ha (28,041 acres) or 53.8% of the surface area of seasonal basins was in basins < 4.0 ha. The remaining 46.3% of the surface area of seasonal basins or 9,775

Table 16. Number and area of basins in western South Dakota summed by water regime and size category. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. See Table 14 for Size Category key.

Temporary Basins

Size Category	Number	% Number	Area (ha)	Area (ac)	%Area
0.2	48,362	78.3%	2,392.8	5,912.6	13.4%
0.4	5,560	9.0%	1,565.8	3,869.0	8.8%
0.8	3,601	5.8%	2,013.4	4,975.1	11.3%
2.0	2,647	4.3%	3,283.4	8,113.2	18.4%
4.0	992	1.6%	2,774.7	6,856.1	15.5%
4.0+	595	1.0%	5,858.4	14,476.0	32.7%
	61,757	100.0%	17,888.6	44,202.1	100.0%

Seasonal Basins

Size Category	Number	% Number	Area (ha)	Area (ac)	%Area
0.2	38,117	75.6%	2,106.5	5,205.1	10.0%
0.4	4,719	9.4%	1,325.3	3,274.8	6.3%
0.8	3,035	6.0%	1,700.5	4,202.0	8.1%
2.0	2,458	4.9%	3,076.8	7,602.6	14.6%
4.0	1,113	2.2%	3,138.9	7,756.2	14.9%
4.0+	1,005	2.0%	9,775.3	24,154.5	46.3%
	50,447	100.0%	21,123.4	52,195.2	100.0%

Semipermanent Basins

Size Category	Number	% Number	Area (ha)	Area (ac)	%Area
0.2	20,634	34.8%	2,270.5	5,610.3	4.2%
0.4	11,432	19.3%	3,315.0	8,191.2	6.1%
0.8	11,397	19.2%	6,541.0	16,162.5	12.0%
2.0	10,538	17.8%	13,113.9	32,404.1	24.0%
4.0	3,497	5.9%	9,561.3	23,625.6	17.5%
4.0+	1,842	3.1%	19,730.9	48,754.3	36.2%
	59,340	100.0%	54,532.5	134,748.0	100.0%

Permanent Basins

Size Category	Number	% Number	Area (ha)	Area (ac)	%Area
0.2	375	28.3%	33.3	82.2	0.2%
0.4	96	7.3%	26.7	65.9	0.1%
0.8	64	4.8%	37.5	92.6	0.2%
2.0	95	7.2%	134.3	331.9	0.7%
4.0	143	10.8%	419.4	1,036.2	2.1%
4.0+	550	41.6%	19,298.1	47,684.9	96.7%
	1,323	100.0%	19,949.2	49,293.8	100.0%

ha (24,155 acres) was in basins ≥ 4.0 hectares in size. In addition, the area of all seasonal basins was summed by water regime and size category in a non-cumulative manner (Table 16).

Semipermanent Basins

Of the 59,340 semipermanent basins in western South Dakota, 20,634 or 34.8% were < 0.2 ha, 32,066 or 54.0% were < 0.4 ha, 43,463 or 73.2% were < 0.8 ha, 54,001 or 91.0% were < 2.0 ha, and 57,498 or 96.9% of all semipermanent basins were < 4.0 ha. In addition, all semipermanent basins were summed by water regime and size category in a non-cumulative manner (Table 16).

Exactly 2,271 ha (5,610 acres) or 4.2% of the surface area of semipermanent basins was in basins < 0.2 ha, 5,586 ha (13,802 acres) or 10.2% of the surface area of semipermanent basins was in basins < 0.4 ha, 12,126 ha (29,964 acres) or 22.2% of the surface area of semipermanent basins was in basin < 0.8 ha, 25,240 ha (62,368 acres) or 46.3% of the surface area of semipermanent basins was in basins < 2.0 ha, 34,802 ha (85,994 acres) or 63.8% of the surface area of semipermanent basins was in basins < 4.0 ha. The remaining 36.2% of the surface area of semipermanent basins or 19,731 ha (48,754 acres) was in basins ≥ 4.0 ha. In addition, the area of all semipermanent basins was summed by water regime and size category in a non-cumulative manner (Table 16).

Permanent Basins

Of the permanent basins in western South Dakota, or 375 or 28.3% were < 0.2 ha, 471 or 35.6% were < 0.4 ha, 535 or 40.4% are < 0.8 ha, 630 or 47.6% were < 2.0 ha, and 773 or 58.4% of all permanent basins were < 4.0 ha. In addition, all permanent basins were summed by water regime and size category in a non-cumulative manner (Table 16).

Exactly 19,298 ha (47,685 acres) or 96.7% of the surface area of permanent basins was ≥ 4.0 ha. Next in order, 419 ha (1,036 acres) or 2.1% of the surface area of

semipermanent basins was in basins ≥ 0.2 and < 4.0 ha. The remaining 1.2% of surface area of permanent basins, 232 ha (573 acres), was in basins < 2.0 ha. In addition, the area of all permanent basins was summed by water regime and size category in a non-cumulative manner (Table 16).

Distribution of Basins by County

Of the 22 counties that comprise western South Dakota, Tripp County contained the greatest number of basins, totaling 20,941 or 12.1% of the total number of basins in western South Dakota. Next, Mead County had 14,351 or 8.3% of the total number of basins. Following this was Harding, Perkins and Corson counties, having 12,474 (7.2%), 10,527 (6.1%) and 9,884 (5.7%) basins, respectively (Table 17).

The five counties of western South Dakota with the greatest basin area were Lyman, Dewey, Butte, Perkins, and Tripp. Lyman county had 11,617 ha or 10.2% of the total basin area. Dewey county had 8,815 ha or 7.8% of the total basin area. Butte, Perkins and Tripp counties had 8,775 (7.7%), 7,605 ha (6.7%), and 6,687 ha (5.9%) of basin area, respectively (Table 17).

In 18 of the 22 counties, the surface area of semipermanent basins was greater than that of the other water regimes. Bennett and Fall River counties had more area contained in permanent basins than any other water regime, while Tripp and Todd counties had more area contained in seasonal basins. The area and number of basins was ordered by county and water regime (Table 18).

Densities of basins in the 22 counties of western South Dakota ranged from 5.8 to 50.0 basins/10 km^2. Tripp County had a density of 50.0 basins/10 km^2. Gregory County had a density of 33.9 basins/10 km^2. Next in order, Todd, Lyman and Jones counties had densities of 23.5, 20.1 and 19.3 basins/10 km^2, respectively (Table 19).

Table 17. Number and area of basins in western South Dakota summed by county. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one county and only the portion of the basin laying inside a given county was summed for that county.

County	Number	% Number	Area (ha)	Area (ac)	% Area
Bennett	3,271	1.9%	5,563.1	13,746.3	4.9%
Butte	9,081	5.2%	8,775.4	21,683.7	7.7%
Corson	9,884	5.7%	6,160.7	15,222.9	5.4%
Custer	3,333	1.9%	1,066.1	2,634.2	0.9%
Dewey	7,280	4.2%	8,814.9	21,781.4	7.8%
Fall River	7,883	4.6%	5,118.7	12,648.2	4.5%
Gregory	9,237	5.3%	2,832.4	6,998.7	2.5%
Haakon	6,143	3.5%	4,999.9	12,354.6	4.4%
Harding	12,474	7.2%	5,439.4	13,440.5	4.8%
Jackson	5,567	3.2%	2,672.5	6,603.7	2.4%
Jones	4,863	2.8%	5,407.7	13,362.3	4.8%
Lawrence	1,212	0.7%	326.4	806.6	0.3%
Lyman	8,861	5.1%	11,617.3	28,705.9	10.2%
Meade	14,351	8.3%	6,651.3	16,435.1	5.9%
Mellette	5,761	3.3%	3,045.0	7,524.0	2.7%
Pennington	8,902	5.1%	5,175.4	12,788.2	4.6%
Perkins	10,527	6.1%	7,605.2	18,792.3	6.7%
Shannon	4,299	2.5%	1,771.4	4,377.2	1.6%
Stanley	5,177	3.0%	5,314.2	13,131.3	4.7%
Todd	8,450	4.9%	2,441.9	6,033.9	2.2%
Tripp	20,941	12.1%	6,686.8	16,522.8	5.9%
Ziebach	5,627	3.3%	6,007.9	14,845.3	5.3%
	173,124	100.0%	113,493.7	280,439.0	100.0%

Table 18. Number and area of basins in western South Dakota summed by county and water regime. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one county and only the portion of the basin laying inside a given county was summed for that county.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Bennett						
	Temporary	1,688	51.6%	871.9	2,154.6	15.7%
	Seasonal	1,122	34.3%	983.3	2,429.6	17.7%
	Semipermanent	407	12.4%	902.3	2,229.6	16.2%
	Permanent	54	1.7%	2,805.6	6,932.6	50.4%
		3,271	100.0%	5,563.1	13,746.3	100.0%
Butte						
	Temporary	2,320	25.5%	656.1	1,621.2	7.5%
	Seasonal	2,233	24.6%	626.5	1,548.0	7.1%
	Semipermanent	4,461	49.1%	3,819.8	9,438.5	43.5%
	Permanent	67	0.7%	3,673.1	9,076.1	41.9%
		9,081	100.0%	8,775.4	21,683.7	100.0%
Corson						
	Temporary	5,322	53.8%	1,450.0	3,583.0	23.5%
	Seasonal	2,082	21.1%	1,426.5	3,524.9	23.2%
	Semipermanent	2,421	24.5%	2,497.9	6,172.2	40.5%
	Permanent	59	0.6%	786.2	1,942.8	12.8%
		9,884	100.0%	6,160.7	15,222.9	100.0%
Custer						
	Temporary	957	28.7%	160.6	396.8	15.1%
	Seasonal	943	28.3%	147.3	363.9	13.8%
	Semipermanent	1,377	41.3%	620.1	1,532.2	58.2%
	Permanent	56	1.7%	138.1	341.4	13.0%
		3,333	100.0%	1,066.1	2,634.2	100.0%
Dewey						
	Temporary	2,621	36.0%	1,966.5	4,859.1	22.3%
	Seasonal	1,665	22.9%	1,909.2	4,717.7	21.7%
	Semipermanent	2,924	40.2%	3,619.0	8,942.3	41.1%
	Permanent	70	1.0%	1,320.3	3,262.4	15.0%
		7,280	100.0%	8,814.9	21,781.4	100.0%

Table 18. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Fall River						
	Temporary	1,764	22.4%	238.7	589.8	4.7%
	Seasonal	2,840	36.0%	551.3	1,362.2	10.8%
	Semipermanent	3,244	41.2%	2,042.2	5,046.2	39.9%
	Permanent	35	0.4%	2,286.6	5,650.0	44.7%
		7,883	100.0%	5,118.7	12,648.2	100.0%
Gregory						
	Temporary	3,045	33.0%	524.5	1,296.1	18.5%
	Seasonal	2,936	31.8%	600.5	1,483.8	21.2%
	Semipermanent	3,211	34.8%	1,358.8	3,357.5	48.0%
	Permanent	45	0.5%	348.5	861.3	12.3%
		9,237	100.0%	2,832.4	6,998.7	100.0%
Haakon						
	Temporary	1,643	26.7%	787.3	1,945.5	15.7%
	Seasonal	1,780	29.0%	1,162.8	2,873.2	23.3%
	Semipermanent	2,700	44.0%	2,799.5	6,917.5	56.0%
	Permanent	20	0.3%	250.3	618.4	5.0%
		6,143	100.0%	4,999.9	12,354.6	100.0%
Harding						
	Temporary	6,211	49.8%	1,257.1	3,106.2	23.1%
	Seasonal	2,987	23.9%	901.9	2,228.7	16.6%
	Semipermanent	3,233	25.9%	2,715.0	6,708.7	49.9%
	Permanent	43	0.3%	565.4	1,397.0	10.4%
		12,474	100.0%	5,439.4	13,440.5	100.0%
Jackson						
	Temporary	1,698	30.5%	385.1	951.6	14.4%
	Seasonal	1,709	30.7%	558.3	1,379.7	20.9%
	Semipermanent	2,128	38.2%	1,522.1	3,761.2	57.0%
	Permanent	32	0.6%	206.9	511.3	7.7%
		5,567	100.0%	2,672.5	6,603.7	100.0%

Table 18. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Jones						
	Temporary	1,065	21.9%	553.9	1,368.8	10.2%
	Seasonal	1,180	24.3%	972.4	2,402.8	18.0%
	Semipermanent	2,570	52.8%	3,524.8	8,709.7	65.2%
	Permanent	48	1.0%	356.5	880.9	6.6%
		4,863	100.0%	5,407.7	13,362.3	100.0%
Lawrence						
	Temporary	182	15.0%	28.2	69.7	8.6%
	Seasonal	305	25.2%	32.4	80.1	9.9%
	Semipermanent	542	44.7%	165.1	407.9	50.6%
	Permanent	183	15.1%	100.7	248.9	30.9%
		1,212	100.0%	326.4	806.6	100.0%
Lyman						
	Temporary	2,384	26.9%	2,177.2	5,379.8	18.7%
	Seasonal	2,356	26.6%	2,400.8	5,932.3	20.7%
	Semipermanent	4,070	45.9%	6,594.9	16,295.7	56.8%
	Permanent	51	0.6%	444.4	1,098.0	3.8%
		8,861	100.0%	11,617.3	28,705.9	100.0%
Meade						
	Temporary	4,282	29.8%	1,035.2	2,558.0	15.6%
	Seasonal	3,679	25.6%	1,044.9	2,581.9	15.7%
	Semipermanent	6,350	44.2%	4,199.2	10,376.0	63.1%
	Permanent	40	0.3%	372.0	919.3	5.6%
		14,351	100.0%	6,651.3	16,435.1	100.0%
Mellette						
	Temporary	2,152	37.4%	329.7	814.8	10.8%
	Seasonal	1,317	22.9%	765.9	1,892.6	25.2%
	Semipermanent	2,266	39.3%	1,812.8	4,479.4	59.5%
	Permanent	26	0.5%	136.5	337.3	4.5%
		5,761	100.0%	3,045.0	7,524.0	100.0%

Table 18. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Pennington						
	Temporary	2,387	26.8%	845.0	2,087.9	16.3%
	Seasonal	2,494	28.0%	840.0	2,075.5	16.2%
	Semipermanent	3,833	43.1%	2,573.7	6,359.5	49.7%
	Permanent	188	2.1%	916.8	2,265.3	17.7%
		8,902	100.0%	5,175.4	12,788.2	100.0%
Perkins						
	Temporary	4,820	45.8%	1,231.7	3,043.5	16.2%
	Seasonal	2,291	21.8%	743.1	1,836.1	9.8%
	Semipermanent	3,383	32.1%	2,901.4	7,169.3	38.2%
	Permanent	33	0.3%	2,729.0	6,743.4	35.9%
		10,527	100.0%	7,605.2	18,792.3	100.0%
Shannon						
	Temporary	2,333	54.3%	326.7	807.2	18.4%
	Seasonal	1,186	27.6%	398.4	984.5	22.5%
	Semipermanent	749	17.4%	541.1	1,337.1	30.5%
	Permanent	31	0.7%	505.2	1,248.4	28.5%
		4,299	100.0%	1,771.4	4,377.2	100.0%
Stanley						
	Temporary	1,243	24.0%	515.0	1,272.5	9.7%
	Seasonal	1,267	24.5%	1,003.6	2,479.8	18.9%
	Semipermanent	2,604	50.3%	3,297.8	8,148.7	62.1%
	Permanent	63	1.2%	497.9	1,230.4	9.4%
		5,177	100.0%	5,314.2	13,131.3	100.0%
Todd						
	Temporary	5,042	59.7%	443.9	1,096.8	18.2%
	Seasonal	2,576	30.5%	829.8	2,050.4	34.0%
	Semipermanent	791	9.4%	775.0	1,915.0	31.7%
	Permanent	41	0.5%	393.2	971.7	16.1%
		8,450	100.0%	2,441.9	6,033.9	100.0%

Table 18. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Tripp						
	Temporary	6,656	31.8%	1,084.4	2,679.5	16.2%
	Seasonal	10,771	51.4%	2,442.8	6,036.1	36.5%
	Semipermanent	3,403	16.3%	2,380.9	5,883.1	35.6%
	Permanent	111	0.5%	778.7	1,924.1	11.6%
		20,941	100.0%	6,686.8	16,522.8	100.0%
Ziebach						
	Temporary	2,012	35.8%	1,019.8	2,519.9	17.0%
	Seasonal	800	14.2%	781.7	1,931.5	13.0%
	Semipermanent	2,783	49.5%	3,869.3	9,560.8	64.4%
	Permanent	32	0.6%	337.1	833.1	5.6%
		5,627	100.0%	6,007.9	14,845.3	100.0%

Table 19. Distribution of basins in western South Dakota sorted by county and water regime, presented as number of basins per 10 sq. units and as area of basins per 10 sq. units. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one county and only the portion of the basin laying inside a given county was summed for that county.

Cty.	Water Regime	Number/ 10 km^2	Number/ 10 km^2	Acres/ 10 mi^2	Hectares/ 10 km^2
Bennett					
	Temporary	5.5	14.2	18.1	2.8
	Seasonal	3.6	9.4	20.4	3.2
	Semipermanent	1.3	3.4	18.7	2.9
	Permanent	0.2	0.5	58.2	9.1
		10.6	27.5	115.4	18.0
Butte					
	Temporary	3.9	10.2	7.1	1.1
	Seasonal	3.8	9.8	6.8	1.1
	Semipermanent	7.6	19.6	41.6	6.5
	Permanent	0.1	0.3	40.0	6.2
		15.4	40.0	95.5	14.9
Corson					
	Temporary	8.1	21.0	14.2	2.2
	Seasonal	3.2	8.2	13.9	2.2
	Semipermanent	3.7	9.6	24.4	3.8
	Permanent	0.1	0.2	7.7	1.2
		15.1	39.1	60.2	9.4
Custer					
	Temporary	2.4	6.1	2.5	0.4
	Seasonal	2.3	6.0	2.3	0.4
	Semipermanent	3.4	8.8	9.8	1.5
	Permanent	0.1	0.4	2.2	0.3
		8.2	21.3	16.9	2.6
Dewey					
	Temporary	4.1	10.7	19.9	3.1
	Seasonal	2.6	6.8	19.3	6.2
	Semipermanent	4.6	12.0	36.6	11.7
	Permanent	0.1	0.3	13.3	4.3
		11.5	29.8	89.1	25.3

Table 19. Continued.

Cty.	Water Regime	Number/ 10 km^2	Number/ 10 acres	Acres/ 10 mi	Hectares/ 10 km
Fall River					
	Temporary	3.9	10.1	3.4	0.5
	Seasonal	6.3	16.2	7.8	1.2
	Semipermanent	7.1	18.5	28.8	4.5
	Permanent	0.1	0.2	32.2	5.0
		17.4	45.0	72.1	11.3
Gregory					
	Temporary	11.2	28.9	12.3	1.9
	Seasonal	10.8	27.9	14.1	2.2
	Semipermanent	11.8	30.5	31.9	5.0
	Permanent	0.2	0.4	8.2	1.3
		33.9	87.7	66.5	10.4
Haakon					
	Temporary	3.5	9.0	10.6	1.7
	Seasonal	3.8	9.7	15.7	2.5
	Semipermanent	5.7	14.8	37.9	5.9
	Permanent	0.0	0.1	3.4	0.5
		13.0	33.6	67.6	10.6
Harding					
	Temporary	8.9	23.1	11.6	1.8
	Seasonal	4.3	11.1	8.3	1.3
	Semipermanent	4.7	12.0	25.0	3.9
	Permanent	0.1	0.2	5.2	0.8
		17.9	46.5	50.1	7.8
Jackson					
	Temporary	3.5	9.1	5.1	0.8
	Seasonal	3.5	9.1	7.4	1.2
	Semipermanent	4.4	11.4	20.1	3.1
	Permanent	0.1	0.2	2.7	0.4
		11.5	29.7	35.3	5.5

Table 19. Continued.

Cty.	Water Regime	Number/ 10 sq. km	Number/ 10 sq. ac	Acres/ 10 sq. mi	Hectares/ 10 sq. km
Jones					
	Temporary	4.2	11.0	14.1	2.2
	Seasonal	4.7	12.1	24.7	3.9
	Semipermanent	10.2	26.5	89.7	14.0
	Permanent	0.2	0.5	9.1	1.4
		19.3	50.1	137.6	21.5
Lawrence					
	Temporary	0.9	2.3	0.9	0.1
	Seasonal	1.5	3.8	1.0	0.2
	Semipermanent	2.6	6.8	5.1	0.8
	Permanent	0.9	2.3	3.1	0.5
		5.8	15.1	10.0	1.6
Lyman					
	Temporary	5.4	14.0	31.5	4.9
	Seasonal	5.3	13.8	34.8	5.4
	Semipermanent	9.2	23.9	95.5	14.9
	Permanent	0.1	0.3	6.4	1.0
		20.1	51.9	168.3	26.3
Meade					
	Temporary	4.7	12.3	7.3	1.1
	Seasonal	4.1	10.6	7.4	1.2
	Semipermanent	7.0	18.2	29.8	4.7
	Permanent	0.0	0.1	2.6	0.4
		15.9	41.2	47.1	7.4
Mellette					
	Temporary	6.3	16.4	6.2	1.0
	Seasonal	3.9	10.1	14.5	2.3
	Semipermanent	6.7	17.3	34.2	5.3
	Permanent	0.1	0.2	2.6	0.4
		17.0	44.0	57.5	9.0

Table 19. Continued.

Cty.	Water Regime	Number/ 10 sq. km	Number/ 10 sq. ac	Acres/ 10 sq. mi	Hectares/ 10 sq. km
Pennington					
	Temporary	3.3	8.6	7.5	1.2
	Seasonal	3.5	8.9	7.4	1.2
	Semipermanent	5.3	13.7	22.8	3.6
	Permanent	0.3	0.7	8.1	1.3
		12.3	31.9	45.8	7.2
Perkins					
	Temporary	6.4	16.7	10.5	1.6
	Seasonal	3.1	7.9	6.3	1.0
	Semipermanent	4.5	11.7	24.8	3.9
	Permanent	0.0	0.1	23.3	3.6
		14.0	36.4	64.9	10.1
Shannon					
	Temporary	4.3	11.1	3.8	0.6
	Seasonal	2.2	5.7	4.7	0.7
	Semipermanent	1.4	3.6	6.4	1.0
	Permanent	0.1	0.1	5.9	0.9
		7.9	20.5	20.9	3.3
Stanley					
	Temporary	3.2	8.2	8.4	1.3
	Seasonal	3.2	8.4	16.4	2.6
	Semipermanent	6.6	17.2	53.8	8.4
	Permanent	0.2	0.4	8.1	1.3
		13.2	34.1	86.6	13.5
Todd					
	Temporary	14.0	36.3	7.9	1.2
	Seasonal	7.2	18.5	14.7	2.3
	Semipermanent	2.2	5.7	13.8	2.2
	Permanent	0.1	0.3	7.0	1.1
		23.5	60.8	43.4	6.8

Table 19. Continued.

Cty.	Water Regime	Number/ 10 sq. km	Number/ 10 sq. ac	Acres/ 10 sq. mi	Hectares/ 10 sq. km
Tripp					
	Temporary	15.9	41.2	16.6	2.6
	Seasonal	25.7	66.6	37.4	5.8
	Semipermanent	8.1	21.1	36.4	5.7
	Permanent	0.3	0.7	11.9	1.9
		50.0	129.6	102.2	16.0
Ziebach					
	Temporary	3.9	10.2	12.8	2.0
	Seasonal	1.6	4.1	9.8	1.5
	Semipermanent	5.5	14.1	48.5	7.6
	Permanent	0.1	0.2	4.2	0.7
		11.0	28.5	75.3	11.8

Meade County contained the greatest number of created basins of any county in western South. A total of 9,067 impounded and excavated basins were located in this county. Next in order, Butte, Pennington, and Fall River counties contained 6,545, 6,188, and 5,412 created basins, respectively. All these counties are located on the western half of western South Dakota. Bennett County contained the fewest created basins with a total of 736 (Table 20).

In terms of the density of created basins, Gregory County ranked the highest with 15.8 basins/10 km^2. Jones and Tripp counties followed with 13.4 and 12.5 basins/10 km^2, respectively. These three counties are in the eastern half of western South Dakota. As was the case with the fewest created basins, Bennett County also ranked lowest in created basin density, with 2.4 basins/10 km^2 (Table 21).

Distribution of Basins by Physiographic Region

All basins are contained in the five physiographic regions that comprise western South Dakota. Exactly 85,570 basins or 49.3% of the total number of basins were in the Pierre Hills physiographic region. The Northern Plateaus region had 48,297 basins or 27.8% of all basins. The Sand Hills region contained 19,168 or 11.1% of all basins and the Southern Plateaus had 16,293 basins or 9.4% of all basins. The remaining 2.4% of all basins or 4,114 basins were found in the Black Hills physiographic region (Table 22).

The Pierre Hills region contains 61,480 ha or 54.2% of the total area of basins in western South Dakota. The Northern Plateaus has 34,111 ha or 30.1%, Southern Plateaus has 10,134 ha or 8.9%, Sand Hills has 6,175 or 5.4% and the Black Hills region has 3,894 or 1.4% of the total area of basins in western South Dakota (Table 22).

In 3 of the 5 physiographic regions; Northern Plateaus, Pierre Hills, and Southern Plateaus, the surface area of semipermanent basins was greater than that of the other water regimes. The Black Hills physiographic region had more area contained in permanent basins

Table 20. Number of natural and created basins in western South Dakota summed by county. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one county and only the portion of the basin laying inside a given county was summed for that county.

	Natural Basins	Created Basins				All Basins
County	Total	Impoundments	Excavated	Beaver	Total	Total
Bennett	2,535	482	251	3	736	3,271
Butte	2,536	5,616	929	0	6,545	9,081
Corson	6,720	2,505	659	0	3,164	9,884
Custer	1,053	2,130	129	21	2,280	3,333
Dewey	3,509	3,037	734	0	3,771	7,280
Fall River	2,471	4,982	430	0	5,412	7,883
Gregory	4,927	2,991	1,319	0	4,310	9,237
Haakon	1,795	4,047	301	0	4,348	6,143
Harding	7,104	4,757	612	1	5,370	12,474
Jackson	2,154	3,140	273	0	3,413	5,567
Jones	1,494	2,822	546	1	3,369	4,863
Lawrence	225	761	48	178	987	1,212
Lyman	3,666	3,730	1,465	0	5,195	8,861
Meade	5,284	8,214	853	0	9,067	14,351
Mellette	2,709	2,850	202	0	3,052	5,761
Pennington	2,714	5,321	760	107	6,188	8,902
Perkins	5,574	4,008	945	0	4,953	10,527
Shannon	2,717	1,445	137	0	1,582	4,299
Stanley	1,864	2,746	567	0	3,313	5,177
Todd	7,165	1,003	282	0	1,285	8,450
Tripp	15,715	2,887	2,339	0	5,226	20,941
Ziebach	2,100	3,194	333	0	3,527	5,627
	86,031	72,668	14,114	311	87,093	173,124

Table 21. Distribution of natural and created basins in western South Dakota sorted by county, presented as number of basins per 10 sq. km. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one county and only the portion of the basin laying inside a given county was summed for that county

	Natural Basins	Created Basins	All Basins
County	Basins/10 sq. km	Basins/10 sq. km	Basins/10 sq. km
Bennett	8.2	2.4	10.6
Butte	4.3	11.1	15.4
Corson	10.3	4.8	15.1
Custer	2.6	5.6	8.2
Dewey	5.5	6.0	11.5
Fall River	5.4	11.9	17.4
Gregory	18.1	15.8	33.9
Haakon	3.8	9.2	13.0
Harding	10.2	7.7	17.9
Jackson	4.4	7.0	11.5
Jones	5.9	13.4	19.3
Lawrence	1.1	4.7	5.8
Lyman	8.3	11.8	20.1
Meade	5.9	10.0	15.9
Mellette	8.0	9.0	17.0
Pennington	3.8	8.6	12.3
Perkins	7.4	6.6	14.0
Shannon	5.0	2.9	7.9
Stanley	4.7	8.4	13.2
Todd	19.9	3.6	23.5
Tripp	37.5	12.5	50.0
Ziebach	4.1	6.9	11.0

Table 22. Number and area of basins in western South Dakota summed by physiographic region. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin was counted more than once if it lay in more than one physiographic region and only the portion of the basin lying inside a given physiographic region was summed for that region.

Physiographic Region	Number	% Number	Area (ha)	Area (ac)	% Area
Black Hills	4,114	2.4%	1,575.8	3,893.6	1.4%
Northern Plateaus	48,297	27.8%	34,110.8	84,286.6	30.1%
Pierre Hills	85,570	49.3%	61,497.9	151,959.3	54.2%
South Plateaus	16,293	9.4%	10,134.2	25,041.2	8.9%
Sand Hills	19,168	11.1%	6,174.9	15,258.1	5.4%
	173,442	100.0%	113,493.6	280,438.9	100.0%

than any other water regime, while the Sand Hills physiographic region had more area contained in seasonal basins. Area and number of basins was ordered by physiographic region and water regime (Table 23).

Densities of basins in the five physiographic regions of western South Dakota varied from 5.2 to 37.0 basins/10 km^2 . The Sand Hills region had a density of 37.0 basins/10 km^2 . The Pierre Hills region had a density of 16.8 basins/10 km^2 . Next in order, the Northern Plateaus, Southern Plateaus, and the Black Hills regions had densities of 16.1, 11.5, and 5.2 basins/10 km^2, respectively (Table 24).

The Pierre Hills physiographic region contained the greatest number of created basins. A total of 53,186 created basins were tallied. When further classified, this region also had the greatest number of impounded basins (45,009) and the greatest number of excavated basins (8,176) of any physiographic region. At nearly half of these numbers, the Northern Plateaus region contained 18,355 impoundments and 3,449 excavated basins, for a total of 21,804 created basins. The fewest created basins were found in the Sand Hills Physiographic Region with 2,441 basins (Table 25).

In terms of the density of created basins, the Pierre Hills physiographic region ranked the highest at 10.4 basins/10 km^2. The Northern Plateaus region ranked second with 7.3 basins/10 km^2. The remaining three regions have densities between 4.2 and 4.7 basins/10 km^2 (Table 26).

Distribution of Basins by Hydrologic Unit

All basins were contained in the ten hydrologic units that comprise western South Dakota. Exactly 37,212 basins or 21.5% of the total number of basins were in HU 101303. Similarly, 31,813 basins or 18.4% of total number of basins were in HU 101201. Units 101402, 101401 and 101500 contained 29,921 (17.3%),

Table 23. Number and area of basins in western South Dakota summed by physiographic region and water regime. Impoundments, excavated basins and beaver dams were included. Basin-like pools in riverine and riverine-like systems were not included. Missouri River impoundments were not included. A given basin may be counted more than once if it lays in more than one physiographic region and only the portion of the basin laying inside a given physiographic region was summed for that region.

Phy.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Black Hills						
	Temporary	745	18.1%	78.1	193.0	5.0%
	Seasonal	1,222	29.7%	127.6	315.2	8.1%
	Semipermanent	1,766	42.9%	362.1	894.8	23.0%
	Permanent	381	9.3%	1,007.9	2,490.5	64.0%
		4,114	100.0%	1,575.8	3,893.6	100.0%
North Plateaus						
	Temporary	22,573	46.7%	6,997.4	17,290.3	20.5%
	Seasonal	10,608	22.0%	5,582.3	13,793.6	16.4%
	Semipermanent	14,892	30.8%	15,767.6	38,961.3	46.2%
	Permanent	224	0.5%	5,763.5	14,241.5	16.9%
		48,297	100.0%	34,110.8	84,286.6	100.0%
Pierre Hills						
	Temporary	23,332	27.3%	8,002.7	19,774.4	13.0%
	Seasonal	24,259	28.3%	11,130.4	27,502.9	18.1%
	Semipermanent	37,450	43.8%	33,496.8	82,769.5	54.5%
	Permanent	529	0.6%	8,868.0	21,912.5	14.4%
		85,570	100.0%	61,497.9	151,959.3	100.0%
Southern Plateaus						
	Temporary	7,437	45.6%	1,669.1	4,124.4	16.5%
	Seasonal	4,686	28.8%	2,071.4	5,118.3	20.4%
	Semipermanent	4,017	24.7%	3,277.0	8,097.3	32.3%
	Permanent	153	0.9%	3,116.7	7,701.2	30.8%
		16,293	100.0%	10,134.2	25,041.2	100.0%
Sand Hills						
	Temporary	7,797	40.7%	1,141.2	2,819.9	18.5%
	Seasonal	9,816	51.2%	2,211.7	5,465.1	35.8%
	Semipermanent	1,501	7.8%	1,628.9	4,025.0	26.4%
	Permanent	54	0.3%	1,193.0	2,948.0	19.3%
		19,168	100.0%	6,174.9	15,258.1	100.0%

Table 24. Distribution of basins in western South Dakota sorted by physiographic region and water regime, presented as number of basins per 10 sq. units and as area of basins per 10 sq. units. Impoundments, excavated basins and beaver dams are included. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one physiographic region and only the portion of the basin laying inside a given physiographic region is summed for that region.

Phy.	Water Regime	Number/ 10 sq. km	Number/ 10 sq. mi	Hectares/ 10 sq. km	Acres/ 10 sq. mi
Black Hills					
	Temporary	0.9	2.4	0.1	0.6
	Seasonal	1.5	4.0	0.2	1.0
	Semipermanent	2.2	5.8	0.5	2.9
	Permanent	0.5	1.3	1.3	8.2
		5.2	13.5	2.0	12.8
Northern Plateaus					
	Temporary	7.5	19.5	2.3	14.9
	Seasonal	3.5	9.2	1.9	11.9
	Semipermanent	5.0	12.9	5.3	33.6
	Permanent	0.1	0.2	1.9	12.3
		16.1	41.7	11.4	72.8
Pierre Hills					
	Temporary	4.6	11.9	1.6	10.1
	Seasonal	4.8	12.3	2.2	14.0
	Semipermanent	7.4	19.1	6.6	42.1
	Permanent	0.1	0.3	1.7	11.1
		16.8	43.5	12.1	77.3
South Plateaus					
	Temporary	5.3	13.6	1.2	7.6
	Seasonal	3.3	8.6	1.5	9.4
	Semipermanent	2.8	7.4	2.3	14.8
	Permanent	0.1	0.3	2.2	14.1
		11.5	29.8	7.2	45.9
Sand Hills					
	Temporary	15.1	39.0	2.2	14.1
	Seasonal	19.0	49.1	4.3	27.3
	Semipermanent	2.9	7.5	3.1	20.1
	Permanent	0.1	0.3	2.3	14.8
		37.0	95.9	11.9	76.4

Table 25. Number of natural and created basins in western South Dakota summed by physiographic region. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one physiographic region and only the portion of the basin laying inside a given region is summed for that region.

	Natural Basins	Created Basins				All Basins
Physiographic Region	Total	Impoundments	Excavated	Beaver	Total	Total
Black Hills	765	2,783	260	306	3,349	4,114
Northern Plateaus	26,492	18,355	3,449	1	21,805	48,297
Pierre Hills	32,384	45,009	8,176	1	53,186	85,570
Southern Plateaus	9,761	5,735	794	3	6,532	16,293
Sand Hills	16,727	996	1,445	0	2,441	19,168
	86,129	72,878	14,124	311	87,313	173,442

Table 26. Distribution of natural and created basins in western South Dakota sorted by physiographic region, presented as number of basins per 10 sq. km. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one physiographic region and only the portion of the basin laying inside a given region is summed for that region.

	Natural Basins	Created Basins	All Basins
Physiographic Region	Basins/10 sq. km	Basins/10 sq. km	Basins/10 sq. km
Black Hills	1.0	4.2	5.2
Northern Plateaus	8.8	7.3	16.1
Pierre Hills	6.4	10.4	16.8
Southern Plateaus	6.9	4.6	11.5
Sand Hills	32.3	4.7	37.0

28,563 (16.5%), and 21,957 (12.7%) basins, respectively. The remaining five units combined contained 23,745 basins, or 13.6% of the total number of basins (Table 27).

Hydrologic Unit 101303 had 27,579 ha or 24.3% of the surface area of all basins. Hydrologic Unit 101401 had 24,2003 ha or 21.3% of the surface area of all basins. Units 101402, 101201, and 101202 contained 20,193 ha (17.8%), 18,180 ha (16.0%), and 9,013 ha (7.9%) of basin area, respectively. The remaining five units combined contained 14,329 ha or 12.7% of the surface area of all basins (Table 27).

In 8 of the 10 hydrologic units, the surface area of semipermanent basins was greater than that of the other water regimes. Hydrologic Unit 101202 had slightly more area contained in permanent basins than any other water regime, while HU 101500 had more area contained in seasonal basins. The area and number of basins were ordered by hydrologic unit and water regime (Table 29).

Densities of basins in the ten hydrologic units (6-digit) in western South Dakota varied from 11.5 to 48.4 basins/10 km^2 . Unit 101500 had a density of 48.4 basins/10 km^2 . Unit 101701 had a density of 26.2 basins/10 km2. Unit 101401 had a density of 19.7 basins/10 km^2. The lowest density of basins in the 10 hydrologic units was located in unit 101301 (Table 29).

There are 20,767 created basins in HU 101201. Hydrologic Units 101401 and 101303 were next in rank with 17,461 and 16,523 basins. The fewest number of created basins was in the smallest Hydrologic Unit found in western South Dakota, HU 101701, which had 132 created basins (Table 30).

HU 101701, with the smallest area and the fewest created basins, had the greatest density of basins at 15.0 basins/10 km^2. Ranked at second, HU 101401 had 12.1 basins/10 km^2. Ranked third, HU 101202 had 10.4 basins/10 km^2. The eight remaining Hydrologic Units had densities of 6.4 to 8.9 basins/10 km^2 (Table 31).

Table 27. Number and area of basins in western South Dakota summed by 6-digit hydrological unit. Impoundments, excavated basins and beaver dams are included. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one hydrologic unit and only the portion of the basin laying inside a given hydrologic unit is summed for that unit.

Hydrological Unit	Number	% Number	Area (ha)	Area (ac)	% Area
101102	2,604	1.5%	1,069.2	2,642.0	0.9%
101201	31,813	18.4%	18,179.6	44,921.2	16.0%
101202	11,611	6.7%	9,012.8	22,270.4	7.9%
101301	8,729	5.0%	6,778.2	16,748.7	6.0%
101302	570	0.3%	303.7	750.5	0.3%
101303	37,212	21.5%	27,578.7	68,146.0	24.3%
101401	28,563	16.5%	24,200.3	59,798.1	21.3%
101402	29,921	17.3%	20,192.9	49,895.9	17.8%
101500	21,957	12.7%	6,118.2	15,117.8	5.4%
101701	231	0.1%	60.1	148.4	0.1%
	173,211	100.0%	113,493.7	280,439.0	100.0%

Table 28. Number and area of basins in western South Dakota summed by 6-digit hydrological unit and water regime. Impoundments, excavated basins and beaver dams are included. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one hydrologic unit and only the portion of the basin laying inside a given hydrologic unit is summed for that unit.

HUC	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
101102						
	Temporary	1,267	48.7%	324.5	801.8	30.3%
	Seasonal	675	25.9%	190.4	470.5	17.8%
	Semipermanent	650	25.0%	493.8	1,220.3	46.2%
	Permanent	12	0.5%	60.5	149.5	5.7%
		2,604	100.0%	1,069.2	2,642.0	100.0%
101201						
	Temporary	9,052	28.5%	2,408.8	5,951.9	13.2%
	Seasonal	9,120	28.7%	2,682.2	6,627.6	14.8%
	Semipermanent	13,264	41.7%	9,433.2	23,309.0	51.9%
	Permanent	377	1.2%	3,655.5	9,032.7	20.1%
		31,813	100.0%	18,179.6	44,921.2	100.0%
101202						
	Temporary	2,418	20.8%	808.5	1,997.7	9.0%
	Seasonal	3,034	26.1%	760.7	1,879.6	8.4%
	Semipermanent	5,969	51.4%	3,721.7	9,196.1	41.3%
	Permanent	190	1.6%	3,722.0	9,196.8	41.3%
		11,611	100.0%	9,012.8	22,270.4	100.0%
101301						
	Temporary	2,809	32.2%	1,050.6	2,596.0	15.5%
	Seasonal	2,097	24.0%	1,417.3	3,502.0	20.9%
	Semipermanent	3,752	43.0%	3,938.7	9,732.4	58.1%
	Permanent	71	0.8%	371.6	918.3	5.5%
		8,729	100.0%	6,778.2	16,748.7	100.0%
101302						
	Temporary	290	50.9%	57.0	140.8	18.8%
	Seasonal	116	20.4%	21.6	53.5	7.1%
	Semipermanent	160	28.1%	128.7	318.1	42.4%
	Permanent	4	0.7%	96.4	238.1	31.7%
		570	100.0%	303.7	750.5	100.0%

Table 28. Continued.

HUC	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
101303						
	Temporary	17,740	47.7%	5,626.7	13,903.4	20.4%
	Seasonal	7,744	20.8%	4,269.8	10,550.6	15.5%
	Semipermanent	11,566	31.1%	12,413.8	30,674.0	45.0%
	Permanent	162	0.4%	5,268.4	13,017.9	19.1%
		37,212	100.0%	27,578.7	68,146.0	100.0%
101401						
	Temporary	7,475	26.2%	3,324.5	8,214.6	13.7%
	Seasonal	8,325	29.1%	5,139.5	12,699.5	21.2%
	Semipermanent	12,558	44.0%	13,775.5	34,038.7	56.9%
	Permanent	205	0.7%	1,960.9	4,845.3	8.1%
		28,563	100.0%	24,200.3	59,798.1	100.0%
101402						
	Temporary	11,546	38.6%	3,210.3	7,932.7	15.9%
	Seasonal	8,893	29.7%	4,385.8	10,837.2	21.7%
	Semipermanent	9,250	30.9%	8,902.1	21,996.7	44.1%
	Permanent	232	0.8%	3,694.6	9,129.3	18.3%
		29,921	100.0%	20,192.9	49,895.9	100.0%
101500						
	Temporary	9,184	41.8%	1,061.5	2,622.8	17.3%
	Seasonal	10,492	47.8%	2,240.5	5,536.3	36.6%
	Semipermanent	2,207	10.1%	1,699.2	4,198.7	27.8%
	Permanent	74	0.3%	1,117.0	2,760.0	18.3%
		21,957	100.0%	6,118.2	15,117.8	100.0%
101701						
	Temporary	75	32.5%	16.3	40.3	27.1%
	Seasonal	46	19.9%	15.5	38.3	25.8%
	Semipermanent	109	47.2%	25.9	63.9	43.1%
	Permanent	1	0.4%	2.4	5.9	4.0%
		231	100.0%	60.1	148.4	100.0%

Table 29. Distribution of basins in western South Dakota sorted by 6-digit hydrological unit and water regime, presented as number of basins per 10 sq. units and as area of basins per 10 sq. units. Impoundments, excavated basins and beaver dams are included. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one hydrologic unit and only the portion of the basin laying inside a given hydrologic unit is summed for that unit.

HUC	Water Regime	Number/ 10 sq. km	Number/ 10 sq. mi	Acres/ 10 sq. mi	Hectares/ 10 sq. km
101102					
	Temporary	8.3	21.5	13.6	2.1
	Seasonal	4.4	11.5	8.0	1.2
	Semipermanent	4.3	11.0	20.7	3.2
	Permanent	0.1	0.2	2.5	0.4
		17.1	44.2	44.9	7.0
101201					
	Temporary	3.6	9.3	6.1	1.0
	Seasonal	3.6	9.4	6.8	1.1
	Semipermanent	5.3	13.6	24.0	3.7
	Permanent	0.1	0.4	9.3	1.5
		12.6	32.7	46.2	7.2
101202					
	Temporary	2.9	7.4	6.1	1.0
	Seasonal	3.6	9.3	5.8	0.9
	Semipermanent	7.1	18.3	28.2	4.4
	Permanent	0.2	0.6	28.2	4.4
		13.7	35.6	68.2	10.7
101301					
	Temporary	3.7	9.6	8.9	1.4
	Seasonal	2.8	7.2	12.0	1.9
	Semipermanent	5.0	12.8	33.3	5.2
	Permanent	0.1	0.2	3.1	0.5
		11.5	29.8	57.2	8.9
101302					
	Temporary	9.3	24.0	11.7	1.8
	Seasonal	3.7	9.6	4.4	0.7
	Semipermanent	5.1	13.3	26.4	4.1
	Permanent	0.1	0.3	19.7	3.1
		18.3	47.3	62.2	9.7

Table 29. Continued.

HUC	Water Regime	Number/ 10 sq. km	Number/ 10 sq. mi	Acres/ 10 sq. mi	Hectares/ 10 sq. km
101303					
	Temporary	7.2	18.7	14.7	2.3
	Seasonal	3.2	8.2	11.1	1.7
	Semipermanent	4.7	12.2	32.4	5.1
	Permanent	0.1	0.2	13.7	2.1
		15.2	39.3	72.0	11.2
101401					
	Temporary	5.2	13.4	14.7	2.3
	Seasonal	5.7	14.9	22.7	3.5
	Semipermanent	8.7	22.5	60.9	9.5
	Permanent	0.1	0.4	8.7	1.4
		19.7	51.1	107.0	16.7
101402					
	Temporary	5.4	14.0	9.6	1.5
	Seasonal	4.2	10.8	13.1	2.0
	Semipermanent	4.3	11.2	26.6	4.2
	Permanent	0.1	0.3	11.0	1.7
		14.0	36.2	60.3	9.4
101500					
	Temporary	20.3	52.5	15.0	2.3
	Seasonal	23.1	60.0	31.6	4.9
	Semipermanent	4.9	12.6	24.0	3.7
	Permanent	0.2	0.4	15.8	2.5
		48.4	125.5	86.4	13.5
101701					
	Temporary	8.5	22.1	11.8	1.9
	Seasonal	5.2	13.5	11.3	1.8
	Semipermanent	12.4	32.1	18.8	2.9
	Permanent	0.1	0.3	1.7	0.3
		26.2	67.9	43.6	6.8

Table 30. Number of natural and created basins in western South Dakota summed by hydrologic unit. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one hydrologic unit and only the portion of the basin laying inside a given unit is summed for that unit.

	Natural Basins	Created Basins				All Basins
Hydrologic Unit	Total	Impoundments	Excavated	Beaver	Total	Total
101102	1,244	1,238	121	1	1,360	2,604
101201	11,046	18,691	1,891	185	20,767	31,813
101202	2,808	7,627	1,055	121	8,803	11,611
101301	4,107	3,931	691	0	4,622	8,729
101302	335	145	90	0	235	570
101303	20,689	13,954	2,569	0	16,523	37,212
101401	11,102	13,764	3,696	1	17,461	28,563
101402	16,107	11,543	2,268	3	13,814	29,921
101500	18,587	1,691	1,679	0	3,370	21,957
101701	99	110	22	0	132	231
	86,124	72,694	14,082	311	87,087	173,211

Table 31. Distribution of natural and created basins in western South Dakota sorted by hydrologic unit, presented as number of basins per 10 sq. km. Basin-like pools in riverine and riverine-like systems are not included. Missouri River impoundments are not included. A given basin may be counted more than once if it lies in more than one hydrologic unit and only the portion of the basin laying inside a given unit is summed for that unit

	Natural Basins	Created Basins	All Basins
Hydrologic Unit	Basins/10 sq. km	Basins/10 sq. km	Basins/10 sq. km
101102	8.2	8.9	17.1
101201	4.4	8.2	12.6
101202	3.3	10.4	13.7
101301	5.4	6.1	11.5
101302	10.7	7.5	18.3
101303	8.4	6.7	15.2
101401	7.7	12.1	19.7
101402	7.5	6.4	14.0
101500	41.0	7.4	48.4
101701	11.2	15.0	26.2

DISCUSSION

The Missouri River divides South Dakota approximately in half. The portion to the east of the Missouri River was glaciated during the late-Wisconsin glaciation period and is part of the Prairie Pothole Region (PPR) of North America. The portion to the west of the Missouri River was not glaciated during this period. Because of these differences, the wetland and basin demographics for western South Dakota differs greatly from demographic summaries for eastern South Dakota (Johnson and Higgins 1997). In terms of wetlands, there were about one-third fewer hectares of NWI-delineated wetlands in western South Dakota. In terms of basins, there were five-fold fewer basins in western South Dakota than in eastern South Dakota. Overall, there were considerably fewer wetland hectares, fewer basins, and fewer basin hectares in western South Dakota than in eastern South Dakota.

In western South Dakota, about one-third of the number of basins was classified into each of the water regimes: temporary (36%), seasonal (29%) and semipermanent (34%). Less than one percent of basins had a permanent water regime. In comparison, basin summaries for eastern South Dakota showed a majority (56%) of basins had a temporary water regime and over a third (36%) of the basins had a seasonal water regime. Less than 10% of eastern South Dakota basins were classified as semipermanent or permanent.

Basins with a semipermanent water regime accounted for nearly half (48%) of the total basin area of western South Dakota. Seasonal, permanent, and temporary basins accounted for 19%, 18%, and 16% of the total area, respectively. In comparison semipermanent basins in eastern South Dakota accounted for one-third (34%) of the total basin area. Seasonal, permanent, and temporary basins accounted for 26%, 22%, and 18% of the total, respectively. On a statewide level (western South Dakota data combined with those of Johnson and Higgins 1997), semipermanent basins accounted for 36% of the total basin area, seasonal basins 25%, permanent basins 21%, and temporary basins 18% of the total basin area.

The size structure of western South Dakota basins was similar to that of eastern South Dakota. In western South Dakota, over 60% of all basins were less than 0.2 ha (0.49 acres) in size and roughly 10% of the basins were in each of the following size categories; 0.2 - 0.4 ha, 0.4 - 0.8 ha, 1.0 - 2.0 ha. Basins greater than 2.0 ha accounted for approximately 5% percent of the total number of basins.

Of the counties in western South Dakota, Tripp and Gregory contained the highest densities of basins with 50.0 and 33.9 basins/10 km^2. These counties are at the 'point' where the Sand Hills, Southern Plateaus, and the Pierre Hills Physiographic Regions are intermingled. Lawrence County, which contained eight-fold fewer basins than Tripp County, lies almost entirely in the Black Hill Physiographic Region. Reporting the distribution of basins by county provides a starting point for discussion and investigation, however, summaries by Physiographic Regions or Hydrologic Units provide a better means for research, analysis, and management.

The five physiographic regions identified in western South Dakota are based on physical landforms and the underlying soils. Soils affect infiltration rates, water runoff rates and vegetative landcover. The soils in the Pierre Hills physiographic region are dominated by Vertisols. These soils have a high percentage of clay particles, which swell when wet and shrink when dry. The parent material of this region is Pierre shale. The Northern Plateaus region is dominated by Mollisols and Entisols. The parent material is Cretatecous sandstone overlying Pierre Shale. The soils formed in this region are significantly different from the clay soils of the Pierre Hills. The Southern Plateaus region is dominated by Entisols and Mollisols. These soils developed from Oligocene claystone formations overlying Pierre shale. The White River Badlands are in this Region. The Sand Hills physiographic region is also dominated by Entisols. Here, the parent material is not claystone, as found in the Southern Plateaus, but eolian and alluvial sand lying over Miocene sandstone. The Black Hills physiographic region has the only expanse of Alfisols in South Dakota (Johnson, et al 1995). Alfisols developed under Pondersoa pine *(Pinus ponderosa)* canopies, while Mollisols developed on grassy

parcels and Entisols developed on steep slopes. The parent material of the Black Hills is mostly granite or mica schist.

Each physiographic region is part of a greater ecoregion. The Sand Hills physiographic region is part of the much larger Nebraska Sand Hills ecoregion, an extensive area of grass-stabilized dunes, with interdunal wetlands, lakes, and streams. The Black Hills physiographic region is an isolated extension of the Middle Rockies ecoregion, dominated by creeks and streams with comparatively few basins. The remaining three physiographic regions; Northern Plateaus, Southern Plateaus, and Pierre Hills are mostly contained within the Northwestern Great Plains ecoregion (Bryce 1998). This ecoregion is characterized as a semiarid rolling plain, with occasional natural depressions or impounded basins.

Basin densities of the five physiographic regions varied tremendously. The Sand Hills Physiographic Region contained 37.0 basins/10 km^2. This basin density was seven-fold that what is found in the Black Hills Physiographic Region. The other three physiographic regions each contained less than half the basin densities found in the Sand Hill region.

The 10, six-digit Hydrologic Units (HU) of western South Dakota are based on major rivers and their watersheds. The Grand and Moreau Rivers in the northwest part of the state form HU 101303. The White River watershed in the southern part of the state forms HU 101402. The watersheds of the Cheyenne, Belle Fourche, Bad, and the Missouri Rivers form the hydrologic units of central western South Dakota.

Basin density within the ten hydrologic units of western South Dakota varies significantly. HU 101500 has the greatest basin density (48.4 basins/km2), roughly twice to four-fold as dense as any other unit. HU 101500 lies along the South Dakota and Nebraska boarder and contains the Niobrara River and its watershed. The location of HU 101500 roughly corresponds to the Sand Hills Physiographic Region. The lowest basin density is found in HU 101301, which lies in the steep bluffs of Lake Oahe, the largest of the Missouri River mainstem

reservoirs. This Hydrologic Unit is almost entirely within the Pierre Hills physiographic region (not including the portion of this Unit laying east of the Missouri River).

Not only is South Dakota divided by the Missouri River, it is also approximately halved by the 100th meridian, which is the arbitrary border between the subhumid and semiarid climatic zones (Gartner and Sieg 1996). Precipitation rates play a role in designating climatic zones. Statewide, the average annual precipitation in South Dakota ranges from 60 m in the southeast to 30 cm in the northwest. The 46 cm isohyet lies approximately along the 100th meridian. Average annual precipitation for the grasslands of western South Dakota is typically 30-40 cm, except for Tripp and Gregory counties, which mostly lie to the east of the 100 meridian. Average annual precipitation for the Black Hills region ranges from 45-60cm.

Impoundments are a common feature of the western South Dakota landscape. The utility of these impoundments is beyond the scope of this study, however lacustrine impoundments are constructed for irrigation, municipal/rural water systems, flood control and recreation. Palustrine impoundments and dugouts are typically created as livestock watering ponds (stock dams) in grassland landscapes. Whether lacustrine or palustrine, these created water bodies provide various values for humans and wildlife, including waterfowl (Ruwaldt et al. 1979, Rumble and Flake 1983), non-game water birds (May et al. 2002), fish (Doorenbos 1997), amphibians (Fischer et al. 1999), and turtles (Bandas 2003), to list a few.

There were 51,936 impounded semipermanent and 6,810 excavated semipermanent basins western South Dakota. This amounted to four-fold more semipermanent impoundments and one-fifth the number of semipermanent excavated basins, when compared to eastern South Dakota (Table 32). There were less than 1,000 permanent impoundments and excavated basins in both eastern and western South Dakota. The topography and the low-density of natural basins within western South Dakota creates a situation were basins are created for water storage; for livestock ranching, municipal water supplies or irrigation.

Table 32. Comparison of natural and created basins in eastern and western South Dakota. Reported number and area include the Missouri River mainstem impoundments.

Eastern South Dakota

Semipermanent	Number	Area (ha)
Natural	23997	152,837.0
Impounded	11527	40,231.0
Excavated	38663	99,148.0

Permanent	Number	Area (ha)
Natural	603	78,526.0
Impounded	384	106,902.0
Excavated	470	1,622.0

Western South Dakota

Semipermanent	Number	Area (ha)
Natural	479	13,840.7
Impounded	52051	39,618.1
Excavated	6810	1,073.8

Permanent	Number	Area (ha)
Natural	340	3,119.1
Impounded	704	110,817.2
Excavated	290	379.8

The wetland and basins coverages that resulted from this study are additional GIS layers in the South Dakota GAP project (Smith et al. 2002). These additional datasets will assist researches and resource managers in addressing issues of flora and fauna habitat protection in western South Dakota. Below is a short list of other areas where this wetland and basin information may benefit resource managers and policy makers:

1) The 10 six-digit Hydrologic Units in western South Dakota all extend beyond the boundaries of South Dakota or extend east into eastern South Dakota. This hydrologic data can be combined with other hydrologic data sets from neighboring states and from eastern South Dakota. A complete Hydrologic Unit dataset can be used to assist watershed research and management. In addition, this hydrologic data can be combined with hydrogeomorphological data (Brinson 1993) to investigate the value and function of these wetlands based on their position in the landscape.

2) The importance of wetland complexes to waterfowl biology has been documented (Fredrickson and Reid 1988). Basins with temporary, seasonal, semipermanent, and permanent water regimes each provide critical habitat resources. This study reported densities and composition on a county, physiographic region and hydrologic unit level; however, more localized information could be provided on any specific area within the state. This could be accomplished by using a sliding window (3 km by 3 km) to calculate basin densities and basin composition structure for that parcel and for all possible parcels in western South Dakota. Parcels with high basin densities and robust composition could be targeted for protection.

3) The USFWS conducts wetland studies to periodically assess the status and trends of wetlands in the United States (Dahl 2000). On a nation-wide level, wetland loss continues to be documented. Wetland losses due to agriculture, urbanization, and silviculture lead the list of impacts. There are no logical reasons to suspect that western South Dakota is not included in this trend. This geographic information system could allow similar assessments of the wetland resources in western South Dakota. When combined with eastern South Dakota, a statewide

status and trends assessment could be conducted to document wetland changes in South Dakota.

The wetland and basin coverages created for this project and the resulting demographic summaries provide a temporal and spatial data baseline to which past and future changes in wetland demographics can be compared. The demographic data summaries also will benefit resource managers in their efforts to conserve native species of flora and fauna, and to understand the role that wetlands have in western South Dakota landscapes.

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APPENDICES

Appendix 1. Number and area of NWI-delineated wetlands summed by NWI attribute.

NWI Attribute	Number	Area (ha)	Area (ac)	% Area
L1UBFh	1	0.0	0.1	0.00%
L1UBG	1	0.3	0.6	0.00%
L1UBGh	872	17,801.8	43,987.5	6.93%
L1UBHh	32	79,329.8	196,021.3	30.87%
L2ABF	31	804.7	1,988.5	0.31%
L2ABFh	219	1,452.3	3,588.6	0.57%
L2ABG	20	536.5	1,325.6	0.21%
L2ABGh	120	1,873.9	4,630.4	0.73%
L2ABKGh	14	866.7	2,141.5	0.34%
L2ABKx	1	10.5	26.0	0.00%
L2UBF	3	67.2	166.1	0.03%
L2UBFh	181	989.2	2,444.2	0.38%
L2UBFx	3	0.5	1.2	0.00%
L2UBGh	12	738.7	1,825.2	0.29%
L2USA	33	277.9	686.7	0.11%
L2USAh	149	738.4	1,824.6	0.29%
L2USC	33	505.8	1,249.7	0.20%
L2USCd	2	19.3	47.7	0.01%
L2USCh	916	1,338.1	3,306.3	0.52%
L2USCx	1	0.1	0.2	0.00%
PAB/EMF	12	69.7	172.3	0.03%
PAB/EMFd	1	6.2	15.2	0.00%
PAB/EMFh	112	135.5	334.8	0.05%
PAB/EMFhx	1	0.1	0.3	0.00%
PAB/EMFx	2	0.2	0.4	0.00%
PABC	20	1.9	4.8	0.00%
PABCh	1	0.1	0.1	0.00%
PABCx	1	0.0	0.1	0.00%
PABF	690	397.1	981.1	0.15%
PABFb	1	1.3	3.2	0.00%
PABFd	3	2.6	6.4	0.00%
PABFh	51,563	31,875.0	78,762.0	12.40%
PABFhx	278	43.0	106.3	0.02%
PABFx	2,828	535.5	1,323.2	0.21%

Appendix 1. Continued.

NWI Attribute	Number	Area (ha)	Area (ac)	% Area
PABGb	299	29.5	72.9	0.01%
PABGh	355	1,286.7	3,179.3	0.50%
PABGhx	2	0.1	0.3	0.00%
PABGx	20	60.2	148.7	0.02%
PABHh	3	0.4	0.9	0.00%
PABKFh	5	16.1	39.7	0.01%
PABKFx	6	5.6	13.8	0.00%
PABKh	3	9.8	24.3	0.00%
PABKx	150	178.0	439.9	0.07%
PEM/ABF	140	598.1	1,478.0	0.23%
PEM/ABFd	4	20.9	51.6	0.01%
PEM/ABFh	137	168.7	416.9	0.07%
PEM/ABFhx	1	0.1	0.3	0.00%
PEM/ABFx	8	2.3	5.7	0.00%
PEM/FOA	116	215.0	531.2	0.08%
PEM/FOAh	1	0.2	0.4	0.00%
PEM/FOC	127	176.2	435.3	0.07%
PEM/FOCd	4	5.0	12.3	0.00%
PEM/FOCh	56	19.9	49.1	0.01%
PEM/FOCx	8	1.2	2.9	0.00%
PEM/SSA	15	48.8	120.5	0.02%
PEM/SSAh	2	20.7	51.1	0.01%
PEM/SSC	13	30.2	74.7	0.01%
PEM/SSCh	4	2.8	6.8	0.00%
PEM1Ah	1	0.0	0.0	0.00%
PEM1Ch	1	0.0	0.0	0.00%
PEMA	77,735	32,310.2	79,837.5	12.57%
PEMAd	2,007	6,455.6	15,951.5	2.51%
PEMAh	7,774	3,035.0	7,499.5	1.18%
PEMAx	667	76.1	188.0	0.03%
PEMB	197	286.1	706.9	0.11%
PEMBd	5	171.3	423.3	0.07%
PEMC	44,187	22,773.1	56,271.6	8.86%
PEMCb	31	4.0	9.9	0.00%
PEMCd	788	2,716.2	6,711.6	1.06%
PEMCh	26,064	7,107.8	17,563.2	2.77%
PEMChx	1	0.0	0.0	0.00%
PEMCx	5,792	569.5	1,407.3	0.22%

Appendix 1. Continued.

NWI Attribute	Number	Area (ha)	Area (ac)	% Area
PEMF	616	865.1	2,137.7	0.34%
PEMFb	21	3.2	7.9	0.00%
PEMFd	28	98.8	244.0	0.04%
PEMFh	2,291	1,705.1	4,213.3	0.66%
PEMFhx	1	0.0	0.0	0.00%
PEMFx	103	20.9	51.7	0.01%
PEMKAh	27	157.2	388.4	0.06%
PEMKCh	41	253.5	626.3	0.10%
PEMKCx	2	0.5	1.3	0.00%
PEMKFh	42	541.4	1,337.7	0.21%
PEMKh	1	0.8	1.9	0.00%
PEMKx	51	67.4	166.4	0.03%
PFO/EMA	38	354.4	875.6	0.14%
PFO/EMAd	1	0.6	1.4	0.00%
PFO/EMAh	6	177.9	439.5	0.07%
PFO/EMC	67	56.4	139.3	0.02%
PFO/EMCd	1	1.0	2.6	0.00%
PFO/EMCh	19	9.7	23.8	0.00%
PFO/EMCx	1	0.3	0.7	0.00%
PFO/SSA	3	164.3	405.9	0.06%
PFO/SSC	3	5.2	12.9	0.00%
PFO5Ch	1	0.8	2.0	0.00%
PFO5Fh	1	1.2	2.9	0.00%
PFOA	7,300	3,848.2	9,508.9	1.50%
PFOAd	22	19.6	48.4	0.01%
PFOAh	1,097	407.4	1,006.6	0.16%
PFOAhx	1	0.0	0.1	0.00%
PFOAx	175	53.0	130.9	0.02%
PFOB	3	0.3	0.7	0.00%
PFOC	686	193.8	478.8	0.08%
PFOCd	9	2.6	6.5	0.00%
PFOCh	135	70.5	174.2	0.03%
PFOCx	18	2.4	5.9	0.00%
PFOKAh	3	0.3	0.9	0.00%
PSS/EMA	12	440.6	1,088.8	0.17%
PSS/EMAh	3	251.1	620.4	0.10%
PSS/EMC	4	10.7	26.6	0.00%
PSS/EMCh	2	1.8	4.4	0.00%

Appendix 1. Continued.

NWI Attribute	Number	Area (ha)	Area (ac)	% Area
PSS/FOA	6	36.5	90.2	0.01%
PSS/FOAh	2	8.5	21.0	0.00%
PSS/USA	2	5.9	14.5	0.00%
PSS/USAh	1	80.4	198.6	0.03%
PSSA	2,534	2,548.0	6,296.0	0.99%
PSSAd	10	6.2	15.3	0.00%
PSSAh	392	915.6	2,262.4	0.36%
PSSAx	21	2.0	4.8	0.00%
PSSB	42	172.6	426.5	0.07%
PSSBd	1	1.3	3.2	0.00%
PSSC	147	63.6	157.2	0.02%
PSSCb	3	0.5	1.2	0.00%
PSSCd	1	0.2	0.4	0.00%
PSSCh	93	158.8	392.4	0.06%
PSSCx	6	0.8	2.0	0.00%
PSSKAh	4	4.8	11.9	0.00%
PUBF	6	18.4	45.5	0.01%
PUBFh	58	14.2	35.0	0.01%
PUBFhx	1	0.9	2.2	0.00%
PUBFx	5,154	695.3	1,718.0	0.27%
PUBGh	4	12.3	30.4	0.00%
PUBGx	12	18.8	46.3	0.01%
PUBKx	52	17.8	43.9	0.01%
PUS/EMA	4	10.9	27.0	0.00%
PUSA	2,690	1,168.3	2,886.8	0.45%
PUSAd	16	43.7	107.9	0.02%
PUSAh	1,419	387.8	958.3	0.15%
PUSAx	51	6.2	15.4	0.00%
PUSC	1,095	486.2	1,201.3	0.19%
PUSCd	11	25.0	61.7	0.01%
PUSCh	2,639	710.3	1,755.2	0.28%
PUSCx	288	28.5	70.4	0.01%
PUSKx	9	32.4	80.1	0.01%
R2UBF	297	4,565.2	11,280.4	1.78%
R2UBFh	1	0.0	0.1	0.00%
R2UBFx	13	23.4	57.9	0.01%
R2UBG	60	2,914.9	7,202.5	1.13%
R2UBGx	10	2.2	5.3	0.00%

Appendix 1. Continued.

NWI Attribute	Number	Area (ha)	Area (ac)	% Area
R2UBH	13	250.7	619.4	0.10%
R2USA	4,691	4,849.4	11,982.6	1.89%
R2USC	1,128	520.7	1,286.8	0.20%
R3UBF	53	64.9	160.3	0.03%
R3UBFx	1	0.1	0.2	0.00%
R3UBG	68	83.0	205.0	0.03%
R3UBGx	6	0.6	1.6	0.00%
R3UBH	25	29.8	73.6	0.01%
R3USA	111	29.4	72.7	0.01%
R3USC	17	3.7	9.2	0.00%
R3USCx	1	0.0	0.1	0.00%
R4SBA	3,343	3,270.0	8,080.0	1.27%
R4SBAx	57	15.2	37.5	0.01%
R4SBC	1,303	2,589.5	6,398.6	1.01%
R4SBCx	96	93.7	231.6	0.04%
R4SBF	205	1,404.7	3,470.9	0.55%
R4SBFx	16	4.0	10.0	0.00%
	266,010	257,006.4	635,054.1	100.00%

Appendix 2. Number and area of NWI-delineated wetlands summed by county and NWI attribute.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Bennett					
	L2ABF	15	389.2	961.6	5.0%
	L2ABFh	1	3.5	8.7	0.0%
	L2ABG	8	147.4	364.3	1.9%
	L2ABGh	2	81.1	200.4	1.0%
	L2ABKGh	14	866.7	2,141.5	11.2%
	L2UBF	1	62.0	153.3	0.8%
	L2USC	3	20.1	49.5	0.3%
	PABC	3	0.1	0.3	0.0%
	PABF	67	83.2	205.7	1.1%
	PABFd	2	2.2	5.5	0.0%
	PABFh	210	96.7	238.9	1.2%
	PABFx	25	12.9	31.8	0.2%
	PABGb	3	0.9	2.3	0.0%
	PABGh	17	45.9	113.4	0.6%
	PABGx	2	3.2	7.9	0.0%
	PABKFh	5	16.1	39.7	0.2%
	PABKFx	6	5.6	13.8	0.1%
	PABKx	5	5.1	12.6	0.1%
	PEMA	2,305	1,697.5	4,194.5	21.9%
	PEMAd	70	514.5	1,271.2	6.6%
	PEMAh	85	20.4	50.4	0.3%
	PEMAx	32	3.5	8.7	0.0%
	PEMB	65	208.1	514.3	2.7%
	PEMBd	2	50.3	124.3	0.6%
	PEMC	1,347	1,177.8	2,910.3	15.2%
	PEMCd	41	185.8	459.1	2.4%
	PEMCh	275	97.7	241.5	1.3%
	PEMCx	117	12.2	30.3	0.2%
	PEMF	128	340.2	840.6	4.4%
	PEMFd	8	29.4	72.7	0.4%
	PEMFh	46	72.3	178.8	0.9%
	PEMFx	6	1.3	3.1	0.0%
	PEMKAh	27	157.2	388.4	2.0%
	PEMKCh	41	253.5	626.3	3.3%
	PEMKCx	2	0.5	1.3	0.0%
	PEMKFh	42	541.4	1,337.7	7.0%
	PEMKx	4	0.9	2.3	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOA	242	103.1	254.7	1.3%
	PFOAd	1	4.6	11.5	0.1%
	PFOAh	8	2.5	6.1	0.0%
	PFOAx	22	1.8	4.5	0.0%
	PFOB	1	0.2	0.4	0.0%
	PFOC	6	12.2	30.0	0.2%
	PFOCh	1	0.5	1.2	0.0%
	PFOCx	1	0.4	0.9	0.0%
	PFOKAh	3	0.3	0.9	0.0%
	PSSA	90	111.6	275.7	1.4%
	PSSAd	7	4.0	9.9	0.1%
	PSSAh	5	3.2	7.8	0.0%
	PSSAx	1	0.0	0.1	0.0%
	PSSB	34	167.5	413.9	2.2%
	PSSBd	1	1.3	3.2	0.0%
	PSSC	21	12.8	31.7	0.2%
	PSSCd	1	0.2	0.4	0.0%
	PSSCh	2	2.0	4.9	0.0%
	PSSCx	1	0.6	1.5	0.0%
	PSSKAh	4	4.8	11.9	0.1%
	PUBF	1	0.2	0.4	0.0%
	PUBFh	1	0.2	0.4	0.0%
	PUBFx	84	8.4	20.9	0.1%
	PUBGx	1	0.1	0.3	0.0%
	PUSA	18	8.5	21.1	0.1%
	PUSAh	3	0.5	1.2	0.0%
	PUSC	20	22.3	55.1	0.3%
	PUSCh	8	1.9	4.7	0.0%
	PUSCx	4	0.4	0.9	0.0%
	R2UBF	1	5.1	12.5	0.1%
	R2UBFx	1	0.0	0.1	0.0%
	R2UBG	13	57.7	142.5	0.7%
	R2UBGx	4	0.8	1.9	0.0%
	R2USA	2	0.2	0.6	0.0%
	R2USC	2	0.3	0.8	0.0%
	R4SBA	12	8.2	20.3	0.1%
	R4SBC	1	5.2	13.0	0.1%
	R4SBFx	4	0.8	2.1	0.0%
			7,761.0	19,177.1	100.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Butte					
	L1UBGh	3	1,707.0	4,218.0	15.3%
	L1UBHh	3	72.8	179.8	0.7%
	L2ABFh	14	112.2	277.3	1.0%
	L2ABGh	17	239.1	590.8	2.1%
	L2UBFh	2	46.0	113.7	0.4%
	L2UBFx	1	0.2	0.5	0.0%
	L2UBGh	1	618.4	1,528.1	5.6%
	L2USAh	21	446.1	1,102.4	4.0%
	L2USC	1	72.2	178.3	0.6%
	L2USCh	25	61.5	151.9	0.6%
	PABF	26	23.4	57.9	0.2%
	PABFh	3,988	2,370.6	5,857.7	21.3%
	PABFx	48	47.4	117.1	0.4%
	PABGh	11	78.6	194.1	0.7%
	PABKx	15	37.8	93.5	0.3%
	PEM1Ah	1	0.0	0.0	0.0%
	PEM1Ch	1	0.0	0.0	0.0%
	PEMA	3,201	1,147.9	2,836.4	10.3%
	PEMAd	22	156.8	387.3	1.4%
	PEMAh	962	518.4	1,280.9	4.7%
	PEMAx	80	17.2	42.5	0.2%
	PEMB	1	0.1	0.2	0.0%
	PEMC	1,602	685.3	1,693.3	6.2%
	PEMCd	7	16.6	41.1	0.1%
	PEMCh	2,389	840.5	2,076.9	7.5%
	PEMCx	426	206.6	510.6	1.9%
	PEMF	30	30.5	75.3	0.3%
	PEMFd	3	18.1	44.8	0.2%
	PEMFh	196	167.4	413.6	1.5%
	PEMFx	4	1.8	4.4	0.0%
	PEMKx	3	0.3	0.9	0.0%
	PFOA	361	213.6	527.9	1.9%
	PFOAh	22	8.7	21.6	0.1%
	PFOAx	36	5.8	14.3	0.1%
	PSSA	206	93.5	231.1	0.8%
	PSSAh	41	33.0	81.6	0.3%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSAx	2	0.3	0.8	0.0%
	PSSC	3	1.0	2.5	0.0%
	PSSCh	4	0.8	2.0	0.0%
	PUBFh	1	0.3	0.7	0.0%
	PUBFx	482	102.0	252.0	0.9%
	PUBKx	3	0.8	1.9	0.0%
	PUSA	133	80.2	198.2	0.7%
	PUSAd	2	15.9	39.3	0.1%
	PUSAh	136	42.7	105.5	0.4%
	PUSAx	9	1.4	3.4	0.0%
	PUSC	39	31.6	78.1	0.3%
	PUSCh	238	89.9	222.1	0.8%
	PUSCx	25	4.5	11.0	0.0%
	PUSKx	1	7.9	19.4	0.1%
	R2UBF	116	61.0	150.8	0.5%
	R2UBFx	5	14.7	36.2	0.1%
	R2UBG	34	273.2	675.0	2.5%
	R2USA	204	78.2	193.2	0.7%
	R2USC	9	2.8	6.9	0.0%
	R4SBA	73	55.4	137.0	0.5%
	R4SBAx	2	0.1	0.4	0.0%
	R4SBC	53	116.8	288.7	1.0%
	R4SBCx	30	51.6	127.4	0.5%
	R4SBF	35	8.1	20.0	0.1%
	R4SBFx	2	0.8	1.9	0.0%
			11,137.5	27,520.3	100.0%
Corson					
	L1UBGh	182	2,244.7	5,546.7	9.4%
	L1UBHh	2	10,569.5	26,116.8	44.3%
	L2ABF	3	30.7	75.8	0.1%
	L2ABFh	16	125.4	309.9	0.5%
	L2ABG	5	235.7	582.4	1.0%
	L2ABGh	6	78.0	192.8	0.3%
	L2UBFh	18	288.5	713.0	1.2%
	L2USA	4	15.0	37.2	0.1%
	L2USAh	25	140.4	346.8	0.6%
	L2USC	1	9.7	24.0	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	L2USCh	39	62.4	154.2	0.3%
	PAB/EMFh	5	7.9	19.5	0.0%
	PABC	1	0.3	0.8	0.0%
	PABF	54	25.2	62.3	0.1%
	PABFh	2,059	1,646.0	4,067.1	6.9%
	PABFx	182	32.7	80.7	0.1%
	PABGh	29	117.2	289.5	0.5%
	PABGx	1	3.4	8.3	0.0%
	PABKx	3	4.5	11.1	0.0%
	PEM/ABF	4	5.6	13.7	0.0%
	PEM/ABFh	6	11.1	27.3	0.0%
	PEM/ABFx	1	0.9	2.1	0.0%
	PEM/FOC	8	20.8	51.3	0.1%
	PEM/SSA	3	2.3	5.6	0.0%
	PEM/SSAh	1	19.4	47.9	0.1%
	PEM/SSC	4	4.0	9.9	0.0%
	PEMA	6,366	2,807.6	6,937.5	11.8%
	PEMAd	85	169.3	418.2	0.7%
	PEMAh	215	186.3	460.3	0.8%
	PEMAx	23	0.9	2.2	0.0%
	PEMC	2,329	1,884.6	4,656.9	7.9%
	PEMCd	21	72.9	180.1	0.3%
	PEMCh	725	270.3	668.0	1.1%
	PEMCx	255	13.9	34.3	0.1%
	PEMF	7	18.9	46.7	0.1%
	PEMFh	76	69.7	172.3	0.3%
	PEMKx	1	0.6	1.4	0.0%
	PFO/EMA	1	6.2	15.4	0.0%
	PFO/EMAh	5	175.2	432.8	0.7%
	PFO/EMC	5	9.1	22.4	0.0%
	PFO/SSA	2	1.1	2.8	0.0%
	PFO/SSC	1	4.6	11.4	0.0%
	PFOA	268	138.8	343.1	0.6%
	PFOAh	31	49.1	121.2	0.2%
	PFOC	18	3.9	9.6	0.0%
	PFOCh	6	26.3	65.0	0.1%
	PSS/EMA	3	13.0	32.1	0.1%
	PSS/EMAh	3	251.1	620.4	1.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSA	183	234.2	578.8	1.0%
	PSSAd	1	1.4	3.5	0.0%
	PSSAh	32	81.7	201.9	0.3%
	PSSC	8	5.8	14.4	0.0%
	PSSCh	11	19.7	48.6	0.1%
	PUBF	2	17.1	42.4	0.1%
	PUBFh	2	1.2	3.0	0.0%
	PUBFx	263	33.3	82.4	0.1%
	PUSA	320	158.8	392.3	0.7%
	PUSAh	9	4.6	11.3	0.0%
	PUSAx	1	0.1	0.3	0.0%
	PUSC	73	40.3	99.7	0.2%
	PUSCh	17	4.8	11.9	0.0%
	PUSCx	2	0.1	0.2	0.0%
	R2UBF	4	772.0	1,907.5	3.2%
	R2USA	266	146.3	361.6	0.6%
	R2USC	52	21.0	51.8	0.1%
	R4SBA	223	198.8	491.2	0.8%
	R4SBAx	3	0.2	0.5	0.0%
	R4SBC	107	196.0	484.4	0.8%
	R4SBF	13	53.3	131.6	0.2%
	R4SBFx	1	0.1	0.3	0.0%
			23,865.4	58,970.6	100.0%
Custer					
	L1UBGh	2	25.9	64.0	1.2%
	L1UBHh	3	59.8	147.8	2.8%
	L2ABGh	2	5.3	13.1	0.3%
	PABF	7	1.2	2.9	0.1%
	PABFh	1,349	451.6	1,115.9	21.5%
	PABFx	6	2.6	6.4	0.1%
	PABGb	19	1.6	3.9	0.1%
	PABGh	21	27.9	68.9	1.3%
	PABKx	3	0.5	1.3	0.0%
	PEMA	1,157	332.8	822.3	15.8%
	PEMAd	1	0.2	0.6	0.0%
	PEMAh	314	61.6	152.3	2.9%
	PEMAx	11	1.9	4.7	0.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMB	67	34.0	84.0	1.6%
	PEMC	928	380.2	939.3	18.1%
	PEMCb	3	0.4	1.0	0.0%
	PEMCh	693	104.3	257.7	5.0%
	PEMCx	52	7.4	18.4	0.4%
	PEMF	20	9.3	22.9	0.4%
	PEMFb	4	0.8	2.0	0.0%
	PEMFh	50	19.0	47.0	0.9%
	PEMFx	3	0.9	2.3	0.0%
	PEMKx	2	0.2	0.6	0.0%
	PFOA	234	81.2	200.7	3.9%
	PFOAh	8	1.3	3.2	0.1%
	PSSA	80	29.2	72.3	1.4%
	PSSAh	5	0.6	1.5	0.0%
	PSSAx	2	0.1	0.2	0.0%
	PSSB	1	0.1	0.2	0.0%
	PSSCh	1	0.1	0.3	0.0%
	PUBFh	1	0.1	0.1	0.0%
	PUBFx	42	3.7	9.2	0.2%
	PUBGx	1	3.1	7.6	0.1%
	PUBKx	5	0.6	1.5	0.0%
	PUSA	76	19.3	47.6	0.9%
	PUSAh	102	15.5	38.2	0.7%
	PUSAx	3	0.2	0.5	0.0%
	PUSC	20	3.6	8.8	0.2%
	PUSCh	152	25.6	63.1	1.2%
	PUSCx	14	1.4	3.5	0.1%
	R2UBF	2	7.9	19.4	0.4%
	R2UBG	94	150.2	371.0	7.1%
	R2USA	160	64.5	159.4	3.1%
	R2USC	17	2.6	6.3	0.1%
	R3UBF	17	16.1	39.8	0.8%
	R3UBFx	1	0.1	0.2	0.0%
	R3UBG	18	17.3	42.7	0.8%
	R3UBGx	2	0.1	0.4	0.0%
	R3USA	2	0.2	0.6	0.0%
	R4SBA	75	75.3	186.0	3.6%
	R4SBAx	1	0.2	0.4	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R4SBC	31	43.7	107.9	2.1%
	R4SBCx	12	3.6	8.8	0.2%
	R4SBF	2	3.6	8.8	0.2%
			2,100.3	5,189.7	100.0%
Dewey					
	L1UBGh	406	7,194.7	17,777.9	15.5%
	L1UBHh	7	25,882.8	63,955.5	55.9%
	L2ABF	3	135.1	333.9	0.3%
	L2ABFh	13	93.8	231.9	0.2%
	L2ABGh	7	103.0	254.5	0.2%
	L2ABKx	1	10.5	26.0	0.0%
	L2UBF	1	3.9	9.6	0.0%
	L2UBFh	83	216.0	533.7	0.5%
	L2UBFx	2	0.3	0.7	0.0%
	L2UBGh	7	20.8	51.3	0.0%
	L2USA	15	174.3	430.6	0.4%
	L2USC	15	193.4	477.8	0.4%
	L2USCh	387	628.0	1,551.8	1.4%
	PABF	7	5.5	13.6	0.0%
	PABFh	2,605	2,025.4	5,004.6	4.4%
	PABFhx	1	0.2	0.4	0.0%
	PABFx	110	17.5	43.2	0.0%
	PABGh	23	109.4	270.4	0.2%
	PABKx	8	18.8	46.5	0.0%
	PEM/ABF	2	1.9	4.7	0.0%
	PEM/ABFx	1	0.5	1.2	0.0%
	PEM/FOA	3	4.1	10.1	0.0%
	PEM/FOC	4	2.2	5.4	0.0%
	PEM/SSA	2	0.6	1.6	0.0%
	PEM/SSAh	1	1.3	3.3	0.0%
	PEM/SSC	1	0.2	0.5	0.0%
	PEMA	3,471	3,649.0	9,016.5	7.9%
	PEMAd	155	944.7	2,334.4	2.0%
	PEMAh	167	105.3	260.3	0.2%
	PEMAx	19	1.0	2.5	0.0%
	PEMC	1,413	1,698.3	4,196.4	3.7%
	PEMCd	52	141.3	349.2	0.3%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCh	708	183.7	453.9	0.4%
	PEMCx	374	14.1	34.8	0.0%
	PEMF	9	13.5	33.2	0.0%
	PEMFh	42	51.5	127.3	0.1%
	PEMKx	5	4.3	10.6	0.0%
	PFO/EMA	3	6.5	16.0	0.0%
	PFO/EMC	1	0.0	0.1	0.0%
	PFOA	273	156.1	385.6	0.3%
	PFOAd	4	3.5	8.7	0.0%
	PFOAh	54	13.7	33.7	0.0%
	PFOAx	2	0.3	0.7	0.0%
	PFOC	3	2.9	7.2	0.0%
	PFOCh	2	0.6	1.4	0.0%
	PSS/EMA	2	5.8	14.4	0.0%
	PSS/FOA	6	36.5	90.2	0.1%
	PSS/FOAh	2	8.5	21.0	0.0%
	PSS/USAh	1	80.4	198.6	0.2%
	PSSA	141	146.5	361.9	0.3%
	PSSAd	1	0.3	0.6	0.0%
	PSSAh	29	343.2	848.1	0.7%
	PSSC	6	12.2	30.0	0.0%
	PSSCh	4	69.7	172.2	0.2%
	PUBFh	7	1.2	3.0	0.0%
	PUBFx	246	36.9	91.1	0.1%
	PUBGx	1	0.5	1.4	0.0%
	PUBKx	3	0.5	1.2	0.0%
	PUSA	31	60.7	150.0	0.1%
	PUSAh	9	8.5	21.1	0.0%
	PUSC	11	23.2	57.3	0.1%
	PUSCd	2	7.6	18.9	0.0%
	PUSCh	35	4.5	11.0	0.0%
	PUSCx	5	0.3	0.8	0.0%
	R2UBF	1	583.4	1,441.7	1.3%
	R2UBFh	1	0.0	0.1	0.0%
	R2USA	275	213.6	527.9	0.5%
	R2USC	16	11.8	29.2	0.0%
	R4SBA	477	512.1	1,265.3	1.1%
	R4SBAx	1	0.0	0.1	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R4SBC	136	250.9	619.9	0.5%
	R4SBCx	2	0.2	0.4	0.0%
	R4SBF	6	23.0	56.9	0.0%
			46,276.4	114,347.4	100.0%
Fall River					
	L1UBGh	2	1,730.9	4,277.1	25.4%
	L1UBHh	1	18.8	46.5	0.3%
	L2ABFh	12	114.9	284.0	1.7%
	L2ABGh	6	190.0	469.5	2.8%
	L2USA	2	12.1	29.8	0.2%
	L2USAh	5	6.5	16.0	0.1%
	L2USC	1	117.6	290.5	1.7%
	L2USCd	2	19.3	47.7	0.3%
	L2USCh	4	18.9	46.6	0.3%
	PABF	25	4.9	12.1	0.1%
	PABFh	3,053	1,551.6	3,833.9	22.8%
	PABFx	25	8.5	21.0	0.1%
	PABGh	2	10.0	24.6	0.1%
	PABKx	8	13.2	32.6	0.2%
	PEMA	2,477	612.9	1,514.6	9.0%
	PEMAd	9	16.0	39.4	0.2%
	PEMAh	478	93.0	229.8	1.4%
	PEMAx	74	9.4	23.2	0.1%
	PEMB	13	7.4	18.3	0.1%
	PEMC	2,413	585.1	1,445.8	8.6%
	PEMCd	11	39.5	97.5	0.6%
	PEMCh	1,954	429.4	1,061.1	6.3%
	PEMCx	164	17.6	43.5	0.3%
	PEMF	42	13.9	34.3	0.2%
	PEMFh	185	173.6	429.0	2.5%
	PEMKx	5	0.4	0.9	0.0%
	PFOA	266	30.8	76.2	0.5%
	PFOAh	97	30.7	75.7	0.4%
	PFOAx	5	0.5	1.2	0.0%
	PFOCh	1	6.6	16.3	0.1%
	PSSA	80	29.9	74.0	0.4%
	PSSAh	47	31.2	77.0	0.5%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSB	2	0.1	0.2	0.0%
	PSSC	1	0.3	0.8	0.0%
	PSSCh	2	1.2	2.9	0.0%
	PUBFh	4	0.9	2.3	0.0%
	PUBFx	118	17.1	42.3	0.3%
	PUSA	36	6.4	15.8	0.1%
	PUSAh	169	35.4	87.5	0.5%
	PUSAx	14	0.6	1.5	0.0%
	PUSC	17	1.2	2.9	0.0%
	PUSCh	293	73.7	182.0	1.1%
	PUSCx	38	3.4	8.3	0.0%
	PUSKx	4	15.2	37.5	0.2%
	R2UBF	34	184.9	456.9	2.7%
	R2UBG	5	113.6	280.6	1.7%
	R2UBGx	1	0.6	1.5	0.0%
	R2USA	191	210.2	519.3	3.1%
	R2USC	51	15.0	37.1	0.2%
	R3UBF	3	5.3	13.0	0.1%
	R3UBG	3	3.6	8.9	0.1%
	R3UBH	2	2.3	5.6	0.0%
	R3USA	1	0.4	1.0	0.0%
	R3USCx	1	0.0	0.1	0.0%
	R4SBA	102	50.9	125.9	0.7%
	R4SBAx	16	8.3	20.4	0.1%
	R4SBC	52	71.7	177.1	1.1%
	R4SBCx	23	27.1	67.0	0.4%
	R4SBF	6	23.7	58.6	0.3%
			6,817.8	16,846.5	100.0%
Gregory					
	L1UBGh	15	208.1	514.3	1.5%
	L1UBHh	2	9,058.8	22,384.0	66.7%
	L2ABG	1	12.2	30.1	0.1%
	L2ABGh	6	161.3	398.6	1.2%
	L2UBFh	15	108.7	268.5	0.8%
	L2USCh	25	35.4	87.5	0.3%
	PAB/EMF	1	1.5	3.7	0.0%
	PAB/EMFd	1	6.2	15.2	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PAB/EMFh	27	20.7	51.1	0.2%
	PAB/EMFhx	1	0.1	0.3	0.0%
	PABF	39	10.4	25.6	0.1%
	PABFh	2,493	838.8	2,072.6	6.2%
	PABFhx	152	19.5	48.2	0.1%
	PABFx	679	87.6	216.5	0.6%
	PABGh	25	67.5	166.8	0.5%
	PABGx	7	24.8	61.2	0.2%
	PEM/ABF	29	113.5	280.4	0.8%
	PEM/ABFh	26	22.2	54.9	0.2%
	PEM/ABFx	1	0.1	0.1	0.0%
	PEM/FOA	18	18.0	44.6	0.1%
	PEM/FOC	25	10.0	24.7	0.1%
	PEM/FOCh	32	8.3	20.5	0.1%
	PEM/FOCx	3	0.4	1.0	0.0%
	PEM/SSA	5	21.0	51.8	0.2%
	PEMA	3,524	576.5	1,424.4	4.2%
	PEMAd	549	194.3	480.1	1.4%
	PEMAh	12	6.8	16.9	0.1%
	PEMAx	45	1.6	3.9	0.0%
	PEMC	2,786	984.6	2,433.0	7.2%
	PEMCd	90	91.4	225.9	0.7%
	PEMCh	262	15.6	38.7	0.1%
	PEMChx	1	0.0	0.0	0.0%
	PEMCx	686	20.5	50.6	0.2%
	PEMF	9	16.2	39.9	0.1%
	PEMFd	1	1.2	3.0	0.0%
	PEMFh	13	6.4	15.7	0.0%
	PEMFx	3	0.7	1.7	0.0%
	PFO/EMA	3	12.6	31.1	0.1%
	PFO/EMC	6	0.7	1.7	0.0%
	PFO/EMCh	6	2.0	4.9	0.0%
	PFO/EMCx	1	0.3	0.7	0.0%
	PFOA	297	104.2	257.5	0.8%
	PFOAd	3	1.9	4.8	0.0%
	PFOAh	130	11.4	28.1	0.1%
	PFOAx	13	0.4	0.9	0.0%
	PFOC	217	40.3	99.6	0.3%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOCh	30	5.6	13.8	0.0%
	PFOCx	5	0.2	0.4	0.0%
	PSS/EMC	1	8.8	21.8	0.1%
	PSSA	6	6.7	16.5	0.0%
	PSSAx	1	0.1	0.3	0.0%
	PSSC	2	2.1	5.1	0.0%
	PSSCh	2	31.8	78.7	0.2%
	PUBF	1	0.9	2.2	0.0%
	PUBFh	2	0.3	0.7	0.0%
	PUBFhx	1	0.9	2.2	0.0%
	PUBFx	15	1.1	2.8	0.0%
	PUBGx	1	0.1	0.2	0.0%
	PUSAh	1	0.1	0.2	0.0%
	PUSC	1	0.0	0.0	0.0%
	PUSCh	22	2.4	6.0	0.0%
	PUSCx	1	0.0	0.0	0.0%
	R2UBH	3	250.1	618.1	1.8%
	R2USA	11	60.3	148.9	0.4%
	R2USC	8	29.9	74.0	0.2%
	R4SBA	139	78.4	193.8	0.6%
	R4SBC	51	59.2	146.2	0.4%
	R4SBF	46	99.4	245.5	0.7%
	R4SBFx	2	0.3	0.7	0.0%
			13,583.0	33,563.2	100.0%
Haakon					
	L1UBGh	18	217.9	538.4	2.8%
	L1UBHh	1	102.7	253.8	1.3%
	L2ABFh	9	54.6	135.0	0.7%
	L2ABGh	2	20.7	51.2	0.3%
	L2UBFh	3	201.9	498.9	2.6%
	L2UBGh	2	5.1	12.7	0.1%
	L2USA	2	21.2	52.3	0.3%
	L2USAh	2	2.5	6.1	0.0%
	L2USC	1	0.5	1.2	0.0%
	L2USCh	22	47.3	116.9	0.6%
	L2USCx	1	0.0	0.0	0.0%
	PABF	5	3.1	7.6	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PABFh	2,469	1,648.0	4,072.0	21.1%
	PABFx	6	2.9	7.2	0.0%
	PABKx	4	4.9	12.1	0.1%
	PEMA	1,862	1,253.4	3,097.2	16.1%
	PEMAd	42	263.1	650.0	3.4%
	PEMAh	531	204.5	505.3	2.6%
	PEMAx	4	0.1	0.3	0.0%
	PEMC	939	680.7	1,681.9	8.7%
	PEMCd	36	219.0	541.1	2.8%
	PEMCh	2,135	815.6	2,015.2	10.5%
	PEMCx	77	6.7	16.5	0.1%
	PEMF	5	8.9	21.9	0.1%
	PEMFd	1	3.0	7.3	0.0%
	PEMFh	122	81.2	200.7	1.0%
	PEMFx	1	0.2	0.5	0.0%
	PFOA	520	468.3	1,157.2	6.0%
	PFOAh	41	52.8	130.5	0.7%
	PFOAx	10	1.5	3.8	0.0%
	PFOC	1	0.1	0.3	0.0%
	PFOCh	1	0.6	1.4	0.0%
	PSSA	142	200.0	494.3	2.6%
	PSSAh	26	182.0	449.8	2.3%
	PSSC	1	0.2	0.5	0.0%
	PSSCh	3	0.6	1.5	0.0%
	PUBF	1	0.2	0.5	0.0%
	PUBFh	3	0.9	2.3	0.0%
	PUBFx	199	26.7	66.0	0.3%
	PUBGx	1	0.2	0.6	0.0%
	PUSA	24	8.3	20.5	0.1%
	PUSAh	84	21.4	53.0	0.3%
	PUSAx	1	0.1	0.3	0.0%
	PUSC	1	0.0	0.1	0.0%
	PUSCh	127	45.3	111.8	0.6%
	PUSCx	4	0.3	0.7	0.0%
	R2UBF	26	37.7	93.1	0.5%
	R2UBFx	3	0.7	1.8	0.0%
	R2UBG	87	224.8	555.5	2.9%
	R2USA	170	465.4	1,150.1	6.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R2USC	38	11.6	28.6	0.1%
	R4SBA	91	98.2	242.8	1.3%
	R4SBC	68	79.5	196.5	1.0%
	R4SBCx	3	0.1	0.3	0.0%
			7,797.4	19,267.2	100.0%
Harding					
	L1UBGh	7	143.7	355.0	2.1%
	L2ABFh	24	148.6	367.2	2.2%
	L2ABGh	9	56.7	140.1	0.8%
	L2UBGh	1	70.4	173.9	1.0%
	L2USA	3	29.2	72.2	0.4%
	L2USAh	7	14.7	36.3	0.2%
	L2USC	2	17.4	43.0	0.3%
	L2USCh	3	10.0	24.8	0.1%
	PABF	15	5.9	14.5	0.1%
	PABFh	2,859	1,942.0	4,798.7	28.7%
	PABFx	11	2.9	7.2	0.0%
	PABGb	2	1.0	2.5	0.0%
	PABGh	1	7.6	18.7	0.1%
	PABKx	4	3.7	9.2	0.1%
	PEMA	5,551	1,027.5	2,539.0	15.2%
	PEMAd	12	27.6	68.3	0.4%
	PEMAh	1,153	375.1	926.9	5.5%
	PEMAx	30	4.2	10.4	0.1%
	PEMB	6	3.1	7.6	0.0%
	PEMC	1,885	572.1	1,413.6	8.5%
	PEMCb	2	0.4	1.0	0.0%
	PEMCd	3	5.3	13.1	0.1%
	PEMCh	2,252	555.1	1,371.5	8.2%
	PEMCx	117	8.5	21.1	0.1%
	PEMF	3	0.7	1.7	0.0%
	PEMFh	82	78.3	193.4	1.2%
	PFOA	132	35.5	87.8	0.5%
	PFOAh	31	6.3	15.5	0.1%
	PSSA	41	24.3	60.1	0.4%
	PSSAh	17	9.0	22.2	0.1%
	PSSCh	1	0.4	1.1	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUBFh	9	1.2	2.8	0.0%
	PUBFx	462	55.4	137.0	0.8%
	PUBKx	2	1.7	4.1	0.0%
	PUSA	1,346	594.9	1,470.0	8.8%
	PUSAd	1	6.0	14.8	0.1%
	PUSAh	190	71.0	175.6	1.0%
	PUSC	514	253.3	626.0	3.7%
	PUSCd	1	0.7	1.7	0.0%
	PUSCh	141	52.1	128.8	0.8%
	PUSCx	7	1.1	2.7	0.0%
	R2UBF	37	119.2	294.5	1.8%
	R2USA	533	221.8	548.1	3.3%
	R2USC	33	10.5	25.9	0.2%
	R4SBA	106	108.7	268.6	1.6%
	R4SBC	24	84.4	208.6	1.2%
	R4SBCx	2	0.2	0.5	0.0%
			6,769.4	16,726.9	100.0%
Jackson					
	L1UBGh	2	14.0	34.6	0.3%
	L2ABFh	4	40.3	99.6	0.8%
	L2ABGh	2	66.1	163.2	1.3%
	L2USCh	1	1.4	3.6	0.0%
	PABF	13	2.6	6.4	0.1%
	PABFh	1,924	936.2	2,313.2	18.1%
	PABFx	6	0.6	1.5	0.0%
	PABGh	6	27.4	67.7	0.5%
	PABKx	12	8.9	22.0	0.2%
	PEMA	1,939	588.5	1,454.1	11.4%
	PEMAd	22	28.8	71.1	0.6%
	PEMAh	392	136.6	337.5	2.6%
	PEMAx	15	0.7	1.8	0.0%
	PEMC	993	381.3	942.1	7.4%
	PEMCd	8	34.0	83.9	0.7%
	PEMCh	1,597	529.5	1,308.3	10.2%
	PEMCx	26	2.3	5.7	0.0%
	PEMF	5	4.5	11.1	0.1%
	PEMFh	68	47.5	117.3	0.9%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMFx	1	0.2	0.4	0.0%
	PFO5Ch	1	0.8	2.0	0.0%
	PFO5Fh	1	1.2	2.9	0.0%
	PFOA	482	388.5	959.9	7.5%
	PFOAh	41	13.6	33.7	0.3%
	PFOC	2	0.2	0.5	0.0%
	PSSA	218	350.6	866.4	6.8%
	PSSAh	6	9.6	23.8	0.2%
	PSSC	13	5.6	13.8	0.1%
	PSSCh	1	0.4	0.9	0.0%
	PUBFh	6	0.8	2.0	0.0%
	PUBFx	192	26.4	65.2	0.5%
	PUBKx	9	2.1	5.2	0.0%
	PUSA	68	24.7	61.0	0.5%
	PUSAh	73	31.5	77.7	0.6%
	PUSC	38	13.2	32.6	0.3%
	PUSCh	119	37.9	93.6	0.7%
	PUSCx	13	0.8	2.1	0.0%
	R2UBF	61	485.7	1,200.2	9.4%
	R2UBFx	2	0.1	0.3	0.0%
	R2USA	418	529.8	1,309.1	10.2%
	R2USC	43	10.6	26.1	0.2%
	R4SBA	161	257.9	637.2	5.0%
	R4SBAx	5	0.6	1.6	0.0%
	R4SBC	85	126.4	312.4	2.4%
	R4SBCx	4	0.2	0.5	0.0%
			5,170.4	12,775.8	100.0%
Jones					
	L1UBGh	8	61.9	152.9	0.8%
	L2ABFh	11	27.7	68.5	0.4%
	L2ABG	2	30.6	75.5	0.4%
	L2ABGh	5	47.0	116.1	0.6%
	L2USCh	1	0.7	1.6	0.0%
	PAB/EMFh	8	12.3	30.3	0.2%
	PABF	9	2.1	5.2	0.0%
	PABFb	1	1.3	3.2	0.0%
	PABFh	2,308	1,979.1	4,890.3	26.7%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PABFhx	8	2.3	5.6	0.0%
	PABFx	158	40.3	99.7	0.5%
	PABGh	29	120.6	297.9	1.6%
	PEM/ABF	4	8.1	20.0	0.1%
	PEM/ABFh	2	3.9	9.6	0.1%
	PEM/FOA	22	43.5	107.5	0.6%
	PEM/FOC	6	23.2	57.3	0.3%
	PEM/FOCh	2	0.8	2.0	0.0%
	PEM/SSA	1	0.4	1.0	0.0%
	PEM/SSC	1	0.6	1.4	0.0%
	PEM/SSCh	4	2.8	6.8	0.0%
	PEMA	1,352	1,007.0	2,488.2	13.6%
	PEMAd	77	283.3	699.9	3.8%
	PEMAh	133	76.2	188.3	1.0%
	PEMAx	10	0.7	1.7	0.0%
	PEMC	848	1,504.4	3,717.4	20.3%
	PEMCd	47	184.2	455.3	2.5%
	PEMCh	749	245.8	607.4	3.3%
	PEMCx	258	10.6	26.1	0.1%
	PEMF	17	28.5	70.5	0.4%
	PEMFd	2	14.3	35.3	0.2%
	PEMFh	82	85.5	211.2	1.2%
	PEMFx	2	0.4	0.9	0.0%
	PFO/EMA	2	7.8	19.2	0.1%
	PFO/EMC	1	1.8	4.3	0.0%
	PFOA	118	178.2	440.3	2.4%
	PFOAh	9	4.0	9.8	0.1%
	PFOC	3	0.6	1.5	0.0%
	PSSA	138	241.6	596.9	3.3%
	PSSAh	6	1.5	3.8	0.0%
	PSSC	6	3.5	8.6	0.0%
	PSSCh	1	0.6	1.5	0.0%
	PUBFh	1	0.3	0.8	0.0%
	PUBFx	143	23.2	57.3	0.3%
	PUBGx	2	3.0	7.4	0.0%
	PUBKx	3	4.3	10.6	0.1%
	PUSA	3	0.8	2.0	0.0%
	PUSAh	25	8.9	22.0	0.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSCh	17	4.7	11.5	0.1%
	PUSCx	1	0.0	0.0	0.0%
	R2UBF	153	501.6	1,239.5	6.8%
	R2UBH	1	0.0	0.1	0.0%
	R2USA	422	342.9	847.2	4.6%
	R2USC	75	16.5	40.8	0.2%
	R4SBA	113	119.6	295.5	1.6%
	R4SBAx	2	0.1	0.3	0.0%
	R4SBC	45	77.7	192.0	1.0%
	R4SBCx	1	0.1	0.3	0.0%
	R4SBF	16	25.0	61.8	0.3%
			7,418.1	18,329.8	100.0%
Lawrence					
	L1UBHh	1	22.8	56.4	2.8%
	L2ABFh	1	1.3	3.1	0.2%
	L2UBGh	1	8.2	20.2	1.0%
	PABF	8	3.1	7.7	0.4%
	PABFh	509	138.1	341.4	16.8%
	PABFx	5	0.7	1.8	0.1%
	PABGb	170	15.1	37.3	1.8%
	PABGh	7	5.5	13.6	0.7%
	PABHh	3	0.4	0.9	0.0%
	PABKx	4	9.6	23.8	1.2%
	PEMA	364	123.7	305.7	15.1%
	PEMAh	51	7.8	19.3	0.9%
	PEMAx	14	2.3	5.8	0.3%
	PEMB	12	11.7	28.9	1.4%
	PEMC	393	155.6	384.6	18.9%
	PEMCb	21	3.0	7.3	0.4%
	PEMCh	189	18.0	44.5	2.2%
	PEMCx	14	5.9	14.6	0.7%
	PEMF	8	0.9	2.2	0.1%
	PEMFb	13	1.5	3.7	0.2%
	PEMFh	13	4.6	11.3	0.6%
	PEMKx	3	28.2	69.7	3.4%
	PFOA	86	28.1	69.3	3.4%
	PFOAh	1	0.1	0.3	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOAx	8	0.8	1.9	0.1%
	PSSA	85	21.6	53.3	2.6%
	PSSAh	2	0.6	1.4	0.1%
	PSSB	1	0.8	2.1	0.1%
	PSSC	1	0.0	0.1	0.0%
	PSSCb	2	0.4	0.9	0.0%
	PSSCh	1	0.2	0.6	0.0%
	PUBFx	20	4.2	10.3	0.5%
	PUBKx	3	0.4	1.1	0.1%
	PUSA	3	0.2	0.5	0.0%
	PUSAh	23	3.7	9.3	0.5%
	PUSAx	1	0.0	0.1	0.0%
	PUSC	9	0.3	0.7	0.0%
	PUSCh	46	4.8	11.9	0.6%
	PUSCx	5	0.6	1.5	0.1%
	PUSKx	1	0.2	0.4	0.0%
	R2UBF	109	3.9	9.6	0.5%
	R2UBFx	2	0.0	0.1	0.0%
	R2UBG	27	4.8	11.8	0.6%
	R2USA	2	0.3	0.7	0.0%
	R3UBF	14	13.1	32.5	1.6%
	R3UBG	28	26.4	65.3	3.2%
	R3UBGx	2	0.4	0.9	0.0%
	R3UBH	17	14.6	36.0	1.8%
	R3USA	70	17.8	44.1	2.2%
	R3USC	10	1.6	3.9	0.2%
	R4SBA	42	83.3	205.9	10.1%
	R4SBAx	2	0.3	0.8	0.0%
	R4SBC	17	14.0	34.7	1.7%
	R4SBF	28	6.2	15.3	0.8%
			821.8	2,030.7	100.0%
Lyman					
	L1UBG	1	0.3	0.6	0.0%
	L1UBGh	2	17.7	43.8	0.1%
	L1UBHh	5	15,489.9	38,275.0	50.0%
	L2ABFh	6	17.8	44.0	0.1%
	L2ABGh	8	191.4	472.9	0.6%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	L2USC	4	3.7	9.2	0.0%
	L2USCh	94	57.4	141.9	0.2%
	PAB/EMF	9	51.5	127.4	0.2%
	PAB/EMFh	28	52.3	129.2	0.2%
	PAB/EMFx	1	0.1	0.3	0.0%
	PABF	17	8.2	20.4	0.0%
	PABFh	3,249	2,023.5	4,999.9	6.5%
	PABFhx	18	3.9	9.8	0.0%
	PABFx	577	108.9	269.1	0.4%
	PABGh	31	145.3	359.1	0.5%
	PABGx	4	8.3	20.6	0.0%
	PABKx	2	4.7	11.5	0.0%
	PEM/ABF	31	137.8	340.4	0.4%
	PEM/ABFd	1	12.7	31.3	0.0%
	PEM/ABFh	40	50.1	123.7	0.2%
	PEM/ABFx	1	0.3	0.6	0.0%
	PEM/FOA	4	1.3	3.3	0.0%
	PEM/FOAh	1	0.2	0.4	0.0%
	PEM/FOC	7	14.2	35.0	0.0%
	PEM/FOCh	4	4.4	10.8	0.0%
	PEM/SSA	1	0.3	0.7	0.0%
	PEM/SSC	4	5.7	14.2	0.0%
	PEMA	3,418	4,066.4	10,047.9	13.1%
	PEMAd	144	1,159.0	2,864.0	3.7%
	PEMAh	86	102.8	254.0	0.3%
	PEMAx	37	2.3	5.6	0.0%
	PEMC	2,025	3,497.4	8,641.8	11.3%
	PEMCd	95	628.2	1,552.3	2.0%
	PEMCh	693	244.8	605.0	0.8%
	PEMCx	722	31.3	77.3	0.1%
	PEMF	73	35.2	86.9	0.1%
	PEMFd	1	10.1	25.0	0.0%
	PEMFh	252	136.5	337.3	0.4%
	PEMFx	12	1.7	4.1	0.0%
	PEMKx	1	2.3	5.6	0.0%
	PFO/EMA	16	274.1	677.3	0.9%
	PFO/EMAh	1	2.7	6.7	0.0%
	PFO/EMC	4	10.9	27.0	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFO/EMCh	5	2.5	6.1	0.0%
	PFO/SSA	1	163.1	403.1	0.5%
	PFO/SSC	2	0.6	1.5	0.0%
	PFOA	130	106.8	264.0	0.3%
	PFOAh	109	35.6	87.9	0.1%
	PFOAx	11	0.3	0.7	0.0%
	PFOC	27	4.2	10.3	0.0%
	PFOCh	17	4.7	11.7	0.0%
	PFOCx	3	0.8	2.0	0.0%
	PSS/EMA	4	412.7	1,019.8	1.3%
	PSS/EMC	1	1.3	3.1	0.0%
	PSS/EMCh	1	1.5	3.8	0.0%
	PSS/USA	1	4.3	10.7	0.0%
	PSSA	99	157.0	387.8	0.5%
	PSSAh	9	5.5	13.7	0.0%
	PSSC	11	2.7	6.7	0.0%
	PSSCh	9	7.6	18.8	0.0%
	PUBFx	223	29.0	71.7	0.1%
	PUBGx	2	6.4	15.8	0.0%
	PUS/EMA	4	10.9	27.0	0.0%
	PUSAd	2	1.6	3.9	0.0%
	PUSAh	1	0.4	0.9	0.0%
	PUSAx	2	0.4	1.0	0.0%
	PUSC	2	1.1	2.7	0.0%
	PUSCd	3	7.5	18.5	0.0%
	PUSCh	10	3.0	7.3	0.0%
	PUSCx	2	0.2	0.5	0.0%
	R2UBF	42	101.9	251.7	0.3%
	R2USA	182	157.1	388.2	0.5%
	R2USC	48	4.8	11.9	0.0%
	R4SBA	343	229.6	567.4	0.7%
	R4SBC	192	217.1	536.4	0.7%
	R4SBF	52	682.4	1,686.2	2.2%
	R4SBFx	2	0.4	0.9	0.0%
			30,982.6	76,556.9	100.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Meade					
	L1UBGh	6	166.3	410.9	1.6%
	L2ABFh	10	53.8	133.0	0.5%
	L2ABGh	3	40.7	100.7	0.4%
	L2USA	1	1.7	4.3	0.0%
	L2USC	2	24.6	60.9	0.2%
	L2USCh	8	18.1	44.6	0.2%
	PABF	26	14.1	34.9	0.1%
	PABFh	5,866	3,051.4	7,539.9	30.2%
	PABFx	5	0.6	1.5	0.0%
	PABGh	4	24.2	59.9	0.2%
	PABKx	13	15.4	37.9	0.2%
	PEMA	7,033	2,119.0	5,235.9	20.9%
	PEMAd	61	185.2	457.6	1.8%
	PEMAh	606	259.5	641.1	2.6%
	PEMAx	46	3.4	8.4	0.0%
	PEMB	2	4.7	11.6	0.0%
	PEMC	3,050	638.0	1,576.4	6.3%
	PEMCd	35	101.7	251.3	1.0%
	PEMCh	3,184	812.6	2,007.9	8.0%
	PEMCx	157	14.0	34.6	0.1%
	PEMF	7	4.9	12.0	0.0%
	PEMFd	1	0.6	1.6	0.0%
	PEMFh	165	92.8	229.3	0.9%
	PEMFx	2	0.0	0.1	0.0%
	PEMKx	7	15.5	38.4	0.2%
	PFOA	916	290.2	717.1	2.9%
	PFOAh	68	8.1	20.1	0.1%
	PFOAx	1	0.0	0.1	0.0%
	PFOC	4	3.4	8.3	0.0%
	PFOCh	2	1.2	2.9	0.0%
	PSSA	119	75.3	186.1	0.7%
	PSSAh	24	3.9	9.7	0.0%
	PSSCh	4	1.5	3.7	0.0%
	PSSCx	2	0.1	0.2	0.0%
	PUBFh	1	0.2	0.5	0.0%
	PUBFx	604	59.0	145.7	0.6%
	PUBKx	5	0.8	1.9	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSA	184	41.1	101.4	0.4%
	PUSAd	5	9.8	24.2	0.1%
	PUSAh	133	35.5	87.8	0.4%
	PUSAx	9	0.5	1.1	0.0%
	PUSC	94	48.7	120.2	0.5%
	PUSCd	4	9.1	22.4	0.1%
	PUSCh	478	146.0	360.8	1.4%
	PUSCx	53	4.1	10.1	0.0%
	PUSKx	1	0.5	1.2	0.0%
	R2UBG	82	837.3	2,069.0	8.3%
	R2USA	427	369.7	913.4	3.7%
	R2USC	163	57.8	142.8	0.6%
	R3UBF	2	0.6	1.5	0.0%
	R3UBG	4	3.0	7.4	0.0%
	R3USA	37	10.9	26.8	0.1%
	R3USC	6	2.0	5.1	0.0%
	R4SBA	287	160.0	395.3	1.6%
	R4SBAx	5	1.9	4.8	0.0%
	R4SBC	81	263.9	652.0	2.6%
	R4SBCx	7	8.8	21.8	0.1%
			10,117.6	25,000.2	100.0%
Mellette					
	L1UBGh	6	35.7	88.3	0.7%
	L2ABFh	10	44.1	108.9	0.9%
	L2ABGh	1	9.5	23.6	0.2%
	L2USCh	2	0.5	1.1	0.0%
	PABF	22	16.5	40.8	0.3%
	PABFh	2,135	1,392.1	3,439.9	27.0%
	PABFx	3	0.3	0.8	0.0%
	PABGh	6	25.9	64.1	0.5%
	PABKx	4	3.6	9.0	0.1%
	PEMA	2,563	604.4	1,493.4	11.7%
	PEMAd	13	74.1	183.1	1.4%
	PEMAh	173	56.2	139.0	1.1%
	PEMAx	8	0.7	1.8	0.0%
	PEMC	940	607.9	1,502.1	11.8%
	PEMCd	28	162.1	400.7	3.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCh	1,046	240.8	594.9	4.7%
	PEMCx	59	3.6	9.0	0.1%
	PEMF	4	2.2	5.5	0.0%
	PEMFd	2	3.3	8.1	0.1%
	PEMFh	102	53.8	133.0	1.0%
	PEMFx	3	0.5	1.2	0.0%
	PEMKh	1	0.8	1.9	0.0%
	PEMKx	1	0.3	0.6	0.0%
	PFOA	345	370.1	914.6	7.2%
	PFOAh	37	13.7	33.9	0.3%
	PFOC	10	2.1	5.3	0.0%
	PFOCh	14	1.9	4.8	0.0%
	PSSA	250	279.4	690.5	5.4%
	PSSAh	9	2.6	6.4	0.1%
	PSSAx	2	0.0	0.1	0.0%
	PSSC	15	4.4	10.8	0.1%
	PSSCh	7	0.7	1.8	0.0%
	PSSCx	2	0.1	0.1	0.0%
	PUBFx	125	16.9	41.8	0.3%
	PUBGx	1	0.7	1.8	0.0%
	PUBKx	1	0.4	1.1	0.0%
	PUSA	9	1.8	4.5	0.0%
	PUSAh	39	6.2	15.3	0.1%
	PUSAx	1	0.0	0.0	0.0%
	PUSC	2	0.2	0.4	0.0%
	PUSCh	37	12.7	31.3	0.2%
	PUSCx	2	0.3	0.6	0.0%
	R2UBF	192	282.6	698.2	5.5%
	R2UBG	11	80.0	197.6	1.6%
	R2UBGx	4	0.6	1.5	0.0%
	R2USA	521	327.7	809.7	6.4%
	R2USC	185	113.6	280.6	2.2%
	R4SBA	127	161.6	399.2	3.1%
	R4SBAx	2	0.1	0.2	0.0%
	R4SBC	37	139.6	345.0	2.7%
	R4SBCx	3	0.3	0.6	0.0%
			5,159.4	12,748.7	100.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Pennington					
	L1UBGh	1	6.8	16.7	0.1%
	L1UBHh	3	617.2	1,525.1	7.6%
	L2ABFh	10	82.1	202.9	1.0%
	L2ABGh	7	70.0	173.0	0.9%
	L2USAh	3	19.8	49.0	0.2%
	L2USCh	1	2.8	7.0	0.0%
	PABF	18	6.5	16.1	0.1%
	PABFh	3,459	1,553.6	3,838.9	19.2%
	PABFx	20	2.9	7.1	0.0%
	PABGb	105	10.8	26.8	0.1%
	PABGh	16	26.9	66.4	0.3%
	PABKh	3	9.8	24.3	0.1%
	PABKx	31	19.6	48.4	0.2%
	PEMA	3,184	1,196.6	2,956.8	14.8%
	PEMAd	95	375.8	928.6	4.7%
	PEMAh	544	156.0	385.4	1.9%
	PEMAx	81	17.7	43.7	0.2%
	PEMB	12	8.3	20.5	0.1%
	PEMC	1,666	586.7	1,449.8	7.3%
	PEMCb	5	0.3	0.7	0.0%
	PEMCd	73	219.8	543.2	2.7%
	PEMCh	2,100	449.7	1,111.2	5.6%
	PEMCx	241	106.4	262.9	1.3%
	PEMF	25	27.4	67.6	0.3%
	PEMFb	4	0.9	2.2	0.0%
	PEMFd	6	15.7	38.7	0.2%
	PEMFh	249	168.9	417.3	2.1%
	PEMFx	13	1.4	3.5	0.0%
	PEMKx	8	2.2	5.6	0.0%
	PFOA	425	110.8	273.7	1.4%
	PFOAh	71	9.4	23.2	0.1%
	PFOAx	53	39.7	98.0	0.5%
	PSSA	330	145.7	360.1	1.8%
	PSSAh	18	3.2	7.9	0.0%
	PSSAx	6	1.0	2.6	0.0%
	PSSB	4	4.1	10.1	0.1%
	PSSC	2	0.2	0.5	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSCb	1	0.1	0.4	0.0%
	PSSCh	5	4.7	11.6	0.1%
	PUBF	1	0.1	0.1	0.0%
	PUBFh	4	0.6	1.4	0.0%
	PUBFx	345	68.6	169.6	0.9%
	PUBGh	1	0.4	1.1	0.0%
	PUBGx	1	0.9	2.3	0.0%
	PUBKx	8	1.6	4.0	0.0%
	PUSA	114	28.8	71.1	0.4%
	PUSAd	1	0.7	1.7	0.0%
	PUSAh	158	37.2	92.0	0.5%
	PUSAx	5	2.4	6.0	0.0%
	PUSC	89	13.8	34.1	0.2%
	PUSCh	465	98.0	242.1	1.2%
	PUSCx	87	7.8	19.3	0.1%
	R2UBF	20	73.5	181.6	0.9%
	R2UBG	97	609.1	1,505.0	7.5%
	R2UBGx	1	0.2	0.4	0.0%
	R2USA	427	560.4	1,384.8	6.9%
	R2USC	174	74.1	183.1	0.9%
	R3UBF	26	29.7	73.5	0.4%
	R3UBG	22	32.7	80.7	0.4%
	R3UBGx	2	0.1	0.4	0.0%
	R3UBH	6	13.0	32.1	0.2%
	R3USA	1	0.1	0.2	0.0%
	R3USC	1	0.0	0.0	0.0%
	R4SBA	147	218.9	540.8	2.7%
	R4SBAx	10	2.1	5.2	0.0%
	R4SBC	48	113.4	280.3	1.4%
	R4SBCx	4	0.7	1.7	0.0%
	R4SBF	2	0.8	2.0	0.0%
			8,071.4	19,944.2	100.0%
Perkins					
	L1UBGh	3	779.3	1,925.7	8.1%
	L1UBHh	6	1,244.3	3,074.6	12.9%
	L2ABFh	22	186.1	459.7	1.9%
	L2ABGh	3	61.9	152.8	0.6%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	L2USA	5	10.1	25.1	0.1%
	L2USAh	63	31.2	77.2	0.3%
	L2USC	1	43.7	108.0	0.5%
	L2USCh	33	144.4	356.7	1.5%
	PABF	46	17.2	42.5	0.2%
	PABFh	2,744	1,850.9	4,573.6	19.2%
	PABFx	15	2.4	5.9	0.0%
	PABGh	6	33.0	81.5	0.3%
	PABKx	3	1.8	4.5	0.0%
	PEMA	7,082	1,967.2	4,860.8	20.4%
	PEMAd	63	521.9	1,289.6	5.4%
	PEMAh	959	362.1	894.7	3.8%
	PEMAx	22	1.7	4.1	0.0%
	PEMB	4	2.2	5.5	0.0%
	PEMC	2,601	682.4	1,686.3	7.1%
	PEMCd	18	61.8	152.7	0.6%
	PEMCh	2,125	394.4	974.6	4.1%
	PEMCx	155	9.5	23.5	0.1%
	PEMF	2	0.2	0.6	0.0%
	PEMFh	91	62.3	154.0	0.6%
	PEMFx	4	1.7	4.3	0.0%
	PFOA	431	152.0	375.6	1.6%
	PFOAh	95	42.3	104.5	0.4%
	PFOC	2	1.4	3.5	0.0%
	PFOCh	3	0.3	0.7	0.0%
	PSSA	60	21.2	52.3	0.2%
	PSSAh	67	51.1	126.2	0.5%
	PSSAx	1	0.1	0.2	0.0%
	PSSC	2	1.0	2.5	0.0%
	PSSCh	2	0.4	0.9	0.0%
	PSSCx	1	0.0	0.1	0.0%
	PUBFh	5	0.6	1.6	0.0%
	PUBFx	782	83.5	206.4	0.9%
	PUBKx	3	0.8	2.0	0.0%
	PUSA	181	88.5	218.7	0.9%
	PUSAd	2	5.5	13.7	0.1%
	PUSAh	88	21.2	52.4	0.2%
	PUSC	27	11.5	28.4	0.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSCh	90	20.3	50.3	0.2%
	PUSCx	10	0.9	2.2	0.0%
	R2UBF	64	400.2	989.0	4.2%
	R2USA	428	138.5	342.2	1.4%
	R2USC	44	2.5	6.1	0.0%
	R3USC	1	0.1	0.2	0.0%
	R4SBA	45	41.4	102.2	0.4%
	R4SBC	22	74.2	183.3	0.8%
	R4SBF	1	0.0	0.1	0.0%
			9,633.3	23,803.7	100.0%
Shannon					
	L1UBFh	1	0.0	0.1	0.0%
	L1UBGh	1	211.1	521.6	5.3%
	L2ABF	5	139.3	344.3	3.5%
	L2ABFh	3	25.4	62.8	0.6%
	L2ABG	1	1.9	4.8	0.0%
	L2ABGh	1	18.8	46.4	0.5%
	L2USA	1	14.3	35.2	0.4%
	PABF	49	28.4	70.3	0.7%
	PABFh	623	276.7	683.6	6.9%
	PABFx	7	1.8	4.5	0.0%
	PABKx	13	4.4	10.7	0.1%
	PEMA	2,713	931.0	2,300.4	23.2%
	PEMAd	5	9.6	23.6	0.2%
	PEMAh	436	111.4	275.4	2.8%
	PEMAx	47	4.0	10.0	0.1%
	PEMB	8	4.5	11.0	0.1%
	PEMC	1,110	309.7	765.2	7.7%
	PEMCh	573	107.0	264.5	2.7%
	PEMCx	25	1.4	3.5	0.0%
	PEMF	120	150.9	372.8	3.8%
	PEMFh	93	51.9	128.3	1.3%
	PEMFx	3	1.4	3.5	0.0%
	PEMKx	6	2.7	6.7	0.1%
	PFOA	433	177.0	437.3	4.4%
	PFOAd	1	0.3	0.7	0.0%
	PFOAh	36	12.1	30.0	0.3%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOAx	4	0.7	1.7	0.0%
	PFOB	2	0.1	0.4	0.0%
	PFOC	8	4.5	11.0	0.1%
	PFOCh	6	5.7	14.2	0.1%
	PSSA	100	53.4	131.9	1.3%
	PSSAd	1	0.5	1.3	0.0%
	PSSAh	11	2.5	6.2	0.1%
	PSSAx	3	0.1	0.2	0.0%
	PSSC	19	5.4	13.3	0.1%
	PSSCh	10	11.3	27.9	0.3%
	PUBFx	38	3.0	7.3	0.1%
	PUSA	84	20.8	51.4	0.5%
	PUSAh	126	32.4	80.0	0.8%
	PUSAx	4	0.4	1.1	0.0%
	PUSC	118	12.0	29.7	0.3%
	PUSCd	1	0.1	0.2	0.0%
	PUSCh	220	52.0	128.6	1.3%
	PUSCx	7	0.7	1.7	0.0%
	PUSKx	2	8.7	21.5	0.2%
	R2UBF	15	423.3	1,046.1	10.5%
	R2UBFx	3	7.8	19.4	0.2%
	R2UBG	42	63.5	157.0	1.6%
	R2UBH	1	0.0	0.1	0.0%
	R2USA	263	191.7	473.7	4.8%
	R2USC	167	77.5	191.5	1.9%
	R4SBA	240	368.5	910.6	9.2%
	R4SBAx	5	0.8	1.9	0.0%
	R4SBC	81	76.1	188.1	1.9%
	R4SBCx	1	0.0	0.1	0.0%
	R4SBF	3	0.1	0.2	0.0%
			4,020.9	9,935.5	100.0%
Stanley					
	L1UBGh	226	2,619.1	6,471.6	10.1%
	L1UBHh	11	16,106.3	39,798.2	62.4%
	L2ABFh	26	136.3	336.9	0.5%
	L2ABGh	7	108.5	268.1	0.4%
	L2UBF	1	1.3	3.3	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	L2UBFh	59	57.9	143.1	0.2%
	L2USAh	14	6.5	16.2	0.0%
	L2USCh	263	124.8	308.3	0.5%
	PAB/EMFh	3	3.6	8.9	0.0%
	PABF	11	7.4	18.2	0.0%
	PABFh	2,408	2,368.4	5,852.3	9.2%
	PABFhx	4	0.5	1.2	0.0%
	PABFx	130	43.9	108.5	0.2%
	PABGh	26	133.2	329.1	0.5%
	PABGhx	1	0.0	0.1	0.0%
	PEM/FOA	43	110.4	272.7	0.4%
	PEM/FOC	6	41.5	102.6	0.2%
	PEM/FOCh	1	0.5	1.3	0.0%
	PEM/FOCx	1	0.1	0.2	0.0%
	PEM/SSA	1	3.6	8.8	0.0%
	PEM/SSC	3	19.7	48.7	0.1%
	PEMA	1,439	754.3	1,863.7	2.9%
	PEMAd	60	91.2	225.5	0.4%
	PEMAh	99	81.5	201.3	0.3%
	PEMAx	8	0.3	0.8	0.0%
	PEMC	962	1,487.1	3,674.5	5.8%
	PEMCd	20	77.9	192.4	0.3%
	PEMCh	377	196.2	484.8	0.8%
	PEMCx	375	15.0	37.0	0.1%
	PEMF	12	34.5	85.3	0.1%
	PEMFh	95	121.7	300.7	0.5%
	PEMFx	13	3.9	9.7	0.0%
	PFO/EMA	3	1.8	4.5	0.0%
	PFO/EMC	1	1.6	3.9	0.0%
	PFOA	30	11.8	29.1	0.0%
	PFOAh	15	5.5	13.5	0.0%
	PFOCh	1	0.4	1.0	0.0%
	PSS/EMCh	1	0.2	0.6	0.0%
	PSSA	16	6.6	16.2	0.0%
	PSSAh	16	44.2	109.2	0.2%
	PSSCh	1	0.3	0.8	0.0%
	PUBFx	53	8.8	21.7	0.0%
	PUBGh	3	11.9	29.3	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSA	2	0.1	0.3	0.0%
	PUSAh	17	5.1	12.7	0.0%
	PUSC	8	0.4	0.9	0.0%
	PUSCh	36	6.6	16.4	0.0%
	R2UBF	9	226.4	559.3	0.9%
	R2USA	10	3.7	9.1	0.0%
	R4SBA	395	281.7	696.0	1.1%
	R4SBAx	2	0.3	0.7	0.0%
	R4SBC	133	362.6	896.0	1.4%
	R4SBCx	1	0.1	0.3	0.0%
	R4SBF	15	80.4	198.6	0.3%
	R4SBFx	2	0.3	0.7	0.0%
			25,817.7	63,794.6	100.0%
Todd					
	L1UBGh	4	90.2	223.0	1.8%
	L2ABF	3	87.2	215.5	1.7%
	L2ABFh	7	13.9	34.4	0.3%
	L2ABG	1	0.0	0.1	0.0%
	L2ABGh	9	104.2	257.4	2.1%
	L2UBGh	1	10.6	26.3	0.2%
	L2USC	2	3.0	7.3	0.1%
	L2USCh	1	0.1	0.3	0.0%
	PABC	4	0.1	0.3	0.0%
	PABCh	1	0.1	0.1	0.0%
	PABCx	1	0.0	0.1	0.0%
	PABF	92	67.5	166.9	1.3%
	PABFh	594	429.0	1,060.0	8.5%
	PABFx	11	4.9	12.1	0.1%
	PABGh	12	55.0	135.9	1.1%
	PABKx	7	12.4	30.6	0.2%
	PEM/ABF	3	0.6	1.5	0.0%
	PEMA	6,461	2,164.9	5,349.3	43.0%
	PEMAd	30	52.6	130.1	1.0%
	PEMAh	92	29.2	72.0	0.6%
	PEMAx	9	0.4	0.9	0.0%
	PEMB	6	1.9	4.7	0.0%
	PEMBd	3	121.0	298.9	2.4%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMC	3,019	1,058.1	2,614.6	21.0%
	PEMCd	10	22.5	55.6	0.4%
	PEMCh	574	210.4	520.0	4.2%
	PEMCx	97	5.9	14.6	0.1%
	PEMF	72	76.1	188.1	1.5%
	PEMFd	2	1.2	3.1	0.0%
	PEMFh	63	44.4	109.7	0.9%
	PEMFx	7	0.5	1.3	0.0%
	PEMKx	5	9.4	23.3	0.2%
	PFOA	226	91.2	225.3	1.8%
	PFOAh	21	7.1	17.6	0.1%
	PFOC	9	1.3	3.2	0.0%
	PFOCh	16	4.0	9.8	0.1%
	PSSA	141	55.1	136.0	1.1%
	PSSAh	12	3.6	9.0	0.1%
	PSSC	19	2.1	5.3	0.0%
	PSSCh	11	2.2	5.4	0.0%
	PUBFh	2	0.3	0.7	0.0%
	PUBFx	152	15.5	38.3	0.3%
	PUBGx	1	3.6	8.9	0.1%
	PUBKx	4	3.1	7.7	0.1%
	PUSA	6	2.5	6.1	0.0%
	PUSAh	3	0.4	1.0	0.0%
	PUSAx	1	0.1	0.1	0.0%
	PUSC	6	0.9	2.3	0.0%
	PUSCh	9	2.4	5.9	0.0%
	PUSCx	1	0.0	0.0	0.0%
	R2UBF	3	7.7	19.1	0.2%
	R2UBG	6	60.6	149.7	1.2%
	R2USA	37	6.9	17.2	0.1%
	R2USC	102	22.9	56.5	0.5%
	R4SBA	40	19.5	48.2	0.4%
	R4SBC	30	41.1	101.5	0.8%
	R4SBF	2	0.3	0.6	0.0%
	R4SBFx	3	1.4	3.4	0.0%
			5,033.2	12,436.9	100.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Tripp					
	L1UBGh	3	97.6	241.2	1.1%
	L2ABF	2	23.2	57.4	0.3%
	L2ABG	2	108.6	268.4	1.2%
	L2ABGh	16	181.6	448.6	2.0%
	PAB/EMF	2	16.7	41.2	0.2%
	PAB/EMFh	41	38.7	95.7	0.4%
	PAB/EMFx	1	0.1	0.2	0.0%
	PABC	13	1.3	3.3	0.0%
	PABF	131	57.7	142.5	0.6%
	PABFd	1	0.3	0.8	0.0%
	PABFh	2,158	1,023.7	2,529.4	11.2%
	PABFhx	95	16.6	41.0	0.2%
	PABFx	799	112.8	278.7	1.2%
	PABGh	83	225.7	557.7	2.5%
	PABGhx	1	0.1	0.2	0.0%
	PABGx	6	20.5	50.7	0.2%
	PEM/ABF	67	330.8	817.3	3.6%
	PEM/ABFd	3	8.2	20.3	0.1%
	PEM/ABFh	63	81.5	201.4	0.9%
	PEM/ABFhx	1	0.1	0.3	0.0%
	PEM/ABFx	4	0.7	1.6	0.0%
	PEM/FOA	28	37.6	93.0	0.4%
	PEM/FOC	71	64.3	159.0	0.7%
	PEM/FOCd	4	5.0	12.3	0.1%
	PEM/FOCh	17	5.9	14.5	0.1%
	PEM/FOCx	4	0.7	1.7	0.0%
	PEM/SSA	3	20.6	50.9	0.2%
	PEMA	7,853	1,787.9	4,417.9	19.5%
	PEMAd	444	251.1	620.5	2.7%
	PEMAh	33	10.0	24.6	0.1%
	PEMAx	41	1.2	2.9	0.0%
	PEMB	1	0.1	0.2	0.0%
	PEMC	10,332	2,679.3	6,620.4	29.2%
	PEMCd	151	172.5	426.1	1.9%
	PEMCh	673	148.5	366.9	1.6%
	PEMCx	1,336	50.6	125.1	0.6%
	PEMF	21	48.0	118.5	0.5%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMFd	1	1.8	4.3	0.0%
	PEMFh	167	73.9	182.6	0.8%
	PEMFhx	1	0.0	0.0	0.0%
	PEMFx	26	2.5	6.2	0.0%
	PFO/EMA	15	45.4	112.1	0.5%
	PFO/EMAd	1	0.6	1.4	0.0%
	PFO/EMC	50	32.3	79.9	0.4%
	PFO/EMCd	1	1.0	2.6	0.0%
	PFO/EMCh	8	5.2	12.8	0.1%
	PFOA	658	173.3	428.2	1.9%
	PFOAd	13	9.2	22.7	0.1%
	PFOAh	144	8.5	21.1	0.1%
	PFOAhx	1	0.0	0.1	0.0%
	PFOAx	11	1.3	3.1	0.0%
	PFOC	378	116.7	288.5	1.3%
	PFOCd	9	2.6	6.5	0.0%
	PFOCh	33	11.7	28.8	0.1%
	PFOCx	9	1.0	2.5	0.0%
	PSS/EMA	3	9.1	22.5	0.1%
	PSS/EMC	2	0.7	1.7	0.0%
	PSS/USA	1	1.6	3.9	0.0%
	PSSA	103	71.1	175.6	0.8%
	PSSAh	3	0.2	0.5	0.0%
	PSSAx	2	0.1	0.2	0.0%
	PSSC	17	4.3	10.6	0.0%
	PSSCh	11	2.5	6.2	0.0%
	PUBFh	3	3.1	7.5	0.0%
	PUBFx	315	35.3	87.1	0.4%
	PUSAh	2	0.5	1.2	0.0%
	PUSCh	17	4.8	11.9	0.1%
	PUSCx	4	0.4	1.1	0.0%
	R2UBF	46	42.3	104.4	0.5%
	R2UBG	6	170.8	422.0	1.9%
	R2USA	242	136.7	337.7	1.5%
	R2USC	34	2.5	6.1	0.0%
	R4SBA	86	60.8	150.1	0.7%
	R4SBC	102	102.0	252.1	1.1%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R4SBCx	1	0.1	0.2	0.0%
	R4SBF	110	398.4	984.5	4.3%
			9,163.8	22,643.3	100.0%
Ziebach					
	L1UBGh	10	229.1	566.0	2.4%
	L1UBHh	3	84.1	207.7	0.9%
	L2ABFh	20	170.4	420.9	1.8%
	L2ABGh	2	39.1	96.6	0.4%
	L2UBFh	6	70.1	173.3	0.7%
	L2UBGh	1	5.2	12.7	0.1%
	L2USAh	9	70.7	174.6	0.7%
	L2USCh	19	124.4	307.5	1.3%
	L2USCx	1	0.1	0.2	0.0%
	PABF	5	2.9	7.1	0.0%
	PABFh	2,566	2,281.7	5,638.1	24.0%
	PABFx	3	0.4	0.9	0.0%
	PABKx	11	9.1	22.4	0.1%
	PEMA	2,787	1,894.4	4,681.1	20.0%
	PEMAd	58	1,136.5	2,808.4	12.0%
	PEMAh	259	74.4	183.8	0.8%
	PEMAx	12	0.9	2.1	0.0%
	PEMC	845	536.6	1,326.0	5.7%
	PEMCd	44	279.6	691.0	2.9%
	PEMCh	829	197.8	488.7	2.1%
	PEMCx	72	5.4	13.2	0.1%
	PEMFh	39	41.9	103.5	0.4%
	PEMFx	2	1.8	4.4	0.0%
	PFOA	559	438.6	1,083.6	4.6%
	PFOAh	30	70.9	175.3	0.7%
	PFOCh	2	0.5	1.2	0.0%
	PSSA	131	193.5	478.1	2.0%
	PSSAh	20	103.2	255.0	1.1%
	PSSAx	1	0.0	0.1	0.0%
	PSSC	1	0.0	0.1	0.0%
	PUBFh	6	2.0	5.0	0.0%
	PUBFx	254	37.3	92.2	0.4%
	PUBKx	3	0.7	1.6	0.0%

Appendix 2. Continued.

Cnty.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSA	54	22.0	54.3	0.2%
	PUSAd	3	4.1	10.2	0.0%
	PUSAh	30	5.1	12.6	0.1%
	PUSC	9	8.6	21.4	0.1%
	PUSCh	64	17.0	42.0	0.2%
	PUSCx	3	1.3	3.1	0.0%
	R2UBF	37	244.9	605.2	2.6%
	R2UBG	60	269.5	665.8	2.8%
	R2UBH	8	0.5	1.2	0.0%
	R2USA	450	623.4	1,540.5	6.6%
	R2USC	43	32.7	80.8	0.3%
	R4SBA	129	81.2	200.7	0.9%
	R4SBAx	1	0.2	0.4	0.0%
	R4SBC	40	73.9	182.5	0.8%
	R4SBCx	7	0.7	1.6	0.0%
			9,488.1	23,444.8	100.0%

Appendix 3. Number and area of NWI-delineated wetlands summed by physiographic region and NWI attribute.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Black Hills					
	L1UBGh	6.0	19.1	47.3	0.6%
	L1UBHh	7.0	699.8	1,729.3	23.2%
	L2ABFh	1.0	1.3	3.1	0.0%
	L2ABGh	7.0	84.7	209.4	2.8%
	L2UBGh	1.0	8.2	20.2	0.3%
	L2USA	1.0	0.3	0.7	0.0%
	L2USAh	1.0	2.7	6.8	0.1%
	L2USCh	2.0	9.9	24.5	0.3%
	PABF	22.0	4.2	10.5	0.1%
	PABFh	1,665.0	279.3	690.0	9.3%
	PABFx	20.0	4.3	10.6	0.1%
	PABGb	294.0	27.5	68.1	0.9%
	PABGh	40.0	38.5	95.2	1.3%
	PABHh	3.0	0.4	0.9	0.0%
	PABKx	17.0	14.1	34.9	0.5%
	PEMA	1,039.0	319.9	790.5	10.6%
	PEMAd	1.0	3.9	9.7	0.1%
	PEMAh	305.0	38.6	95.3	1.3%
	PEMAx	13.0	1.7	4.2	0.1%
	PEMB	76.0	41.6	102.8	1.4%
	PEMC	1,292.0	572.4	1,414.4	19.0%
	PEMCb	29.0	3.6	8.9	0.1%
	PEMCh	649.0	72.4	179.0	2.4%
	PEMCx	61.0	11.1	27.4	0.4%
	PEMF	27.0	5.6	13.8	0.2%
	PEMFb	21.0	3.2	7.9	0.1%
	PEMFh	55.0	17.2	42.5	0.6%
	PEMFx	3.0	0.3	0.9	0.0%
	PEMKx	13.0	30.3	74.9	1.0%
	PFOA	264.0	66.0	163.2	2.2%
	PFOAh	24.0	9.5	23.5	0.3%
	PFOAx	2.0	0.1	0.2	0.0%
	PSSA	226.0	68.1	168.2	2.3%
	PSSAh	18.0	20.0	49.3	0.7%
	PSSAx	2.0	0.1	0.2	0.0%
	PSSB	6.0	5.0	12.4	0.2%
	PSSC	3.0	0.3	0.6	0.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSCb	3.0	0.5	1.2	0.0%
	PSSCh	3.0	4.7	11.5	0.2%
	PUBF	1.0	0.1	0.1	0.0%
	PUBFh	4.0	0.4	0.9	0.0%
	PUBFx	72.0	8.6	21.3	0.3%
	PUBGh	1.0	0.4	1.1	0.0%
	PUBGx	1.0	0.9	2.3	0.0%
	PUBKx	13.0	2.3	5.7	0.1%
	PUSA	10.0	0.7	1.6	0.0%
	PUSAh	100.0	11.6	28.6	0.4%
	PUSAx	6.0	0.5	1.1	0.0%
	PUSC	25.0	2.3	5.7	0.1%
	PUSCh	214.0	17.8	43.9	0.6%
	PUSCx	61.0	4.3	10.6	0.1%
	PUSKx	1.0	0.2	0.4	0.0%
	R2UBF	21.0	13.7	33.9	0.5%
	R2UBFx	1.0	0.2	0.5	0.0%
	R2UBG	20.0	7.9	19.5	0.3%
	R2UBGx	1.0	0.2	0.4	0.0%
	R2USA	41.0	38.0	93.8	1.3%
	R2USC	9.0	2.1	5.1	0.1%
	R3UBF	47.0	57.5	142.1	1.9%
	R3UBG	58.0	75.1	185.5	2.5%
	R3UBGx	6.0	0.6	1.6	0.0%
	R3UBH	22.0	28.1	69.5	0.9%
	R3USA	13.0	1.6	3.9	0.1%
	R3USC	2.0	0.1	0.3	0.0%
	R3USCx	1.0	0.0	0.1	0.0%
	R4SBA	143.0	197.5	488.0	6.5%
	R4SBAx	9.0	3.5	8.7	0.1%
	R4SBC	45.0	41.1	101.6	1.4%
	R4SBCx	5.0	1.3	3.3	0.0%
	R4SBF	5.0	8.2	20.2	0.3%
	R4SBFx	2.0	0.7	1.8	0.0%
			3,017.9	7,457.0	100.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Northern Plateaus					
	L1UBGh	70.0	1,405.5	3,472.9	3.1%
	L1UBHh	33.0	1,292.8	3,194.5	2.9%
	L2ABF	6.0	165.8	409.7	0.4%
	L2ABFh	94.0	713.5	1,763.1	1.6%
	L2ABG	5.0	235.7	582.4	0.5%
	L2ABGh	27.0	324.6	802.1	0.7%
	L2ABKx	1.0	10.5	26.0	0.0%
	L2UBFh	11.0	95.6	236.2	0.2%
	L2UBFx	2.0	0.3	0.7	0.0%
	L2UBGh	1.0	70.4	173.9	0.2%
	L2USA	28.0	230.4	569.4	0.5%
	L2USAh	82.0	127.8	315.8	0.3%
	L2USC	21.0	288.8	713.6	0.6%
	L2USCh	50.0	341.3	843.5	0.8%
	PAB/EMFh	5.0	7.9	19.5	0.0%
	PABC	1.0	0.3	0.8	0.0%
	PABF	119.0	43.9	108.4	0.1%
	PABFh	12,836.0	9,397.5	23,221.0	20.9%
	PABFx	257.0	43.4	107.2	0.1%
	PABGb	2.0	1.0	2.5	0.0%
	PABGh	49.0	239.3	591.4	0.5%
	PABGx	1.0	3.4	8.3	0.0%
	PABKx	27.0	38.9	96.2	0.1%
	PEM/ABF	3.0	3.8	9.4	0.0%
	PEM/ABFh	6.0	11.1	27.3	0.0%
	PEM/FOA	1.0	0.4	1.1	0.0%
	PEM/SSAh	1.0	19.4	47.9	0.0%
	PEMA	28,445.0	11,643.9	28,771.7	25.9%
	PEMAd	354.0	2,738.8	6,767.4	6.1%
	PEMAh	3,094.0	1,178.4	2,911.7	2.6%
	PEMAx	101.0	8.3	20.6	0.0%
	PEMB	10.0	5.3	13.0	0.0%
	PEMC	9,997.0	5,082.8	12,559.4	11.3%
	PEMCb	2.0	0.4	1.0	0.0%
	PEMCd	134.0	558.1	1,379.0	1.2%
	PEMCh	7,980.0	1,979.9	4,892.2	4.4%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCx	903.0	50.6	124.9	0.1%
	PEMF	22.0	36.6	90.5	0.1%
	PEMFh	374.0	308.5	762.2	0.7%
	PEMFx	6.0	3.5	8.6	0.0%
	PEMKx	5.0	4.6	11.3	0.0%
	PFO/EMAh	6.0	135.3	334.4	0.3%
	PFO/EMC	1.0	0.2	0.5	0.0%
	PFOA	1,939.0	736.4	1,819.5	1.6%
	PFOAd	4.0	3.5	8.7	0.0%
	PFOAh	269.0	122.8	303.5	0.3%
	PFOAx	2.0	0.3	0.7	0.0%
	PFOC	7.0	3.5	8.8	0.0%
	PFOCh	11.0	25.7	63.4	0.1%
	PSS/EMAh	3.0	250.9	620.1	0.6%
	PSSA	304.0	204.2	504.5	0.5%
	PSSAd	1.0	0.3	0.6	0.0%
	PSSAh	131.0	127.4	314.9	0.3%
	PSSAx	2.0	0.1	0.2	0.0%
	PSSC	3.0	2.0	4.9	0.0%
	PSSCh	12.0	13.7	33.9	0.0%
	PSSCx	1.0	0.0	0.1	0.0%
	PUBF	1.0	17.1	42.1	0.0%
	PUBFh	26.0	5.6	13.8	0.0%
	PUBFx	2,328.0	274.7	678.8	0.6%
	PUBGx	1.0	0.5	1.4	0.0%
	PUBKx	8.0	3.0	7.3	0.0%
	PUSA	2,092.0	979.3	2,419.8	2.2%
	PUSAd	7.0	16.8	41.5	0.0%
	PUSAh	378.0	128.3	316.9	0.3%
	PUSAx	5.0	0.4	1.0	0.0%
	PUSC	676.0	372.1	919.4	0.8%
	PUSCd	7.0	17.4	43.0	0.0%
	PUSCh	460.0	164.0	405.2	0.4%
	PUSCx	35.0	3.2	7.9	0.0%
	R2UBF	136.0	1,267.4	3,131.7	2.8%
	R2UBH	8.0	0.5	1.2	0.0%
	R2USA	1,379.0	583.0	1,440.6	1.3%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R2USC	121.0	18.8	46.5	0.0%
	R3USC	1.0	0.1	0.2	0.0%
	R4SBA	467.0	369.9	914.0	0.8%
	R4SBAx	3.0	0.1	0.4	0.0%
	R4SBC	224.0	446.2	1,102.5	1.0%
	R4SBCx	10.0	1.0	2.4	0.0%
	R4SBF	11.0	31.7	78.4	0.1%
			45,040.3	111,293.0	100.0%
Pierre Hills					
	L1UBG	1.0	0.3	0.6	0.0%
	L1UBGh	869.0	15,999.2	39,533.5	8.7%
	L1UBHh	21.0	77,321.0	191,057.5	42.3%
	L2ABF	1.0	10.8	26.7	0.0%
	L2ABFh	101.0	597.5	1,476.3	0.3%
	L2ABG	3.0	39.8	98.3	0.0%
	L2ABGh	69.0	1,176.4	2,906.9	0.6%
	L2UBF	2.0	5.2	12.9	0.0%
	L2UBFh	177.0	893.6	2,208.1	0.5%
	L2UBFx	1.0	0.2	0.5	0.0%
	L2UBGh	9.0	649.5	1,604.9	0.4%
	L2USA	3.0	32.9	81.4	0.0%
	L2USAh	63.0	588.0	1,453.0	0.3%
	L2USC	7.0	194.0	479.3	0.1%
	L2USCd	2.0	19.3	47.7	0.0%
	L2USCh	864.0	983.6	2,430.4	0.5%
	L2USCx	1.0	0.1	0.2	0.0%
	PAB/EMF	12.0	69.7	172.3	0.0%
	PAB/EMFd	1.0	6.2	15.2	0.0%
	PAB/EMFh	78.0	103.7	256.3	0.1%
	PAB/EMFhx	1.0	0.1	0.3	0.0%
	PAB/EMFx	2.0	0.2	0.4	0.0%
	PABC	1.0	0.0	0.0	0.0%
	PABF	238.0	115.8	286.0	0.1%
	PABFb	1.0	1.3	3.2	0.0%
	PABFd	1.0	0.3	0.8	0.0%
	PABFh	33,207.0	19,957.7	49,314.8	10.9%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PABFhx	221.0	36.2	89.5	0.0%
	PABFx	2,036.0	406.5	1,004.4	0.2%
	PABGh	217.0	819.6	2,025.2	0.4%
	PABGhx	2.0	0.1	0.3	0.0%
	PABGx	14.0	48.9	120.7	0.0%
	PABKx	73.0	99.4	245.6	0.1%
	PEM/ABF	120.0	540.5	1,335.6	0.3%
	PEM/ABFd	4.0	20.9	51.6	0.0%
	PEM/ABFh	120.0	146.7	362.4	0.1%
	PEM/ABFhx	1.0	0.1	0.3	0.0%
	PEM/ABFx	7.0	2.2	5.4	0.0%
	PEM/FOA	101.0	198.7	491.0	0.1%
	PEM/FOAh	1.0	0.2	0.4	0.0%
	PEM/FOC	87.0	135.5	334.7	0.1%
	PEM/FOCd	1.0	0.2	0.5	0.0%
	PEM/FOCh	53.0	19.3	47.6	0.0%
	PEM/FOCx	8.0	1.2	2.9	0.0%
	PEM/SSA	14.0	47.5	117.4	0.0%
	PEM/SSAh	1.0	1.3	3.3	0.0%
	PEM/SSC	13.0	30.2	74.7	0.0%
	PEM/SSCh	4.0	2.8	6.8	0.0%
	PEM1Ah	1.0	0.0	0.0	0.0%
	PEM1Ch	1.0	0.0	0.0	0.0%
	PEMA	30,081.0	13,735.6	33,940.3	7.5%
	PEMAd	1,320.0	2,810.7	6,945.2	1.5%
	PEMAh	3,565.0	1,558.8	3,851.8	0.9%
	PEMAx	416.0	54.9	135.7	0.0%
	PEMB	32.0	24.7	61.0	0.0%
	PEMC	18,700.0	12,597.0	31,126.7	6.9%
	PEMCd	506.0	1,724.8	4,261.9	0.9%
	PEMCh	14,687.0	4,248.7	10,498.3	2.3%
	PEMChx	1.0	0.0	0.0	0.0%
	PEMCx	3,924.0	460.9	1,138.8	0.3%
	PEMF	231.0	219.2	541.5	0.1%
	PEMFd	13.0	54.4	134.5	0.0%
	PEMFh	1,503.0	1,081.2	2,671.5	0.6%
	PEMFhx	1.0	0.0	0.0	0.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMFx	65.0	12.6	31.0	0.0%
	PEMKx	18.0	19.4	47.9	0.0%
	PFO/EMA	34.0	350.9	867.1	0.2%
	PFO/EMAh	3.0	42.6	105.2	0.0%
	PFO/EMC	17.0	24.7	61.0	0.0%
	PFO/EMCh	12.0	5.6	13.8	0.0%
	PFO/EMCx	1.0	0.3	0.7	0.0%
	PFO/SSA	3.0	164.3	405.9	0.1%
	PFO/SSC	3.0	5.2	12.9	0.0%
	PFOA	3,419.0	2,290.7	5,660.2	1.3%
	PFOAd	8.0	3.8	9.3	0.0%
	PFOAh	633.0	231.8	572.9	0.1%
	PFOAhx	1.0	0.0	0.1	0.0%
	PFOAx	133.0	49.6	122.6	0.0%
	PFOC	338.0	78.8	194.8	0.0%
	PFOCd	3.0	0.4	1.1	0.0%
	PFOCh	86.0	29.3	72.3	0.0%
	PFOCx	16.0	1.9	4.8	0.0%
	PSS/EMA	12.0	440.6	1,088.8	0.2%
	PSS/EMAh	1.0	0.1	0.4	0.0%
	PSS/EMC	2.0	10.1	24.9	0.0%
	PSS/EMCh	2.0	1.8	4.4	0.0%
	PSS/FOA	6.0	36.5	90.2	0.0%
	PSS/FOAh	2.0	8.5	21.0	0.0%
	PSS/USA	2.0	5.9	14.5	0.0%
	PSS/USAh	1.0	80.4	198.6	0.0%
	PSSA	1,580.0	1,937.8	4,788.2	1.1%
	PSSAd	1.0	1.4	3.5	0.0%
	PSSAh	219.0	757.5	1,871.8	0.4%
	PSSAx	11.0	1.6	3.9	0.0%
	PSSB	2.0	0.1	0.2	0.0%
	PSSC	62.0	33.5	82.9	0.0%
	PSSCh	51.0	124.0	306.3	0.1%
	PSSCx	4.0	0.1	0.3	0.0%
	PUBF	3.0	1.1	2.8	0.0%
	PUBFh	20.0	7.2	17.8	0.0%
	PUBFhx	1.0	0.9	2.2	0.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUBFx	2,100.0	339.8	839.7	0.2%
	PUBGh	3.0	11.9	29.3	0.0%
	PUBGx	8.0	13.5	33.5	0.0%
	PUBKx	20.0	7.4	18.3	0.0%
	PUS/EMA	4.0	10.9	27.0	0.0%
	PUSA	395.0	139.0	343.4	0.1%
	PUSAd	9.0	26.9	66.4	0.0%
	PUSAh	714.0	183.1	452.3	0.1%
	PUSAx	36.0	5.2	12.7	0.0%
	PUSC	197.0	62.4	154.1	0.0%
	PUSCd	3.0	7.5	18.5	0.0%
	PUSCh	1,617.0	431.2	1,065.4	0.2%
	PUSCx	153.0	17.7	43.7	0.0%
	PUSKx	6.0	23.5	58.1	0.0%
	R2UBF	139.0	2,596.7	6,416.3	1.4%
	R2UBFh	1.0	0.0	0.1	0.0%
	R2UBFx	8.0	15.2	37.7	0.0%
	R2UBG	50.0	2,612.7	6,455.8	1.4%
	R2UBGx	5.0	1.2	3.0	0.0%
	R2UBH	5.0	250.2	618.2	0.1%
	R2USA	2,729.0	3,755.0	9,278.5	2.1%
	R2USC	662.0	379.1	936.6	0.2%
	R3UBF	8.0	7.4	18.2	0.0%
	R3UBFx	1.0	0.1	0.2	0.0%
	R3UBG	14.0	7.9	19.5	0.0%
	R3UBH	6.0	1.7	4.2	0.0%
	R3USA	98.0	27.8	68.8	0.0%
	R3USC	16.0	3.5	8.7	0.0%
	R4SBA	2,484.0	1,951.0	4,821.0	1.1%
	R4SBAx	38.0	9.5	23.4	0.0%
	R4SBC	991.0	1,876.5	4,636.7	1.0%
	R4SBCx	79.0	91.0	224.8	0.0%
	R4SBF	176.0	1,351.5	3,339.6	0.7%
	R4SBFx	7.0	1.1	2.6	0.0%
			182,874.9	451,877.8	100.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
Sand Hills					
	L1UBGh	2.0	29.4	72.6	0.3%
	L2ABF	22.0	578.5	1,429.4	5.8%
	L2ABFh	3.0	23.4	57.9	0.2%
	L2ABG	11.0	259.0	640.1	2.6%
	L2ABGh	6.0	51.5	127.2	0.5%
	L2UBGh	1.0	10.6	26.3	0.1%
	L2USC	1.0	3.9	9.6	0.0%
	L2USCh	1.0	0.1	0.3	0.0%
	PAB/EMFh	2.0	3.0	7.5	0.0%
	PABC	9.0	1.3	3.2	0.0%
	PABCh	1.0	0.1	0.1	0.0%
	PABF	188.0	188.2	465.0	1.9%
	PABFd	2.0	2.2	5.5	0.0%
	PABFh	613.0	312.9	773.1	3.1%
	PABFhx	41.0	4.8	11.9	0.0%
	PABFx	441.0	59.4	146.7	0.6%
	PABGh	12.0	36.7	90.6	0.4%
	PABGx	3.0	4.8	11.8	0.0%
	PABKx	2.0	0.5	1.2	0.0%
	PEM/ABF	16.0	53.1	131.3	0.5%
	PEM/ABFh	4.0	5.9	14.5	0.1%
	PEM/ABFx	1.0	0.1	0.3	0.0%
	PEM/FOA	14.0	15.8	39.1	0.2%
	PEM/FOC	39.0	40.0	98.8	0.4%
	PEM/FOCd	3.0	4.8	11.8	0.0%
	PEM/FOCh	2.0	0.6	1.4	0.0%
	PEM/SSA	1.0	1.3	3.1	0.0%
	PEMA	9,260.0	3,513.0	8,680.4	34.9%
	PEMAd	222.0	427.0	1,055.2	4.2%
	PEMAh	74.0	21.6	53.4	0.2%
	PEMAx	30.0	1.4	3.4	0.0%
	PEMB	17.0	13.9	34.3	0.1%
	PEMBd	3.0	121.0	298.9	1.2%
	PEMC	10,097.0	2,736.1	6,760.8	27.2%
	PEMCd	105.0	168.7	416.9	1.7%
	PEMCh	395.0	154.7	382.2	1.5%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCx	748.0	32.5	80.2	0.3%
	PEMF	247.0	478.0	1,181.2	4.8%
	PEMFd	11.0	32.4	80.1	0.3%
	PEMFh	67.0	34.9	86.3	0.3%
	PEMFx	11.0	1.1	2.7	0.0%
	PEMKx	3.0	7.6	18.9	0.1%
	PFO/EMA	3.0	2.1	5.1	0.0%
	PFO/EMAd	1.0	0.6	1.4	0.0%
	PFO/EMC	42.0	29.1	72.0	0.3%
	PFO/EMCd	1.0	1.0	2.6	0.0%
	PFO/EMCh	4.0	2.4	6.0	0.0%
	PFOA	608.0	173.3	428.3	1.7%
	PFOAd	9.0	12.0	29.6	0.1%
	PFOAh	43.0	7.9	19.5	0.1%
	PFOAx	8.0	0.4	1.1	0.0%
	PFOC	284.0	77.9	192.6	0.8%
	PFOCd	6.0	2.2	5.4	0.0%
	PFOCh	15.0	4.3	10.7	0.0%
	PFOCx	1.0	0.1	0.1	0.0%
	PSS/EMC	2.0	0.7	1.7	0.0%
	PSSA	122.0	104.4	258.0	1.0%
	PSSAd	7.0	4.0	9.9	0.0%
	PSSAh	5.0	0.8	2.0	0.0%
	PSSB	10.0	9.8	24.1	0.1%
	PSSC	26.0	7.1	17.4	0.1%
	PSSCd	1.0	0.2	0.4	0.0%
	PSSCh	9.0	7.6	18.9	0.1%
	PUBF	1.0	0.2	0.4	0.0%
	PUBFh	3.0	0.3	0.8	0.0%
	PUBFx	301.0	32.3	79.7	0.3%
	PUBGx	2.0	0.7	1.8	0.0%
	PUBKx	4.0	3.1	7.7	0.0%
	PUSA	19.0	9.3	23.1	0.1%
	PUSAh	5.0	0.3	0.7	0.0%
	PUSAx	1.0	0.1	0.1	0.0%
	PUSC	38.0	16.6	40.9	0.2%
	PUSCh	6.0	0.6	1.4	0.0%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSCx	3.0	0.1	0.4	0.0%
	R2UBF	1.0	0.0	0.1	0.0%
	R2UBG	14.0	57.5	142.1	0.6%
	R2USA	19.0	3.3	8.1	0.0%
	R2USC	104.0	23.2	57.3	0.2%
	R4SBA	18.0	7.2	17.8	0.1%
	R4SBC	19.0	14.5	35.9	0.1%
	R4SBF	10.0	5.1	12.7	0.1%
	R4SBFx	7.0	2.2	5.5	0.0%
			10,060.3	24,858.6	100.0%
Southern Plateaus					
	L1UBFh	1.0	0.0	0.1	0.0%
	L1UBGh	7.0	342.1	845.3	2.1%
	L2ABF	4.0	49.7	122.7	0.3%
	L2ABFh	23.0	115.1	284.5	0.7%
	L2ABG	1.0	1.9	4.8	0.0%
	L2ABGh	16.0	236.7	584.9	1.5%
	L2ABKGh	14.0	866.7	2,141.5	5.4%
	L2UBF	1.0	62.0	153.3	0.4%
	L2USA	1.0	14.3	35.2	0.1%
	L2USAh	3.0	19.8	49.0	0.1%
	L2USC	5.0	19.1	47.2	0.1%
	L2USCh	2.0	3.1	7.7	0.0%
	PAB/EMFh	27.0	20.8	51.5	0.1%
	PABC	9.0	0.3	0.6	0.0%
	PABCx	1.0	0.0	0.1	0.0%
	PABF	125.0	44.8	110.7	0.3%
	PABFh	3,472.0	1,921.5	4,748.0	12.0%
	PABFhx	17.0	2.0	4.9	0.0%
	PABFx	86.0	22.0	54.3	0.1%
	PABGb	3.0	0.9	2.3	0.0%
	PABGh	45.0	152.5	376.9	1.0%
	PABGx	2.0	3.2	7.9	0.0%
	PABKFh	5.0	16.1	39.7	0.1%
	PABKFx	6.0	5.6	13.8	0.0%
	PABKh	3.0	9.8	24.3	0.1%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PABKx	32.0	25.1	62.0	0.2%
	PEM/ABF	1.0	0.7	1.7	0.0%
	PEM/ABFh	8.0	5.1	12.6	0.0%
	PEM/FOC	1.0	0.7	1.8	0.0%
	PEM/FOCh	1.0	0.0	0.1	0.0%
	PEMA	9,445.0	3,089.0	7,632.9	19.4%
	PEMAd	115.0	472.8	1,168.4	3.0%
	PEMAh	762.0	237.5	586.8	1.5%
	PEMAx	111.0	9.7	23.9	0.1%
	PEMB	68.0	200.6	495.7	1.3%
	PEMBd	2.0	50.3	124.3	0.3%
	PEMC	4,499.0	1,776.8	4,390.5	11.1%
	PEMCd	49.0	264.6	653.8	1.7%
	PEMCh	2,429.0	650.5	1,607.4	4.1%
	PEMCx	190.0	14.4	35.6	0.1%
	PEMF	93.0	125.7	310.7	0.8%
	PEMFd	4.0	11.9	29.5	0.1%
	PEMFh	305.0	262.7	649.2	1.6%
	PEMFx	18.0	3.4	8.4	0.0%
	PEMKAh	27.0	157.2	388.4	1.0%
	PEMKCh	41.0	253.5	626.3	1.6%
	PEMKCx	2.0	0.5	1.3	0.0%
	PEMKFh	42.0	541.4	1,337.7	3.4%
	PEMKh	1.0	0.8	1.9	0.0%
	PEMKx	12.0	5.4	13.4	0.0%
	PFO/EMA	1.0	1.4	3.5	0.0%
	PFO/EMC	8.0	2.3	5.8	0.0%
	PFO/EMCh	3.0	1.7	4.1	0.0%
	PFO5Ch	1.0	0.8	2.0	0.0%
	PFO5Fh	1.0	1.2	2.9	0.0%
	PFOA	1,206.0	581.8	1,437.6	3.6%
	PFOAd	1.0	0.3	0.7	0.0%
	PFOAh	136.0	35.3	87.3	0.2%
	PFOAx	30.0	2.6	6.3	0.0%
	PFOB	3.0	0.3	0.7	0.0%
	PFOC	68.0	33.5	82.7	0.2%
	PFOCh	24.0	11.2	27.8	0.1%

Appendix 3. Continued.

Phy.	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOCx	1.0	0.4	0.9	0.0%
	PFOKAh	3.0	0.3	0.9	0.0%
	PSSA	328.0	233.5	576.9	1.5%
	PSSAd	1.0	0.5	1.3	0.0%
	PSSAh	25.0	9.9	24.3	0.1%
	PSSAx	6.0	0.2	0.4	0.0%
	PSSB	34.0	157.7	389.8	1.0%
	PSSBd	1.0	1.3	3.2	0.0%
	PSSC	54.0	20.8	51.3	0.1%
	PSSCh	20.0	8.8	21.8	0.1%
	PSSCx	1.0	0.6	1.5	0.0%
	PSSKAh	4.0	4.8	11.9	0.0%
	PUBFh	5.0	0.7	1.7	0.0%
	PUBFx	355.0	39.7	98.1	0.2%
	PUBGx	1.0	3.0	7.4	0.0%
	PUBKx	7.0	2.0	4.9	0.0%
	PUSA	174.0	40.0	98.8	0.3%
	PUSAh	224.0	64.6	159.7	0.4%
	PUSAx	3.0	0.2	0.5	0.0%
	PUSC	160.0	32.5	80.2	0.2%
	PUSCd	1.0	0.1	0.2	0.0%
	PUSCh	351.0	96.8	239.2	0.6%
	PUSCx	36.0	3.2	7.9	0.0%
	PUSKx	2.0	8.7	21.5	0.1%
	R2UBF	62.0	682.9	1,687.4	4.3%
	R2UBFx	6.0	8.0	19.7	0.1%
	R2UBG	37.0	236.8	585.2	1.5%
	R2UBGx	4.0	0.8	1.9	0.0%
	R2USA	572.0	470.1	1,161.6	2.9%
	R2USC	234.0	97.6	241.1	0.6%
	R4SBA	479.0	743.9	1,838.1	4.7%
	R4SBAx	14.0	2.0	5.0	0.0%
	R4SBC	177.0	211.0	521.4	1.3%
	R4SBCx	7.0	0.5	1.1	0.0%
	R4SBF	12.0	7.7	19.1	0.0%
			15,954.5	39,423.0	100.0%

Appendix 4. Number and area of NWI-delineated wetlands summed by 6-digit hydrologic unit and NWI attribute.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
101102					
	L2ABFh	3	19.6	48.4	1.2%
	L2ABGh	3	12.7	31.5	0.8%
	L2USA	2	12.8	31.6	0.8%
	L2USCh	2	0.3	0.6	0.0%
	PABFh	585	355.3	877.9	22.5%
	PABFx	5	1.6	3.9	0.1%
	PABGb	2	1.0	2.5	0.1%
	PABGh	1	7.6	18.7	0.5%
	PABKx	3	0.3	0.7	0.0%
	PEMA	1017	275.1	679.8	17.4%
	PEMAd	5	4.1	10.1	0.3%
	PEMAh	410	116.8	288.6	7.4%
	PEMAx	21	3.4	8.4	0.2%
	PEMB	4	1.2	2.9	0.1%
	PEMC	313	81.9	202.3	5.2%
	PEMCb	2	0.4	1.0	0.0%
	PEMCh	532	88.4	218.4	5.6%
	PEMCx	30	1.7	4.1	0.1%
	PEMFh	9	2.8	6.8	0.2%
	PFOA	33	15.3	37.8	1.0%
	PFOAh	4	1.0	2.4	0.1%
	PSSA	31	20.5	50.6	1.3%
	PSSAh	6	1.8	4.5	0.1%
	PUBFh	3	0.3	0.8	0.0%
	PUBFx	69	7.4	18.2	0.5%
	PUSA	281	130.9	323.5	8.3%
	PUSAh	66	30.5	75.3	1.9%
	PUSC	124	57.6	142.3	3.6%
	PUSCd	1	0.7	1.7	0.0%
	PUSCh	64	25.6	63.3	1.6%
	PUSCx	1	0.2	0.4	0.0%
	R2UBF	21	85.6	211.5	5.4%
	R2USA	440	191.8	473.8	12.1%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R2USC	29	6.1	15.0	0.4%
	R4SBA	24	15.6	38.7	1.0%
	R4SBC	2	2.9	7.3	0.2%
			1,580.6	3,905.5	100.0%
101201					
	L1UBGh	11	1,906.8	4,711.6	6.6%
	L1UBHh	7	695.8	1,719.4	2.4%
	L2ABFh	35	285.8	706.2	1.0%
	L2ABGh	16	267.6	661.3	0.9%
	L2UBGh	1	10.3	25.4	0.0%
	L2USA	5	35.0	86.4	0.1%
	L2USAh	5	6.5	16.0	0.0%
	L2USC	4	142.7	352.6	0.5%
	L2USCd	2	19.3	47.7	0.1%
	L2USCh	17	44.5	110.0	0.2%
	PABF	64	20.5	50.6	0.1%
	PABFh	12319	6,701.9	16,560.1	23.2%
	PABFx	51	13.7	34.0	0.0%
	PABGb	179	18.9	46.6	0.1%
	PABGh	46	101.0	249.6	0.4%
	PABKx	60	42.5	104.9	0.1%
	PEMA	12976	4,604.4	11,377.2	16.0%
	PEMAd	157	575.5	1,422.1	2.0%
	PEMAh	1912	545.3	1,347.5	1.9%
	PEMAx	159	28.5	70.5	0.1%
	PEMB	102	60.3	149.0	0.2%
	PEMC	7605	2,432.3	6,010.0	8.4%
	PEMCb	20	1.5	3.7	0.0%
	PEMCd	115	353.0	872.4	1.2%
	PEMCh	7090	1,735.4	4,288.0	6.0%
	PEMCx	564	141.3	349.1	0.5%
	PEMF	91	57.7	142.5	0.2%
	PEMFb	20	3.1	7.6	0.0%
	PEMFd	7	18.1	44.8	0.1%
	PEMFh	551	381.7	943.0	1.3%
	PEMFx	7	1.8	4.4	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMKx	20	3.7	9.2	0.0%
	PFOA	1955	949.3	2,345.6	3.3%
	PFOAh	185	104.3	257.7	0.4%
	PFOAx	53	39.9	98.6	0.1%
	PFOCh	1	6.6	16.3	0.0%
	PSSA	731	568.1	1,403.7	2.0%
	PSSAh	88	71.3	176.3	0.2%
	PSSAx	7	1.1	2.6	0.0%
	PSSB	8	5.1	12.6	0.0%
	PSSC	3	0.5	1.3	0.0%
	PSSCb	1	0.1	0.4	0.0%
	PSSCh	10	7.4	18.4	0.0%
	PSSCx	2	0.1	0.2	0.0%
	PUBF	2	0.2	0.6	0.0%
	PUBFh	15	2.4	6.0	0.0%
	PUBFx	947	134.2	331.5	0.5%
	PUBGh	1	0.4	1.1	0.0%
	PUBGx	3	4.3	10.6	0.0%
	PUBKx	17	3.2	7.8	0.0%
	PUSA	385	78.5	193.8	0.3%
	PUSAd	6	10.5	26.0	0.0%
	PUSAh	527	113.4	280.2	0.4%
	PUSAx	29	3.8	9.3	0.0%
	PUSC	178	67.4	166.4	0.2%
	PUSCd	4	9.1	22.4	0.0%
	PUSCh	1248	329.3	813.6	1.1%
	PUSCx	167	15.7	38.8	0.1%
	PUSKx	5	15.7	38.7	0.1%
	R2UBF	51	214.5	530.1	0.7%
	R2UBG	18	1,580.0	3,904.2	5.5%
	R2UBGx	2	0.8	1.9	0.0%
	R2USA	915	1,911.6	4,723.4	6.6%
	R2USC	272	148.7	367.5	0.5%
	R3UBF	50	62.3	154.0	0.2%
	R3UBFx	1	0.1	0.2	0.0%
	R3UBG	48	62.9	155.5	0.2%
	R3UBGx	4	0.3	0.7	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R3UBH	8	15.2	37.7	0.1%
	R3USA	4	0.7	1.8	0.0%
	R3USC	1	0.3	0.7	0.0%
	R3USCx	1	0.0	0.1	0.0%
	R4SBA	609	523.7	1,294.1	1.8%
	R4SBAx	22	10.1	25.0	0.0%
	R4SBC	191	444.8	1,099.1	1.5%
	R4SBCx	44	32.1	79.2	0.1%
	R4SBF	10	29.2	72.2	0.1%
			28,835.4	71,251.4	100.0%
101202					
	L1UBGh	4	1,750.5	4,325.3	13.6%
	L1UBHh	4	95.6	236.2	0.7%
	L2ABFh	5	63.4	156.7	0.5%
	L2ABGh	17	239.1	590.8	1.9%
	L2UBFh	2	46.0	113.7	0.4%
	L2UBFx	1	0.2	0.5	0.0%
	L2UBGh	2	626.6	1,548.3	4.9%
	L2USAh	18	439.9	1,087.1	3.4%
	L2USC	1	72.2	178.3	0.6%
	L2USCh	25	61.5	151.9	0.5%
	PABF	40	30.5	75.3	0.2%
	PABFh	5433	2,487.1	6,145.4	19.4%
	PABFx	50	47.7	118.0	0.4%
	PABGb	115	8.7	21.4	0.1%
	PABGh	13	61.4	151.8	0.5%
	PABHh	3	0.4	0.9	0.0%
	PABKx	20	56.9	140.5	0.4%
	PEM1Ah	1	0.0	0.0	0.0%
	PEMA	3909	1,586.0	3,919.0	12.3%
	PEMAd	30	199.4	492.7	1.6%
	PEMAh	690	364.1	899.6	2.8%
	PEMAx	111	21.0	51.8	0.2%
	PEMB	6	5.9	14.5	0.0%
	PEMC	2131	761.5	1,881.7	5.9%
	PEMCb	9	2.1	5.2	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCd	12	33.9	83.7	0.3%
	PEMCh	2817	753.8	1,862.7	5.9%
	PEMCx	452	214.1	529.1	1.7%
	PEMF	40	32.0	79.1	0.2%
	PEMFb	1	0.1	0.3	0.0%
	PEMFd	3	18.1	44.8	0.1%
	PEMFh	203	129.7	320.5	1.0%
	PEMFx	4	1.8	4.4	0.0%
	PEMKx	8	43.2	106.8	0.3%
	PFOA	473	188.7	466.3	1.5%
	PFOAh	45	12.1	29.8	0.1%
	PFOAx	44	6.6	16.3	0.1%
	PFOC	4	3.4	8.3	0.0%
	PFOCh	2	1.2	2.9	0.0%
	PSSA	210	121.0	299.1	0.9%
	PSSAh	44	30.3	74.8	0.2%
	PSSAx	2	0.3	0.8	0.0%
	PSSC	2	0.1	0.2	0.0%
	PSSCb	2	0.4	0.9	0.0%
	PSSCh	6	1.0	2.5	0.0%
	PUBFh	1	0.3	0.7	0.0%
	PUBFx	536	105.5	260.8	0.8%
	PUBKx	9	1.5	3.7	0.0%
	PUSA	65	57.7	142.5	0.4%
	PUSAd	2	15.9	39.3	0.1%
	PUSAh	159	43.5	107.6	0.3%
	PUSAx	15	1.6	4.0	0.0%
	PUSC	59	24.8	61.3	0.2%
	PUSCh	405	107.5	265.6	0.8%
	PUSCx	50	6.7	16.7	0.1%
	PUSKx	2	8.0	19.8	0.1%
	R2UBF	7	33.8	83.6	0.3%
	R2UBFx	4	14.7	36.4	0.1%
	R2UBG	8	942.2	2,328.2	7.3%
	R2USA	452	284.0	701.8	2.2%
	R2USC	93	33.5	82.9	0.3%
	R3UBF	3	2.6	6.4	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R3UBG	20	20.0	49.5	0.2%
	R3UBGx	2	0.4	0.9	0.0%
	R3UBH	17	14.6	36.0	0.1%
	R3USA	107	28.7	70.9	0.2%
	R3USC	15	3.4	8.3	0.0%
	R4SBA	217	189.0	467.1	1.5%
	R4SBAx	4	1.5	3.7	0.0%
	R4SBC	86	207.8	513.5	1.6%
	R4SBCx	26	59.5	147.0	0.5%
	R4SBF	9	13.2	32.6	0.1%
	R4SBFx	2	0.8	1.9	0.0%
			12,842.3	31,732.8	100.0%
101301					
	L1UBGh	790	12,226.9	30,212.4	16.4%
	L1UBHh	8	50,045.5	123,660.7	67.1%
	L2ABFh	21	80.3	198.4	0.1%
	L2ABG	1	51.9	128.2	0.1%
	L2ABGh	4	51.9	128.3	0.1%
	L2UBF	2	5.2	12.9	0.0%
	L2UBFh	164	806.1	1,991.8	1.1%
	L2UBFx	1	0.1	0.3	0.0%
	L2UBGh	7	20.8	51.3	0.0%
	L2USA	5	7.7	19.0	0.0%
	L2USAh	27	203.3	502.4	0.3%
	L2USC	1	42.4	104.8	0.1%
	L2USCh	688	774.6	1,914.1	1.0%
	L2USCx	1	0.1	0.2	0.0%
	PAB/EMFh	5	7.9	19.5	0.0%
	PABF	22	8.5	20.9	0.0%
	PABFh	3500	2,984.2	7,373.8	4.0%
	PABFhx	1	0.2	0.4	0.0%
	PABFx	205	36.2	89.3	0.0%
	PABGh	46	190.0	469.5	0.3%
	PABGx	1	3.4	8.3	0.0%
	PEM/ABF	5	6.5	16.2	0.0%
	PEM/ABFh	3	6.1	15.0	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEM/ABFx	2	1.3	3.3	0.0%
	PEM/FOA	2	2.1	5.1	0.0%
	PEM/FOC	4	2.5	6.1	0.0%
	PEM/FOCh	1	0.5	1.3	0.0%
	PEM/SSA	1	0.4	1.0	0.0%
	PEM/SSAh	1	19.4	47.9	0.0%
	PEM/SSC	1	0.6	1.4	0.0%
	PEMA	3262	1,656.0	4,092.0	2.2%
	PEMAd	136	379.5	937.8	0.5%
	PEMAh	136	200.2	494.6	0.3%
	PEMAx	25	0.9	2.3	0.0%
	PEMC	1883	1,582.9	3,911.4	2.1%
	PEMCd	44	215.5	532.6	0.3%
	PEMCh	576	278.2	687.4	0.4%
	PEMCx	394	14.5	35.9	0.0%
	PEMF	11	30.2	74.7	0.0%
	PEMFh	98	93.4	230.7	0.1%
	PEMFx	7	0.8	2.0	0.0%
	PFO/EMA	3	5.9	14.5	0.0%
	PFO/EMAh	5	175.2	432.8	0.2%
	PFO/EMC	2	0.6	1.4	0.0%
	PFOA	107	27.4	67.6	0.0%
	PFOAh	27	98.0	242.1	0.1%
	PFOC	14	1.7	4.2	0.0%
	PFOCh	7	26.5	65.6	0.0%
	PSS/EMA	2	5.8	14.4	0.0%
	PSS/EMAh	3	251.1	620.4	0.3%
	PSS/FOA	4	24.4	60.2	0.0%
	PSS/FOAh	2	8.5	21.0	0.0%
	PSS/USAh	1	80.4	198.6	0.1%
	PSSA	59	64.1	158.3	0.1%
	PSSAh	66	653.7	1,615.3	0.9%
	PSSC	5	0.5	1.3	0.0%
	PSSCh	14	73.2	181.0	0.1%
	PUBFh	3	0.7	1.6	0.0%
	PUBFx	89	11.8	29.1	0.0%
	PUBKx	2	0.3	0.8	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSA	5	0.7	1.8	0.0%
	PUSAh	15	2.8	7.0	0.0%
	PUSC	8	0.4	0.9	0.0%
	PUSCh	64	12.9	31.9	0.0%
	PUSCx	1	0.0	0.0	0.0%
	R2UBF	1	22.7	56.1	0.0%
	R2UBFh	1	0.0	0.1	0.0%
	R4SBA	655	582.5	1,439.2	0.8%
	R4SBAx	1	0.1	0.2	0.0%
	R4SBC	168	281.9	696.7	0.4%
	R4SBF	14	109.8	271.2	0.1%
	R4SBFx	1	0.1	0.3	0.0%
			74,562.3	184,240.8	100.0%
101302					
	L1UBGh	2	77.2	190.7	21.4%
	L2ABFh	6	10.8	26.7	3.0%
	PABF	16	2.1	5.3	0.6%
	PABFh	107	65.4	161.5	18.1%
	PABKx	1	1.0	2.6	0.3%
	PEMA	401	80.6	199.2	22.3%
	PEMAd	7	45.2	111.8	12.5%
	PEMAh	33	7.5	18.5	2.1%
	PEMAx	4	0.5	1.1	0.1%
	PEMC	184	39.4	97.3	10.9%
	PEMCh	41	8.3	20.5	2.3%
	PEMCx	33	3.4	8.3	0.9%
	PEMFh	11	8.7	21.5	2.4%
	PEMFx	1	0.4	0.9	0.1%
	PFOA	4	0.4	0.9	0.1%
	PFOAh	4	0.7	1.6	0.2%
	PSSA	6	0.4	1.1	0.1%
	PSSAh	1	0.1	0.3	0.0%
	PUBFx	66	7.2	17.9	2.0%
	PUSA	3	1.5	3.6	0.4%
	PUSCh	1	0.5	1.3	0.1%
			361.1	892.4	100.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
101303					
	L1UBGh	13	962.0	2,377.0	2.6%
	L1UBHh	6	1,244.3	3,074.6	3.4%
	L2ABF	6	165.8	409.7	0.4%
	L2ABFh	82	644.6	1,592.8	1.7%
	L2ABG	4	183.8	454.2	0.5%
	L2ABGh	20	263.4	650.9	0.7%
	L2ABKx	1	10.5	26.0	0.0%
	L2UBFh	1	28.4	70.3	0.1%
	L2UBFx	1	0.2	0.4	0.0%
	L2UBGh	1	70.4	173.9	0.2%
	L2USA	20	208.2	514.4	0.6%
	L2USAh	82	62.3	153.9	0.2%
	L2USC	18	221.7	547.9	0.6%
	L2USCh	39	328.3	811.1	0.9%
	PABC	1	0.3	0.8	0.0%
	PABF	96	47.5	117.3	0.1%
	PABFh	9925	7,201.2	17,793.9	19.5%
	PABFx	123	22.3	55.0	0.1%
	PABGh	16	86.5	213.7	0.2%
	PABKx	19	33.5	82.7	0.1%
	PEM/ABF	2	0.9	2.2	0.0%
	PEM/ABFh	3	5.0	12.3	0.0%
	PEM/FOA	1	2.0	5.1	0.0%
	PEM/FOC	8	20.5	50.6	0.1%
	PEM/SSA	4	2.5	6.2	0.0%
	PEM/SSAh	1	1.3	3.3	0.0%
	PEM/SSC	4	3.7	9.1	0.0%
	PEM1Ch	1	0.0	0.0	0.0%
	PEMA	21504	9,257.7	22,875.4	25.0%
	PEMAd	241	2,385.5	5,894.6	6.4%
	PEMAh	2645	1,032.2	2,550.6	2.8%
	PEMAx	58	3.6	8.9	0.0%
	PEMB	6	4.1	10.2	0.0%
	PEMC	7142	3,711.4	9,170.8	10.0%
	PEMCd	100	378.3	934.6	1.0%
	PEMCh	6289	1,562.7	3,861.4	4.2%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMCx	587	35.8	88.5	0.1%
	PEMF	12	13.8	34.2	0.0%
	PEMFh	277	250.3	618.5	0.7%
	PEMFx	5	3.1	7.7	0.0%
	PEMKx	6	4.8	11.9	0.0%
	PFO/EMA	2	7.0	17.2	0.0%
	PFO/EMC	3	8.5	21.0	0.0%
	PFO/SSA	2	1.1	2.8	0.0%
	PFO/SSC	1	4.6	11.4	0.0%
	PFOA	1459	700.4	1,730.6	1.9%
	PFOAd	4	3.5	8.7	0.0%
	PFOAh	215	68.8	170.1	0.2%
	PFOAx	2	0.3	0.7	0.0%
	PFOC	9	6.5	16.2	0.0%
	PFOCh	6	1.1	2.8	0.0%
	PSS/EMA	3	13.0	32.1	0.0%
	PSS/FOA	2	12.1	30.0	0.0%
	PSSA	456	400.0	988.4	1.1%
	PSSAd	2	1.7	4.2	0.0%
	PSSAh	103	83.5	206.4	0.2%
	PSSAx	2	0.1	0.2	0.0%
	PSSC	14	19.5	48.1	0.1%
	PSSCh	4	16.9	41.7	0.0%
	PSSCx	1	0.0	0.1	0.0%
	PUBF	2	17.1	42.4	0.0%
	PUBFh	20	4.7	11.5	0.0%
	PUBFx	1898	232.9	575.5	0.6%
	PUBGx	1	0.5	1.4	0.0%
	PUBKx	7	2.8	7.0	0.0%
	PUSA	1744	833.4	2,059.4	2.3%
	PUSAd	6	15.7	38.8	0.0%
	PUSAh	276	84.6	209.1	0.2%
	PUSAx	1	0.1	0.3	0.0%
	PUSC	527	284.1	702.1	0.8%
	PUSCd	2	7.6	18.9	0.0%
	PUSCh	231	63.2	156.1	0.2%
	PUSCx	25	2.4	6.0	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R2UBF	109	2,023.7	5,000.5	5.5%
	R2UBH	8	0.5	1.2	0.0%
	R2USA	1320	680.3	1,681.0	1.8%
	R2USC	133	42.3	104.6	0.1%
	R3USC	1	0.1	0.2	0.0%
	R4SBA	382	412.6	1,019.4	1.1%
	R4SBAx	5	0.3	0.7	0.0%
	R4SBC	196	456.1	1,127.1	1.2%
	R4SBCx	12	1.1	2.7	0.0%
	R4SBF	8	19.0	46.9	0.1%
			36,998.6	91,422.3	100.0%
101401					
	L1UBG	1	0.3	0.6	0.0%
	L1UBGh	32	368.1	909.6	0.6%
	L1UBHh	10	27,178.5	67,157.0	46.9%
	L2ABF	1	10.8	26.7	0.0%
	L2ABFh	38	233.9	578.0	0.4%
	L2ABG	3	42.7	105.6	0.1%
	L2ABGh	28	645.3	1,594.4	1.1%
	L2UBFh	15	108.7	268.5	0.2%
	L2USAh	17	26.4	65.2	0.0%
	L2USC	4	3.7	9.2	0.0%
	L2USCh	144	128.4	317.2	0.2%
	PAB/EMF	7	17.2	42.4	0.0%
	PAB/EMFd	1	6.2	15.2	0.0%
	PAB/EMFh	52	69.2	171.0	0.1%
	PAB/EMFhx	1	0.1	0.3	0.0%
	PAB/EMFx	1	0.1	0.3	0.0%
	PABF	59	22.0	54.2	0.0%
	PABFb	1	1.3	3.2	0.0%
	PABFh	10664	6,933.7	17,132.9	12.0%
	PABFhx	109	18.6	46.0	0.0%
	PABFx	1271	244.2	603.3	0.4%
	PABGh	106	427.0	1,055.0	0.7%
	PABGhx	1	0.0	0.1	0.0%
	PABGx	6	6.3	15.6	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PABKh	3	9.8	24.3	0.0%
	PABKx	11	15.7	38.7	0.0%
	PEM/ABF	68	343.2	848.1	0.6%
	PEM/ABFd	2	5.1	12.7	0.0%
	PEM/ABFh	70	93.0	229.8	0.2%
	PEM/ABFx	1	0.1	0.1	0.0%
	PEM/FOA	85	172.7	426.8	0.3%
	PEM/FOAh	1	0.2	0.4	0.0%
	PEM/FOC	44	75.4	186.4	0.1%
	PEM/FOCh	39	15.5	38.3	0.0%
	PEM/FOCx	4	0.5	1.2	0.0%
	PEM/SSA	7	25.0	61.7	0.0%
	PEM/SSC	6	21.3	52.5	0.0%
	PEM/SSCh	4	2.8	6.8	0.0%
	PEMA	9343	5,563.5	13,747.3	9.6%
	PEMAd	672	1,171.6	2,895.1	2.0%
	PEMAh	814	422.2	1,043.2	0.7%
	PEMAx	102	6.1	15.0	0.0%
	PEMC	6235	6,938.1	17,143.8	12.0%
	PEMCd	242	762.9	1,885.1	1.3%
	PEMCh	4060	1,478.5	3,653.4	2.5%
	PEMChx	1	0.0	0.0	0.0%
	PEMCx	1885	73.4	181.5	0.1%
	PEMF	103	87.2	215.5	0.2%
	PEMFd	4	16.6	41.1	0.0%
	PEMFh	531	444.7	1,098.8	0.8%
	PEMFx	30	5.7	14.2	0.0%
	PEMKx	1	2.3	5.6	0.0%
	PFO/EMA	11	87.2	215.5	0.2%
	PFO/EMAh	1	2.7	6.7	0.0%
	PFO/EMC	6	4.2	10.4	0.0%
	PFO/EMCh	6	3.2	7.8	0.0%
	PFO/EMCx	1	0.3	0.7	0.0%
	PFO/SSA	1	163.1	403.1	0.3%
	PFO/SSC	1	0.4	0.9	0.0%
	PFOA	771	485.1	1,198.8	0.8%
	PFOAd	2	0.9	2.2	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOAh	281	52.3	129.3	0.1%
	PFOAx	31	2.2	5.5	0.0%
	PFOC	132	25.3	62.4	0.0%
	PFOCh	36	9.6	23.7	0.0%
	PFOCx	4	0.8	2.1	0.0%
	PSS/EMA	4	391.5	967.4	0.7%
	PSS/EMC	2	10.1	24.9	0.0%
	PSS/EMCh	2	1.8	4.4	0.0%
	PSS/USA	1	0.3	0.7	0.0%
	PSSA	148	120.0	296.4	0.2%
	PSSAh	36	53.5	132.3	0.1%
	PSSAx	3	0.2	0.5	0.0%
	PSSC	18	7.0	17.2	0.0%
	PSSCh	16	41.1	101.7	0.1%
	PUBFh	5	0.9	2.2	0.0%
	PUBFx	597	82.5	203.8	0.1%
	PUBGh	3	11.9	29.3	0.0%
	PUBGx	1	0.1	0.2	0.0%
	PUBKx	3	0.8	2.0	0.0%
	PUS/EMA	4	10.9	27.0	0.0%
	PUSA	30	15.4	38.0	0.0%
	PUSAd	2	1.6	3.9	0.0%
	PUSAh	111	40.1	99.0	0.1%
	PUSC	10	1.4	3.6	0.0%
	PUSCd	1	1.5	3.7	0.0%
	PUSCh	185	49.3	121.7	0.1%
	PUSCx	9	0.4	1.1	0.0%
	R2UBF	27	537.4	1,327.8	0.9%
	R2UBFx	3	0.7	1.8	0.0%
	R2USA	36	8.5	21.0	0.0%
	R2USC	2	0.4	1.0	0.0%
	R4SBA	782	587.1	1,450.8	1.0%
	R4SBAx	9	1.0	2.5	0.0%
	R4SBC	310	618.3	1,527.8	1.1%
	R4SBCx	5	0.4	0.9	0.0%
	R4SBF	78	329.2	813.5	0.6%
	R4SBFx	6	0.9	2.3	0.0%
			58,009.0	143,338.4	100.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
101402					
	L1UBFh	1	0.0	0.1	0.0%
	L1UBGh	13	298.1	736.6	0.9%
	L2ABF	9	326.9	807.7	1.0%
	L2ABFh	26	102.9	254.3	0.3%
	L2ABG	7	122.2	302.0	0.4%
	L2ABGh	19	287.2	709.6	0.8%
	L2ABKGh	14	866.7	2,141.5	2.6%
	L2UBF	1	62.0	153.3	0.2%
	L2UBGh	1	10.6	26.3	0.0%
	L2USA	1	14.3	35.2	0.0%
	L2USC	3	20.1	49.5	0.1%
	L2USCh	2	0.5	1.1	0.0%
	PAB/EMF	5	52.6	129.9	0.2%
	PAB/EMFh	16	21.9	54.2	0.1%
	PAB/EMFx	1	0.1	0.2	0.0%
	PABC	6	0.2	0.5	0.0%
	PABCx	1	0.0	0.1	0.0%
	PABF	177	110.9	274.0	0.3%
	PABFd	3	2.6	6.4	0.0%
	PABFh	7839	4,534.2	11,203.8	13.4%
	PABFhx	47	9.2	22.7	0.0%
	PABFx	489	82.1	203.0	0.2%
	PABGb	3	0.9	2.3	0.0%
	PABGh	97	311.9	770.6	0.9%
	PABGhx	1	0.1	0.2	0.0%
	PABGx	9	28.5	70.3	0.1%
	PABKFh	5	16.1	39.7	0.0%
	PABKFx	6	5.6	13.8	0.0%
	PABKx	32	18.1	44.8	0.1%
	PEM/ABF	45	169.8	419.5	0.5%
	PEM/ABFd	2	15.8	39.0	0.0%
	PEM/ABFh	38	42.6	105.3	0.1%
	PEM/ABFhx	1	0.1	0.3	0.0%
	PEM/ABFx	4	0.8	2.0	0.0%
	PEM/FOA	14	22.3	55.1	0.1%
	PEM/FOC	34	38.6	95.3	0.1%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEM/FOCd	1	0.2	0.5	0.0%
	PEM/FOCh	9	1.9	4.6	0.0%
	PEM/FOCx	4	0.7	1.7	0.0%
	PEM/SSA	2	19.6	48.5	0.1%
	PEM/SSC	2	4.8	11.7	0.0%
	PEMA	14520	6,461.0	15,964.8	19.1%
	PEMAd	378	1,404.5	3,470.5	4.1%
	PEMAh	1082	323.1	798.4	1.0%
	PEMAx	140	10.8	26.7	0.0%
	PEMB	78	213.7	528.0	0.6%
	PEMBd	2	50.3	124.3	0.1%
	PEMC	7860	4,396.7	10,864.0	13.0%
	PEMCd	183	832.0	2,055.7	2.5%
	PEMCh	4287	1,028.8	2,542.1	3.0%
	PEMCx	968	52.0	128.5	0.2%
	PEMF	240	370.6	915.7	1.1%
	PEMFd	6	21.9	54.1	0.1%
	PEMFh	553	354.8	876.7	1.0%
	PEMFhx	1	0.0	0.0	0.0%
	PEMFx	38	6.0	14.8	0.0%
	PEMKAh	27	157.2	388.4	0.5%
	PEMKCh	41	253.5	626.3	0.7%
	PEMKCx	2	0.5	1.3	0.0%
	PEMKFh	42	541.4	1,337.7	1.6%
	PEMKh	1	0.8	1.9	0.0%
	PEMKx	15	12.2	30.1	0.0%
	PFO/EMA	21	251.4	621.2	0.7%
	PFO/EMC	6	11.4	28.2	0.0%
	PFO/EMCh	3	2.6	6.4	0.0%
	PFO/SSC	1	0.3	0.6	0.0%
	PFO5Ch	1	0.8	2.0	0.0%
	PFO5Fh	1	1.2	2.9	0.0%
	PFOA	1789	1,316.3	3,252.6	3.9%
	PFOAd	6	6.7	16.6	0.0%
	PFOAh	254	56.1	138.7	0.2%
	PFOAhx	1	0.0	0.1	0.0%
	PFOAx	31	3.5	8.7	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PFOB	3	0.3	0.7	0.0%
	PFOC	132	47.3	116.8	0.1%
	PFOCd	6	2.0	5.0	0.0%
	PFOCh	57	17.8	44.1	0.1%
	PFOCx	10	1.4	3.4	0.0%
	PFOKAh	3	0.3	0.9	0.0%
	PSS/EMA	3	30.3	75.0	0.1%
	PSS/USA	2	5.6	13.8	0.0%
	PSSA	823	1,223.3	3,022.7	3.6%
	PSSAd	5	3.2	8.0	0.0%
	PSSAh	43	20.0	49.4	0.1%
	PSSAx	7	0.3	0.6	0.0%
	PSSB	34	167.5	413.9	0.5%
	PSSBd	1	1.3	3.2	0.0%
	PSSC	78	31.1	76.8	0.1%
	PSSCd	1	0.2	0.4	0.0%
	PSSCh	39	18.1	44.7	0.1%
	PSSCx	3	0.7	1.7	0.0%
	PSSKAh	4	4.8	11.9	0.0%
	PUBFh	7	4.4	11.0	0.0%
	PUBFx	692	86.4	213.5	0.3%
	PUBGx	6	10.2	25.3	0.0%
	PUBKx	14	9.1	22.5	0.0%
	PUSA	171	46.7	115.4	0.1%
	PUSAh	263	72.7	179.6	0.2%
	PUSAx	5	0.7	1.7	0.0%
	PUSC	173	48.4	119.5	0.1%
	PUSCd	4	6.1	15.0	0.0%
	PUSCh	428	121.3	299.6	0.4%
	PUSCx	33	3.0	7.3	0.0%
	PUSKx	2	8.7	21.5	0.0%
	R2UBF	78	1,634.4	4,038.5	4.8%
	R2UBFx	6	8.0	19.7	0.0%
	R2UBG	29	221.8	548.1	0.7%
	R2UBGx	8	1.4	3.4	0.0%
	R2UBH	2	0.1	0.2	0.0%
	R2USA	1371	1,689.2	4,173.9	5.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	R2USC	589	259.6	641.5	0.8%
	R4SBA	717	953.4	2,355.7	2.8%
	R4SBAx	16	2.2	5.4	0.0%
	R4SBC	330	552.0	1,364.0	1.6%
	R4SBCx	8	0.6	1.6	0.0%
	R4SBF	43	824.7	2,037.7	2.4%
	R4SBFx	2	0.3	0.8	0.0%
			33,906.3	83,781.3	100.0%
101500					
	L1UBGh	8	212.2	524.4	2.3%
	L2ABF	15	301.2	744.4	3.2%
	L2ABFh	5	11.0	27.1	0.1%
	L2ABG	5	135.8	335.6	1.4%
	L2ABGh	13	106.7	263.6	1.1%
	L2USC	2	3.0	7.3	0.0%
	L2USCh	1	0.1	0.3	0.0%
	PAB/EMFh	38	36.0	89.0	0.4%
	PABC	13	1.4	3.4	0.0%
	PABCh	1	0.1	0.1	0.0%
	PABF	218	155.2	383.5	1.7%
	PABFh	1187	589.4	1,456.5	6.3%
	PABFhx	118	14.6	36.1	0.2%
	PABFx	628	86.6	213.9	0.9%
	PABGh	31	98.9	244.4	1.1%
	PABGx	4	22.0	54.4	0.2%
	PABKx	4	10.2	25.1	0.1%
	PEM/ABF	23	77.7	192.0	0.8%
	PEM/ABFh	23	22.0	54.4	0.2%
	PEM/ABFx	1	0.1	0.3	0.0%
	PEM/FOA	14	15.8	39.1	0.2%
	PEM/FOC	37	39.2	96.9	0.4%
	PEM/FOCd	3	4.8	11.8	0.1%
	PEM/FOCh	5	1.7	4.3	0.0%
	PEM/SSA	1	1.3	3.1	0.0%
	PEMA	10960	2,797.1	6,911.6	29.7%
	PEMAd	383	285.5	705.4	3.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PEMAh	58	23.6	58.2	0.3%
	PEMAx	46	1.3	3.2	0.0%
	PEMB	2	0.9	2.3	0.0%
	PEMBd	3	121.0	298.9	1.3%
	PEMC	10914	2,816.8	6,960.1	30.0%
	PEMCd	98	139.4	344.5	1.5%
	PEMCh	402	173.7	429.2	1.8%
	PEMCx	884	32.9	81.3	0.3%
	PEMF	124	273.5	675.9	2.9%
	PEMFd	8	24.0	59.2	0.3%
	PEMFh	62	39.1	96.7	0.4%
	PEMFx	11	1.3	3.2	0.0%
	PEMKx	1	1.1	2.8	0.0%
	PFO/EMA	4	2.9	7.1	0.0%
	PFO/EMAd	1	0.6	1.4	0.0%
	PFO/EMC	51	31.7	78.2	0.3%
	PFO/EMCd	1	1.0	2.6	0.0%
	PFO/EMCh	10	3.9	9.6	0.0%
	PFOA	701	161.4	398.8	1.7%
	PFOAd	10	8.4	20.9	0.1%
	PFOAh	84	14.1	34.8	0.1%
	PFOAx	14	0.4	1.1	0.0%
	PFOC	398	105.6	260.9	1.1%
	PFOCd	3	0.6	1.4	0.0%
	PFOCh	22	7.1	17.7	0.1%
	PFOCx	4	0.2	0.4	0.0%
	PSS/EMC	2	0.7	1.7	0.0%
	PSSA	69	28.6	70.6	0.3%
	PSSAd	3	1.3	3.2	0.0%
	PSSAh	6	1.3	3.1	0.0%
	PSSC	27	4.9	12.2	0.1%
	PSSCh	4	1.0	2.4	0.0%
	PUBF	1	0.2	0.4	0.0%
	PUBFh	4	0.4	1.0	0.0%
	PUBFhx	1	0.9	2.2	0.0%
	PUBFx	264	27.4	67.7	0.3%
	PUBGx	1	3.6	8.9	0.0%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PUSA	7	3.5	8.7	0.0%
	PUSAh	3	0.2	0.5	0.0%
	PUSAx	1	0.1	0.1	0.0%
	PUSC	16	2.1	5.2	0.0%
	PUSCh	13	0.8	1.9	0.0%
	PUSCx	1	0.0	0.0	0.0%
	R2UBF	4	13.1	32.4	0.1%
	R2UBG	6	170.8	422.0	1.8%
	R2USA	147	23.8	58.8	0.3%
	R2USC	2	0.1	0.3	0.0%
	R4SBA	8	1.0	2.5	0.0%
	R4SBC	21	25.0	61.7	0.3%
	R4SBCx	1	0.1	0.2	0.0%
	R4SBF	43	76.1	188.2	0.8%
	R4SBFx	5	1.9	4.7	0.0%
			9,404.7	23,238.7	100.0%
101701					
	L1UBHh	1	70.1	173.3	13.9%
	PAB/EMFh	1	0.4	1.1	0.1%
	PABFh	97	22.7	56.1	4.5%
	PABFhx	3	0.4	1.0	0.1%
	PABFx	9	1.1	2.6	0.2%
	PABGh	1	2.4	5.9	0.5%
	PEM/FOCh	2	0.2	0.6	0.0%
	PEMA	61	28.8	71.3	5.7%
	PEMAd	21	4.7	11.5	0.9%
	PEMAh	1	0.1	0.3	0.0%
	PEMAx	1	0.0	0.0	0.0%
	PEMC	33	12.3	30.3	2.4%
	PEMCd	1	1.2	2.9	0.2%
	PEMCh	2	0.1	0.2	0.0%
	PEMCx	11	0.3	0.8	0.1%
	PFOA	9	4.0	9.9	0.8%
	PFOAh	1	0.0	0.1	0.0%
	PFOC	3	4.1	10.0	0.8%
	PFOCh	4	0.5	1.2	0.1%

Appendix 4. Continued.

HU	NWI Attribute	Number	Area (ha)	Area (ac)	% Area
	PSSA	3	2.1	5.1	0.4%
	PUBF	1	0.9	2.2	0.2%
	PUSCx	1	0.0	0.0	0.0%
	R2UBH	3	250.1	618.1	49.4%
	R2USA	11	60.3	148.9	11.9%
	R2USC	8	29.9	74.0	5.9%
	R4SBA	8	5.1	12.5	1.0%
	R4SBC	1	0.7	1.7	0.1%
	R4SBF	1	3.5	8.6	0.7%
			506.0	1,250.4	100.0%

Appendix 5. Number and Area of basins in western South Dakota summed by county and water regime.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Bennett						
	Temporary	1,688	51.6%	871.9	2,154.6	15.7%
	Seasonal	1,122	34.3%	983.3	2,429.6	17.7%
	Semipermanent	407	12.4%	902.3	2,229.6	16.2%
	Permanent	54	1.7%	2,805.6	6,932.6	50.4%
		3,271	100.0%	5,563.1	13,746.3	100.0%
Butte						
	Temporary	2,320	25.5%	656.1	1,621.2	7.5%
	Seasonal	2,233	24.6%	626.5	1,548.0	7.1%
	Semipermanent	4,461	49.1%	3,819.8	9,438.5	43.5%
	Permanent	67	0.7%	3,673.1	9,076.1	41.9%
		9,081	100.0%	8,775.4	21,683.7	100.0%
Corson						
	Temporary	5,322	53.8%	1,450.0	3,583.0	23.5%
	Seasonal	2,082	21.1%	1,426.5	3,524.9	23.2%
	Semipermanent	2,421	24.5%	2,497.9	6,172.2	40.5%
	Permanent	59	0.6%	786.2	1,942.8	12.8%
		9,884	100.0%	6,160.7	15,222.9	100.0%
Custer						
	Temporary	957	28.7%	160.6	396.8	15.1%
	Seasonal	943	28.3%	147.3	363.9	13.8%
	Semipermanent	1,377	41.3%	620.1	1,532.2	58.2%
	Permanent	56	1.7%	138.1	341.4	13.0%
		3,333	100.0%	1,066.1	2,634.2	100.0%
Dewey						
	Temporary	2,621	36.0%	1,966.5	4,859.1	22.3%
	Seasonal	1,665	22.9%	1,909.2	4,717.7	21.7%
	Semipermanent	2,924	40.2%	3,619.0	8,942.3	41.1%
	Permanent	70	1.0%	1,320.3	3,262.4	15.0%
		7,280	100.0%	8,814.9	21,781.4	100.0%

Appendix 5. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Fall River						
	Temporary	1,764	22.4%	238.7	589.8	4.7%
	Seasonal	2,840	36.0%	551.3	1,362.2	10.8%
	Semipermanent	3,244	41.2%	2,042.2	5,046.2	39.9%
	Permanent	35	0.4%	2,286.6	5,650.0	44.7%
		7,883	100.0%	5,118.7	12,648.2	100.0%
Gregory						
	Temporary	3,045	33.0%	524.5	1,296.1	18.5%
	Seasonal	2,936	31.8%	600.5	1,483.8	21.2%
	Semipermanent	3,211	34.8%	1,358.8	3,357.5	48.0%
	Permanent	45	0.5%	348.5	861.3	12.3%
		9,237	100.0%	2,832.4	6,998.7	100.0%
Haakon						
	Temporary	1,643	26.7%	787.3	1,945.5	15.7%
	Seasonal	1,780	29.0%	1,162.8	2,873.2	23.3%
	Semipermanent	2,700	44.0%	2,799.5	6,917.5	56.0%
	Permanent	20	0.3%	250.3	618.4	5.0%
		6,143	100.0%	4,999.9	12,354.6	100.0%
Harding						
	Temporary	6,211	49.8%	1,257.1	3,106.2	23.1%
	Seasonal	2,987	23.9%	901.9	2,228.7	16.6%
	Semipermanent	3,233	25.9%	2,715.0	6,708.7	49.9%
	Permanent	43	0.3%	565.4	1,397.0	10.4%
		12,474	100.0%	5,439.4	13,440.5	100.0%
Jackson						
	Temporary	1,698	30.5%	385.1	951.6	14.4%
	Seasonal	1,709	30.7%	558.3	1,379.7	20.9%
	Semipermanent	2,128	38.2%	1,522.1	3,761.2	57.0%
	Permanent	32	0.6%	206.9	511.3	7.7%
		5,567	100.0%	2,672.5	6,603.7	100.0%

Appendix 5. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Jones						
	Temporary	1,065	21.9%	553.9	1,368.8	10.2%
	Seasonal	1,180	24.3%	972.4	2,402.8	18.0%
	Semipermanent	2,570	52.8%	3,524.8	8,709.7	65.2%
	Permanent	48	1.0%	356.5	880.9	6.6%
		4,863	100.0%	5,407.7	13,362.3	100.0%
Lawrence						
	Temporary	182	15.0%	28.2	69.7	8.6%
	Seasonal	305	25.2%	32.4	80.1	9.9%
	Semipermanent	542	44.7%	165.1	407.9	50.6%
	Permanent	183	15.1%	100.7	248.9	30.9%
		1,212	100.0%	326.4	806.6	100.0%
Lyman						
	Temporary	2,384	26.9%	2,177.2	5,379.8	18.7%
	Seasonal	2,356	26.6%	2,400.8	5,932.3	20.7%
	Semipermanent	4,070	45.9%	6,594.9	16,295.7	56.8%
	Permanent	51	0.6%	444.4	1,098.0	3.8%
		8,861	100.0%	11,617.3	28,705.9	100.0%
Meade						
	Temporary	4,282	29.8%	1,035.2	2,558.0	15.6%
	Seasonal	3,679	25.6%	1,044.9	2,581.9	15.7%
	Semipermanent	6,350	44.2%	4,199.2	10,376.0	63.1%
	Permanent	40	0.3%	372.0	919.3	5.6%
		14,351	100.0%	6,651.3	16,435.1	100.0%
Mellette						
	Temporary	2,152	37.4%	329.7	814.8	10.8%
	Seasonal	1,317	22.9%	765.9	1,892.6	25.2%
	Semipermanent	2,266	39.3%	1,812.8	4,479.4	59.5%
	Permanent	26	0.5%	136.5	337.3	4.5%
		5,761	100.0%	3,045.0	7,524.0	100.0%

Appendix 5. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Pennington						
	Temporary	2,387	26.8%	845.0	2,087.9	16.3%
	Seasonal	2,494	28.0%	840.0	2,075.5	16.2%
	Semipermanent	3,833	43.1%	2,573.7	6,359.5	49.7%
	Permanent	188	2.1%	916.8	2,265.3	17.7%
		8,902	100.0%	5,175.4	12,788.2	100.0%
Perkins						
	Temporary	4,820	45.8%	1,231.7	3,043.5	16.2%
	Seasonal	2,291	21.8%	743.1	1,836.1	9.8%
	Semipermanent	3,383	32.1%	2,901.4	7,169.3	38.2%
	Permanent	33	0.3%	2,729.0	6,743.4	35.9%
		10,527	100.0%	7,605.2	18,792.3	100.0%
Shannon						
	Temporary	2,333	54.3%	326.7	807.2	18.4%
	Seasonal	1,186	27.6%	398.4	984.5	22.5%
	Semipermanent	749	17.4%	541.1	1,337.1	30.5%
	Permanent	31	0.7%	505.2	1,248.4	28.5%
		4,299	100.0%	1,771.4	4,377.2	100.0%
Stanley						
	Temporary	1,243	24.0%	515.0	1,272.5	9.7%
	Seasonal	1,267	24.5%	1,003.6	2,479.8	18.9%
	Semipermanent	2,604	50.3%	3,297.8	8,148.7	62.1%
	Permanent	63	1.2%	497.9	1,230.4	9.4%
		5,177	100.0%	5,314.2	13,131.3	100.0%
Todd						
	Temporary	5,042	59.7%	443.9	1,096.8	18.2%
	Seasonal	2,576	30.5%	829.8	2,050.4	34.0%
	Semipermanent	791	9.4%	775.0	1,915.0	31.7%
	Permanent	41	0.5%	393.2	971.7	16.1%
		8,450	100.0%	2,441.9	6,033.9	100.0%

Appendix 5. Continued.

Cty.	Water Regime	Number	% Number	Area (ha)	Area (ac)	% Area
Tripp						
	Temporary	6,656	31.8%	1,084.4	2,679.5	16.2%
	Seasonal	10,771	51.4%	2,442.8	6,036.1	36.5%
	Semipermanent	3,403	16.3%	2,380.9	5,883.1	35.6%
	Permanent	111	0.5%	778.7	1,924.1	11.6%
		20,941	100.0%	6,686.8	16,522.8	100.0%
Ziebach						
	Temporary	2,012	35.8%	1,019.8	2,519.9	17.0%
	Seasonal	800	14.2%	781.7	1,931.5	13.0%
	Semipermanent	2,783	49.5%	3,869.3	9,560.8	64.4%
	Permanent	32	0.6%	337.1	833.1	5.6%
		5,627	100.0%	6,007.9	14,845.3	100.0%