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MEMORANDUM | September 8, 2014

TO U.S. Fish and Wildlife Service (Service)

FROM Industrial Economics, Incorporated (IEc)

SUBJECT Screening Analysis of the Likely Economic Impacts of Critical Habitat Designation for the Dakota Skipper and Poweshiek Skipperling

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On October 24, 2013, the Service published a proposed rule to designate critical habitat for the Dakota skipper (*Hesperia dacotae*) and Poweshiek skipperling (*Oarisma poweshiek*) under the Endangered Species Act (the Act).[1] As part of the rulemaking process, the Service must consider the economic impacts, including costs and benefits, of the proposed rule in the context of three separate requirements:[2]

- **Executive Order (EO)12866 *Regulatory Planning and Review***, which directs Agencies to assess the costs and benefits of the regulatory action; [3]
- **Section 4(b)(2) of the Act**, which requires the Secretary of the Interior to consider economic impacts prior to designating critical habitat; and
- **Regulatory Flexibility Act**, which requires Federal agencies to prepare and make available for public comment an initial regulatory flexibility analysis that describes the effect of a proposed rule on small entities. No initial regulatory flexibility analysis is required if the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.[4,5]

This memorandum provides information to the Service on the potential costs and benefits of the proposed critical habitat designation to determine whether the rule meets the threshold for an economically significant rule.[6] This memorandum also identifies the geographic areas or specific activities that could experience the greatest impacts,

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[1] U.S. Fish and Wildlife Service (2013a).

[2] Additional laws and executive orders require the consideration of the distribution of impacts on vulnerable subpopulations, such as state or local governments. These requirements for distributional analysis are beyond the scope of this memorandum.

[3] Clinton (1993), as affirmed by Obama (2011).

[4] 5 U.S.C. § 601 et seq.

[5] For a discussion of the Service's findings regarding the Regulatory Flexibility Act (RFA) and other relevant statutes, please refer to the preamble to the proposed rule published in the Federal Register.

[6] For the definition of "economically significant rule," please refer to section 3(f)(1) of EO 12866.

measured in terms of changes in social welfare, to inform the Secretary's decision under section 4(b)(2).[7]

FINDINGS OF THE SCREENING ANALYSIS

Critical habitat designation for the Dakota skipper and Poweshiek skipperling is unlikely to generate costs exceeding $100 million in a single year. Therefore, the rule is unlikely to meet the threshold for an economically significant rule, with regard to costs, under E.O. 12866. Data limitations prevent the quantification of benefits.

Section 7 Costs

The majority of acres proposed for designation (92 percent) are considered to be occupied, or occupancy is uncertain but the butterflies have been identified at the site in the past. In these areas, the economic impacts of implementing the rule through section 7 of the Act are likely limited to minor additional administrative effort. This finding is based on the following conclusions provided by the Service:

- Any activities occurring in these areas and requiring Federal approval or funding (creating a "nexus" for section 7 consultation) will be subject to section 7 consultation requirements regardless of critical habitat designation due to the potential presence of the listed species; and
- Project modifications recommended to avoid adversely modifying critical habitat are largely the same as those needed to avoid jeopardizing the species.

In areas the Service is certain are unoccupied (eight percent of the proposed designation), incremental section 7 costs may include both the administrative costs of consultation and the costs of developing and implementing conservation measures. This analysis reviews activities potentially affected by the designation in these areas. Likely incremental effects are primarily related to voluntary conservation agreements between private landowners and the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) or the Service, and land management changes on unoccupied Service-managed lands. These effects are expected to be limited, as follows:

- Total incremental section 7 costs associated with NRCS agreements could reach $440,000 in 2014. Costs are likely to be highest in South Dakota due to the relatively larger number of potentially affected projects.
- While we have not quantified total incremental costs associated with the Service's land management activities, data from the Waubay National Wildlife Refuge suggest these costs are minimal.

Therefore, the total costs of the proposed rule are unlikely to reach the threshold of an economically significant rulemaking.

Other Costs

- The designation of critical habitat is unlikely to trigger additional requirements under state or local regulations. This assumption is based on the protective status currently afforded the species under state regulations.
- Private property owners have expressed concern that the designation of critical habitat for the two butterflies may affect their property values. Data limitations prevent the quantification of the possible incremental reduction in property values. However, data on current land values suggest that even if such costs occur, the rule is unlikely to reach the threshold of an economically significant rulemaking when possible perception effects are combined with the other incremental costs estimated in this memorandum.

Section 7 and Other Benefits

Various economic benefits may result from the incremental conservation efforts identified in this analysis, including: (1) those associated with the primary goal of species conservation (i.e. direct benefits), and (2) those additional beneficial services that derive from conservation efforts but are not the purpose of the Act (i.e. ancillary benefits). Due to existing data limitations, we are unable to assess the likely magnitude of these benefits.

[7] The discipline of welfare economics focuses on maximizing societal well-being (see Just et. al. 2004). It measures costs and benefits in terms of the opportunity costs of employing resources for the conservation of the species and individual willingness to pay to conserve those species. Opportunity cost is the value of the benefit that could have been provided by devoting the resources to their best alternative uses. Opportunity costs differ from the measurement of accounting costs (e.g., actual expenses). Welfare economics is recognized by the U.S. Office of Management and Budget (OMB) as the appropriate tool for valuing the costs and benefits of proposed regulatory actions (OMB, 2003).

To prepare this assessment, we rely on: (1) the proposed rule and associated geographic information systems (GIS) data layers provided by the Service; (2) the Service's incremental effects memorandum (described in greater detail later in this memorandum); (3) the results of the Service's outreach efforts to other Federal agencies concerning the likely effects of critical habitat; and (4) limited interviews with relevant stakeholders.

SECTION 1. BACKGROUND

The Dakota skipper is a small to medium-sized butterfly that occurs in Minnesota, North Dakota, South Dakota, and two Canadian provinces.[8] The Poweshiek skipperling is a butterfly of similar size, which now likely occurs only in Wisconsin, Michigan, Minnesota, and Manitoba (Canada) and possibly North Dakota, South Dakota, and Iowa.[9] These two species are henceforth referred to as "the two butterflies." The two butterflies are restricted to native prairie remnants and prairie fens, which have both been significantly reduced throughout the historical range of the two species. This has contributed to a decline in the populations of the two butterflies.[10]

The Service proposes to designate approximately 28,051 acres of critical habitat across 50 units for the Dakota skipper, and 30,279 acres across 62 units for the Poweshiek skipperling. Approximately 15,731 of the acres proposed as critical habitat for the two species overlap; thus, the total acreage proposed as critical habitat is 42,600 acres.[11] Similarly, 28 of the proposed units overlap; thus, 84 units are proposed in total. The proposed critical habitat is located in 44 counties in Minnesota, Michigan, South Dakota, North Dakota, Iowa, and Wisconsin.[12]

Approximately 42 percent of the total proposed designation is located on private lands, 40 percent on state and county lands, 13 percent on federal lands, and five percent on Tribal lands. Exhibit 1 provides an overview of the proposed critical habitat units, including the occupancy status at the time of listing and land ownership by Federal, state, private, and tribal entities. Exhibit 2 provides an overview map of the proposed designation.

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[8] U.S. Fish and Wildlife Service (2014).

[9] *Ibid* and personal communication with Service Biologist June 11, 2014.

[10] *Ibid*.

[11] IEC analysis of GIS shapefiles provided by U.S. Fish and Wildlife Service on April 2 and June 13, 2014. Our acreage figures for Dakota skipper habitat and overlapping habitat are slightly different from those presented in the Incremental Effects Memorandum (27,782 acres and 14,931 acres); this is assumed to be due to rounding error in GIS calculations and updates to critical habitat units.

[12] U.S. Fish and Wildlife Service (2014).

EXHIBIT 1. SUMMARY OF PROPOSED CRITICAL HABITAT UNITS

UNIT	OCCUPANCY STATUS [1]	OVERLAPPING UNIT	OVERLAPPING UNIT OCCUPANCY STATUS	LAND OWNERSHIP (ACRES) [2]				
				FEDERAL	STATE / COUNTY	PRIVATE	TRIBAL	TOTAL
DS MN 01	Occupied	PS MN 01	Uncertain	0	2,056	831	0	2,887
DS MN 02	Occupied	PS MN 02	Uncertain	0	0	905	0	905
DS MN 03	Uncertain	PS MN 03	Uncertain	0	0	126	0	126
DS MN 04	Occupied	PS MN 04	Uncertain	0	464	1,887	0	2,351
DS MN 05 [3]	Occupied	PS MN 05	Unoccupied	0	861	136	0	997
DS MN 06	Uncertain	PS MN 06	Uncertain	0	0	275	0	275
DS MN 07	Uncertain	PS MN 07 [4]	Uncertain	0	639	936	0	1,576
DS MN 08	Uncertain	PS MN 08	Uncertain	0	321	0	0	321
DS MN 09	Occupied	PS MN 09	Uncertain	0	415	0	0	415
DS MN 10	Unoccupied	PS MN 10	Uncertain	0	621	1,245	0	1,865
DS MN 11	Uncertain			0	197	0	0	197
DS MN 12	Occupied			0	0	549	0	549
DS MN 13	Uncertain	PS MN New 01	Occupied	0	263	0	0	263
DS MN 14	Uncertain			0	842	0	0	842
DS ND 01	Uncertain	PS ND 01	Uncertain	111	6	2	0	119
DS ND 02	Uncertain			630	0	319	0	949
DS ND 03	Occupied			0	156	1,370	0	1,526
DS ND 04	Occupied			0	0	197	0	197
DS ND 05	Occupied			58	557	1,832	0	2,446
DS ND 06	Occupied			0	80	0	0	80
DS ND 07	Occupied			0	0	280	0	280
DS ND 08	Occupied			0	324	123	0	447
DS ND 09	Uncertain			0	74	360	81	514
DS ND 10	Uncertain			0	0	0	639	639
DS ND 11	Occupied			371	0	47	0	418
DS ND 12	Occupied			296	0	13	0	309
DS ND 13	Occupied			727	0	0	0	727
DS ND 14	Occupied			0	0	242	0	242
DS SD 01	Unoccupied	PS SD 01	Unoccupied	451	0	0	0	451
DS SD 02	Occupied	PS SD 02	Uncertain	0	169	0	0	169
DS SD 03	Uncertain	PS SD 03	Uncertain	0	516	582	0	1,098
DS SD 04	Occupied	PS SD 04	Uncertain	292	0	0	0	292
DS SD 05	Uncertain	PS SD 05	Uncertain	119	0	0	0	119
DS SD 06	Occupied	PS SD 06	Unoccupied	0	31	0	0	31
DS SD 07	Occupied	PS SD 07	Uncertain	151	0	41	278	470
DS SD 08	Occupied	PS SD 08	Unoccupied	501	0	0	0	501
DS SD 09	Occupied	PS SD 09	Unoccupied	0	0	26	133	160

UNIT	OCCUPANCY STATUS [1]	OVERLAPPING UNIT	OVERLAPPING UNIT OCCUPANCY STATUS	LAND OWNERSHIP (ACRES) [2]				
				FEDERAL	STATE / COUNTY	PRIVATE	TRIBAL	TOTAL
DS SD 10	Occupied	PS SD 10	Uncertain	0	0	0	117	117
DS SD 11	Occupied	PS SD 11	Unoccupied	0	0	14	75	89
DS SD 12 [3]	Occupied	PS SD 12	Uncertain	0	0	238	438	676
DS SD 13	Uncertain	PS SD 13	Uncertain	0	0	18	38	56
DS SD 14	Occupied	PS SD 14	Unoccupied	0	0	0	189	189
DS SD 15	Unoccupied	PS SD 15	Unoccupied	0	175	0	13	188
DS SD 16	Unoccupied	PS SD 16	Unoccupied	348	0	0	0	348
DS SD 17	Occupied			552	0	0	0	552
DS SD 18	Uncertain			216	0	0	0	216
DS SD 19	Occupied			0	0	326	37	363
DS SD 20	Occupied			0	0	255	0	255
DS SD 21	Occupied			0	0	198	0	198
DS SD 22	Occupied			0	0	133	0	133
PS IA 01	Uncertain			0	237	0	0	237
PS IA 02	Unoccupied			0	0	35	0	35
PS IA 03	Unoccupied			0	0	136	0	136
PS IA 04	Unoccupied			0	726	29	0	755
PS IA 05	Uncertain			0	0	75	0	75
PS IA 06	Unoccupied			0	79	0	0	79
PS IA 07	Unoccupied			0	146	0	0	146
PS IA 08	Unoccupied			0	152	55	0	207
PS IA 09	Unoccupied			0	121	192	0	312
PS IA 10	Unoccupied			0	0	139	0	139
PS IA 11	Unoccupied			0	272	0	0	272
PS MI 01	Occupied			0	25	0	0	25
PS MI 02	Occupied			0	51	15	0	66
PS MI 03	Occupied			0	118	337	0	455
PS MI 04	Occupied			0	0	369	0	369
PS MI 05	Uncertain			0	0	23	0	23
PS MI 06	Occupied			0	234	34	0	268
PS MI 07	Occupied			0	0	123	0	123
PS MI 08	Occupied			0	0	363	0	363
PS MI 09	Occupied			0	0	34	0	34
PS MN 11	Uncertain			0	0	477	0	477
PS MN 12	Uncertain			0	274	0	0	274
PS MN 13	Uncertain			0	17	762	0	779
PS MN 14	Uncertain			0	0	90	0	90
PS MN 15	Uncertain			0	1,369	0	0	1,369
PS MN 16	Uncertain			0	239	0	0	239

UNIT	OCCUPANCY STATUS [1]	OVERLAPPING UNIT	OVERLAPPING UNIT OCCUPANCY STATUS	LAND OWNERSHIP (ACRES) [2]				
				FEDERAL	STATE / COUNTY	PRIVATE	TRIBAL	TOTAL
PS MN 17	Uncertain			0	0	431	0	431
PS MN 18	Uncertain			0	0	466	0	466
PS MN New 02	Occupied			328	2,432	0	0	2,761
PS ND 02	Uncertain			47	0	0	0	47
PS SD 17	Uncertain			0	0	198	0	198
PS SD 18	Unoccupied			401	0	0	0	401
PS WI 01	Occupied			0	1,525	10	0	1,535
PS WI 02	Occupied			0	162	118	0	280
			Total [5]	**5,597**	**16,949**	**18,017**	**2,037**	**42,600**

Notes: Units may not sum due to rounding.

(1) U.S. Fish and Wildlife Service. Text Description of Proposed Critical Habitat Units for the Dakota skipper and Poweshiek skipperling. "Occupied" represents units where the Service believes the species is present; "Unoccupied" represents units where the Service believes the species is truly absent; "Uncertain" represents units where the Service is uncertain of the occupancy status. These distinctions are discussed further in Section 3 below.

(2) For certain units, the breakdown of acreages by landowner type and total acreage may not exactly match those cited in the Text Description of Proposed Critical Habitat Units in the Proposed Rule, due to typographical errors in the text descriptions and updated landownership information (Emails from Service biologist, May 6 and May 21, 2014).

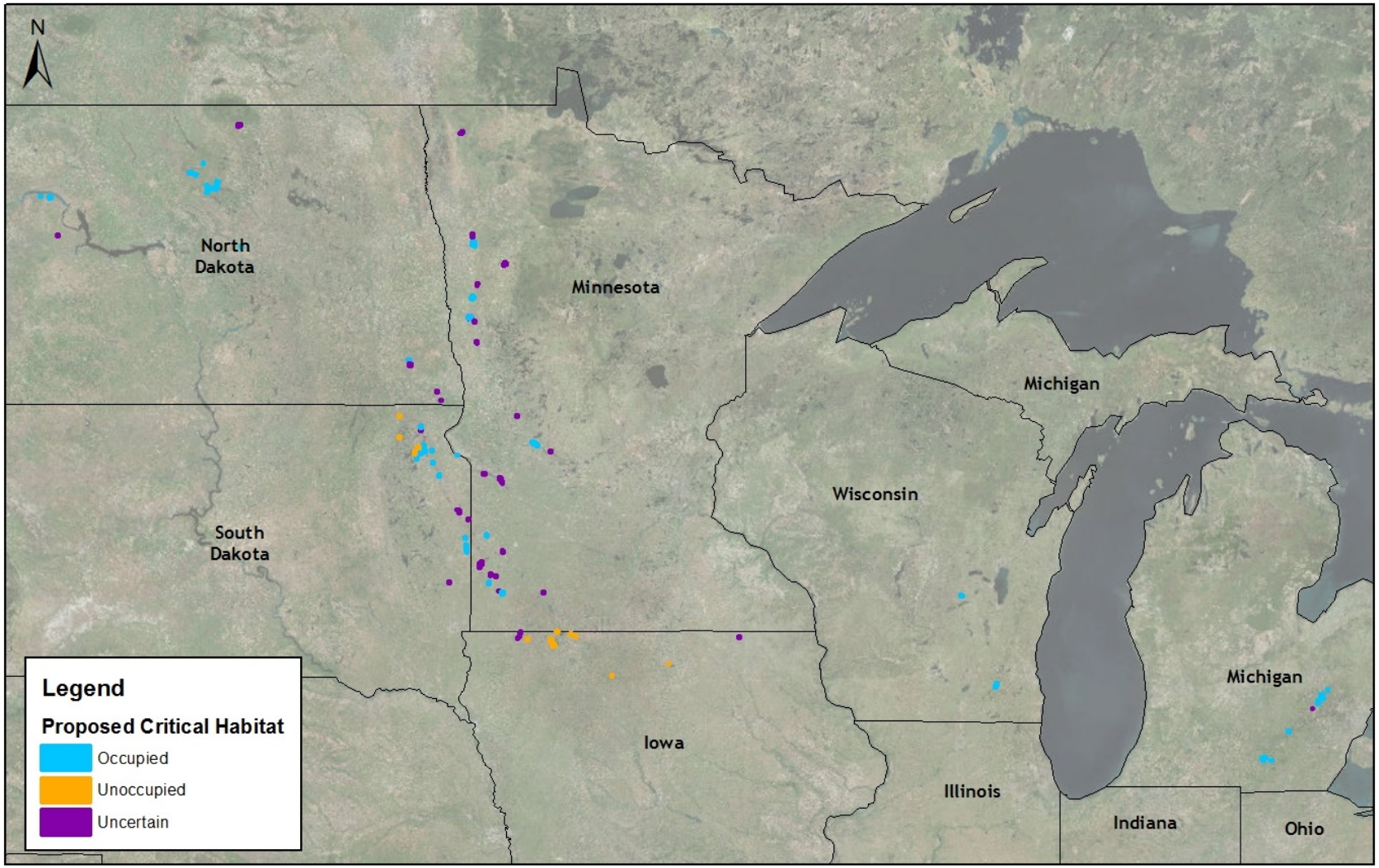
(3) The following units overlap only with a portion of their overlapping unit listed in the third column: DS Minnesota Unit 05 (642 acres in total, of which 506 acres are state / county lands, and 136 are private lands), DS South Dakota Unit 03 (516 acres in total, all of which are state / county lands), and DS South Dakota Unit 12 (531 acres in total, of which 438 acres are tribal lands, and 93 acres are private lands).

(4) PS Minnesota Unit 07 (1335 acres in total, of which 696 are private lands, and 639 are state / county lands), overlaps with only a portion of the unit listed in the first column (DS Minnesota Unit 07).

(5) Totals may not sum due to rounding.

Source: IEc Analysis of GIS Shapefiles provided to IEc by U.S. Fish and Wildlife Service on April 2 and June 13, 2014.

EXHIBIT 2. OVERVIEW OF DAKOTA SKIPPER AND POWESHIEK SKIPPERLING PROPOSED CRITICAL HABITAT



Data Sources:
1. US Fish and Wildlife Service
2. ESRI Map Projection: Mercator Auxiliary Sphere

0 365 730 1,460 Miles

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Based on discussions with the Service, as well as review of the proposed rule, public comments on the proposed critical habitat rule, the incremental effects memorandum, and the consultation history to date, the following land use activities have the potential to adversely affect proposed critical habitat and may require consultation with the Service:

- Grazing and agricultural activity on private lands managed under agreements with the Service or the Natural Resources Conservation Service (NRCS);
- Land management activities on public lands and privately managed conservation lands;
- Oil and gas development;
- Transportation activities; and,
- Other development on private lands (e.g., residential and commercial development, gravel mining, wind energy).

SECTION 2. FRAMEWORK

Guidelines issued by the U.S. Office of Management and Budget (OMB) for the economic analysis of regulations direct Federal agencies to measure the costs and benefits of a regulatory action against a baseline (i.e., costs and benefits that are "incremental" to the baseline). OMB defines the baseline as the "best assessment of the way the world would look absent the proposed action."[13] In other words, the baseline includes any existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users absent the designation of critical habitat. The baseline includes the economic impacts of listing the species under the Act, even if the listing occurs concurrently with critical habitat designation. Impacts that are incremental to the baseline (i.e., occurring over and above existing constraints) are those that are solely attributable to the designation of critical habitat. This screening analysis focuses on the likely incremental effects of the critical habitat designation.

We consider incremental effects of the designation in two key categories: 1) those that may be generated by section 7 of the Act; and 2) other types of impacts outside of the context of section 7:

- **Incremental section 7 impacts:** Activities with a Federal nexus that may affect listed species are subject to section 7 consultation to consider whether actions may jeopardize the existence of the species, even absent critical habitat.[14] As part of these consultations, critical habitat triggers an additional analysis evaluating whether an action will diminish the recovery potential or conservation value of the designated area. Specifically, following the designation, Federal agencies must also consider the potential for activities to result in the destruction or adverse modification of critical habitat. These consultations are the regulatory mechanism through which critical habitat rules are implemented. Any time and

[13] OMB (2003). Circular A-4 provides "guidance to Federal Agencies on the development of regulatory analysis as required under Section 6(a)(3)(c) of Executive Order 12866…" (p. 1)

[14] A Federal nexus exists for activities authorized, funded, or carried out by a Federal agency.

effort spent on this additional analysis, as well as the costs and benefits of implementing any recommendations resulting from this review, are economic impacts of the critical habitat designation.

- **Other incremental impacts:** Critical habitat may also trigger additional regulatory changes. For example, the designation may cause other Federal, state, or local permitting or regulatory agencies to expand or change standards or requirements. Regulatory uncertainty generated by critical habitat may also have impacts. For example, landowners or buyers may perceive that the rule will restrict land or water use activities in some way and therefore value the resource less than they would have absent critical habitat. This is a perception, or stigma, effect of critical habitat on markets.

SECTION 3. SECTION 7 COSTS OF THE CRITICAL HABITAT RULE

In this section, we discuss the likelihood that the designation of critical habitat will result in incremental costs through the section 7 consultation process. In the baseline, section 7 of the Act requires Federal agencies to consult with the Service to ensure that their actions will not jeopardize the two butterflies. Once critical habitat is designated, section 7 also requires Federal agencies to ensure that actions they authorize, fund, or carry out will not adversely modify critical habitat. Thus, a key focus of this screening analysis is whether the designation of critical habitat would trigger project modifications to avoid adverse effects to critical habitat that would be above and beyond any modifications triggered by adverse effects to the species itself.

For the two butterflies' critical habitat, the Service has proposed areas that are occupied by the species as well as areas where the Service is uncertain of the occupancy (hereafter, "Uncertain"), and areas where the Service believes the species is truly absent (hereafter, "Unoccupied"). Both the Uncertain and the Unoccupied habitat are areas that were recently occupied (i.e., had positive records in 1993 or more recently).[15] With reference to areas considered uncertain, the Service notes that "[t]he status of the species is unknown at a number of sites where the species may be present at densities that are so low that it has not been recently detected or where it may actually be absent. Additional surveys are needed at these sites to confirm the status of one or both species."[16] The section 7 costs of the proposed rule are likely to differ depending on the type of habitat in which a project occurs, as follows:

- **Occupied Habitat**:[17] In occupied areas, activities with a Federal nexus will be subject to section 7 consultation requirements regardless of critical habitat designation, due to the presence of the listed species. In addition, the Service anticipates that in most cases project modifications recommended to avoid adverse modification will largely be the same as those needed to avoid

[15] U.S. Fish and Wildlife Service (2013a). Page 63640.

[16] U.S. Fish and Wildlife Service (2014). Page 24.

[17] We note that where the two butterflies critical habitat units overlap, if the unit is considered occupied or uncertain for either species, the unit is considered occupied for the purposes of this analysis.

jeopardy.[18] In rare instances, the Service believes that it may be able to differentiate between conservation measures implemented to minimize impacts to avoid jeopardy and measures implemented to minimize impacts to avoid adverse modification. However, the Service cannot predict when or where these instances may occur.[19] Thus, we do not forecast any incremental impacts resulting from project modifications in occupied areas. When section 7 consultations occur, incremental costs are likely to be limited to the additional administrative effort to consider adverse modification during the consultation process.

- **Unoccupied Habitat**: In unoccupied areas, activities with a Federal nexus may not be subject to section 7 consultation requirements absent the designation of critical habitat because the species is not present. Therefore, incremental costs in these areas would include both the entire administrative costs of consultation as well as the costs of developing and implementing conservation measures needed to avoid adverse modification of critical habitat.

- **Uncertain Habitat**: Per direction from the Service, for purposes of this screening analysis, we treat the uncertain areas as occupied.[20] Given that surveys for the species have previously been undertaken in these areas, and the species was present in these units the past, landowners are likely to be aware that the species may be present. Further, where there is a nexus for activities occurring on uncertain critical habitat, Federal agencies overseeing the activity would likely already have been aware of the need to consult with the Service. Because of the short duration (less than three weeks) of their adult flight period, it may be difficult to detect the two butterflies during surveys. In part for that reason, the Service expects in most situations to treat these areas as occupied for purposes of section 7 consultation.[21]

  The Service states "[f]or purposes of section 7 consultation, we may consider the species to be present in those areas with uncertain occupancy. In those areas where we are uncertain of the presence of the species, the Service may consult on activities regardless of the critical habitat designation because there is still a sufficient likelihood of the species' presence."[22] Therefore, when section 7 consultations occur, incremental costs within uncertain units are, in most situations, likely to be limited to the additional administrative effort to consider adverse modification during the consultation process.

Because we anticipate that incremental administrative costs in occupied and uncertain habitat areas will be minor (in most situations), our analysis is focused on areas where

[18] U.S. Fish and Wildlife Service (2014).

[19] Personal communication with U.S. Fish and Wildlife Service, April 10, 2014.

[20] Ibid, and personal communication with U.S. Fish and Wildlife Service, May 5, 2014.

[21] Whether the Service considers that the species may be present in a particular area may vary depending on the specific situation of the site.

[22] U.S. Fish and Wildlife Service (2014).

incremental project modifications could occur.[23] As such, in the following sections we focus on activities expected to occur in the units considered unoccupied:

- Poweshiek skipperling Iowa Units 2, 3, 4, 6, 7, 8, 9, 10 and 11;
- Poweshiek skipperling South Dakota Unit 18; and,
- Dakota skipper/Poweshiek skipperling South Dakota Units 1, 15 and 16.

3.1 SECTION 7 COSTS RELATED TO VOLUNTARY AGREEMENTS

This section presents our analysis of the likely impacts of the proposed designation on agriculture and grazing activities covered by voluntary conservation agreements with the Service and NRCS.

3.1.1 U.S. Fish and Wildlife Service

The Service's grassland easement program was designed to help prevent conversion of grassland to cropland. Grassland easements generally prohibit the cultivation of grassland habitat, while permitting the landowner's traditional livestock uses. Haying, mowing and seed harvest are restricted until July 16 of each year.[24]

The Service has indicated that to protect the butterflies and their habitat, additional restrictions might be required on existing easements.[25] These restrictions could affect the frequency with which an area could be hayed, by only allowing haying to occur every three years, rather than annually. In addition, grazing could be restricted. The Service notes that such measures are most likely in areas where the proposed 4(d) rule, if finalized, permitting routine grazing activity is not applicable, including Kittson County (MN), and Eddy, McHenry, Richland, Rollette, Sargent, and Stutsman Counties (ND).[26] None of these areas overlap proposed unoccupied critical habitat; thus, we do not estimate incremental project modification costs associated with the Service's grassland easement program.

The Service also expects that the listing and designation of critical habitat will have the effect of reducing the number of private landowners who choose to enter into these easements due to concerns over restrictions on grazing and haying activities. This effect

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[23] Since the Dakota skipper and Poweshiek skipperling have been on the candidate list for nine and three years, respectively, historical records of section 7 consultations that have considered each species are available. Looking at the historical rate of consultation, we are able to confirm that incremental administrative costs in occupied areas are minimal. Given typical costs of section 7 consultations (based on average levels of effort and the best available cost information) and the historical rate of consultation (average number of consultations expected per year), we estimate a per acre cost of consultation. For occupied and uncertain units (treated as occupied for section 7), incremental administrative costs are estimated to total approximately $340,000 in 2014. Thus, these incremental administrative costs are not expected to contribute significantly to total incremental costs associated with the designation of critical habitat.

[24] U.S. Fish and Wildlife Service (2014).

[25] While the Service anticipates expansion in its grassland easements program, substantial incremental impacts are not likely to result from restrictions related to critical habitat designation for the two butterflies for two reasons. First, the amount of privately-owned non-conservation lands containing unoccupied proposed critical habitat that could be enrolled in the easement program is limited to 441 acres in Iowa. Second, grazing or haying activities on lands in Iowa would be subject to the proposed 4(d) rule (if finalized) permitting routine grazing activity.

[26] Personal communication with Project leader, Waubay National Wildlife Refuge, May 15, 2014. Also see 78 FR 6325 for details on the 4(d) rule.

would result in distributional impacts (i.e., funds that would have been paid to private landowners will be otherwise employed for the public benefit), but would not result in an overall cost.[27]

3.1.2 Natural Resources Conservation Service

The U.S. Department of Agriculture's NRCS provides financial assistance to landowners to improve and maintain natural resources through programs including: Environmental Quality Incentives Program (EQUIP), Conservation Security/Stewardship Program (CSP), and Conservation Reserve Program (CRP). Specific activities may include prescribed grazing, fencing, water facility, forage harvest management, and upland wildlife habitat management. These programs may benefit the two butterflies to the extent that they result in land management practices conducive to meeting the habitat needs of the species. While these agreements generally prevent grasslands from being plowed or destroyed and prevent haying before July 16, they may not restrict other practices that can degrade the two butterflies' habitat, such as routing of water sources for livestock, prescribed burns or pesticide use.[28] In these cases, section 7 consultation may impose additional restrictions on activities covered under NRCS agreements.

The Service received letters from various state offices of the NRCS with respect to the impacts that the critical habitat designation might have on relevant activities. In addition, we conducted outreach with local NRCS representatives to obtain additional information. Based on discussion with NRCS staff, the likely primary impact of the critical habitat in unoccupied units is additional administrative cost related to section 7 consultation efforts; incremental project modifications are expected to be very limited in most states.[29]

Based on the Service's incremental effects memorandum, and discussion with staff at NRCS state offices, we estimate the number of section 7 consultations and project modifications expected to occur as a result of the listing and critical habitat designation.[30] While our analysis is focused on impacts occurring in unoccupied areas, because information is not readily available to distinguish the locations covered by the anticipated consultations, we conservatively assume all of the consultations are due to critical habitat designation. NRCS offices in Iowa, North and South Dakota, and Wisconsin all will undertake programmatic consultation with the Service.[31] In South Dakota, NRCS also estimates 23 existing projects will require informal consultation prior to completion of the

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[27] However, we note that if many landowners chose not to participate in grassland easement programs as a result of the critical habitat designation, this could affect the recovery of the species.

[28] U.S. Fish and Wildlife Service (2014).

[29] Personal communication with Conservation Biologist, Iowa NRCS, May 8, 2014; Personal communication with State Resource Conservationist, Minnesota NRCS, May 5, 2014.; Personal communication with various staff, South Dakota NRCS, April 28, 2014; Personal communication with various staff, North Dakota NRCS, April 24, 2014. Personal communication with State Biologist, Wisconsin NRCS, April 29, 2014.

[30] *Ibid.*

[31] While representatives at NRCS Wisconsin were uncertain whether a programmatic consultation would occur, we conservatively assume that a programmatic consultation between NRCS Wisconsin and the Service will result from the designation of critical habitat for the two butterflies.

programmatic consultation. In North Dakota, NRCS also expects to conduct two formal consultations per year prior to completion of the programmatic consultation.

Formal consultations in North Dakota may result in additional conservation measures due to designation of critical habitat for the two butterflies.[32] Specifically, we assume that the Service will recommend rerouting of water sources at a cost of approximately $5,000 per project. Other project modifications may include timing restrictions on activities such as grazing or prescribed burning. The likelihood that such project modifications will be recommended is too uncertain to quantify; however, costs associated with timing restrictions are expected to be minor.[33] Project modifications other than timing restrictions are not anticipated in states other than North Dakota.

Exhibit 3 presents the total incremental costs associated with NRCS activities within the proposed critical habitat designation. Due to uncertainty regarding the likely location of future consultations in North Dakota, and an absence of information regarding the precise location of the existing projects requiring consultation in South Dakota, we present aggregate costs by state. We conservatively estimate that all costs will occur in 2014, following designation of critical habitat. Total costs associated with NRCS activities are estimated to be $440,000, with the highest costs in South Dakota.

EXHIBIT 3. INCREMENTAL COSTS ASSOCIATED WITH NRCS ACTIVITIES ($2013)

STATE	ESTIMATED COSTS IN 2014
Iowa	$36,000
Michigan	$0
Minnesota	$25,000
South Dakota	$260,000
North Dakota	$86,000
Wisconsin	$36,000
TOTAL	**$440,000**

Notes: The level of effort per consultation represents approximate averages based on the best available cost information. The cost estimates in this report are accordingly rounded to two significant digits to reflect this imprecision. The state cost estimates therefore may not sum to the total costs reported due to rounding.

It is worth noting that some landowners may choose not to enter into NRCS agreements because of perceived restrictions that would result from section 7 consultation. As discussed above, forgoing these agreements would have impacts on individual farmers or ranchers due to the loss of NRCS funds. Because NRCS has a limited amount of funds,

[32] Personal communication with various staff, North Dakota NRCS, April 24, 2014.

[33] *Ibid*.

we assume that these funds would be utilized by a different applicant or for a different program and therefore only result in distributional impacts.[34]

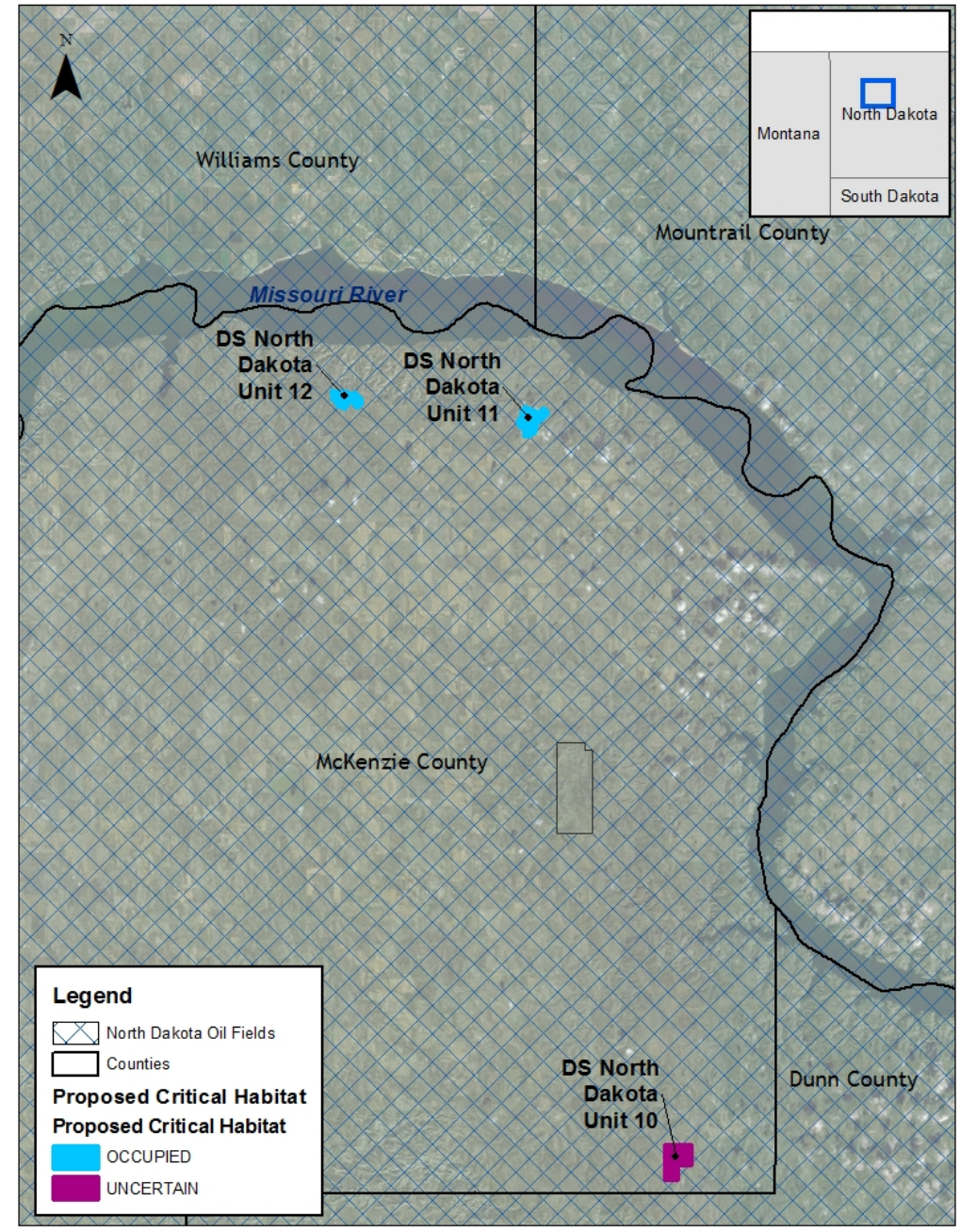
3.2 OIL AND GAS ACTIVITY

Based on our review of public comments, the proposed rules, and activities occurring in the region, we identified the development of oil fields in North Dakota as an activity that could potentially be affected by the proposed designation. We find that oil and gas development is unlikely in the units considered unoccupied by the two butterflies. Comments from ConocoPhillips indicate that the most significant levels of oil and gas development occur at the westernmost edge of the species range and that the increased level of oil and gas development associated with the Bakken formation is concentrated in specific counties in North Dakota.[35] Based on a review of GIS data illustrating oil fields in North Dakota, we determined that the critical habitat areas with the highest likelihood for oil development are within McKenzie County. The three units in McKenzie county that are within the oil field development area are all units considered occupied or uncertain, as shown in Exhibit 4. Therefore, as discussed above, we expect that if a Federal nexus exists, any project modifications recommended by the Service would occur regardless of critical habitat designation. Incremental costs for oil and gas activity are thus limited to administrative costs of considering adverse modification of critical habitat during consultation.

[34] We note that if many landowners chose not to participate in NRCS programs as a result of the critical habitat designation, the recovery of the species could be affected. We also note that NRCS and private landowners have expressed concern that additional regulation could lead landowners to convert their grasslands to cropland. NRCS notes, "[s]everal years of high commodity prices have generated economic pressure to convert grasslands to cropland combined with the perceived threat of government regulation on private lands are real threats to persistence of native grasslands." See U.S. Department of Agriculture, NRCS, Bismarck State Office (2014). Also, the North Dakota Stockmen's Association notes, "[t]he proposals that the USFWS have unveiled would come with private property rights restrictions that have economically significant ramifications for livestock producers particularly. The threat of being subject to additional government requirements could be enough to encourage the conversion of these lands to other land uses – agricultural or otherwise – that are not subject to them" (North Dakota Stockmen's Association, 2013).

[35] ConocoPhillips (2013).

EXHIBIT 4. OVERLAP OF OIL FIELDS WITH PROPOSED CRITICAL HABITAT



Data Sources:
1. US Fish and Wildlife Service
2. ND Department of Mineral Resources
https://www.dmr.nd.gov/OaGIMS/viewer.htm (OilFields.zip)
3. ESRI Map Projection: Mercator
Auxiliary Sphere

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3.3 TRANSPORTATION ACTIVITY

Because transportation activities are considered a stressor in the proposed listing rule, and given the nexus that can exist through funding by the Federal Highway Administration (FHWA), we reviewed transportation activity that could potentially be affected by the proposed designation. In order to identify incremental project modifications, our analysis of transportation projects first involved identifying unoccupied critical habitat units where maintenance or construction on Federal or state highways funded with Federal highway funds might occur (i.e., units where state or Federal roads are located within the proposed critical habitat). This analysis identified one unoccupied critical habitat unit (PS IA Unit 02) for further analysis.

Next, for those relevant areas, we reviewed available information from the Iowa Department of Transportation (DOT) website to determine whether there were any ongoing or planned transportation construction projects that could impact the two butterflies' critical habitat.[36] Based on this analysis, we did not identify any planned projects in the proposed critical habitat. In addition, neither the Service nor the FHWA identified any specific projects of concern in the proposed critical habitat.[37]

3.4 PUBLIC LAND MANAGEMENT[38]

Based on our review of the consultation records provided by the Service, we identified public land management (outside of agricultural lands) as an activity that could be potentially affected by the proposed designation. All of the unoccupied proposed critical habitat under Federal ownership is managed by the Service, including a portion of the Waubay National Wildlife Refuge and some waterfowl protection areas. In total, we estimate that approximately 1,200 acres could be affected by the proposed designation of unoccupied areas.[39]

For these lands, any project modifications to public land management activities resulting from designation of critical habitat would be considered an incremental cost. The types of conservation measures recommended could vary, depending on land uses and locations. While we do not have the information needed to quantify these potential impacts across all of these areas, we present an estimate of impacts at the Waubay National Wildlife Refuge (NWR) as an example to illustrate the magnitude of potential impacts. The types of management changes on these lands would likely be similar to those discussed in the text box below for the Waubay NWR.[40]

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[36] Iowa DOT (2014).

[37] Federal Highway Administration (2014) and U.S. Fish and Wildlife Service (2014).

[38] As private conservation lands and state lands are not expected to have a Federal nexus for land management planning activities, this section focuses on Federal lands with unoccupied critical habitat.

[39] Based on IEc GIS analysis.

[40] Personal communication with Project leader, Waubay National Wildlife Refuge, May 15, 2014.

EXAMPLE: WAUBAY NATIONAL WILDLIFE REFUGE

Approximately 348 acres of the Waubay NWR are included in proposed critical habitat for the two butterflies (DS – PS South Dakota Unit 16). This unit is considered to be unoccupied by both species. Thus, any internal section 7 consultation and resulting changes in land management activities occurring in this unit would be an incremental result of the designation. Administrative costs of Service efforts to conduct an intra-Service consultation would total approximately $12,000.

In addition, NWR staff anticipates changing the way prescribed burns are conducted and adding fencing to ensure critical habitat areas are not affected at certain times of the year. Costs to undertake a prescribed burn in the unit would increase due to the requirement to provide refuge for the species. As a result, what could have been accomplished in one day would now take two days, requiring additional labor at a cost of roughly $5,000. This cost would likely be incurred every other year. Costs to install additional fencing are estimated to be approximately $4,000 per mile, and would likely be required for about two miles, for a total incremental cost of $8,000. After the one-time installation cost, maintenance costs are expected to be approximately $1,000 per year.(1) Thus, total initial incremental project modification costs would be $25,000, and recurring annual costs would be as much as $6,000.

Notes:

(1) Personal communication with Project leader, Waubay National Wildlife Refuge, May 15, 2014.

3.5 TRIBAL ACTIVITIES

Because of the special government-to-government relationship that exists between Tribes and the Federal government, many activities occurring on Tribal lands are subject to a Federal nexus through Federal funding or permitting through the Bureau of Indian Affairs. Therefore, potential exists for section 7 impacts in these areas. In occupied critical habitat, incremental impacts are likely limited to administrative burden. In unoccupied areas, incremental project modifications may occur.

Proposed critical habitat overlaps land owned by three Tribes in North Dakota—the Turtle Mountain Band of Chippewa Indians, the Spirit Lake Sioux, and the Three Affiliated Tribes—and one Tribe in South Dakota—the Sisseton Wahpeton Oyate Tribe. Of the 2,037 acres of proposed critical habitat that overlap Tribal lands, only 13 acres are unoccupied, occurring on Sisseton-Wahpeton-Oyate lands in DS-PS SD Unit 15. Therefore, we do not anticipate incremental project modifications on the majority of Tribal lands.

Information is not available regarding ongoing or planned Tribal activities on the 13 acres of the Tribe's lands that contain unoccupied proposed critical habitat. Should future Tribal activities in these areas impact critical habitat, the Tribe will likely enter section 7 consultation with the Service. Any administrative effort or project modifications that

result from such consultations are considered incremental impacts of the designation. Given the small amount of potentially affected lands (13 acres), when combined with other expected incremental impacts, total costs are not expected to reach the threshold of an economically significant rulemaking.

3.6 WIND ENERGY

Wind energy projects can affect the species and its habitat through temporary ground disturbance during construction and permanent loss of habitat throughout the productive life of wind turbines, access roads, and other related structures.[41] Because wind energy development is actively occurring in the States with proposed critical habitat, we investigated whether there are any planned projects in the proposed critical habitat.

The Service identified two wind projects that are currently planned or ongoing within or near two occupied proposed critical habitat units in South Dakota: DS South Dakota Unit 17 and DS South Dakota Unit 19.[42] While these projects trigger section 7 consultation, incremental impacts are likely to be limited to administrative effort, because the potentially affected critical habitat units are occupied.

We did not identify any planned or ongoing projects within proposed unoccupied critical habitat. However, existing wind farms are located near several unoccupied units in Iowa, including PS IA Units 2, 3, 4, 6, 7, and 9.[43] Expansion of current wind facilities is a possibility; however, we lack data on the likelihood of such expansion. Furthermore, much of the unoccupied habitat in Iowa is owned and managed by entities that are unlikely to pursue wind energy development.[44] Should proponents propose a project on or near the 736 non-conservation unoccupied acres in Iowa or South Dakota where such development is possible, incremental impacts could occur. However, the timing and magnitude of such impacts are highly uncertain.

If a project is proposed in unoccupied critical habitat, the permanent ground disturbance footprint of a wind turbine is approximately 0.5 acres, and access roads and construction staging areas can greatly increase the amount of disturbed habitat.[45] Consequently, the Service may request that project proponents avoid construction in critical habitat altogether or place turbines and other facilities as near to existing roads as possible to

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[41] Personal communication with Project leader, Waubay National Wildlife Refuge, June 13, 2014; personal communication with Service staff at Rock Island Ecological Services Field Office on June 20, 2014.

[42] Personal communication with Project leader, Waubay National Wildlife Refuge, June 13, 2014.

[43] Personal communication with Service staff at Rock Island Ecological Services Field Office on June 20, 2014.

[44] In Iowa, unoccupied PS IA Units 2, 3, 4, 6, 7, 8, 9, 10, and 11 contain a total of 2,080 acres of State, county and private land. Together, State, county and private conservation organizations, including the Iowa Department of Natural Resources (Iowa DNR), Christopherson Slough Complex Wildlife Management Area, Osceola County Conservation Board, and The Nature Conservancy (TNC) own approximately 1,519 acres. We do not expect wind energy development activity to occur on land owned by these entities because of their conservation land management goals. In particular, Iowa DNR has issued siting guidelines for wind energy facilities on State conservation lands, which recommend avoiding areas where Federally listed species have been documented and avoiding protected natural resource areas, including: Federal, State, and County owned lands, NRCS's Wetlands Reserve Program Easements, U.S. Fish and Wildlife Service Easements, Bird Conservation Areas, Iowa's Prairie Pothole Joint Venture Priority Areas, and TNC priority areas for bird conservation (see Iowa DNR, 2014). Similarly, wind energy development is not expected on Service-owned unoccupied habitat.

[45] Personal communication with Project leader, Waubay National Wildlife Refuge, June 13, 2014.

avoid adverse modification of critical habitat by minimizing the need for new roadways and staging areas.[46] Project proponents may incur costs related to additional construction restrictions and/or decreased daily energy production; relocating a wind turbine even a small distance can significantly impact the turbine's efficiency.[47] If proponents are unable to avoid construction in critical habitat, the Service may request habitat restoration.[48] The per acre cost of restoring lost remnant prairie habitat is uncertain, but seeding costs roughly $1,500 per acre and restoration maintenance efforts can cost between $5,000 to $10,000 per acre per year.[49] Thus, although we are unable to predict the likelihood that wind power projects will be proposed in unoccupied critical habitat, the small number of acres potentially affected, combined with the relatively modest potential project modification costs, suggest that impacts are unlikely to reach the threshold of an economically significant rulemaking when combined with other expected incremental impacts.

3.7 OTHER DEVELOPMENT

Other activities that we considered include residential and commercial development and gravel mining. Based on the Service's incremental effects memorandum and our review of public comments, we are not aware of any specific residential and commercial development or gravel mining projects planned within the proposed critical habitat area. Thus, incremental impacts resulting from this type of activity is not anticipated.

SECTION 4. OTHER COSTS OF THE CRITICAL HABITAT RULE

This section discusses the potential for incremental costs to occur outside of the section 7 consultation process. These types of costs include triggering additional requirements or project modifications under state laws or regulations, and perception effects on markets. These types of impacts may occur even when activities do not have a Federal nexus for consultation.

4.1 ADDITIONAL STATE REGULATION

Indirect incremental impacts may occur if the designation of critical habitat increases awareness of the presence of the species or the need for protection of its habitat. As shown below in Exhibit 5, the two butterflies are provided some level of protection in five of the six states containing proposed critical habitat designation (all except North Dakota).[50] Although protective status for the species may not require implementation of conservation efforts sufficient to protect the species' habitat, these designations suggest that state agencies are likely to be aware of the presence of the species. We therefore assume that the designation of critical habitat is unlikely to trigger state-level impacts as a

[46] *Ibid*. The Service may request timing restrictions as well.

[47] Personal communication with Project leader, Waubay National Wildlife Refuge, June 13, 2014.

[48] Personal communication with Service staff at Rock Island Ecological Services Field Office on June 20, 2014.

[49] *Ibid.*

[50] U.S. Fish and Wildlife Service (2014).

result of increased awareness of the species and its habitat. The Service did not receive any public comments on the proposed rule suggesting this conclusion is incorrect.

EXHIBIT 5. STATE PROTECTIVE STATUS FOR DAKOTA SKIPPER AND POWESHIEK SKIPPERLING

STATE	PROTECTIVE STATUS
Iowa	Poweshiek skipperling listed as threatened under state statute.
Michigan	Poweshiek skipperling listed as threatened under state statute.
Minnesota	Dakota skipper and Poweshiek skipperling both listed as endangered under state statute.
South Dakota	State natural heritage program considers species to be imperiled because of rarity due to very restricted range and few populations.
Wisconsin	Poweshiek skipperling listed as endangered under state statute.
Source: U.S. Fish and Wildlife Service (2014).	

4.2 POSSIBLE IMPACTS OF PUBLIC PERCEPTION

Private property owners have expressed concern that the designation of critical habitat for the two butterflies may affect their property values. One commenter states, "In South Dakota, land that is designated as critical habitat under ESA is likely to be valued differently (lower) than a tract of similar land not so designated because future perspective buyers of that property will be wary of ESA."[51] The Service has received similar comments on proposed critical habitat rules in other parts of the United States.[52]

These commenters believe that, all else being equal, a property that is inhabited by a threatened or endangered species, or that lies within a critical habitat designation, will have a lower market value than a property that is not inhabited by the species or that lies outside of critical habitat. This lower value results from the perception that critical habitat will preclude, limit, or slow development, or somehow alter the highest and best use of the property.

Public attitudes about the limits and costs that the Act may impose can cause real economic effects to the owners of property, regardless of whether such limits are actually imposed. Over time, as public awareness grows of the regulatory burden placed on designated lands, particularly where no Federal nexus compelling section 7 consultation exists, the effect of critical habitat designation on properties may subside.

Data limitations prevent the quantification of the possible incremental reduction in property values or its attenuation rate. Therefore, to determine whether the possible magnitude of such costs may approach the threshold for an economically significant rulemaking under E.O. 12866, we conduct a bounding analysis. We estimate the total value of privately-owned land in the proposed critical habitat designation (excluding

[51] Whipple (2013).

[52] See, for example, public comments on the possible impact of designating private lands as critical habitat for the Northern spotted owl (as summarized in Industrial Economics, Incorporated (2012), p. 5-21) and the cactus ferruginous pygmy owl (as summarized in Industrial Economics, Incorporated (1999), p. 44).

private conservation lands held by The Nature Conservancy and Michigan Nature Association). Given the rural nature of these areas, agricultural uses are likely to represent the highest and best use of the properties.

The total value of the properties represents the upper bound on possible costs rather than a best estimate of likely costs. Assuming the entire land value is lost would likely overstate impacts and is not supported by the limited existing academic literature investigating endangered species-related public perception effects.[53] In addition, these properties may experience similar perception-related effects for other reasons, including the presence of the listed butterflies in the occupied areas, reducing the incremental portion of the impact attributable solely to the two butterflies' critical habitat.

For the purposes of this analysis, we rely on per-acre values for cropland and pastureland. Where available, we applied county specific values; otherwise, we apply a statewide average. Land values are obtained from various sources, including the National Agricultural Statistics Service and the North Dakota Department of Trust Lands. We develop estimates of the total value of the roughly 10,500 acres of privately-owned land (excluding conservation lands). While we do not know the specific use of these lands (i.e., pastureland versus cropland), applying the higher per-acre value for cropland, we find that possible costs resulting from public perception of the effect of critical habitat designation, when combined with section 7 costs, are unlikely to exceed the threshold for an economically significant rulemaking under E.O. 12866.[54]

SECTION 5. SECTION 7 AND OTHER ECONOMIC BENEFITS

The primary intended benefit of critical habitat is to support the conservation of threatened and endangered species, such as the two butterflies. As described in the previous sections of this memorandum, the designation may result in incremental conservation efforts for the two butterflies, including reduced grazing, additional fencing, and alterations to prescribed burns for areas currently not occupied by the species. Various economic benefits may result from these incremental conservation efforts, including: (1) those associated with the primary goal of species conservation (i.e. direct benefits), and (2) those additional beneficial services that derive from conservation efforts but are not the purpose of the Act (i.e. ancillary benefits).

In order to quantify and monetize these benefits, information would be needed to determine (1) the incremental change in the probability of two butterflies' conservation expected to result from the designation, and (2) the public's willingness to pay for such beneficial changes.[55] Although numerous published studies estimate individuals' willingness to pay to protect endangered species, we are not aware of any published studies that estimate the value the public places on preserving the two butterflies.[56] In

[53] For a discussion of the available literature describing potential perception effects resulting from the Act, see Industrial Economics, Incorporated (2014).

[54] Industrial Economics, Incorporated (2014).

[55] For a detailed discussion of these data limitations, see Flight and Unsworth (2011).

[56] See, for example, Loomis and White (1996).

addition, we do not have information on the expected change in species population levels that may result from critical habitat designation for the two butterflies. Lacking these data, we are not able to quantify the primary species conservation benefit of the critical habitat designation.

We therefore provide a qualitative summary of the categories of benefits that may result from implementation of the incremental conservation efforts described in this memorandum. Exhibit 6 provides information on these ancillary benefits and where they are expected to occur. In addition to the benefits listed in Exhibit 6, the maintenance or enhancement of use and non-use values for coexisting species, or for biodiversity in general, may also result from the incremental conservation efforts for the two butterflies.

EXHIBIT 6. POSSIBLE INCREMENTAL CONSERVATION EFFORTS FOR THE TWO BUTTERFLIES AND ASSOCIATED BENEFITS

POSSIBLE INCREMENTAL CONSERVATION EFFORT	ASSOCIATED BENEFITS	CRITICAL HABITAT UNITS WITH ASSOCIATED BENEFITS
Fencing	• Improved water and soil quality • Ecosystem health for coexisting species	• Poweshiek skipperling Iowa Units 2, 3, 4, 6, 7, 8, 9, 10 and 11 • Poweshiek skipperling South Dakota Unit 18 • Overlapping Dakota skipper/ Poweshiek skipperling South Dakota Units 1, 15 and 16
Grazing restrictions (i.e., alterations to timing or watering)		
Altering prescribed burns		
Note: All conservation efforts are intended to support the survival and/or recovery of the species.		

SECTION 6. SUMMARY

This analysis reviews potential section 7 and other costs resulting from the proposed critical habitat designation for the two butterflies. To determine section 7 costs, the analysis focuses on the impacts of future consultations likely to occur for activities undertaken by or permitted by Federal agencies within unoccupied areas of proposed critical habitat. Specifically, the analysis forecasts costs associated with conservation efforts that may be recommended in consultation for activities covered by voluntary conservation agreements with NRCS. The total quantifiable incremental section 7 costs associated with these NRCS agreements are estimated to be $440,000 in 2014. While future wind projects in unoccupied critical habitat may incur incremental project modification costs, the likelihood and timing such projects are highly uncertain.

In addition, we considered the magnitude of potential administrative costs that could result from the consideration of adverse modification in consultations occurring within habitat considered occupied for purposes of section 7. This rough assessment of incremental administrative costs for occupied areas indicates that aggregate incremental costs, when combined with the other anticipated costs discussed in this memorandum, are unlikely to reach the threshold of an economically significant rulemaking.

In terms of other costs, this analysis concludes that the designation of critical habitat is unlikely to trigger additional requirements under state or local regulations. Finally, costs

resulting from public perception of the effect of critical habitat, based on the value of privately-owned non-conservation land in the vicinity of the proposed designation, combined with the other incremental impacts estimated in this analysis are unlikely to reach the threshold of an economically significant rulemaking.

We conclude that critical habitat designation for the two butterflies is unlikely to reach the threshold of an economically significant rulemaking. The magnitude of benefits is highly uncertain, and quantification would require primary research and the generation of substantial amounts of new data, which is beyond the scope of this memorandum and Executive Order 12866.[57]

[57] Executive Order 12866 directs agencies to base regulatory decisions on "the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation" (58 FR 51736). For a detailed discussion of data limitations associated with the estimation of critical habitat benefits, see Flight and Unsworth (2011).

SECTION 7. REFERENCES

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