



Text Descriptions of Proposed Critical Habitat Units for the Dakota Skipper and Poweshiek Skipperling

The U.S. Fish and Wildlife Service is proposing critical habitat for the Dakota skipper and Poweshiek skipperling in a Federal Register proposed rule published on October 24, 2013. In that rule, the Service identified 51 units in North Dakota, South Dakota and Minnesota as proposed critical habitat for the Dakota skipper. The tracks range in size from 31 acres to 2,887 acres. For the Poweshiek skipperling, the Service is proposing as critical habitat 61 units in Iowa, Michigan, Minnesota, North Dakota, South Dakota and Wisconsin; ranging in size from 23 acres to 2,887 acres. Several of these tracts are proposed for both species. Maps showing locations of the proposed tracts are included in the proposed rule. Below are detailed descriptions of each of the units with the corresponding map identified.

Dakota Skipper (DS)

Descriptions of proposed critical habitat units, and the reasons they meet the definition of critical habitat for the Dakota skipper.

DS Minnesota Unit 1: (corresponds to Poweshiek Skipperling (PS) Minnesota Unit 1)

Minnesota Unit 1 is 1,168 ha (2,887 ac) in Pope County owned primarily by the State of Minnesota and managed by the State of Minnesota Department of Natural Resources Division of Parks and Recreation (827 ha (2,043 ac)). Approximately 336 ha (831 ac) are privately owned and 5 ha (14 ac) is owned by Pope County. Located in T124N, R39W, Sections 13, 14, 23, 24, 25, and 26; T124N, R38W, Sections 19, 20, 28, 29, 30, 32, and 33; and T123N, R38W, Section 4, this unit occurs approximately 2.3 km (1.4 mi) east of the intersection of State Highway 29 and County Road 14 and 4.0 km (2.5 mi) west of County Road 19. This unit is considered to be occupied and has several years of adult observations in multiple locations and years – the most recent record of the species in this unit is from 2008. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes high quality native remnant (untilled) tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs, such as little bluestem grass, Indian grass, purple coneflowers, and prairie clover. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. This unit includes portions of Glacial Lakes State Park, which was established as a state park in 1963 to preserve the native prairie habitat. The native prairie habitat is rated by the Minnesota Natural Heritage Program County Biological Survey as good quality prairie. Selby (2013, pp. xvi-xvii) did not rate the habitat in 2012, but documented many flowering forbs, as well as the presence of regal fritillary and other prairie butterflies.

Threats to the physical or biological features within DS Minnesota Unit 1 include but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat; and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to, the control of invasive plant species and restoration of native

tallgrass prairie plant community structure that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS Minnesota Unit 2: (corresponds to PS Minnesota Unit 2)

Minnesota Unit 2 is 366 ha (905 ac) in Murray County is privately owned. Located in T105N, R43W, Sections 1, 2, 3, 10, 11, and 12, this unit occurs approximately 0.6 km (0.4 mi) west of Chandler, Minnesota along Chanarambie Creek, and approximately 0.3 km (0.2 mi) east of State Highway 91. This unit is considered to be occupied and has several years of adult observations in multiple locations and years – the most recent record of the species in this unit is from 2008. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. Dry hill prairie, wet to wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair to excellent quality prairie. Portions of the prairie habitat were ranked by Selby (2009a, p. xlii) as fair quality and Dana (2012, pers. comm.) rated a portion of this prairie as fair to good. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. Other portions of the prairie have been ranked as poor quality due to invasive species and lack of management (Selby 2009a, p. xlii) - some of these areas may be suitable for dispersal between higher quality habitats.

Threats to the physical or biological features within DS Minnesota Unit 2 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat; past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs; and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development; the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late-season haying, low intensity rotational grazing, or other management regimes that result in native grasses and flowering forbs available and necessary for native grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying or domestic ungulate grazing and browsing.

DS Minnesota Unit 3: (corresponds to PS Minnesota Unit 3)

Minnesota Unit 3 is 51 ha (126 ac) in Murray County is privately owned. Located in T105N, R43W, Section 5 and T106N, R43W, Sections 32, and 33, this unit occurs along the North Branch of Chanarambie Creek approximately 0.8 km (0.5 mi) south of County Road 5 and 2.4 km (1.5 mi) east of the Pipestone/Murray County line. Dakota skipper was observed within this unit in 1997, 2005, 2007, and 2008. We are uncertain of the occupancy of this unit, however, because although the species was last observed in 2008, it was not detected during 2012 surveys. Thus are analyzing it as if it were unoccupied for purposes of critical habitat. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes high quality native tallgrass prairie containing a high diversity of

native prairie grasses and flowering forbs. The dry prairie habitats in this unit are rated by the Minnesota Natural Heritage Program as good to excellent quality prairie (Service 2013, unpubl. geodatabase). Carney Prairie was described by Selby (2008a, p. xliii) as an “excellent area for prairie butterflies”, and documented other prairie butterfly species at the site in 2007 - 2008 including regal fritillary and Poweshiek skipperling in 2007. This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS Minnesota Unit 4: (corresponds to PS Minnesota Unit 4)

Minnesota Unit 4 is 759 ha (1,875 ac) in Clay County owned primarily by The Nature Conservancy (603 ha (1,490 ac)) and the Minnesota Department of Natural Resources Division of Parks and Recreation (156 ha (385 ac)) and includes the Bluestem Prairie State Natural Area and portions of Buffalo River State Park. Located in T139N, R46W, Sections 10, 11, 14, 15, 16, 22, 23, 26, and 27, this unit occurs approximately 1.6 km (1.0 mi) east of State Highway 9 and 1.3 km (0.8 mi) south of State Highway 10. This unit is considered to be occupied and has had multiple years of adult observations in at least two sites within this unit. The most recent records of Dakota skipper are from 1996 (at two sites) and there have been no more recent surveys for the species, however the habitat was assessed in 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The mesic prairie and dry prairie habitats in this unit are unrated by the Minnesota Natural Heritage Program but are rated as having good to excellent population viability and portions of this unit were mapped as “best” prairie habitat by the Minnesota County Biological Survey (Service 2013, unpubl. geodatabase). A habitat assessment conducted in 2012 assessment of the habitat at the Bluestem Prairie indicates that this site is a high quality prairie that contains the native prairie flora conducive to the Dakota skipper (Selby 2012, p. 9). The site at Buffalo River State park, which adjoins Bluestem Prairie, has not been surveyed since 1996 but recent habitat assessments show that it still contains prairie habitats with the native prairie flora conducive to the species (MN DNR 2013, unpubl.).

Threats to the physical or biological features within DS Minnesota Unit 4 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure and dynamics through properly managed fire, late-season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS Minnesota Unit 5: (corresponds to PS Minnesota Unit 5)

Minnesota Unit 5 is 595 ha (1,470 ac) in Clay County primarily privately owned (302 ha (746 ac)), Clay County (182 ha (450 ac)), The Nature Conservancy (64 ha (159 ac)), and the State of Minnesota (47 ha (116 ac)). This unit includes the Felton Prairie and Blazing Star State Natural Areas managed by the Minnesota Department of Natural Resources Division of

Ecological Resources and The Nature Conservancy. Located in T142N, R45W, Section 31, T141N, R45W, Sections 5, 6, 7, and 8; and T141N, R46W, Sections 12 and 13, this unit occurs approximately 0.8 km (0.5 mi) south of County Road 34 (160th Avenue North), 1.6 km (1 mi) west of County Road 27, and 3.7 km (2.3 mi) east of County Road 9. This unit is considered to be occupied and has multiple years of adult observations in at least 4 locations within this unit – the species was observed at most recently at one site within the unit during 2012 surveys. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and contains high quality native remnant tallgrass prairies containing a high diversity of native prairie grasses and flowering forbs. The mesic prairie, wet prairie and dry prairie habitats in this unit are described as fair to excellent quality (Selby 2009a, Appendix 4 -5, pp. iii -v; MNDNR Rare Features Database, 2012 unpubl.). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS Minnesota Unit 5 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, improperly managed fire, conversion or destruction of native prairie habitat, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development; the control of invasive plant species and restoration of native tallgrass prairie plant community structure and dynamics through properly managed fire, late-season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS Minnesota Unit 6: (corresponds to PS Minnesota Unit 6)

Minnesota Unit 6 is 111 ha (275 ac) in Norman County owned by The Nature Conservancy. This unit includes the Twin Valley Prairie Star State Natural Area managed by The Nature Conservancy. Located in T143N, R45W, Sections 14, 22, and 23, this unit occurs immediately north of County Road 39 and 6.9 km (4.3 mi) west of County Road 32. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Dakota skipper was last observed in 1993, but not during 1994 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native tallgrass remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by native grasses. This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The wet prairie and wet-mesic prairie habitats in this unit were rated by the Minnesota Natural Heritage Program County Biological Survey in 2009 as good to excellent quality prairie and the dry prairie habitats in this unit are ranked as fair to fair-good with moderate plant diversity and invasion of smooth brome (Service 2013, unpubl. geodatabase).

DS Minnesota Unit 7: (Subunit A corresponds to PS Minnesota Unit 7)

Minnesota Unit 7 is comprised of three subunits totaling of 629 ha (1,554 ac) in Lincoln County and Pipestone County owned primarily by the State of Minnesota (247 ha (610 ac)), The Nature Conservancy (318 ha (785 ac)), Lincoln County (2 ha(6 ac)), and private individuals (62 ha (153 ac)) and is part of the Hole in the Mountain Prairie Preserve managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife and The Nature Conservancy. Located in T109N, R45W, Sections 8, 16, 17, 18, 19, 20, 21, 30, and 31 and T108N, R46W, Section 1, the three sub-units are approximately 0.3 km (0.2 mi) to 0.6 km (0.4 mi) apart, separated mainly by agricultural land. This unit occurs south of Lake Benton, Minnesota south of State Highway 14 and on both sides of State Highway 75. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. All three subunits are essential for the conservation of the species, as described below in each subunit description.

Additionally, all subunits contain the physical or biological features essential to the conservation of the species. All subunits consist of larval and adult habitat and include high quality native remnant tallgrass prairies containing a high diversity of native prairie grasses and flowering forbs. The subunits also have patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The wet-mesic and dry prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey in 2006 -2008 as fair-good to good-excellent quality prairies (Service 2013, unpubl. geodatabase).

Subunit A: This 531 ha (1,313 ac) subunit occurs approximately 1.6 km (1 mi) south of State Highway 14 and adjacent and on both sides of State Highway 75 southwest of Subunits B and C. Located in T109N, R45W, Sections 17, 18, 19, 20, 30, and 31 and T108N, R46W, Section 1, this unit includes the Hole in the Mountain Wildlife Management Area owned and managed by the Minnesota State Department of Natural Resources Division of Fish and Wildlife; this portion of the subunit is approximately 247 ha (610 ac). The Nature Conservancy owns approximately 229 ha (565 ac), Lincoln County owns 2 ha (6 ac), and the remaining 53 ha (132 ac) is private land. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Dakota skipper has been observed in multiple locations within this subunit over multiple years – the most recent observation of the species was in 2008, but the species was not observed during 2012 surveys. The dry hill prairie and wet to wet-mesic prairie habitats in this subunit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair to good-excellent quality prairies (Service 2013, unpubl. geodatabase).

Subunit B: This 37 ha (92 ac) subunit occurs approximately 0.8 km (0.5 mi) south of State Highway 14 and adjacent and west of State Highway 75. The unit is owned by The Nature Conservancy. This subunit is located in T109N, R45W, Sections 8 and 17. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. The most recent observation of the species was in 2009. The dry prairie habitats in this subunit are rated by the Minnesota Natural Heritage Program County Biological Survey as good to good-excellent quality prairies.

Subunit C: This 60 ha (149 ac) subunit occurs approximately 1.9 km (1.2 mi) south of State Highway 14 and adjacent and east of State Highway 75. The most recent observation of the species was in 2009. This subunit is owned primarily by The Nature Conservancy (52 ha (128 ac)). The remaining 8 ha (21 ac) is privately owned. This subunit is located in T109N, R45W, Sections 16, 17, 20, and 21. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. The dry hill prairie habitats in this subunit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair-good quality prairies (Service 2013, unpubl. geodatabase).

DS Minnesota Unit 8: (corresponds to PS Minnesota Unit 8)

Minnesota Unit 8 is 143 ha (352 ac) in Pipestone County owned primarily by the State of Minnesota (130 ha (321 ac)) and is part of the Prairie Coteau Scientific and Natural Area managed by the Minnesota Department of Natural Resources Division of Ecological Resources. Approximately 13 ha (31 ac) is privately owned. Located in T108N, R44W, Sections 28, 29, 32, and 33, this unit occurs on both sides of State Highway 23 approximately 3.2 km (2 mi) southwest of the intersection of State Highway 23 and County Road 18. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Dakota skipper has been observed over multiple years (*e.g.*, 1993-1996 and 2005-2008) in this unit, but was not observed during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native or unrated prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry hill prairie and wet prairie habitats in this unit are rated by the Minnesota Natural Heritage Program in 2006 as good to excellent quality prairie (Service 2013, unpubl. geodatabase). Selby (2013, pp. x-xi) did not rate the habitat in 2012, but noted the presence native flowering forbs and other prairie butterflies including regal fritillary.

DS Minnesota Unit 9: (corresponds to PS Minnesota Unit 9)

Minnesota Unit 9 is 168 ha (415 ac) in Pipestone County owned by the State of Minnesota and is part of the Terrace Wetland Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife. Located in T107N, R44W, Section 31 and T106N, R44W, Section 6, and T106N, R44W, Section 1, this unit occurs immediately south of CR-69 (131st St), approximately 0.8 km (0.5 mi) east of the intersection of CR 69 and Cr-16. This unit is considered to be occupied and has had adult observations in 2006 – 2008, but has not been surveyed more recently. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry hill prairie, wet prairie, and prairie meadow habitats in this unit were rated by the Minnesota Natural

Heritage Program County Biological Survey in 2006 as good to excellent quality prairies with high native species diversity (Service 2013, unpubl. geodatabase) and was described as low to medium quality with areas of high quality in 2008 (Selby 2009a, Appendix 5, p. xlviii).

Threats to the physical or biological features within DS Minnesota Unit 9 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present fire management that degrades or eliminates native prairie grasses and flowering forbs, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development; the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late- season haying, rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS Minnesota Unit 10: (corresponds to PS Minnesota Unit 10)

Minnesota Unit 10 is 392 ha (967 ac) in Swift and Chippewa counties primarily owned by the State of Minnesota (226 ha (557 ac)) and is part of the La Qui Parle Wildlife Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife. The unit is partially owned by The Nature Conservancy (158 ha (391 ac)) and the remaining 8 ha (19 ac) is privately owned. Located in T119N, R43W, Sections 1, 2, 3, 11, and 12 and T120N, R43W, Sections 34, 35, this unit occurs approximately 2.6 km (1.6 mi) west of Highway 59/7 along the Swift and Chippewa County line, approximately 3.2 km (2 mi) south of Appleton, Minnesota. This unit is considered to be unoccupied by Dakota skipper – the last observation of the species was in 1995, but it was not detected in 1996, 2005, or 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry hill prairie, wet prairie, and prairie meadow habitats in this unit were rated by the Minnesota Natural Heritage Program County Biological Survey as good to excellent quality prairies with high native species diversity (Service 2013, unpubl. geodatabase).

DS Minnesota Unit 11:

Minnesota Unit 11 is 80 ha (197 ac) in Pipestone County owned primarily by the Minnesota Department of Natural Resources Division of Fish and Wildlife and is part of the Woodstock Wildlife Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife. Located in T107N, R44W, Sections 1 and 2, this unit occurs on both sides of 171st Street immediately west of the Pipestone/Murray County line, and approximately 1.6 km (1 mi) east of the intersection of CR-18 and CR-8. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Adult Dakota skippers were observed in 2007 but not during 2008 surveys. This unit is

essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes high quality native tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs dominated by sideoats grama, little bluestem, and Indian grass. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey in 2006 as primarily fair – good to good quality prairie (Service 2013, unpubl. geodatabase).

DS Minnesota Unit 12:

Minnesota Unit 12 is 222 ha (548 ac) in Lincoln County is privately owned. Located in T113N, R45W, Section 36; T113N, R 44W, Section 31 and T112N, R 45N Sections 1, 2, and 11; this unit occurs approximately 0.5 mi (0.8 km) south of County Road 18 and 3.9 km (2.4 mi) east of State Highway 75. This unit is considered to be occupied and has adult observations as recently as 2008. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs dominated by little bluestem, sideoats grama, and other native grasses. This unit may also contain small patches of lesser quality native or unrated prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry and wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey in 2006 and 2008 primarily as fair to good to good-excellent quality prairie and described by Selby (2009a, Appendix 5, p. xxx) as fair to good quality prairie.

Threats to the physical or biological features within DS Minnesota Unit 12 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present herbicide use and grazing management that degrades or eliminates native prairie grasses and flowering forbs, conversion or destruction of native prairie habitat, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development; the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late- season haying, low intensity rotational grazing management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS Minnesota Unit 13:

Minnesota Unit 13 is comprised of two subunits totaling 106 ha (263 ac) in Kittison County owned by the State of Minnesota and is part of the Lake Bronson State Park managed by the Minnesota Department of Natural Resources Division of Parks and Recreation. Located in T161N, R46W, Sections 26, 27, 33, 34, and 35 and T160N, R46W, Sections 4 and 5, this unit occurs north of County Road 10, Minnesota approximately 2.9 km (1.8 mi) east of the intersection of County Road 10 and Highway 59. The two sub-units are approximately 0.6 km

(0.4 mi) apart, separated primarily by forested land or shrub-land. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper has been observed over multiple years within this unit, most recently in 2009. The species was not detected during 2012 surveys. Both subunits are essential for the conservation of the species, as described below in each subunit description. Additionally, both subunits contain the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and contains a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as good quality prairie (Service 2013, unpubl. geodatabase).

Subunit A: This 16 ha (38 ac) subunit occurs approximately This unit occurs north of County Road 10, Minnesota approximately 2.9 km (1.8 mi) east of the intersection of County Road 10 and Highway 59 and is located in T161N, R46W, Section 33 and T160N, R46W, Sections 4 and 5. Dakota skipper was last observed in 2009 in this subunit, but was not detected during 2012 surveys. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

Subunit B: This 91 ha (224 ac) subunit occurs approximately This unit occurs north of County Road 10, Minnesota approximately 4.2 km (2.6 mi) east of the intersection of County Road 10 and Highway 59 and is located in T161N, R46W, Sections 26, 27, 34, and 35. Dakota skipper was last observed in 2009 in this subunit, but it is not clear if this subunit was surveyed in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range.

DS Minnesota Unit 14:

Minnesota Unit 14 is 341 ha (842 ac) in Polk County owned by the Minnesota Department of Natural Resources and includes the Tympanuchus Wildlife Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife. Located in T149N, R45W, Sections 20, 21, 28, 29 and 33, this unit occurs immediately south of 320 St. SW and immediately west of 170th Ave SW, and approximately 1.3 km (0.8 mi) east of Minnesota State Highway 102. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Dakota skipper was observed in 2000 and 2009, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat and includes a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by little bluestem and other native grasses. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of

native high quality prairie that connects patches of higher quality native prairies. The dry and wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair to excellent quality prairie (Service 2013, unpubl. geodatabase).

DS Minnesota Unit 15:

Minnesota Unit 15 is 108 ha (268 ac) in Polk County owned primarily by The Nature Conservancy (102 ha (252 ac)) and includes the Pankratz Memorial Prairie. The remaining 6 ha (15 ac) is private land. Located in T149N, R45W, Sections 7, 8, and 17, this unit occurs immediately north of 300th Street SW and immediately east of 190th Avenue SW, approximately 2.4 km (1.5 mi) south of the intersection of State Highway 2 and County Road 46. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Dakota skipper was observed in 1994 but was not detected during surveys in 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by big bluestem, Indian grass and other native grasses. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry and wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair-good to good quality prairie (Service 2013, unpubl. geodatabase) and in 1994 (Schlicht and Saunders 1994, p. 19) as having “critical” prairie for Dakota skipper.

DS North Dakota Unit 1: (Corresponds to PS North Dakota Unit 1)

North Dakota Unit 1 is 48 ha (119 ac) in Richland County owned primarily by the U.S. Fish and Wildlife Service (111 ha (45 ac)) and includes a portion of the Hartleben Waterfowl Production Area. Approximately 2 ha (6 ac) is owned by the State of North Dakota, and approximately 1 ha (2 ac) is private land. Located in T130N, R50W, Section 16 and 17, this unit occurs approximately 0.6 km (0.4 mi) north of State Hwy 11, 2.5 mi (4 km) east of County Road 3, and approximately 4.3 km (2.7 mi) west of Hankinson, North Dakota. We are uncertain of the occupancy of this unit, and thus are analyzing it as if it were unoccupied for the purposes of critical habitat. The Dakota skipper was recorded in 1995 -1997, but the species was not detected during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs and is dominated by leadplant and native grasses. The prairie habitats in this unit were rated as excellent quality prairie (Royer 1997, p. 18). An abundance of flowering forbs and other prairie dependent butterflies were documented in 2012 (Hubers 2013, Appendix A). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native

prairies.

DS North Dakota Unit 2:

North Dakota Unit 2 is 384 ha (949 ac) in Ransom County is primarily federally owned by the USDA Forest Service and is part of the Sheyenne National Grasslands (255 ha (630 ac)). The remaining 129 ha (319 ac) is owned by The Nature Conservancy. Located in T133N, R53W, Sections 5, 6, 7, and 8, this unit occurs approximately 10.8 km (6.7 mi) southeast of Lisbon, North Dakota, immediately west of 146th Street and approximately 0.8 km (0.5 mi) north of 74th Street. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was recorded in 1995 and 2003, but was not detected during the 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The native prairie habitats in this unit are described as fair quality prairie.

DS North Dakota Unit 3:

North Dakota Unit 3 is 618 ha (1,526 ac) in McHenry County primarily privately owned (554 ha (1,370 ac)). The remaining 63 ha (156 ac) is owned by the North Dakota State Land Department. Located in 154N, R75W, Sections 3, 4, 5, 8, 9, 16, 17, 33, and 34 this unit occurs approximately 22.8 km (14.2 mi) northeast of Karlsruhe, North Dakota, 9.7 km (6 mi) east of North Dakota State Highway 14, on both sides of 13th Street and immediately south of 54th Street. This unit is considered to be occupied – the Dakota skipper was recorded in 1998 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily, it contains a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as good to excellent quality native prairies (Royer and Royer 2012a, pp. 36 -41). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 3 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, haying management that degrades or eliminates native prairie grasses and flowering forbs, flooding, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, the control of invasive plant species and restoration of native mixed grass prairie plant community structure, and the implementation of late- season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying.

DS North Dakota Unit 4:

North Dakota Unit 4 is 80 ha (197 ac) in McHenry County that is privately owned. Located in T155N, R75W, Section 22, this unit occurs immediately east of 13th Street, immediately south of 57th Street, and approximately 3.2 km (2 mi) west of the McHenry-Pierce County line. This unit is considered to be occupied—the Dakota skipper was recorded in 1998 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality (Royer and Royer 2012a, p. 15). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 4 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, haying management that degrades or eliminates native prairie grasses and flowering forbs, flooding, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development: The control of invasive plant species and restoration of native mixed grass prairie plant community structure, and the implementation of late- season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying.

DS North Dakota Unit 5:

North Dakota Unit 5 is 990 ha (2,446 ac) in McHenry County primarily privately owned (741 ha (1,832 ac)). The North Dakota State Land Department owns approximately 225 ha (557 ac) and the remaining 23 ha (58 ac) is owned by the U.S. Fish and Wildlife Service. Located in T154N, R76W, Sections 4, 5, 8, 9, 10, 14, 15, 16, 17, 20, 21, 28, 29, 32, and 33; and T155, R76W, Sections 32 and 33, this unit occurs approximately 12.6 km (7.8 mi) northeast of Karlsruhe, North Dakota, on both sides of North Dakota State Highway 14 and immediately north of 49th Street. This unit is considered to be occupied -- Dakota skipper was last observed in 2012 at five sites located within this unit. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily high quality native remnant prairies containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to excellent quality (Royer and Royer 2012a, pp. 24 and 42). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 5 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present haying management that degrades or eliminates native prairie grasses and flowering forbs, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native mixed grass prairie plant community structure, and the implementation of late-season haying, or other management regimes that result in native

grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying.

DS North Dakota Unit 6:

North Dakota Unit 6 is 33 ac (80 ha) in McHenry County owned by the North Dakota State Land Department. Located in T157N, R76W, Sections 17 and 18, this unit occurs on both sides of North Dakota State Highway 14, approximately 8.9 km (5.5 mi) west of Willow Road (9th Ave. NE), 0.4 km (0.3 mi) north of 69th St. NE, and immediately east of 3rd Ave NE. This unit is considered to be occupied – the Dakota skipper has been recorded in 1996, 1997, 1998, and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are described varying habitat of fair to good quality (Royer and Royer 2012a, p. 48).

Threats to the physical or biological features within DS North Dakota Unit 6 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present herbicide or pesticide use, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, and the control of invasive plant species and restoration of native mixed grass prairie plant community structure to result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying.

DS North Dakota Unit 7:

North Dakota Unit 7 is 113 ha (280 ac) in McHenry County privately owned. Located in T156N, R77W, Sections 30 and 31 and T156N, R78W, Section 25, this unit occurs on both sides of U.S. Highway 2, approximately 12.1 km (7.5 mi) west of State Highway 14, immediately south of 62nd Street, and immediately east of 2nd Street. This unit is considered to be occupied – the Dakota skipper was observed in 1997, 1998, and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality prairie (Royer and Royer 2012a, p. 45). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 7 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present haying management that degrades or eliminates native prairie grasses and flowering forbs, flooding, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, the control of invasive plant species and restoration of native mixed grass prairie plant community structure, and the

implementation of late- season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs in areas used for haying.

DS North Dakota Unit 8:

North Dakota Unit 8 is 181 ha (447 ac) in McHenry County primarily owned by the North Dakota Land Department (131 ha (324 ac)). The remaining 50 ha (123 ac) is private land. Located in T156N, R78W, Sections 16, 17, 20, and 21, this unit occurs approximately 6.7 mi (10.8 km) northeast of Granville, North Dakota, approximately 2.9 km (1.8 mi) north of U.S. Highway 2, and immediately west of 5th Avenue N on both sites of 6th Avenue N. This unit is considered to be occupied – the Dakota skipper was observed at two sites within this unit in 2012, and one of the sites has a record from 1998. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described excellent quality prairie (Royer and Royer 2012a, pp. 30 and 33). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 8 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, the control of invasive plant species and restoration of native mixed grass prairie plant community structure to result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS North Dakota Unit 9:

North Dakota Unit 9 is 208 ha (514 ac) in Rolette County primarily privately owned (146 ha (360 ac)). Approximately 33 ha (81 ac) is owned by the Turtle Mountain Band of Chippewa Indians and the remaining 30 ha (74 ac) is owned by the North Dakota Land Department. Located in T161N, R72W, Sections 1, 2, 3 and T162N, R72, Sections 33, 34, and 35, this unit occurs on both sides of State Highway 5 (U.S. Hwy 281) approximately 4.8 km (3 mi) east of State Highway 3, and immediately west of 35th Street. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was last recorded in 1996, and no further surveys were done until 2012, when it was not detected. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The dry prairie habitats in this unit are described as fair quality prairie with a prognosis of fair to good (Royer and Royer 2012a, p. 69). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS North Dakota Unit 10:

North Dakota Unit 10 is 259 ha (639 ac) in McKenzie County owned by the Fort Berthold Reservation. Located in T149N, R94W, Sections 28, 29, 32, and 33, this unit occurs on both sides of State Highway 22, approximately 0.8 km (0.5 mi) north of the McKenzie-Dunn County line. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was recorded in 1994 -1997, but was not detected during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitat in this unit is described as unchanged since the earlier surveys with “all of the requisite habitat flora” (Royer 1997, pp. 9 - 10; Royer and Royer 2012a, p 51). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS North Dakota Unit 11:

North Dakota Unit 11 is 169 ha (418 ac) in McKenzie County primarily owned by the U. S. Department of Agriculture Forest Service (150 ha (371 ac)) and is part of the Little Missouri National Grasslands. The remaining 19 ha (47 ac) is privately owned. Located in T153N, R95W, Sections 12 and 13 and T153N, R94W, Sections 7 and 18, this unit occurs 2.4 km (1.5 mi) northeast of State Highway 1806, 10 km (6.2 mi) north of State Highway 23, 4.7 km (2.9 mi) south of the shared Williams, Mountrail and McKenzie border, and approximately 7 km (4.4 mi) west of Lake Sakawea, which borders McKenzie and Mountrail counties. This unit is considered to be occupied – Dakota skipper was observed in 2002 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as containing “all the requisite flora” and records of other prairie dependent butterflies (Royer 2002, Royer and Royer 2012a, p. 57). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 11 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat; oil and gas development; small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, and the control of invasive plant species and restoration of native mixed grass prairie plant community that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS North Dakota Unit 12:

North Dakota Unit 12 is 125 ha (309 ac) in McKenzie County is primarily owned by the U. S. Department of Agriculture Forest Service (120 ha (296 ac)) and is part of the Little Missouri National Grasslands. The remaining 5 ha (13 ac) is privately owned. Located in T153N, R96W, Sections 11 and 12, this unit occurs approximately 11.6 km (7.2 mi) north of County Road 10, 11.9 km (7.4 mi) NW of State Highway 23, 4.1 km (2.6 mi) northwest of State Highway 1806, and 2.7 km (1.7 mi) south of Lake Sakawea, which borders McKenzie and Williams counties. This unit is considered to be occupied – Dakota skipper was observed in 2002 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat, primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as containing “all the requisite flora” and records of other prairie dependent butterflies (Royer 2002, pp. 6 -8, 11, Royer and Royer 2012a, p. 54). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 12 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, oil and gas development; small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, and the control of invasive plant species and restoration of native mixed grass prairie plant community structure that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS North Dakota Unit 13:

North Dakota Unit 13 is 294 ha (727 ac) in Ransom County owned by the U. S. Department of Agriculture Forest Service and is part of the Sheyenne National Grasslands. Located in T134N, R53W, Sections 19 and 20, and T134N, R54W, Section 24, this unit occurs immediately north of 70th Street, approximately 0.8 km (0.5 mi) west of 146th Street. This unit is considered to be occupied – Dakota skipper was observed in 2002 and there have been no more recent surveys during the flight period. The habitat suitability was assessed in 2012 (Royer and Royer 2012a, p. 96). This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat, primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as “fairly typical Dakota Skipper habitat” containing larval food plants, broadleaf flora, and records of other prairie dependent butterflies (Royer and Royer 2012a, p. 96). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS North Dakota Unit 13 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, management that degrades or eliminates native prairie grasses and flowering forbs, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant

species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS North Dakota Unit 14:

North Dakota Unit 14 is 242 ha (98 ac) in Wells County and is privately owned. Located in T147N, R73W, Sections 2 and 11, this unit occurs approximately 1.3 km (0.6 mi) north of 10th St. NE, and immediately west of North Dakota State Highway 3. This unit is considered to be occupied – Dakota skipper was observed in 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat, primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are described as little bluestem and lightly to moderately grazed dry-mesic prairie with records of other prairie dependent butterflies (HDR Engineering Inc. 2013, pp. 21 - 22).

Threats to the physical or biological features within DS North Dakota Unit 14 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs, ,and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, and the control of invasive plant species and restoration of native mixedgrass prairie plant community structure, , and the implementation of late- season haying, low-intensity rotational grazing, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs..

DS South Dakota Unit 1: (Corresponds to PS South Dakota Unit 1)

South Dakota Unit 1 is 183 ha (451 ac) in Marshall County owned by the U.S. Fish and Wildlife Service. Located in T125N, R56W, Sections 27 and 34, this unit occurs approximately 1.6 km (1 mi) south of County Road 16, immediately west of County Road 5 and approximately 0.4 km (0.2 mi) north of the Marshall County line. This unit is considered to be unoccupied by Dakota skipper –the species was observed in 1996, 2002, 2003, and 2005, but the species was not detected in the last four years of surveys (2008 and 2010-2012). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical and biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as containing an abundance of flowering forbs and native grasses and containing other prairie dependent butterflies (Hubers 2013, p. 4, 63-64; Hubers 2013, pers. comm.). This unit also has patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. Additionally, this unit contains the

physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS South Dakota Unit 2: (Corresponds to PS South Dakota Unit 2)

South Dakota Unit 2 is 69 ha (169 ac) in Brookings County owned by the State of South Dakota (South Dakota State University). Located in T112N, R48W, Sections 12 and 13, this unit occurs approximately 2.9 km (1.8 mi) south of the Deuel-Brookings County line, 8 km (5 mi) east of 478th Avenue, and 1.6 km (1 mi) west of 485th Avenue. This unit is considered to be occupied - Dakota skipper were observed in this unit in 2003 and 2006, but there have been no surveys more recently. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as good to excellent quality dry-mesic hill prairie (Skadsen 2003, p. 11). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 2 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 3: (Corresponds to PS South Dakota Unit 3 Unit A)

South Dakota Unit 3 is 209 ha (516 ac) in Deuel County owned by South Dakota Game, Fish and Parks and includes the Crystal Springs Game Production Area. Located in T116N, R49W, Sections 25 and 36, this unit occurs approximately 3.1 km (1.9 mi) southeast of Altamont, South Dakota, 1.6 km (1 mi) east of State Highway 15, and 4.8 km (3 mi) south of County Road 309. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was last observed in 2003, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily fair to good quality native prairie containing a diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are rated as fair to good quality dry-mesic hill prairie (Skadsen 2003, p. 18).

DS South Dakota Unit 4: (Corresponds to PS South Dakota Unit 4)

South Dakota Unit 4 is 118 ha (292 ac) in Grant County owned by the U.S. Fish and Wildlife Service. Located in T120N, R51W, Sections 15 and 22, this unit occurs approximately 3.2 km (2 mi) south of 149th St. and 9.0 km (5.6 mi) east of Interstate Highway 29, and includes Meyer Lake Waterfowl Production Area. This unit is considered to be occupied --Dakota skipper has been observed over multiple years, including 1996, 2004 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. Other prairie butterflies and purple coneflower were documented in 2012 (Hubers 2013, pp. 55-56). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 4 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie that result native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 5: (Corresponds to PS South Dakota Unit 5)

South Dakota Unit 5 is 48 ha (119 ac) in Deuel County is Federal land owned by the U.S. Fish & Wildlife Service. Located in T114N, R47W, Section 5, this unit occurs approximately 3.2 km (2 mi) south of State Hwy 22 and 3.2 km (2 mi) east of County Road 519. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was last observed in 2004, but not during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitat in this unit was described as good quality dry-mesic hill prairie (Skadsen 2004, p. 5). Regal fritillary, other prairie butterflies, and a diversity of flowering forbs were documented in 2012 (Hubers 2013, pp. 27 - 30). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS South Dakota Unit 6: (Corresponds to PS South Dakota Unit 6)

South Dakota Unit 6 is 13 ha (31 ac) in Roberts County owned by the South Dakota Game, Fish and Parks Department. Located in T122N, R48W, Sections 2 and 3, this unit occurs approximately 0.2 km (0.1 mi) north of State Highway 15 and south of Big Stone River and lies within the Hartford Beach State Park. This unit is considered to be occupied – Dakota skipper was observed at this site in every year it was surveyed since 1996 (1996 -1998, 2000 -2002, 2004-2012), with the most recent observation in 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval

and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that connects patches of higher quality native prairies. The prairie habitats in this unit is described as fair to poor dry-mesic hill prairie due to woody succession and the small size (Skadsen 2005, p. 6, Skadsen 2011, p. 1, 2012, p. 1).

Threats to the physical or biological features within DS South Dakota Unit 6 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present fire, grazing, and herbicide use management that management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Implementation of late- season haying, rotational fire management, or other management regimes and the control of invasive plant species and restoration of native tallgrass prairie plant community that results in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

DS South Dakota Unit 7: (Corresponds to PS South Dakota Unit 7)

South Dakota Unit 7 is 190 ha (470 ac) in Roberts County is primarily tribal land owned by the Sisseton–Wahpeton Oyate (112 ha (278 ac)). The U.S. Fish and Wildlife Service owns 61 ha (151 ac), which includes the Weeks Waterfowl Production Area and the remaining 17 ha (41 ac) is privately owned land. Located in T126N, R52W, Sections 7, 8, 17, and 18, this unit occurs approximately 3.2 km (2 mi) north of State Highway 10, 0.5 km (0.3 mi) east of the Roberts-Marshall County border. This unit is considered to be occupied –Dakota skipper was observed in several sites in this unit over multiple years, most recently in 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native remnant prairies. The prairie habitats in this unit were described as good to excellent quality northern mesic tallgrass and dry-mesic hill prairies (Skadsen 2003, p. 30). Regal fritillary was documented in 2012 and the area was described as containing good flowering forbs and native grasses (Hubers 2013, pp. 59 - 60).

Threats to the physical or biological features within DS South Dakota Unit 7 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 8: (Corresponds to PS South Dakota Unit 8)

South Dakota Unit 8 is 203 ha (501 ac) in Roberts County is Federal land owned by the U.S. Fish & Wildlife Service. Located in T124N, R52W, Sections 21, 22, 27, and 28, this unit

occurs approximately 3.1 km (1.9 mi) south of County Road 5 (127th Street), 3.9 km (2.4 mi) east of the Roberts-Day county border, and includes the Wike Waterfowl Production Area. This unit is considered to be occupied and has multiple years of adult observations (1995, 1997, 1998, 2002, 2006, 2007, and 2012), most recently in 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality native prairie or dispersal grassland habitat that connects patches of higher quality native prairies. The prairie habitats in this unit were described as fair to good quality dry-mesic hill prairies (Skadsen 2003, p. 31) and as varying quality more recently –good to excellent in some areas and poor in others (Hubers 2013, pp. 45 - 48). Regal fritillary and other prairie butterflies were observed within this unit in 2012 (Hubers 2013, pp. 45 - 48).

Threats to the physical or biological features within DS South Dakota Unit 8 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; past and present fire and grazing management that degrades or eliminates native prairie grasses and flowering forbs, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 9: (Corresponds to PS South Dakota Unit 9)

South Dakota Unit 9 is 65 ha (160 ac) in Roberts County primarily owned by the Sisseton–Wahpeton Oyate (54 ha (133 ac)). The remaining 11 ha (26 ac) is privately owned. Located in T123N, R52W, Sections 2, 3, and 11, this unit occurs on both sides of 453rd Avenue, approximately 9.2 km (5.7 mi) south of County Road 5, and 5.1 km (3.2 mi) east of the Roberts-Day county border. This unit is considered to be occupied – Dakota skipper was observed at two sites within this unit in 1997, 2006, 2009, and 2010. The species was also observed at one of those sites in 2011 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit were described as good to excellent quality northern mesic tallgrass prairie and dry-mesic hill prairies (Skadsen 2006, pp. 10 - 13) where other prairie butterflies (*e.g.*, regal fritillary) have been recently documented (Skadsen 2006, pp. 12 and 14). A 2013 habitat assessment described the area as with portions of wetlands and hilltop prairies and up to 90 percent native grasses and forbs, with the presence of purple coneflower (Service 2013, July 12 field notes).

Threats to the physical or biological features within DS South Dakota Unit 9 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure to result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 10: (Corresponds to PS South Dakota Unit 10)

South Dakota Unit 10 is 47 ha (117 ac) in Roberts County owned by the Sisseton–Wahpeton Oyate. Located in T123N, R52W, Sections 10, 11, 14, and 15, this unit occurs immediately east of 453rd Avenue and north of Owl Lake approximately 11.1 km (6.9 mi) south of County Road 5 and 1.5 km (3.6 mi) east of the Roberts-Day County border. This unit is considered to be occupied - Dakota skipper was observed at one site during surveys in 2002 and 2006 and there have been no surveys more recently. Dakota skipper was observed at another site within this unit in 2002, but there have been no surveys more recently at that location. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit were described as fair to good quality northern mesic tallgrass prairie, northern wet-mesic tallgrass prairie, dry-mesic hill prairies (Skadsen 2006, pp.12, 14). The habitat was assessed in 2013, and would best be described overall as a fair quality prairie with a predominance of good native grasses and native flowers in the NE quarter quarter section but decreasing radially and becoming more smooth brome dominated. The habitat was described as to have varying percentage of flowering forbs with native components throughout (Service 2013, July 9 field notes).

Threats to the physical or biological features within DS South Dakota Unit 10 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present haying management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 11: (Corresponds to PS South Dakota Unit 11)

South Dakota Unit 11 is 36 ha (89 ac) in Roberts County primarily owned by the Sisseton–Wahpeton Oyate (30 ha (75 ac)). The remaining 6 ha (14 ac) is privately owned. Located in T123N, R52W, Sections 17 and 20, this unit occurs southeast and adjacent to the intersection of 135th St. and 450th Avenue, approximately 1.6 km (1 mi) east of the Roberts – Day County border and 3.7 km (2.3 mi) west of 453rd Avenue. This unit is considered to be occupied and has multiple years of adult observations (1997, 2002, 2006, and 2009 – 2012). This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as excellent quality northern mesic tallgrass prairie, (Skadsen 2006, pp.12, 14), although more recently, the nectar sources appear to be relatively low (Service 2013, unpubl. geodatabase). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 11 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure to result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 12: (Corresponds to a portion of PS South Dakota Unit 12)

South Dakota Unit 12 is 215 ha (531 ac) in Day County and is primarily owned by the Sisseton–Wahpeton Oyate (177 ha (438ac)). The remaining 38 ha (93 ac) are privately owned. Located in T122N, R53W, Sections 3, 4, 10, 11, and 15, this unit occurs on both sides of County Road 1, immediately north of 140th St., approximately 1.6 km (1 mi) west of 440th Avenue, and 1.6 km (1 mi) north of U.S. Highway 12. This unit is considered to be occupied and has multiple years of adult observations (1997, 2002, 2006, 2010, 2011, and 2012). This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by leadplant and native grasses. This unit also has lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit were described as excellent quality northern mesic tallgrass and northern wet-mesic tallgrass prairies (Skadsen 2006, p. 10).

Threats to the physical or biological features within South Dakota Unit 12 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, lack of management, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 13: (Corresponds to PS South Dakota Unit 13)

South Dakota Unit 13 is 23 ha (56 ac) in Day County is privately owned. Located in T123N, R53W, Section 26, this unit occurs immediately north of 137th St. and west of 448th Avenue, approximately 1.6 km (1 mi) west of the Day-Roberts County line. We are uncertain of the occupancy of this site, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was recorded in 1997 and 2002, and although there have been no further surveys, the species expert assigned a status of unknown to the site. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality dry-mesic hill prairies (Skadsen 2003, p. 15). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of

native high quality prairie that connects patches of higher quality native prairies. A 2013 roadside habitat assessment stated that from the roadside, the habitat looked to be 80 percent invaded by smooth brome, but that purple coneflower and native forbs were present (Service 2013, July 9 field notes).

DS South Dakota Unit 14: (Corresponds to PS South Dakota Unit 14)

South Dakota Unit 14 is 76 ha (189 ac) in Day County is owned by the Sisseton–Wahpeton Oyate. Located in T123N, R53W, Sections 23 and 24, this unit occurs immediately south of 135th Street (T500) and on both sides of 448th Avenue, between 446th Avenue and 449th Avenue, approximately 1 km (0.6 mi) west of the Day-Roberts County line immediately east of Campbell Slough. This unit is considered to be occupied – Dakota skipper was recorded every year it was surveyed since 1995 (1995, 1997, 2002, and 2005 – 2012). This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as good quality dry-mesic hill prairie with a diversity of native flowering forbs and native grasses (Skadsen 2006, p. 13).

Threats to the physical or biological features within DS South Dakota Unit 14 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure to result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 15: (Corresponds to PS South Dakota Unit 15)

South Dakota Unit 15 is 76 ha (188 ac) in Day County is owned primarily by the South Dakota Game, Fish and Parks Department (71 ha (175 ac)) and the remaining 5 ha (13 ac) is owned by Sisseton–Wahpeton Oyate. Located in T124N, R53W, Sections 25, 26, 35, and 36, this unit occurs approximately 2.3 km (1.4 mi) northeast of the intersection of County Road 6 and 446th Avenue, approximately 1.3 km (0.8 mi) west of the Day-Roberts County line. This unit is considered to be unoccupied – Dakota skipper was recorded in 2008 at one site within this unit, but the species was not detected in the last four survey years (2008-2012). The species was recorded at another site within the unit in 2002, but not in the most recent three surveys in that location. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit vary, and are described as poor to fair to good quality northern wet-mesic tallgrass prairie (Skadsen 2005, p. 8, 2006, p. 13). This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS South Dakota Unit 16: (Corresponds to PS South Dakota Unit 16)

South Dakota Unit 16 is 141 ha (348 ac) in Day County is Federal land owned by the U.S. Fish and Wildlife Service and is part of Waubay National Wildlife Refuge. Located in T123N, R53W, Sections 16, 17, 20, 21, and 29, this unit occurs approximately 0.7 km (0.5 mi) west of County Road 1 (446th Avenue) along the east side of Spring Lake. This unit is considered to be unoccupied – Dakota skipper was recorded in in 1996-1998 and 2002, but the species was not detected in the last five years of surveys (2003-2005, 2009, and 2012). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality dry-mesic hill prairie (Skadsen 2003, p. 17). Regal fritillary was also documented in 2012 and the habitat was described as good with many flowering forbs (Hubers 2013, pp. 57 - 58). This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS South Dakota Unit 17:

South Dakota Unit 17 is 223 ha (552 ac) in Roberts County is Federal land owned by the U.S. Fish and Wildlife Service and includes Roberts County Waterfowl Production Area. Located in T122N, R51W, Sections 22, 27, and 28, this unit occurs 0.8 km (0.5 mi) north of South Dakota State Highway 12, immediately west of 459th Avenue, and immediately east of 458th Avenue. This unit is considered to be occupied – Dakota skipper was observed in 2002 and 2012. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as poor to fair quality dry-mesic hill prairie (Skadsen 2003, p. 25). Regal fritillary and other prairie butterflies were observed in 2012 and the habitat was described as variable, having an abundance of flowering forbs and native grasses, with various invasive plants (Hubers 2013, pp. 51 - 54). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within South Dakota Unit 17 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, and past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, low-intensity rotational grazing, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 18:

South Dakota Unit 18 is 88 ha (216 ac) in Marshall/Roberts County is Federal land owned by the U.S. Fish and Wildlife Service and is part of Lake Emma Waterfowl Production Area. Located in T126N, R53W, Section 25 and T126N, R52W, 30, this unit occurs along the Marshall/Roberts County line, immediately north of State Highway 10, 0.4 km (0.3 mi) south of 118th Street, approximately 3.2 km (2 mi) east of 447th Avenue. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Dakota skipper was observed in 2009, but not during surveys in 2011 and 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. Some, but not many other prairie butterflies (including regal fritillary) and flowering forbs (including purple coneflower) were observed at this site in 2012 (Hubers 2013, pp. 41 -42). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

DS South Dakota Unit 19:

South Dakota Unit 19 is 147 ha (363 ac) in Roberts County is primarily privately owned (132 ha (326 ac)) and the remaining 15 ha (37 ac) is owned by the Sisseton–Wahpeton Oyate. Located in T123N, R51W, Sections 9 and 16, this unit occurs approximately 9.7 km (6 mi) south of County Road 5, 5 km (3.1 mi) north of State Highway 15, 4 km (2.5 mi) west of Interstate 29, and west of 458th Avenue. This unit is considered to be occupied - Dakota skipper was observed during 2012 surveys. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native prairie containing a high diversity of native prairie grasses and flowering forbs dominated by leadplant and native grasses. Portions of prairie habitats in this unit are described as fall-hayed prairies with a diversity of native flowering flora (Skadsen 2012, p. 3). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 19 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure, and the implementation of late- season haying, low-intensity rotational grazing, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 20:

South Dakota Unit 20 is 103 ha (255 ac) in Brookings County is privately owned. Located in T111N, R47W, Section 31 and T110N, R47W, Section 6, this unit occurs

approximately 7.1 km (4.4 mi) south of Highway 30 and immediately east of 484th Avenue. This unit is considered to be occupied - Dakota skipper was observed in 2006. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitat in this unit were described as containing areas of high quality plant communities including abundant native flowering forbs (HDR Engineering Inc. 2006, p. 4). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 20 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present herbicide use and grazing management that degrades or eliminates native prairie grasses and flowering forbs, conversion or destruction of native prairie habitat, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late- season haying, low intensity rotational grazing management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 21:

South Dakota Unit 21 is 80 ha (198 ac) in Brookings County is privately owned. Located in T111N, R47W, Sections 6 and 7, this unit occurs immediately south of Highway 30 and immediately east of 484th Avenue. This unit is considered to be occupied - Dakota skipper was observed in 2008. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as good quality prairie (Selby 2009b, p. 1).

Threats to the physical or biological features within DS South Dakota Unit 21 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late- season haying, low intensity rotational grazing management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

DS South Dakota Unit 22:

South Dakota Unit 22 is 54 ha (133 ac) in Brookings County is privately owned. Located in T111N, R47W, Sections 19 and 30, this unit occurs approximately 3.9 km (2.4 mi) south of

Highway 30 and immediately east of 484th Avenue. This unit is considered to be occupied - Dakota skipper was observed in 2008. This unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitat in this unit was described as good quality prairie (Selby 2009b, p. 1). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within DS South Dakota Unit 22 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, past and present grazing management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie habitats subject to future conversion to agriculture or other development, , the control of invasive plant species and restoration of native tallgrass prairie plant community structure; and the implementation of late- season haying, low intensity rotational grazing management, or other management regimes that result in native grasses and flowering forbs available and necessary for Dakota skipper life-history needs.

Poweshiek Skipperling (PS)

Descriptions of proposed critical habitat units, and reasons they meet the definition of critical habitat for Poweshiek skipperling. All units are occupied by the Poweshiek skipperling, unless otherwise noted.

PS Iowa Unit 1:

Iowa Unit 1 is 96 ha (237 ac) in Howard County owned by the State of Iowa and managed by the Iowa Department of Natural Resources. Located in T100N, R13W, Sections 33 and 34, this unit occurs near the northern border of the state of Iowa approximately 13 mi (20.9 km) northeast of Riceville, Iowa and 6.4 km (4 mi) west of Lime Springs, Iowa, immediately south of County Road A-23, immediately west of County Road V-26 (Jade Avenue), and on both sides of Ivy Avenue. This unit includes Hayden Prairie, which was designated as a National Natural Landmark in 1966 and was dedicated as a state preserve in 1968. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Adult Poweshiek skipperling were recorded in 1993, 1994, and 2005, but the species was not detected during the 2007 survey year. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality remnant prairie containing a high diversity of native prairie grasses and flowering forbs; 200 native plant species, including larval food plants, such as prairie dropseed and adult nectar sources have been documented at this site (Selby 2008b, p. xxxii). This unit may also contain small patches of lesser quality native or unrated prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Iowa Unit 2:

Iowa Unit 2 is 14 ha (35 ac) in Cerro Gordo County, Iowa and is owned and managed by The Nature Conservancy. Located in T 96N, R 22W, Sections 16 and 17, this unit occurs approximately 3.2 km (2 mi) west of the City of Clear Lake, Iowa, immediately north of Hwy 18, and approximately 1.6 km (1 mi) east of Balsam Avenue (N. Main Street). This unit includes the Hoffman Prairie, which was purchased by The Nature Conservancy in 1985 and was dedicated as a biological and geological State Preserve in 1986. Poweshiek skipperling were recorded at one site within this unit in 1994, 2007, and 2008. The last positive observation of the species was in 2008 (Selby 2009c, p. 3), but the species was not observed in 2009 or 2010 survey years and an expert in the state believes that the species may be extirpated from the site – so we are considering this unit to be unoccupied. The 2008 record at this site is the most recent record of the species in the state. Previous observations were made in 1993 and 2007 (Selby 2009c, p. 3.). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality remnant wet prairie containing a high

diversity of native prairie grasses and flowering forbs; abundant prairie dropseed and adult nectar sources have been documented at this site (Selby 2008b, pp. ii-iv, 2009c, p. 3). This unit also has small inclusions of fens (Selby 2009c, p. 3) and small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies as well as low wet areas.

PS Iowa Unit 3:

Iowa Unit 3 is 55 ha (136 ac) in Dickinson County, Iowa primarily owned and managed by The Nature Conservancy (44 ha (109 ac)). The remaining 11 ha (26 ac) is private land. Located in T99N, R37W, Section 33, this unit occurs approximately 3.5 km (2.2 mi) southwest of Whapeton, Iowa, west of the Souix River, approximately 1.8 km (1.1 mi) south of 190th Street, 1.6 km (1 mi) north of 220th Street, and 3.2 km (2 mi) west of State Highway 86. This unit includes The Nature Conservancy's Freda Haffner Prairie State Preserve. This unit is considered to be unoccupied; the last positive observation of the species was in 2000, but the species was not observed in 2004, 2005, or 2007 survey years and an expert in the state concurs that the species has been extirpated from the site. Other prairie butterflies were recently observed in this unit (Selby 2008b, p. xv). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality remnant prairie containing a high diversity of native prairie grasses and flowering forbs; abundant adult nectar sources have been documented at this site (Selby 2008b, p. xv). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies as well as low wet areas.

PS Iowa Unit 4:

Iowa Unit 4 is 306 ha (755 ac) in Dickinson County, Iowa primarily owned by the State of Iowa and managed by the Iowa Department of Natural Resources (294 ha (726 ac)). The remaining 12 ha (29 ac) is private land. Located in T 99N, R37W, Sections 7, 8, 16 and 17; this unit occurs approximately 5.0 km (3.1 mi) northwest of Whapeton, Iowa and is bisected by the Souix River, approximately 1.6 km (1 mi) south of State Highway 9, 1.6 km (1 mi) north of 190th Street, and 3.4 km (2.1 mi) west of State Highway 86. This unit includes Cayler Prairie which was designated as a National Natural Landmark in 1966 and was dedicated as an Iowa State Preserve in 1971. An additional 385 acres of former pasture and cropland to the north and east were purchased by the Iowa Department of Natural Resources in 1998. This unit is considered to be unoccupied. Poweshiek skipperling was recorded at multiple locations in this unit and over multiple years (1993, 1994, and 2000), but the species was not observed in the 2004, 2005, or 2007 survey years and an expert in the state concurs that the species is either possibly extirpated or presumed extirpated from 4 the sites within this unit. Other prairie Lepidoptera were recently observed in this unit (Selby 2008b, pp. ix - xi). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult

habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs; over 200 native prairie plant species have been documented at this site including 35 species of grasses dominated by native big bluestem, Indian grass, little bluestem, muhly grass, and blue grama grass (Selby 2008b, pp. ix - xi). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies as well as low wet areas.

PS Iowa Unit 5:

Iowa Unit 5 consists of consists of 30 ha (75 ac) in Osceola County, Iowa is privately owned. Located in T100N, R41W, Sections 9, 16, 17, 20, 29, 31, and 32, and T99N, R42W, Sections 1 and 6, this unit occurs immediately south of the Minnesota and Iowa State boundary, and immediately west of State Highway 60. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The last positive observation of the species was in 2007 at one site in this unit, but an expert in the state believes that the species' status at that site and others within this unit is unknown. Iowa Unit 5 contains multiple nearby sites along an 8 km (5 mi) stretch of fairly continuous patches of native prairie habitat between Highway 60 and the railroad grade. Poweshiek skipperling has been recently recorded at least twice at four of the five sites within the unit – the species was recorded at sites within this unit in 1993, 1994, 2003, 2004, and 2007. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was recently rated at two of the sites within Iowa Unit 5; one was rated as high quality and the other as “fairly high quality” (Selby 2008b, pp. 6, xxxvi, xxxvii). Additionally, Iowa Unit 5 also contains the second most-recent record (2007) of the species in the entire state. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, pp. xxxvi-xxxvii). This unit also has patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Iowa Unit 6:

Iowa Unit 6 consists of consists of 32 ha (79 ac) in Dickinson County, Iowa is owned by the State of Iowa. Located in T100N, R35W, Sections 14 and 23, this unit occurs 2.9 km (1.8 mi) south of the Jackson County and Dickinson County boundary line, and approximately 0.8 km (0.5 mi) east of 320th Avenue. This unit is considered unoccupied - the last positive observation of the species was in 1993 and the species was not detected in 2007, but an expert in the state believes that the species' status at that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was recently described as high quality (Selby 2008b, p. xxiii). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. xxiii). This unit may also contain small

patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie

PS Iowa Unit 7:

Iowa Unit 7 consists of consists of 59 ha (146 ac) in Dickinson County, Iowa is owned by the State of Iowa and includes the Garlock Slough Wildlife Management Area. Located in T99N, R37W, Section 35, this unit occurs immediately north of Iowa State Highway 86 and south of Okoboji Boulevard. This unit is considered unoccupied - the last positive observation of the species was in 1994 and the species was not detected in 2007, but an expert in the state believes that the species' status at that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was not rated recently but described as containing many native prairie grasses and flowering forbs (Selby 2008b, p. xxv). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. xxv). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Iowa Unit 8:

Iowa Unit 8 consists of consists of 83 ha (205 ac) in Osceola County, Iowa is privately owned. Located in T99N, R40W, Sections 6, 7, and 8, this unit occurs immediately south of the intersection of Sorel Avenue and 160th Street and 2.9 km (1.8 mi), 0.6 km (0.4 mi) north of the intersection of Sorel Avenue and 170th Street. This unit is considered unoccupied - the last positive observation of the species was in 1994 and the species was not detected in 2007, but an expert in the state believes that the species' status at that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was recently described as "fairly high quality" (Selby 2008b, p. xxxviii). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. xxxviii). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Iowa Unit 9:

Iowa Unit 9 consists of consists of 126 ha (312 ac) in Dickinson County, Iowa is primarily privately owned (78 ha (192 ac)). The remaining 49 ha (121 ac) is owned by the State of Iowa. Located in T100N, R37W, Sections 7 and 12, this unit occurs immediately south of the Minnesota and Iowa State line and approximately 1.6 km (1 mi) east of Iowa State Highway 86. This unit is considered unoccupied - the last positive observation of the species was in 1993 and the species was not detected in 2007, but an expert in the state believes that the species' status at

that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was recently described as high quality (Selby 2008b, p. viii). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. viii). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Iowa Unit 10:

Iowa Unit 10 consists of consists of 56 ha (139 ac) in Kossuth County, Iowa is privately owned. Located in T95N, R29W, Section 31, this unit occurs immediately east of the 70th Avenue and approximately 5.6 km (3.5 mi) north of 130th Street. This unit is considered unoccupied - the last positive observation of the species was in 1994 and the species was not detected in 2007, but an expert in the state believes that the species' status at that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The native prairie habitat was recently described as high quality (Selby 2008b, p. xxxiii). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. xxxiii). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Iowa Unit 11:

Iowa Unit 11 consists of consists of 110 ha (272 ac) in Emmett County, Iowa is owned by the State of Iowa and includes the Anderson Prairie Wildlife Management Area. Located in T100N, R34W, Sections 28 and 33, this unit occurs immediately east of the 360th Avenue and approximately 0.8 km (0.5 km) north of County Road A20. This unit is considered unoccupied - the last positive observation of the species was in 1994 and the species was not detected in 2007, but an expert in the state believes that the species' status at that site within this unit is possibly extirpated. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The quality of the native prairie habitat was not recently rated, but numerous flowering forbs and abundant prairie dropseed were recently recorded at the site (Selby 2008b, p. xxviii). The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs (Selby 2008b, p. xxviii). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairie.

PS Michigan Unit 1:

Michigan Unit 1 is 10 ha (25 ac) in Oakland County owned by the State of Michigan Department of Natural Resources and is part of the Holly State Recreation Area managed by the Michigan Department of Natural Resources Parks and Recreation Division. Located in T5N, R8E, and Section 12, this subunit occurs east of Brandt Road, approximately 0.7 km (0.5 mi) south of Groveland Road, 1.1 km (0.7 mi) west of State Highway 15, and immediately north of Perryville Road, approximately 1.3 km (0.8 mi) west of Ortonville, Michigan. This unit is considered to be occupied and has had recent adult observations over multiple years (2005-2012). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs and is dominated by little bluestem and mat muhly. This unit contains prairie fen habitat that has been recently (2011) rated by the Michigan Natural Features Inventory as good to fair quality and having excellent population viability (Service 2013, unpubl. geodatabase).

Threats to the physical or biological features within PS Michigan Unit 1 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; groundwater depletion, alteration, and contamination; and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion to development, the control of invasive plant species, and restoration of native prairie fen plant community structure that results in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 2:

Michigan Unit 2 is 27 ha (66 ac) in Oakland County owned primarily by the State of Michigan Department of Natural Resources (21 ha (51 ac)) and is part of the Halsted Lake Recreation Area managed by the Michigan Department of Natural Resources Parks and Recreation Division. The remaining 6 ha (15 ac) is private land. Located in T5N, R7E, and Section 25, and T5N, R8E, and Sections 30 and 31, this subunit occurs southwest of Interstate 75 on both sides of Wordon Road, approximately 0.6 km (0.4 mi) north of East Holly Road. This unit is considered to be occupied and has had recent adult observations over multiple years - in 2005, 2007, 2008, and 2012. This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs. The fen is dominated by mat muhly, tussock sedge (*Carex stricta*), bluejoint reedgrass (*Calamagrostis canadensis*) shrubby cinquefoil, black-eyed Susan, and other native plant species. This unit contains a good quality prairie fen habitat that has been recently rated by the Michigan Natural Features Inventory as fair quality habitat having fair to good population viability (Service 2013, unpubl. geodatabase). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 2 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, groundwater depletion, alteration, and contamination, and small size and

isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, the control of invasive plant species and restoration of native prairie fen plant community structure that results in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 3:

Michigan Unit 3 is 184 ha (456 ac) in Oakland County is primarily privately owned (123 ha (303 ac)). The town of Springfield Park and Recreation Office owns approximately 47 ha (117 ac), which is part of the Shiawassee Basin Nature Preserve, and the remaining 14 ha (36 ac) is owned by the Michigan Metro Girl Scouts. Located in T4N, R8E, Sections 7, 8, 17, and 18 and T4N, R7E, Sections 1 and 12, this subunit occurs 1.9 km (1.2 mi) southwest of Interstate 75 and immediately north of the railroad tracks, primarily between Rattalee Lake Road and Davisburg/Broadway Road, north of Davisburg, Michigan. This unit is considered to be occupied and contains three sites with recent adult observations over multiple years (2005 – 2012). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a high quality prairie fen with a high diversity of native prairie grasses and flowering forbs. The prairie fen and surrounding wetlands contain over 100 documented plant species, dominated by mat muhly and other fen species including shrubby cinquefoil, little bluestem, tussock sedge, Kalm's lobelia (*Lobelia kalmia*), and others. The majority of this unit consists of a prairie fen habitat that has been recently (2011) rated by the Michigan Natural Features Inventory as excellent habitat and excellent viability and is considered to be the stronghold for Poweshiek skipperling in the state of Michigan (Service 2013, unpubl. geodatabase). This unit also contains at least one other prairie fen with a habitat rating of fair to good, but where the species was not found during the most recent survey year. This unit also has small patches of lesser quality native (or unrated) prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 3 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, past and present fire management that degrades or eliminates native prairie grasses and flowering forbs, conversion or destruction of native prairie habitat, groundwater depletion, alteration, and contamination, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control of invasive plant species and restoration of native prairie fen plant community structure that results in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 4:

Michigan Unit 4 is 149 ha (369 ac) in Oakland County primarily privately owned (99 ha (245 ac)). The remaining 50 ha (124 ac) is owned by the Michigan Nature Association. Located in T 4N, R 7E, and Sections 22, 27, 28, 33, and 34 and T3N, R7E, Section 3, this unit occurs approximately 0.4 mi (0.6 km) west of Milford Road, 1.6 km (1 mi) north of White Lake Road, immediately south of Demode Road, north of Knobby View Drive, and west of the railroad

tracks. This unit is considered to be occupied and has had recent adult observations (2007-2012). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs. The prairie fen is surrounded by wetlands, dry mesic prairie, oak forest and old fields. This unit contains prairie fen habitat has been rated by the Michigan Natural Features Inventory (2011) as good quality habitat having good population viability. This unit may also contain small patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 4 include but are not but are not limited to: ecological succession and encroachment of invasive species and woody vegetation, lack of management; conversion or destruction of native prairie habitat, groundwater depletion, alteration, and contamination, and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control of invasive plant species and restoration of native prairie fen plant community structure, and the implementation of rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 5:

Michigan Unit 5 is 10 ha (23 ac) in Livingston County and is privately. Located in T3N, R6E, Section 23, this unit occurs along the eastern edge of Bullard Lake located 0.6 km (0.4 mi) north of State Highway 59 and immediately west of Fenton Road. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperlings were observed in 2007, but the species was not found in the two most recent survey years (2008 or 2009). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs; the fen is dominated by sedges and tamarack (*Larix laricina*). This unit contains prairie fen habitat that has been recently (2011) rated by the Michigan Natural Features Inventory as a good –fair quality fen habitat (Service 2013, unpubl. geodatabase). This unit may also contain small patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Michigan Unit 6:

Michigan Unit 6 is 109 ha (268 ac) in Washtenaw County primarily owned by Washtenaw County Parks Commission (46 ha (114 ac)) and Michigan Department of Natural Resources (36 ha (89 ac)). Approximately 24 ha (59 ac) is privately owned and the remaining 3 ha (6 ac) is owned by Washtenaw County. Located in T1S, R3E, Section 15, 16, and 22, this unit occurs approximately 1 km (0.6 mi) east of State Highway 52, immediately south of South Lake and immediately north of Territorial Road in the Pickney State Recreation Area. This unit is considered to be occupied and has had recent adult observations over multiple years (2007-

2012). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs; the fen is dominated by shrubby cinquefoil, sedges (*Carex sp.*), and Virginia mountain mint (*Pycnanthemum virginianum*) and contains composites, black-eyed Susan, and many other native plant species. This unit contains prairie fen habitats that have been recently (2011) rated by the Michigan Natural Features Inventory (as good (B) quality habitat and as having fair population viability because of their small size (Service2013, unpubl. geodatabase). This unit may also contain smaller patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 6 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat; groundwater depletion, alteration, and contamination, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control of invasive plant species and restoration of native prairie fen plant community structure that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 7:

Michigan Unit 7 is 50 ha (123 ac) in Lenawee County is owned primarily by the Michigan Nature Association (28 ha (68 ac)) and the remaining (22 ha (55 ac)) is private land. Located in T 5S, R 1E, Sections 4 and 9, this unit is located approximately 0.3mi (0.5 km) southeast of Cement City, Michigan; approximately 0.6 km (0.4 mi) north of State Highway 12, 2.7 km (1.7 mi) east of State Highway 127, and 0.8 km (0.5 mi) south of Jackson Street. This unit is considered to be occupied and has had recent adult observations over multiple years (2007-2011). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a good quality prairie fen with a high diversity of native prairie grasses and flowering forbs. Over 76 native plant species have been documented on the fen including mat muhly, black eyed Susan, shrubby cinquefoil, and others. This unit contains prairie fen habitat that has been recently (2011) rated by the Michigan Natural Features Inventory as good quality habitat and the population is rated as fair to good (BC) viability (Service 2013, unpubl. geodatabase). This unit may also contain small patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 7 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation, conversion or destruction of native prairie habitat, groundwater depletion, alteration, and contamination, past or present fire management that degrades or eliminates native prairie grasses and flowering forbs, and small size and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control

of invasive plant species and restoration of native prairie fen plant community structure, and the implementation of rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Michigan Unit 8:

Michigan Unit 8 is 148 ha (365 ac) in Jackson County and Hillsdale County is primarily privately owned (112 ha (276 ac)) and the remaining 35 ha (87 ac) is owned by The Nature Conservancy. Located in T5S, R1W, and Sections 5 and 6 and T4S, R 1W, Sections 29, 31, and 32, this unit is located approximately 1.1 km (0.7 mi) north of Highway 12, 4.2 km (2.6 mi) west of S. Jackson Road, and 0.2 km (0.1 mi) south of West Liberty Road. This unit is considered to be occupied and has had multiple years of adult observations (2007- 2012). This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a high quality prairie fen with a high diversity of native prairie grasses and flowering forbs. At least 89 plant species have been documented on the fen including black-eyed Susan and shrubby cinquefoil. This unit contains prairie fen habitat which has been recently (2011) rated by the Michigan Natural Features Inventory as excellent habitat having excellent population viability (Service 2013, unpubl. geodatabase). The prairie fen habitats in this unit likely comprise the largest undisturbed fen complex in Michigan. This unit may also contain small patches of lesser or unrated quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 8 include but are not but are not limited to: ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat; groundwater depletion, alteration, and contamination; past or present fire management that degrades or eliminates native prairie grasses and flowering forbs; and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control of invasive plant species and restoration of native prairie fen plant community structure; and the implementation of rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs. The portion of this unit managed by The Nature Conservancy is managed with cautious burn programs to maintain the habitat while minimizing negative impact on the Poweshiek skipperling and other imperiled butterflies.

PS Michigan Unit 9:

Michigan Unit 9 is 148 ha (365 ac) in Jackson County is privately owned (14 ha (34 ac)). Located in T4S, R1W, and Section 27, this unit is located approximately 0.7 km (0.4 mi) west of S. Jackson Road and 0.7 km (0.4 mi) south of West Liberty Road. This unit is considered to be occupied – the last observation of the species at this site was in 1996, but there have been no subsequent surveys. This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains a high quality prairie fen with a high diversity of native prairie grasses and flowering forbs. This unit contains prairie fen habitat is not rated by the Michigan Natural Features Inventory, however other prairie fen dependent butterflies have been documented at this location

(Service 2013, unpubl. geodatabase, Hosler 2013, pers. comm.). This unit may contain small patches of lesser or unrated quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical or biological features within PS Michigan Unit 9 include but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat; groundwater depletion, alteration, and contamination; past or present grazing management that degrades or eliminates native prairie grasses and flowering forbs; and isolation from other units. Special management considerations or protection may be needed to address these threats include, but are not limited to: Prioritization and protection of native prairie fen habitats and surrounding lands that influence fen hydrology that are subject to future conversion or development, and the control of invasive plant species and restoration of native prairie fen plant community structure; and the implementation of rotational fire management, or other management regimes that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

PS Minnesota Unit 1: (corresponds to DS Minnesota Unit 1)

Minnesota Unit 1 is 1,168 ha (2,887 ac) in Pope County owned primarily by the State of Minnesota and managed by the State of Minnesota Department of Natural Resources Division of Parks and Recreation (827 ha (2,043 ac)). Approximately 342 ha (844 ac) are privately owned and 5 ha (14 ac) are owned by Pope County. Located in T124N, R39W, Sections 13, 14, 23, 24, 25, and 26; T124N, R38W, Sections 19, 20, 28, 29, 30, 32, and 33; and T123N, R38W, Section 4, this unit occurs approximately 2.3 km (1.4 mi) east of the intersection of State Highway 29 and County Road 14 and 4.0 km (2.5 mi) west of County Road 19. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling has been recorded at multiple locations within this unit between 1993 and 2003. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes high quality native remnant (untilled) tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs, such as little bluestem grass, Indian grass, purple coneflowers, and prairie clover. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. This unit includes portions of Glacial Lakes State Park, which was established as a state park in 1963 to preserve the native prairie habitat. The native prairie habitat is rated by the Minnesota Natural Heritage Program County Biological Survey as good quality prairie. Selby (2013, pp. xvi-xvii) did not rate the habitat in 2012 but documented many flowering forbs as well as the presence of regal fritillary and other prairie butterflies.

PS Minnesota Unit 2: (corresponds to DS Minnesota Unit 2)

Minnesota Unit 2 is 366 ha (905 ac) in Murray County is privately owned. Located in T105N, R43W, Sections 1, 2, 3, 10, 11, and 12, this unit occurs approximately 0.6 km (0.4 mi) west of Chandler, Minnesota along Chanarambie Creek, and approximately 0.3 km (0.2 mi) east of State Highway 91. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling has been recorded

at several locations within this unit and in multiple years (e.g., 1997, 2003, and 2005) – the most recent record of the species in this unit is from 2005. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. Portions of the prairie habitat were ranked by Selby (2009a, p. xlii) as fair quality and Dana (2012, pers. comm.) rated a portion of this prairie as fair to good. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. Dry hill prairie, wet to wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair to excellent quality prairie. Other portions of the prairie have been ranked as poor quality due to invasive species and lack of management (Selby 2009a, p. xlii) – some of these areas may be suitable for dispersal between higher quality habitats.

PS Minnesota Unit 3: (corresponds to DS Minnesota Unit 3)

Minnesota Unit 3 is 51 ha (126 ac) in Murray County is privately owned. Located in T105N, R43W, Section 5 and T106N, R43W, Sections 32, and 33, this unit occurs along the North Branch of Chanarambie Creek approximately 0.8 km (0.5 mi) south of County Road 5 and 2.4 km (1.5 mi) east of the Pipestone/Murray County line. Poweshiek skipperling was observed within this unit in 1997, 2005, and 2007. We are uncertain of the occupancy of this unit, however, because although the species was last observed in 2007, it was not detected during surveys in 2008 or 2012. Thus, we are analyzing it as if it were unoccupied for purposes of critical habitat. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes high quality native tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. The dry prairie habitats in this unit are rated by the Minnesota Natural Heritage Program as good to excellent quality prairie. Carney Prairie was described by Selby (2008a, p. xliii) as an “excellent area for prairie butterflies”, and documented other prairie butterfly species at the site in 2008 including regal fritillary and Dakota skipper. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 4: (corresponds to DS Minnesota Unit 4)

Minnesota Unit 4 is 759 ha (1,875 ac) in Clay County owned primarily by The Nature Conservancy (603 ha (1,490 ac)) and the Minnesota Department of Natural Resources Division of Parks and Recreation (156 ha (385 ac)) and includes the Bluestem Prairie State Natural Area and portions of Buffalo River State Park. Located in T139N, R46W, Sections 10, 11, 14, 15, 16, 22, 23, 26, and 27, this unit occurs approximately 1.6 km (1 mi) east of State Highway 9 and (1.3 km (0.8 mi) south of State Highway 10. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. It has had multiple years of

adult observations at several locations within this unit. The most recent records of Poweshiek skipperlings are from 1996 and although there have been no more recent surveys for the species; the species expert in the state assigned a status of unknown to the sites within the unit. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also have small patches of lesser quality or unrated native prairie or dispersal grassland habitat that connects patches of higher quality native prairies. The mesic prairie and dry prairie habitats in this unit are unrated by the Minnesota Natural Heritage Program but are rated as having good to excellent population viability and portions of this unit were mapped as “best” prairie habitat by the Minnesota County Biological Survey (Service 2013, unpubl. geodatabase). A habitat assessment in 2012 at the Bluestem Prairie indicates that this site is a high quality prairie that contains the native prairie flora conducive to the species (Selby 2012, p. 9). The site at Buffalo River State park, which adjoins Bluestem Prairie, has not been surveyed since 1996 but recent habitat assessments show that it still contains prairie habitats with the native prairie flora conducive to the species (MN DNR 2013, unpubl.).

PS Minnesota Unit 5: (corresponds to DS Minnesota Unit 5)

Minnesota Unit 5 is 595 ha (1,470 ac) in Clay County primarily privately owned (302 ha (746 ac)), Clay County (182 ha (450 ac)), The Nature Conservancy (64 ha (159 ac)), and the State of Minnesota (47 ha (116 ac)). This unit includes the Felton Prairie and Blazing Star State Natural Areas managed by the Minnesota Department of Natural Resources Division of Ecological Resources and The Nature Conservancy. Located in T142N, R45W, Section 31, T141N, R45W, Sections 5, 6, 7, and 8; and T141N, R46W, Sections 12 and 13, this unit occurs approximately 0.8 km (0.5 mi) south of County Road 34 (160th Avenue North), .6 km (1 mi) west of County Road 27, and 3.7 km (2.3 mi) east of County Road 9. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The species was last observed in 1995 at two locations within this unit, but the species was not observed during the two most recent surveys at either site. This unit also contains at least 2 historical locations of the species where other prairie dependent butterflies (e.g., Dakota skipper and regal fritillary) have been observed more recently (Selby 2013, p. iii). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and contains high quality native remnant tallgrass prairies containing a high diversity of native prairie grasses and flowering forbs. The mesic prairie, wet prairie and dry prairie habitats in this unit are described as fair to excellent quality (Selby 2009a, Appendix 4 and 5, pp. iii -v; MNDNR Rare Features Database, 2012 unpubl.). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 6: (corresponds to DS Minnesota Unit 6)

Minnesota Unit 6 is 111 ha (275 ac) in Norman County owned by The Nature Conservancy. This unit includes the Twin Valley Prairie Star State Natural Area managed by The Nature Conservancy. Located in T143N, R45W, Sections 14, 22, and 23, this unit occurs immediately north of County Road 39 and 6.9 km (4.3 mi) west of County Road 32. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was last recorded in 1994, and although there have been no more recent surveys for the species; the species expert in the state assigned a status of unknown to the sites within the unit. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native tallgrass remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by native grasses. This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that connects patches of higher quality native prairies. The wet prairie and wet-mesic prairie habitats in this unit were rated by the Minnesota Natural Heritage Program County Biological Survey in 2009 as good to excellent quality prairie and the dry prairie habitats in this unit are ranked as fair to fair-good with moderate plant diversity and invasion of smooth brome (Service 2013, unpubl. geodatabase).

PS Minnesota Unit 7: (corresponds to DS Minnesota Unit 7 Subunit A)

Minnesota Unit 7 is 531 ha (1,313 ac) occurs approximately 1.6 km (1 mi) south of State Highway 14 and adjacent and on both sides of State Highway 75. Located in T109N, R45W, Sections 17, 18, 19, 20, 30, and 31 and T108N, R46W, Section 1, this unit includes the Hole in the Mountain Wildlife Management Area owned and managed by the Minnesota State Department of Natural Resources Division of Fish and Wildlife (247 ha (610 ac)). The Nature Conservancy owns approximately 229 ha (565 ac), Lincoln County owns 2 ha (6 ac), and the remaining 53 ha (132 ac) is private land. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. There are multiple element occurrences of Poweshiek skipperling within this unit– the most recent observation of the species was in 2005, but the species was not observed during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the species. The unit consists of larval and adult habitat and includes high quality native remnant tallgrass prairies containing a high diversity of native prairie grasses and flowering forbs. The dry hill prairie and wet to wet-mesic prairie habitats in this unit are rated by the Minnesota Natural Heritage Program County Biological Survey as fair to good-excellent quality prairies (Service 2013, unpubl. geodatabase). The unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 8: (corresponds to DS Minnesota Unit 8)

Minnesota Unit 8 is 143 ha (352 ac) in Pipestone County owned primarily by the State of Minnesota (130 ha (321 ac)) and is part of the Prairie Coteau Scientific and Natural Area

managed by the Minnesota Department of Natural Resources Division of Ecological Resources. Approximately 13 ha (31 ac) is privately owned. Located in T108N, R44W, Sections 28, 29, 32, and 33, this unit occurs on both sides of State Highway 23 approximately 3.2 km (2 mi) southwest of the intersection of State Highway 23 and County Road 18. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling has been observed over multiple years in this unit, most recently in 2007, but was not observed during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native or unrated prairie or dispersal grassland habitat that connects patches of higher quality native prairies. The dry hill prairie and wet prairie habitats in this unit are rated by the Minnesota Natural Heritage Program in 2006 as to excellent quality prairie (Service 2013, unpubl. geodatabase). Selby (2013, pp. x-xi) did not rate the habitat in 2012, but noted the presence native flowering forbs and other prairie butterflies including regal fritillary.

PS Minnesota Unit 9: (corresponds to DS Minnesota Unit 9)

Minnesota Unit 9 is 168 ha (415 ac) in Pipestone County owned by the State of Minnesota and is part of the Terrace Wetland Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife. Located in T107N, R44W, Section 31 and T106N, R44W, Section 6, and T106N, R44W, Section 1, this unit occurs immediately south of CR-69 (131st St), approximately 0.8 km (0.5 mi) east of the intersection of CR 69 and Cr-16. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The species was recorded at one site in the unit during 2006 surveys, but was not detected during the most recent (2007) survey year. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry hill prairie, wet prairie, and prairie meadow habitats in this unit were rated by the Minnesota Natural Heritage Program County Biological Survey in 2006 as good to excellent quality prairies with high native species diversity (Service 2013, unpubl. geodatabase) and was described as low to medium quality with areas of high quality in 2008 (Selby 2009a, Appendix 5, p. xlviii).

PS Minnesota Unit 10: (corresponds to DS Minnesota Unit 10)

Minnesota Unit 10 is 392 ha (967 ac) in Swift and Chippewa counties primarily owned by the State of Minnesota (226 ha (557 ac)) and is part of the La Qui Parle Wildlife Management Area managed by the Minnesota Department of Natural Resources Division of Fish and Wildlife.

The unit is partially owned by The Nature Conservancy (158 ha (391 ac)) and the remaining 8 ha (19 ac) is privately owned. Located in T119N, R43W, Sections 1, 2, 3, 11, and 12 and T120N, R43W, Sections 34, 35, this unit occurs approximately 2.6 km (1.6 mi) west of Highway 59/7 along the Swift and Chippewa County line, approximately 3.2 km (2 mi) south of Appleton, Minnesota. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. There are multiple element occurrences of Poweshiek skipperling in this unit in multiple locations and years, however the last of the species was in 1997, and it was not detected in the most recent surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant tallgrass prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also contains patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The dry hill prairie, wet prairie, and prairie meadow habitats in this unit were rated by the Minnesota Natural Heritage Program County Biological Survey as good to excellent quality prairies with high native species diversity (Service 2013, unpubl. geodatabase).

PS Minnesota Unit 11:

Minnesota Unit 11 consists of 177 ha (437 ac) in Wilkin County primarily owned by The Nature Conservancy (168 ha (415 ac)). The remaining 9 ha (22 ac) is private land. This unit includes the Western Prairie North Scientific Natural Area. Located in T136 N, R 45W, and Sections 16,17, and 21, this unit occurs on both sides of County Road 188 immediately south of Township Road 275, approximately 1.3 km (0.8 mi) east of Minnesota State Highway 52. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1994, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The mesic and wet-mesic prairie habitats in this unit are rated by Schlicht (1994) as good quality prairie. The habitat in this unit was not rated in 2012, but Selby (2013, p. xxii) noted the presence of flowering native forbs such as black-eyed Susan, purple prairie clover, and others as well as the presence of regal fritillary and 2 unidentified prairie skippers. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 12:

Minnesota Unit 12 consists of 111 ha (274 ac) in Lyon County owned by State of Minnesota Department of Natural Resources Division of Fish and Wildlife and is part of the Prairie Marshes Wildlife Management Area. Located in T110 N, R 43W, and Sections 1 and 2, and T111N, R43W, Sections 35 and 36, this unit occurs approximately 0.8 km (0.5 mi) north of

the intersection of 160th Avenue and 210th Street and 0.6 km (0.4 mi) west of the intersection of 170th Avenue and 220th Street and 1.7 km (1.1 mi) south of County Road 4. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1994, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The mesic prairie habitat in the northern part of this unit were described as good and the southern portions were described as drier and of mixed quality (Selby 2009a, Appendix 4, p. xxxvi). Selby (2009a, Appendix 4, p. xxxvi) noted the presence of regal fritillary in 2007. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 13:

Minnesota Unit 13 consists of 212 ha (525 ac) in La Qui County primarily privately owned (205 ha (507 ac)). The remaining 7 ha (17 ac) is owned by the Minnesota Department of Natural Resources Division of Fish and Wildlife. This unit includes the Pyramid Wildlife Management Area. Located in T120 N, R 45W, and Sections 11, 13, and 14, this unit occurs approximately 1.6 km (1 mi) east of State Highway 75 and 4.8 km (3 mi) north of County Road 34. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1995 and 1996, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The wet-mesic prairie habitats in this unit were described as good to excellent quality Poweshiek skipperling habitat (Dana 2013 pers. comm.). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 14:

Minnesota Unit 14 consists of 36 ha (90 ac) in Douglas County that is privately owned. Located in T127 N, R 40W, and Sections 7 and 18, this unit occurs approximately 0.2 km (0.1 mi) east of 100th Avenue and approximately 1 km (0.6 mi) north of Minnesota State Highway 55. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1993 and 1994, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the

Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The mesic prairie habitats in this unit were described as good quality (Dana 2013 pers. comm.). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 15:

Minnesota Unit 15 consists of 1,369ha (554 ac) in Mahnomen County that is owned by the State of Minnesota and includes portions of Wambach Wildlife Management Area (WMA) and Santee State Natural Area (SNA). Located in T145 N, R41W, and Sections 6 and 7, T145 N, R 42W, Sections 11 and 12, T146N, R 41W, Section 31, and T146N, R42W, Sections 1 and 36, this unit occurs approximately 1.3 km (0.8 mi) east of State Highway 59 and 3.2 km (2 mi) south of County Road 1. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1993, but was not detected during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in Wambach WMA were described as good in 2012 (Runquist 2012, pp. 15-16) and the Santee SNA was described as good quality by the Minnesota County Biological Survey (Service 2013, unpubl. geodatabase). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 16:

Minnesota Unit 16 consists of 97 ha (239 ac) in Cottonwood County that is owned by the State of Minnesota. Located in T105 N, R37W, Section 6 and T105 N, R 38W, Sections 1 and 12, this unit occurs immediately east of 360th Avenue and approximately 0.8 km (0.5 mi) south of 380th Street and 2.4 km (1.5 mi) south of County Road 13. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1993, but was not detected during surveys in 2008. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit was described as good quality (Selby 2009a, Appendix 4, p. vi) and described by Dana (2013, pers. comm.) as predominantly wet prairie in good to excellent condition. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 17:

Minnesota Unit 17 consists of 174 ha (431 ac) in Pope County that is owned by The Nature Conservancy. Located in T123 N, R36W, Sections 19, 29, and 30, this unit occurs immediately east of Highway 106 (160th Avenue) and approximately 2.4 km (1.5 mi) north of Pope/Swift County line. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1994, the site was not surveyed during the flight season in 2012, and the species expert in the state has determined the status of the site within this unit to be unknown. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit was described as good quality rolling dry-mesic and mesic prairie with some wet prairie and wet meadow (Runquist 2012, p. 24; Dana 2013, pers. comm.). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS Minnesota Unit 18:

Minnesota Unit 18 consists of 189 ha (466 ac) in Clay County that is owned by The Nature Conservancy and includes Audubon Prairie Preserve. Located in T139 N, R45W, Sections 5, 31, and 32, this unit occurs approximately 6.9 km (4.3 mi) east of State Highway 9 and approximately 4 km (2.5 mi) north of 90th Avenue South. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Poweshiek skipperling was last observed in 1994, the species was not detected in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are unrated, but Selby (2013, p. 1) noted the presence of pale purple coneflower and other flowering native forbs as well as the presence of regal fritillary and other prairie butterflies. This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS North Dakota Unit 1: (Corresponds to DS North Dakota Unit 1)

North Dakota Unit 1 is 48 ha (119 ac) in Richland County owned primarily by the U.S. Fish and Wildlife Service (111 ha (45 ac)) and includes a portion of the Hartleben Waterfowl Production Area. Approximately 2 ha (6 ac) is owned by the State of North Dakota and 1 ha (2 ac) is private land. Located in T130N, R50W, Section 16 and 17, this unit occurs approximately 0.6 km (0.4 mi) north of State Hwy 11, 4 km (2.5 mi) east of County Road 3, and approximately 4.3 km (2.7 mi) west of Hankinson, North Dakota. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The

Poweshiek skipperling was recorded at three sites within this unit, most recently in 1997. Only one of those sites has been resurveyed more recently – Poweshiek skipperling was not detected at the site surveyed in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs and is dominated by leadplant and native grasses. The prairie habitats in this unit were rated as excellent quality prairie (Royer 1997, p. 18). An abundance of flowering forbs and other prairie dependent butterflies were documented in 2012 (Hubers 2013, Appendix A). This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS North Dakota Unit 2:

North Dakota Unit 2 is 19 ha (47 ac) in Richland County owned by the U.S. Fish and Wildlife Service and includes the Biggs Waterfowl Production Area. Located in T129N, R50W, Sections 13 and 14, this unit occurs on approximately 1.6 km (1 mi) east of 166th Street, 4.0 km (2.5 mi) west of Interstate Highway 29, and 0.8 km (0.5 mi) south of 98th Street. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was last observed in 1997, but was not detected during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by leadplant and native grasses. The native prairie habitats in this unit are described as good quality prairie (Askertooth 2013, pers. comm.). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS North Dakota Unit 3:

North Dakota Unit 3 is 47 ha (117 ac) in Sargent County is Federal land and includes Krause Wildlife Production Area. Located in T129N, R53W, Sections 4 and 5, this unit occurs immediately south of 96th Street and approximately 0.8 km (0.5 mi) west of 147th Street. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat and includes a high quality native remnant prairie containing a diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality prairie (Askertooth 2013, pers. comm.). This unit may also contain small patches of lesser quality native or unrated prairie or dispersal

grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 1: (Corresponds to DS South Dakota Unit 1)

South Dakota Unit 1 is 183 ha (451 ac) in Marshall County owned by the U.S. Fish and Wildlife Service. Located in T125N, R56W, Sections 27 and 34, this unit occurs approximately 1 mi (0.6 km) south of County Road 16, immediately west of County Road 5 and approximately 0.4 km (0.2 mi) north of the Marshall/Day County line. This unit is considered to be unoccupied by Poweshiek skipperling – the last observation of the species was in 2008, but the species was not detected in 2012 and the species expert in the state thinks the species may be extirpated from the site. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as containing an abundance of flowering forbs and native grasses and containing other prairie dependent butterflies (Hubers 2013, p. 4, 63-64; Hubers 2013, pers. comm.). This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 2: (Corresponds to DS South Dakota Unit 2)

South Dakota Unit 2 is 69 ha (169 ac) in Brookings County owned by the State of South Dakota (South Dakota State University). Located in T112N, R48W, Sections 12 and 13, this unit occurs approximately 2.9 km (1.8 mi) south of the Deuel-Brookings County line, 8 km (5 mi) east of 478th Avenue, and 1.6 km (1 mi) west of 485th Avenue. We are uncertain of the occupancy within this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. Adult Poweshiek skipperlings were recorded during 2006 surveys in this unit but the species expert in the state considers the status of the species to be unknown. Surveys conducted in 2012 were at the incorrect location (Service 2013, unpubl. geodatabase). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as good to excellent quality dry-mesic hill prairie (Skadsen 2003, p. 11). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 3: (Subunit A corresponds to DS South Dakota Unit 3)

South Dakota Unit 3 is comprised of two subunits totaling 444 ha (1,098 ac) in Deuel County owned primarily by the South Dakota Game, Fish and Parks and includes the Crystal Springs Game Production Area. Located in T116N, R49W, Section 36, this unit occurs approximately 1.9 mi (3.1 km) southeast of Altamont, South Dakota, 1.6 km (1 mi) east of State

Highway 15, and 4.8 km (3 mi) south of County Road 309. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The species was last observed in sub-unit A in 2003 and in sub-unit B in 2005, but was not detected in either sub-unit during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily fair to good quality native prairie containing a diversity of native prairie grasses and flowering forbs. This unit also has lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are rated as fair to good quality dry-mesic hill prairie (Skadsen 2003, p. 18).

Subunit A: This 209 ha (516 ac) subunit owned by South Dakota Game, Fish and Parks and includes the Crystal Springs Game Production Area. Located in T116N, R49W, Section 36, this subunit occurs approximately 3.1 km (1.9 mi) southeast of Altamont, South Dakota, 1.6 km (1 mi) east of State Highway 15, and 4.8 km (3 mi) south of County Road 309. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this subunit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily fair to good quality native prairie containing a diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are rated as fair to good quality dry-mesic hill prairie (Skadsen 2003, p. 18). This subunit also has patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

Subunit B: This 236 ha (582 ac) subunit is primarily privately owned (172 ha (425 ac)) and the remaining 63 ha (157 ac) is owned by The Nature Conservancy. Located in T115N, R49W, Section 1, T115N, R48W, Section 6, T116N, R48W, Section 31, and T116N, R49W, Section 36, this subunit occurs approximately immediately west of County Road 8, and approximately 4.8 km (3 mi) south of County Road 309. This subunit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this subunit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The subunit consists of larval and adult habitat; primarily fair to good quality native prairie containing a diversity of native prairie grasses and flowering forbs. This subunit also may contain patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in parts of this unit on the TNC lands are described as tallgrass prairie with abundant native grass and flowering forbs. Regal fritillaries were documented in 2012 (Skadsen 2012, p. 4). The remaining land is within the estimated dispersal distance (1km (0.6 mi)) of the species and is described as high quality wet- prairie with prairie fens that contains native grasses and flowering forbs (Service 2013, unpubl. geodatabase).

PS South Dakota Unit 4: (Corresponds to DS South Dakota Unit 4)

South Dakota Unit 4 is 118 ha (292 ac) in Grant County owned by the U.S. Fish and Wildlife Service. Located in T120N, R51W, Sections 15 and 22, this unit occurs approximately 3.2 km (2 mi) south of 149th Street and 9.0 km (5.6 mi) east of Interstate Highway 29, and includes Meyer Lake Waterfowl Production Area. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was last observed in 1997, but was not detected during surveys in 2004 or 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as good quality dry-mesic hill prairie (Skadsen 2004, p. 5). Dakota skipper, other prairie butterflies, and purple coneflower were documented in 2012 (Hubers 2013, pp. 55-56). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 5: (Corresponds to DS South Dakota Unit 5)

South Dakota Unit 5 is 48 ha (119 ac) in Deuel County is Federal land owned by the U.S. Fish & Wildlife Service. Located in T114N, R47W, Section 5, this unit occurs approximately 3.2 km (2 mi) south of State Hwy 22 and 3.2 km (2 mi) east of County Road 519. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was last observed in 2004, but not during surveys in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Dakota skipper. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitat in this unit was described as good quality dry-mesic hill prairie (Skadsen 2004, p. 5). Regal fritillary, other prairie butterflies, and a diversity of flowering forbs were documented in 2012 (Hubers 2013, pp. 27 - 30). This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 6: (Corresponds to DS South Dakota Unit 6)

South Dakota Unit 6 is 13 ha (31 ac) in Roberts County owned by the South Dakota Game, Fish and Parks Department. Located in T122N, R48W, Sections 2 and 3, this unit occurs approximately 0.2 km (0.1 mi) north of State Highway 15 and south of Big Stone River and lies within the Hartford Beach State Park. This unit is considered to be unoccupied – the Poweshiek skipperling was last observed in 2002 and 2005, but was not observed in the six most recent survey years at this site. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation

principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a good quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit is described as fair to poor dry-mesic hill prairie due to woody succession and the small size (Skadsen 2005, p. 6, Skadsen 2011, p. 1, 2012, p. 1).

PS South Dakota Unit 7: (Corresponds to DS South Dakota Unit 7)

South Dakota Unit 7 is 190 ha (470 ac) in Roberts County is primarily tribal land owned by the Sisseton–Wahpeton Oyate (112 ha (278 ac)). The U.S. Fish and Wildlife Service owns 61 ha (151 ac), which includes the Weeks Prairie Waterfowl Production Area and the remaining 17 ha (41 ac) is privately owned land. Located in T126N, R52W, Sections 7, 8, 17, and 18, this unit occurs approximately 3.2 km (2 mi) north of State Highway 10, 0.5 km (0.3 mi) east of the Roberts-Marshall County border. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was last observed at one site in this unit in 2006, but not in the most recent 2 surveys. The species was last observed at another site in this unit in 2003, but not in surveys conducted in 2012. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as good to excellent quality northern mesic tallgrass and dry-mesic hill prairies (Skadsen 2003, p. 30). Dakota skipper and regal fritillary were documented in 2012 and the area was described as containing good flowering forbs and native grasses (Hubers 2013, pp. 59 - 60). This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native remnant prairies.

PS South Dakota Unit 8: (Corresponds to DS South Dakota Unit 8)

South Dakota Unit 8 is 203 ha (501 ac) in Roberts County is Federal land owned by the U.S. Fish & Wildlife Service. Located in T124N, R52W, Sections 21, 22, 27, and 28, this unit occurs approximately 3.1 km (1.9 mi) south of County Road 5 (127th St.), 3.9 km (2.4 mi) east of the Roberts-Day county border, and includes the Wike Waterfowl Production Area. This unit is considered to be unoccupied – Poweshiek skipperling were last observed in 2006, but the species was not detected during the last four years that the site was surveyed. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that

connects patches of higher quality native prairies. The prairie habitats in this unit were described as fair to good quality dry-mesic hill prairies (Skadsen 2003, p. 31) and described as varying quality more recently –good to excellent in some areas and poor in others (Hubers 2013, pp. 45 - 48). Dakota skipper, regal fritillary, and other prairie butterflies were observed within this unit in 2012 (Hubers 2013, pp. 45 - 48).

PS South Dakota Unit 9: (Corresponds to DS South Dakota Unit 9)

South Dakota Unit 9 is 65 ha (160 ac) in Roberts County primarily owned by the Sisseton–Wahpeton Oyate (54 ha (133 ac)). The remaining 11 ha (26 ac) is privately owned. Located in T123N, R52W, Sections 2, 3, and 11, this unit occurs on both sides of 453rd Avenue, approximately 9.2 km (5.7 mi) south of County Road 5, and 5.1 km (3.2 mi) east of the Roberts-Day county border. This unit is considered to be unoccupied – Poweshiek skipperling were last recorded at one site in this unit in 2006 and another site in 2002, but the species was not found in the most recent four survey years at either site. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit were described as good to excellent quality northern mesic tallgrass prairie and dry-mesic hill prairies (Skadsen 2006, pp. 10 - 13) where other prairie butterflies (*e.g.*, regal fritillary and Dakota skipper) have been recently documented (Skadsen 2006, pp. 10 - 13; Service 2013, unpubl. geodatabase).

PS South Dakota Unit 10: (Corresponds to DS South Dakota Unit 10)

South Dakota Unit 10 is 47 ha (117 ac) in Roberts County owned by the Sisseton–Wahpeton Oyate. Located in T123N, R52W, Sections 10, 11, 14, and 15, this unit occurs immediately east of 453rd Avenue and north of Owl Lake approximately 11.1 km (6.9 mi) south of County Road 5 and 1.5 km (3.6 mi) east of the Roberts-Day County border. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was observed at one site during surveys in 2002 and 2006 and there have been no surveys more recently. Poweshiek skipperling was observed at another site within this unit in 2002, but there have been no surveys more recently at that location. Although there have been no recent negative surveys for this species at these sites, the species expert in the state assigned an unknown status at both of these sites. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit may also contain small patches of lesser quality native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit were described as fair to good quality northern mesic tallgrass prairie, northern wet-mesic

tallgrass prairie, dry-mesic hill prairies (Skadsen 2006, pp.12, 14). Other prairie butterflies (*e.g.*, Dakota skipper and regal fritillary) have been recently documented in this unit (Skadsen 2006, pp.12, 14). The habitat was assessed in 2013, and would best be described overall as a fair quality prairie with a predominance of good native grasses and native flowers in the NE quarter section but decreasing radially and becoming more smooth brome dominated. The habitat was described as to have varying percentage of flowering forbs with native components throughout (Service 2013, July 9 field notes).

PS South Dakota Unit 11: (Corresponds to DS South Dakota Unit 11)

South Dakota Unit 11 is 36 ha (89 ac) in Roberts County primarily owned by the Sisseton–Wahpeton Oyate (30 ha (75 ac)). The remaining 6 ha (14 ac) is privately owned. Located in T123N, R52W, Sections 17 and 20, this unit occurs southeast and adjacent to the intersection of 135th St. and 450th Avenue, approximately 1.6 km (1 mi) east of the Roberts – Day County border and 3.7 km (2.3 mi) west of 453rd Avenue. This unit is considered to be unoccupied – Poweshiek skipperling was observed in 2002 and 2006, but was not detected in the last four survey years. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit were described as excellent quality northern mesic tallgrass prairie, (Skadsen 2006, pp.12, 14), although more recently, the nectar sources appear to be relatively low (Service 2013, unpubl. geodatabase). This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 12: (Corresponds to a portion of DS South Dakota Unit 12)

South Dakota Unit 12 is 274 ha (676 ac) in Day County and is primarily owned by the Sisseton-Wahpeton Oyate (177 ha (438 ac)). The remaining 96 ha (238 ac) are privately owned. Located in T122N, R53W, Sections 3, 4, 10, 11, 15, and 53, this unit occurs on both sides of County Road 1, immediately north of 140th St., approximately 1.6 km (1 mi) west of 440th Avenue, and 1.6 km (1 mi) north of U.S. Highway 12. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was recorded in one site within this unit in 1997, the species was not detected in 1998 at this site, and no further surveys have been conducted at the site. The species was also recorded in 2002 and 2006 at another site within this unit, but the species was not detected during the last three survey years. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs dominated by leadplant and native grasses. This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this

unit were described as good to excellent quality northern mesic tallgrass and northern wet-mesic tallgrass prairies (Skadsen 1997, pp. 12 - 13, 2006, p. 10).

PS South Dakota Unit 13: (Corresponds to DS South Dakota Unit 13)

South Dakota Unit 13 is 23 ha (56 ac) in Day County is privately owned. Located in T123N, R53W, Section 26, this unit occurs immediately north of 137th Street, west of 448th Avenue, approximately 1.6 km (1 mi) west of the Day-Roberts County line. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling was recorded in 1997 and 2002, and although there have been no further surveys; the species expert assigned a status of unknown to the site. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality dry-mesic hill prairies (Skadsen 2003, p. 15). This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 14: (Corresponds to DS South Dakota Unit 14)

South Dakota Unit 14 is 76 ha (189 ac) in Day County is owned by the Sisseton-Wahpeton Oyate. Located in T123N, R53W, Sections 23 and 24, this unit occurs immediately south of 135th Street and on both sides of 448th Avenue, approximately 1 km (0.6 mi) west of the Day-Roberts County line immediately east of Campbell Slough. This unit is considered to be unoccupied – Poweshiek skipperling was recorded was recorded in 2002 and 2005 – 2008, but the species was not detected during the last four survey years (2009 -2012). This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as good quality dry-mesic hill prairie with a diversity of native flowering forbs and native grasses (Skadsen 2006, p. 13). This unit also may contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 15: (Corresponds to DS South Dakota Unit 15)

South Dakota Unit 15 is 76 ha (188 ac) in Day County is owned primarily by the South Dakota Game, Fish and Parks Department (71 ha (175 ac)) and the remaining 5 ha (13 ac) is owned by Sisseton-Wahpeton Oyate. Located in T124N, R53W, Sections 25, 26, 35, and 36, this unit occurs approximately 2.3 km (1.4 mi) northeast of the intersection of County Road 6 and 446th Avenue, approximately 0.3 km (0.8 mi) west of the Day-Roberts County line. This unit is considered to be unoccupied, but has had adult observations as recently as 2004. Poweshiek was recorded at one site in this unit in 2002 and 2004, but not in the most 7 survey

years. The species was recorded at another site within the unit in 2002, but not in the most recent two surveys in that location. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are vary, and are described as poor to fair to good quality northern wet-mesic tallgrass prairie (Skadsen 2005, p. 8, 2006, p. 13).

PS South Dakota Unit 16: (Corresponds to DS South Dakota Unit 16)

South Dakota Unit 16 is 141 ha (348 ac) in Day County is Federal land owned by the U.S. Fish and Wildlife Service and is part of Waubay National Wildlife Refuge. Located in T123N, R53W, Sections 16, 17, 20, 21, and 29, this unit occurs approximately 0.7 km (0.5 mi) west of County Road 1 (446th Avenue) along the east side of Spring Lake. This unit is considered to be unoccupied – Poweshiek skipperling was recorded in 2002, but the species was not detected in the most recent few years of surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. This unit also has patches of lesser quality (or unrated) native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. The prairie habitats in this unit are described as fair to good quality dry-mesic hill prairie (Skadsen 2003, p. 17). Dakota skipper and regal fritillary were documented in 2012 and the habitat was described as good with many flowering forbs (Hubers 2013, pp. 57 - 58).

PS South Dakota Unit 17:

South Dakota Unit 17 is 198 ha (80 ac) in Moody County owned by The Nature Conservancy. Located in T107N, R50W, Sections 25 and 36, this unit occurs immediately east of 471st Avenue (County Road 77), approximately 1.6 km (1 mi) west of Interstate 29 and 1.6 km (1 mi) south of Highway 32. We are uncertain of the occupancy of this unit, thus are analyzing it as if it were unoccupied for purposes of critical habitat. The Poweshiek skipperling were observed in 2003 but not during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit described as good quality northern mesic tallgrass prairie (Skadsen 2003, p. 44) with observations of regal fritillary in 2012 (Skadsen 2012, p. 4). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal

grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies.

PS South Dakota Unit 18:

South Dakota Unit 18 is 162 ha (401 ac) of Federal land in Marshall County owned by the U.S. Fish and Wildlife Service that includes the North Lamee Wildlife Production Area. Located in T127N, R56W, Sections 9, 10, 15, and 16, this unit occurs immediately west of 434th Avenue, approximately 0.8 km (0.5 mi) south of 107th Street, and on both sides of County Road 6. This unit is unoccupied – Poweshiek skipperling were observed in 2002, 2003, and 2005 but not during 2012 surveys. This unit is essential to the conservation of the species because it provides habitat essential to accommodate populations of the species to meet the conservation principles of redundancy and resiliency throughout the species range. Additionally, this unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. The unit consists of larval and adult habitat; primarily a high quality native remnant prairie containing a high diversity of native prairie grasses and flowering forbs. The prairie habitats in this unit are described as fair to good quality dry- mesic hill prairie (Skadsen 2003, p. 43). This unit may also contain small patches of lesser quality or unrated native prairie or dispersal grassland habitat that is within 1 km (0.6 mi) of native high quality prairie that connects patches of higher quality native prairies. Regal fritillary and other prairie butterflies were documented in 2012 and the habitat was described as mixed with an abundance of flowering forbs (Hubers 2013, pp. 37 - 38).

PS Wisconsin Unit 1:

Wisconsin Unit 1 consists of 621 ha (1,535 ac) on the Southern Unit Kettle Moraine State Forest, Wisconsin State Natural Area in Waukesha County, Wisconsin. Approximately 613 ha (1,515 ac) are owned and managed by the Wisconsin Department of Natural Resources. Approximately 4 ha (11 ac) is owned by the Wisconsin Department of Transportation and the remaining 4 ha (10 ac) is private land. Located in T 5N, R 17E, and Sections 3, 4, 8, 9, 10, 16, 17, 20, and 21, this unit is approximately 4.8 km (3 mi) northeast of the town of Eagle, Wisconsin along Wilton Road, immediately north of State Highway 59, and west of State Highway 67 on both sides of County Road N. This unit is considered to be occupied and has had recent adult observations over multiple years (1993-2012) and locations within the unit.

Southern Unit Kettle Moraine Prairies consists of three effectively contiguous but separately named prairies in the Southern Unit Kettle Moraine State Forest; Scuppernong Prairie, Wilton Road Prairie, and the Kettle Moraine Low Prairie. Scuppernong Prairie and Wilton Road prairies are approximately 0.3km (0.2 mi) apart in the Southern Unit Kettle Moraine State Forest, separated by a small road and connected by dispersal habitat. Wilton Road Prairie and Kettle Moraine Low Prairie are separated by less than 0.3 km (0.2 mi) and connected by dispersal habitat. The Scuppernong Prairie may support the most viable population of Poweshiek skipperling in Wisconsin; the majority of occurrences in the state recently have been recorded there.

This unit contains the physical or biological features essential to the conservation of the Poweshiek skipperling. This unit consists of larval and adult habitat and contains high quality native tallgrass prairie with a high diversity of native prairie grasses and flowering forbs, particularly prairie dropseed and black-eyed Susan. This unit also has patches of lesser quality

native prairie or dispersal grassland habitat that is within 1 km (0.62 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical and biological features within Wisconsin Unit 1 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; conversion or destruction of native prairie habitat; and isolation from other units. Special management considerations or protection that may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs. Fire management at Scuppernong Prairie has recently been reintroduced as a management tool to reduce woody vegetation encroachment. This unit needs management that maintains a balance between controlling invasive plants and woody vegetation encroachment with maintaining enough of woody vegetation to discourage over-dispersal of small populations.

PS Wisconsin Unit 2:

Wisconsin Unit 2 consists of 113 ha (280 ac) in Green Lake County, Wisconsin. Approximately 66 ha (162 ac) is owned and managed primarily by the Wisconsin State Department of Natural Resources and includes Puchyan State Natural Area. The remaining 48 ha (118 ac) is private land. Located in T 16N, R 12E, Sections 1 and 2; T 17N, R12E, Section 36; and T 16N, R 13E, Section 6, this unit occurs approximately 4.3 mi (7 km) northwest of Green Lake, Wisconsin, north of the intersection of County Road CC and Puchyan Marsh Road, approximately 1.4 km (0.9 mi) north of County Road J, and 4.7 km (2.9 mi) west of State Highway 49. This unit is considered to be occupied and has had recent adult observations over multiple years (1997, 2000, 2009, and 2012). This unit contains the physical and biological features essential to the conservation of the Poweshiek skipperling. This unit consists of larval and adult habitat; and contains a high quality native wet-mesic prairie with a high diversity of native prairie grasses and flowering forbs, particularly prairie dropseed and black-eyed Susan. The high quality wet mesic prairie is surrounded by “low” prairie and sedge meadow (Swengel and Swengel 2012, p. 4) - these patches of lesser quality native prairie or dispersal grassland habitat are within 1 km (0.62 mi) of native high quality prairie that connects patches of higher quality native prairies.

Threats to the physical and biological features within Wisconsin Unit 2 include but are not but are not limited to: Ecological succession and encroachment of invasive species and woody vegetation; flooding; conversion or destruction of native prairie habitat; and small size and isolation from other units. Special management considerations or protection that may be needed to address these threats include, but are not limited to: The control of invasive plant species and restoration of native tallgrass prairie plant community structure that result in native grasses and flowering forbs available and necessary for Poweshiek skipperling life-history needs.

Literature Cited

HDR Engineering Inc. 2006. Xcel Energy Buffalo Ridge to White 2006 sensitive species survey report.

HDR Engineering Inc. 2013. 2012 Dakota skipper survey report: Center to Grand Forks 345kV Transmission Project.

Hubers, L. 2013. 2012 Surveys for prairie butterfly species of concern in North and South Dakota. U. S. Fish & Wildlife Service.

Minnesota Department of Natural Resources. 2013. unpubl. Rare natural features database. St. Paul, Minnesota.

Royer, R. A. 1997. A final report on conservation status of the Dakota skipper [*Hesperia dacotae* (Skinner 1911)] in the State of North Dakota during the 1996 and 1997 flights, including observations on its potential recovery in the state. Page 26. North Dakota Department of Parks and Recreation, Bismarck, ND.

Royer, R. A. 2002. On the status of five sensitive butterfly species in McKenzie District Pastures 12, 13, and 14, McKenzie County, North Dakota. Page 29 Final Report to Dakota Prairie Grasslands. U.S. Forest Service, Bismarck, ND.

Royer, R. A. and M. R. Royer. 2012a. Dakota Skipper and Poweshiek Skipperling Field Survey and Habitat Assessment at Twenty-Nine North Dakota Sites During the 2012 Season. Minot State University, Minot, ND.

Runquist, E. 2012. Minnesota Prairie Butterfly Monitoring and Conservation 2012 Report – Submitted to U.S. Fish and Wildlife Service. Minnesota Zoo, Apple Valley, MN.

Schlicht, D. 1994. - Typo should be Schlicht and Saunders 1994.

Schlicht, D. and M. Saunders. 1994. Completion of status surveys for the Dakota skipper (*Hesperia dacotae*) and the Poweshiek skipper (*Oarisma poweshiek*) in Minnesota (with additional data on the regal fritillary (*Speyeria idalia*)). Page 22 Final Report. U.S. Fish and Wildlife Service, Bloomington, MN.

Selby, G. 2008a. 2007/2008 Prairie Butterfly Surveys in Western Minnesota: 2007 Annual Report (Progress Report #3). Minnesota Department of Natural Resources, St. Paul, MN.

Selby, G. 2008b. A Comprehensive Inventory and Status Assessment for Iowa Populations of the Poweshiek skipperling (*Oarisma poweshiek*). Iowa State Preserves Advisory Board and Iowa Department of Natural Resources, Des Moines, IA.

Selby, G. 2009a. 2007/2008 Prairie Butterfly Surveys in Western Minnesota. Minnesota Department of Natural Resources, St. Paul, MN.

Selby, G. 2009b. Buffalo Ridge II, Iberdrola Renewables: Brookings County, SD - 2009 Butterfly Survey Results; 3 September 2009 Report. HDR Engineering, Inc., Minneapolis, MN.

Selby, G. 2009c. A Comprehensive Inventory and Census of the Butterflies and a Population Assessment of the Poweshiek Skipperling (*Oarisma poweshiek*) at Hoffman Prairie State Preserve, Cerro Gordo County, IA. Iowa State Preserves Advisory Board and Iowa Department of Natural Resources, Des Moines, Iowa.

Selby, G. 2012. Minnesota Dakota skipper & Poweshiek skipperling surveys: August 1, 2012 Progress Report. Ecological and GIS Services, Indainola, IA.

Selby, G. 2013. U.S. Fish and Wildlife Service, Region 3 - 2012 Minnesota Prairie Butterfly Surveys: Final Report. U. S. Fish & Wildlife Service, Twin Cities Field Office, Bloomington, MN.

Service, National Marine Fisheries and USFWS Service. 2004. Interim Endangered and Threatened Species Recovery Planning Guidance Version 1.3. Pages 1-123.

Service 2013. unpublished Dakota skipper and Poweshiek skipperling geodatabase. Twin Cities Field Office. Bloomington, Minnesota.

Service 2013. unpublished field notes from July 9 and July 12, 2013. Waubay National Wildlife Refuge.

Skadsen, D. 2011. 2011 Year-End Report: Dakota Skipper and Prairie Management in Northeast South Dakota. Grenville, SD.

Skadsen, D. 2012. 2012 Year-End Report Dakota Skipper Surveys and Prairie Management in Northeast South Dakota. Grenville, SD.

Skadsen, D. R. 1997. A report on the results of a survey for Dakota skipper [*Hesperia dacotae* (Skinner, 1911)] in northeast South Dakota during the 1996 and 1997 flights., South Dakota Department of Game, Fish, and Parks, Pierre, SD.

Skadsen, D. R. 2003. Dakota skipper population surveys for CCAA development in the State of South Dakota. Page 56. South Dakota Department of Game, Fish, and Parks, Pierre, SD.

Skadsen, D. R. 2004. 2004 surveys for the Dakota skipper (*Hesperia dacotae*) in northeast South Dakota. Page 18. South Dakota Department of Game, Fish and Parks, Pierre, SD.

Skadsen, D. R. 2005. Monitoring Tallgrass Prairie Lepidoptera Populations In Northeast South Dakota - 2005 Survey Results. Page 9. South Dakota Department of Game, Fish and Parks, Pierre, SD.

Skadsen, D. R. 2006. Surveys for Butterflies Listed as Endangered, Threatened or Species of Tribal Concern on the Sisseton-Wahpeton Oyate Lake Traverse Reservation., Natural History Investigations and Biological Services, Inc., Webster, SD.

Swengel, A. and S. Swengel. 2012. Poweshiek Skipperling (*Oarisma poweshiek*) at Puchyan Prairie: 2012 Report. Baraboo, WI.