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**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT TACOMA**

CENTER FOR BIOLOGICAL DIVERSITY,

Plaintiff,

v.

U.S. FISH AND WILDLIFE SERVICE;
PAUL SOUZA, in his official capacity as
acting Director of the U.S. Fish and Wildlife
Service; and DOUG BURGUM in his official
capacity as Secretary of the U.S. Department
of the Interior,

Defendants.

Case No. 25-cv-5160

**COMPLAINT FOR DECLARATORY
AND INJUNCTIVE RELIEF**

INTRODUCTION

1. Plaintiff Center for Biological Diversity (“Center”) brings this case challenging the U.S. Fish and Wildlife Service’s (“Service”) failure to comply with the Endangered Species Act (“ESA” or “Act”) and the Administrative Procedure Act (“APA”) when determining that the sand-verbena moth (*Copablepharon fuscum*) (“moth”) does not warrant listing as a threatened or endangered species under the Act.

2. The sand-verbena moth is endemic to the active dunes of the Salish Sea, where the rain shadow of the Olympic and Coast mountain ranges creates a relatively warm, dry climate. This habitat specialization, along with unique brown, gold, and grey coloring on its wings, distinguishes the sand-verbena moth from other species in the *Copablepharon* genus.

1 3. The moth has an obligate mutualistic relationship with yellow sand-verbena
2 (*Abronia latifolia*), depending exclusively on the plant for all stages of the moth's life cycle and
3 providing pollination services to the plant. The relationship between the two is most evident
4 between mid-May and early July when the plant produces spherical clusters of small yellow
5 flowers on which adult moths feed and lay eggs during their 7- to 21-day lifespan.

6 4. With only six confirmed populations remaining, and five other sites with historic
7 observations, the moth is in dire need of the ESA's protections. Shoreline development has
8 destroyed much of the moth's formerly suitable dune habitat and invasive plants, such as
9 European beachgrass, crowd out yellow sand-verbena.

10 5. Sea level rise driven by climate change will inundate much of the moth's
11 remaining habitat, further threatening its long-term viability. Although yellow sand-verbena
12 grows on active sand dunes abutting the ocean, the plant cannot tolerate saltwater inundating its
13 roots, which grow up to 14 feet deep. The Salish Sea is projected to rise 0.3m (1 foot) by mid-
14 century and between 0.6 to 1.2m (2 to 3.9 feet) by 2100. Biennial flooding heights are projected
15 to rise 1.8m (5.9 feet) by mid-century and between 2.4 to 2.7m (7.9 to 8.9 feet) by 2100.

16 6. The Service projects that five of the moth's six populations will lose most of their
17 current habitat by mid-century. By the year 2100, the moth populations at either four or five of
18 these sites will be entirely extirpated, depending on whether there is a low- or high-end
19 greenhouse gas emissions outcome.

20 7. Despite this evidence showing that the moth is in danger of extinction and will
21 become more so in the future, on December 19, 2019, the Service published a finding that the
22 sand-verbena moth does not warrant listing under the ESA as either threatened or endangered.

23 8. Responding to a petition that it received over nine years earlier, the Service
24 concluded that there is too much uncertainty regarding the moth's status to list the species under
25 the ESA. In doing so, the Service violated the ESA and APA by: (1) arbitrarily concluding that it
26 is uncertain how habitat loss will impact the moth's long-term viability; (2) failing to base its
27 decision on the best available science regarding the moth's dispersal capabilities, present and
28 historic range, and habitat needs; (3) failing to consider the conclusion in Fleckenstein et al.

1 (2018) that the moth’s isolated populations increase the risk of extirpation; (4) unlawfully
2 determining that 2100 is not the foreseeable future; and (5) unlawfully concluding that the moth
3 does not warrant listing as threatened or endangered in a significant portion of its range.

4 9. To remedy these violations, Plaintiff brings this lawsuit for declaratory and
5 injunctive relief, seeking an Order declaring that the Service violated the ESA and APA by
6 determining that the moth does not warrant listing under the Act, and directing the Service to
7 issue a revised listing decision by a date certain.

8 **JURISDICTION**

9 10. This Court has jurisdiction over this action pursuant to 16 U.S.C. § 1540(c), (g)
10 (ESA citizen suit provision) and 28 U.S.C. § 1331 (federal question). This Court has authority to
11 issue declaratory and injunctive relief pursuant to the ESA, 16 U.S.C. § 1540(g); 28 U.S.C. §§
12 2201–2202; and 5 U.S.C. § 706(2).

13 11. Plaintiff provided Defendants with 60-days’ notice of their ESA violations, as
14 required by 16 U.S.C. § 1540(g)(2)(C), by a letter to the Director of the Service and Secretary of
15 the Interior dated December 16, 2024. Defendants received the notice via email on December 16
16 and received a physical copy on December 27. Defendants have not remedied the violations set
17 out in the notice and an actual controversy exists between the parties within the meaning of the
18 Declaratory Judgment Act, 28 U.S.C. § 2201.

19 12. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(e) because a
20 substantial part of the events or omissions giving rise to Plaintiff’s claims occurred in this district
21 as half of the moth’s known populations occur in this district and the Service’s office that
22 prepared the Species Status Assessment for the sand-verbena moth (“SSA”) is located in Lacey,
23 Thurston County, Washington, which is within this district.

24 **PARTIES**

25 13. Plaintiff the CENTER FOR BIOLOGICAL DIVERSITY is a national, non-profit
26 conservation organization that works through science, law, and policy to protect imperiled
27 wildlife and their habitat. The Center is incorporated in California and headquartered in Tucson,
28

1 Arizona, with offices throughout the United States. The Center has more than 79,000 active
2 members throughout the country and more than 4,000 members in Washington alone.

3 14. The Center brings this action on behalf of its staff and members who derive
4 recreational, aesthetic, educational, scientific, professional, and other benefits from these species
5 and their habitats. Plaintiff's members' interests in protecting and recovering the moth and its
6 habitat are directly harmed by the Service's failure to comply with the ESA and APA in making
7 a listing determination for the sand-verbena moth.

8 15. For example, Center member and professional biologist Nicholas Page, who
9 resides in Courtenay, BC, regularly conducts surveys for sand-verbena moth and has done so
10 since 2001. He has documented populations in both Washington and British Columbia and plans
11 to sample for sand-verbena moth at Goose Spit near Comox, BC, this coming June 2025. He
12 continues to receive contracts from the Canadian government to conduct surveys or provide
13 recommendations on recovery planning. Mr. Page also has a personal connection to the moth, as
14 the expertise he developed from moth-related projects was a key part of his career development.

15 16. Center member Carolyn Woods is the education manager at the Port Townsend
16 Marine Science Center ("PTMSC") and resides in Port Townsend, WA. Since 2014, she has led
17 school field trip groups and summer camp sessions that participate in "Beach Investigations"
18 focused on the native dune habitat and species at Fort Worden State Park, including yellow sand-
19 verbena and the sand-verbena moth. As part of these lessons, Ms. Woods attempts to locate and
20 identify native species, including sand-verbena moth, for the groups that she leads. In 2025, she
21 and PTMSC have field trip programs scheduled in May and June, as well as Marine Biology
22 summer camp sessions scheduled in July and August, all of which will include Beach
23 Investigation activities. She and the AmeriCorps members at PTMSC also host an annual MLK
24 Day of Service volunteer project that typically includes non-native plant removal at Fort Worden
25 State Park. During these events, Ms. Woods finds signs of animal life including insects, pupae,
26 and larvae, which she attempts to identify. Ms. Woods also enjoys spending time at Fort Worden
27 State Park outside of work as part of her lifelong interest in the natural world.

1 17. Defendants’ violation of the ESA and APA in determining that the moth does not
2 warrant listing has denied the moth the ESA’s protections. Plaintiffs’ members’ aesthetic,
3 recreational, professional and scientific interests in the moth have been and will continue to be
4 irreparably harmed by Defendants’ failure to provide the ESA’s needed protections to the moth.
5 A species does not receive any protections under the ESA until it is listed as endangered or
6 threatened. Without these protections, endangered and threatened species continue to decline
7 toward extinction and become harder to conserve as their situations become dire. Thus, without
8 the protections provided by the ESA, the moth lacks critical protections and will continue to
9 decline across its range. These injuries are actual, concrete injuries that are presently suffered by
10 the Center’s members, are directly caused by Defendants’ acts and omissions, and will persist
11 unless the relief sought in this Complaint is granted. The relief sought would redress these
12 injuries. The Center and its members have no other adequate remedy at law.

13 18. Defendant U.S. FISH AND WILDLIFE SERVICE is the agency within the
14 Department of the Interior charged with implementing the ESA for the moth. The Secretary of
15 the Interior has delegated administration of the ESA to the Service. 50 C.F.R. § 402.01(b).¹

16 19. Defendant PAUL SOUZA is the acting Director of the Service and is charged
17 with ensuring that agency decisions comply with the ESA. Defendant Souza is sued in his
18 official capacity.

19 20. Defendant DOUG BURGUM is the Secretary of the U.S. Department of the
20 Interior (“Secretary”) and has the ultimate responsibility to administer and implement the
21 provisions of the ESA. Defendant Burgum is sued in his official capacity.

22 **STATUTORY FRAMEWORK**

23 **The Endangered Species Act**

24 21. The Endangered Species Act, 16 U.S.C. §§ 1531–1544, is “the most
25 comprehensive legislation for the preservation of endangered species ever enacted by any
26

27 ¹ Unless otherwise noted, this complaint cites to the ESA listing regulations in effect when Service
28 published the not-warranted finding on December 19, 2019. 84 Fed. Reg. 69707 (Dec. 19, 2019).
These regulations stayed in effect from September 26, 2019, until May 6, 2024. *See* 84 Fed. Reg.
45020 (Aug. 27, 2019); 89 Fed. Reg. 24300 (Apr. 5, 2024).

1 nation.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). Its fundamental purposes are “to
2 provide a means whereby the ecosystems upon which endangered species and threatened species
3 depend may be conserved [and] to provide a program for the conservation of such endangered
4 species and threatened species.” 16 U.S.C. § 1531(b).

5 22. The ESA defines a “species” as “any subspecies of fish or wildlife or plants, and
6 any distinct population segment of any species of vertebrate fish or wildlife which interbreeds
7 when mature.” *Id.* § 1532(16).

8 23. A species is “endangered” when it “is in danger of extinction throughout all or a
9 significant portion of its range.” *Id.* § 1532(6). A species is “threatened” when it is “likely to
10 become an endangered species within the foreseeable future throughout all or a significant
11 portion of its range.” *Id.* § 1532(20).

12 24. The ESA requires the Service to determine whether any species is endangered or
13 threatened because of any one of, or combination of, the following factors: (A) the present or
14 threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for
15 commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the
16 inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting
17 its continued existence. *Id.* § 1533(a)(1).

18 25. If the Service determines that the species is not endangered throughout all its
19 range, the ESA requires the agency to examine whether it is endangered or threatened throughout
20 any “significant portion” of its range. *Id.* §§ 1532(6), (20).

21 26. The Service must base all listing determinations “solely on the basis of the best
22 scientific and commercial data available.” *Id.* § 1533(b)(1)(A).

23 27. To ensure the timely protection of species at risk of extinction, Congress set forth
24 a detailed process whereby citizens may petition the Service to list a species as endangered or
25 threatened. *Id.* § 1533(b)(3). In response, the Service must publish a series of three decisions
26 according to statutory deadlines. First, within 90 days of receipt of receipt of a listing petition,
27 the Service must, “to the maximum extent practicable,” publish an initial finding as to whether
28 the petition, “presents substantial scientific or commercial information indicating that the

1 petitioned action may be warranted.” *Id.* § 1533(b)(3)(A). This is known as the “90-day finding.”
2 If the Service finds in the 90-day finding that the petition does not present substantial
3 information indicating that listing may be warranted, the petition is rejected and the process
4 concludes.

5 28. If the Service determines that a petition presents substantial information
6 indicating that listing “may be warranted,” the agency must publish that finding and proceed
7 with a scientific review of the species’ status, known as a “status review.” *Id.*

8 29. Upon completing the status review, and within 12 months of receiving the
9 petition, the Service must publish a “12-month finding” with one of three listing determinations:
10 (1) listing is “warranted”; (2) listing is “not warranted”; or (3) listing is “warranted but
11 precluded” by other proposals for listing species, provided certain circumstances are met. *Id.* §
12 1533(b)(3)(B).

13 30. If the Service determines that listing is “warranted,” the agency must publish that
14 finding in the Federal Register along with the text of a proposed regulation to list the species as
15 endangered or threatened and to designate critical habitat for the species. *Id.* § 1533(a)(3)(A),
16 (b)(3)(B)(ii). Within one year of publication of the proposed listing rule, the Service must
17 publish in the Federal Register the final rule implementing its determination to list the species
18 and designate critical habitat. *Id.* § 1533(b)(6)(A).

19 31. If the Service instead issues a finding that listing the species is “not warranted,”
20 the process concludes, and that finding is a final agency action subject to judicial review. *Id.* §
21 1533(b)(3)(C)(ii).

22 32. The ESA has a suite of substantive and procedural legal protections that apply to
23 species once they are listed as endangered or threatened. For example, section 4(a)(3) of the Act
24 requires the Service to designate “critical habitat” for each endangered and threatened species.
25 *Id.* § 1533(a)(3).

26 33. In addition, ESA section 7(a)(2) requires all federal agencies to ensure that their
27 actions do not “jeopardize the continued existence” of any endangered or threatened species or
28

1 “result in the destruction or adverse modification” of any listed species’ critical habitat. *Id.* §
2 1536(a)(2).

3 34. ESA section 9 prohibits, among other actions, “any person” from causing the
4 “take” of any protected fish or wildlife without lawful authorization from the Service. *Id.* §§
5 1538(a)(1)(B), 1539; *see also id.* § 1532(19) (defining “take”). Other provisions require the
6 Service to “develop and implement” recovery plans for listed species, *id.* § 1533(f); authorize the
7 Service to acquire land for the protection of listed species, *id.* § 1534; and authorize the Service
8 to make federal funds available to states to assist in the conservation of endangered and
9 threatened species, *id.* § 1535(d).

10 **The Administrative Procedure Act**

11 35. Under the APA’s standard of review, a court must hold unlawful and set aside
12 “agency actions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in
13 accordance with law.” 5 U.S.C. § 706(2)(A). This standard of review applies to claims brought
14 under the citizen suit provision of the ESA.

15 36. An agency’s action is arbitrary and capricious if the agency “entirely failed to
16 consider an important aspect of the problem, offered an explanation for its decision that runs
17 counter to the evidence before the agency, or is so implausible that it could not be ascribed to a
18 difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v.*
19 *State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983).

20 **FACTUAL BACKGROUND**

21 **The Sand-Verbena Moth**

22 37. The sand-verbena moth is endemic to the active dune systems of the Salish Sea in
23 a small area of northwest Washington State and southwest British Columbia. An obligate
24 mutualist of yellow sand-verbena, the sand-verbena moth depends exclusively on the plant for all
25 stages of the moth’s life cycle and provides pollination services to the plant.

26 38. Adult moths fly once per year, from mid-May to early July. Their adult lifespan is
27 7–21 days and corresponds with the peak flowering period of yellow sand-verbena, during which
28 the moths feed on the plant’s nectar and lay eggs in the plant’s flowers.

1 Cattle Point/American Camp, Deception Pass, and Fort Worden. The other three are in British
2 Columbia at Goose Spit, Island View Beach/Cordova Spit, and James Island.

3 42. Surveys for the moth in Washington have covered 90 percent of suitable habitat.
4 John Fleckenstein, one of the surveyors, estimated that “[t]here is, at best, a very slim chance of
5 more sites,” and cautioned that the “best professional judgment of all who are familiar with the
6 species is that it is probably restricted to the known range.”

7 43. The moth has lost most of its formerly suitable habitat primarily to development
8 and invasive plants. This historical habitat loss led the authors of Fleckenstein et al. 2018—the
9 most recent study on the moth’s status in the U.S.—to conclude that “there is no reason to
10 believe” that the moth did not historically occupy a significantly larger range.

11 44. A multitude of threats continue to degrade the habitat for the moth’s few
12 remaining populations such that rising sea levels are almost certain to extirpate the moth from
13 the vast majority of its range in the near future absent significant recovery measures.

14 45. For example, development at a Canadian Department of National Defense
15 military training site threatens the moth’s Goose Spit habitat. Even those remaining moth
16 populations in public or private parks are threatened by recreation and small-scale development.
17 This is particularly true in Washington where there are no known restrictions to protect the
18 moth’s habitat from human use.

19 46. Invasive plants, such as Scot’s broom and European beachgrass, are another
20 significant and increasing near-term threat to all six moth populations, as the plants crowd out
21 yellow sand-verbena and inhibit the dune system’s natural migration. Although yellow sand-
22 verbena is a good competitor in active dune systems that feature loose, sandy soils, it does not
23 persist long in less dynamic plant communities dominated by non-native plants.

24 47. Sand dune erosion is an increasingly significant threat to the moth’s viability.
25 Absent human intervention, active sand dunes experience intermittent disturbance while
26 remaining relatively intact in the long-term in part because accretion of sand balances out any
27 losses due to erosion. Accretion, however, requires nearby feeder bluffs which can supply “new”
28 sand to dunes experiencing erosion. Owners of property on what otherwise may be considered

1 feeder bluffs often install erosion barriers or “armoring” that prevents erosion. Particularly at the
2 Goose Spit and Island View/Cordova Spit population sites, nearby armoring of feeder bluffs is
3 threatening the large patches of yellow sand-verbena. It is likely that portions of these sites will
4 lose their dynamic shorelines and instead feature a reduced area of more stabilized vegetation.

5 48. In 2013, the Committee on the Status of Endangered Wildlife in Canada
6 (“COSEWIC”) found that in Canada both the sand-verbena moth and the yellow sand-verbena
7 “are facing continuing declines due to ongoing erosion and degradation of coastal dunes.”

8 49. Five of the six moth populations occur in dune systems near sea level and are
9 susceptible to increasing inundation from rising sea levels that will decimate the “nonsaline”
10 yellow sand-verbena. Intergovernmental Panel on Climate Change (“IPCC”) climate change
11 predictions and sea level rise models show that sea level rise will inundate most of the habitat at
12 these sites by mid-century. By 2100, the Service projects that sea level rise will extirpate moth
13 populations at either four or five of these sites, depending on whether there is a low- or high-end
14 greenhouse gas emissions outcome. American Camp/Cattle Point is the only site at which the
15 moth is not projected to be extirpated under either emission scenario.

16 **The Service’s Not-Warranted Finding**

17 50. On February 4, 2010, WildEarth Guardians and the Xerces Society for
18 Invertebrate Conservation petitioned the Service to list the sand-verbena moth as a threatened
19 or endangered species under the ESA.

20 51. On February 17, 2011, the Service issued a positive 90-day finding indicating that
21 listing the moth may be warranted. 76 Fed. Reg. 9309 (Feb. 17, 2011).

22 52. As a result, the Service initiated a status review of the sand-verbena moth
23 throughout its range, culminating in the production of the SSA. The SSA purports to summarize
24 the moth’s current status but does not come to a conclusion on whether the moth warrants listing
25 under the ESA.

26 53. On December 19, 2019, over seven years past the statutory listing deadline in
27 response to the petition, the Service published a finding that the sand-verbena moth does not
28 warrant listing. 84 Fed. Reg. 69707 (Dec. 19, 2019).

1 54. In the not-warranted finding, the underlying reasoning of which is set forth in the
2 Species Assessment and Listing Priority Assignment Form (“SAF”), the Service concluded that
3 the moth is “somewhat vulnerable” throughout its known range due to recreation or human use,
4 development, invasive plants, erosion, and inundation.

5 55. Creating its own habitat vulnerability model, the Service described Goose Spit
6 and American Camp/Cattle Point as highly vulnerable—meaning that those populations face
7 ongoing high impact from multiple threats—and described the other four populations as
8 moderately vulnerable—meaning that they face ongoing moderate or high impact from multiple
9 threats.

10 56. The Service ultimately determined that the moth does not warrant listing as
11 threatened or endangered throughout all of its range because the agency “lack[s] a clear
12 understanding of what [habitat vulnerability] means to the overall viability of the species.” SAF
13 at 21.

14 57. The Service’s explanation for this determination relied on several conclusions and
15 assumptions.

16 58. The Service concluded that the moth may be capable of long-distance dispersal
17 sufficient to overcome habitat loss by colonizing new habitat. The Service did not explain how
18 existing survey data for the moth supports this conclusion.

19 59. The moth is rarely found more than 25m from patches of yellow sand-verbena
20 and has only been found greater than 100m from yellow sand-verbena on one occasion.

21 60. The Service also stated that the moth’s range is uncertain such that there may be
22 undiscovered populations, but did not address contradictory science, including leading scientist
23 John Fleckenstein’s statement that there is a slim chance of discovering additional populations.

24 61. The Service referenced one moth sighting at Wickaninnish—a site that the
25 Service emphasized does not satisfy the moth’s habitat requirements—before stating that the
26 agency may not know the “true number” of populations. SAF at 21.

27 62. The Service did not otherwise assert that Wickaninnish supports a population; the
28 best available science also does not show that a population exists at Wickaninnish. Wickaninnish

1 and similarly situated coastal sites lie outside of the climatic conditions—relatively low
2 precipitation and warm temperatures—that the Service identified as habitat requirements for the
3 moth in accordance with the best available science.

4 63. The Service also stated that “the available data does not provide any information
5 on whether there is a declining or increasing population trend, or whether the range of the
6 species has expanded or contracted.” SAF at 21.

7 64. Both COSEWIC (2013) and Fleckenstein et al. (2018) explain that there is
8 evidence of the moth experiencing an ongoing decline due to habitat loss.

9 65. The Service asserted that although the sand-verbena moth is “not abundant,” the
10 species’ distribution “allow[s] for potential recovery from stochastic events.” SAF at 21.

11 66. The best available science, Fleckenstein et al. (2018), states that the moth’s small
12 number of geographically isolated populations increases the risk of extirpation by stochastic
13 disturbances.

14 67. In determining specifically whether the species is likely to be in danger of
15 extinction in the foreseeable future, the Service considered sea level rise projections out to the
16 year 2100, finding that “[s]ea level rise is fairly predictable using climate models and will have a
17 direct impact on the sand-verbena moth through long-term loss of habitat.” SSA at 84.

18 68. The Service, however, ultimately relied on projections out to only mid-century
19 instead because those projections are allegedly “based on a higher degree of certainty.” SAF at
20 21.

21 69. After finding that the moth does not warrant listing throughout all of its range, the
22 Service separately concluded that the moth is not threatened or endangered in a significant
23 portion of its range.

24 70. The Service purported to apply an approach that considers whether any portion of
25 the moth’s range is significant and whether the moth is, in that portion, in danger of extinction or
26 likely to become so in the foreseeable future.

27 71. The lone criterion for “significant” that the Service referenced in the SAF was
28 whether any area faces “a particular concentration of stressors.” SAF at 23. The Service did not

1 explain why a concentration of stressors is necessary in order for a portion of the moth’s range to
2 be significant in the meaning of the ESA.

3 72. The only portion of the moth’s range that the Service considered as potentially
4 significant was Goose Spit, but the Service dismissed it as not significant because Goose Spit
5 allegedly does not stand out as an area with a concentration of stressors unique from the rest of
6 the moth’s range.

7 73. The Service did not address whether the five low-lying population sites facing
8 inundation and extirpation in the foreseeable future constitute a significant portion of the moth’s
9 range. By mid-century, the sand-verbena moth is likely to lose most of its habitat at each
10 potential population site except American Camp, which is protected from sea level rise by its
11 location 40 to 50 meters above sea level.

12 **CLAIM FOR RELIEF**

13 **Violations of the ESA and the APA**

14 ***The Service’s Determination That the Sand-Verbena Moth Does Not Warrant Listing***
15 ***Is Arbitrary, Capricious, and Fails to Rely on the Best Available Science***

16 74. Plaintiff re-alleges and incorporates all allegations set forth in the preceding
17 paragraphs.

18 75. The Service “shall . . . determine whether any species is an endangered species or
19 a threatened species” because of any one or a combination of the ESA’s five listing factors. 16
20 U.S.C. § 1533(a)(1). A species is “endangered” when it “is in danger of extinction throughout all
21 or a significant portion of its range.” *Id.* § 1532(6). A species is “threatened” when it is “likely to
22 become an endangered species within the foreseeable future throughout all or a significant
23 portion of its range.” *Id.* § 1532(20).

24 76. When making a listing decision, the Service must rely “solely on the basis of the
25 best scientific and commercial data available.” *Id.* § 1533(b)(1)(A). This means the Service must
26 act based on the science available to the agency and cannot dismiss threats to, or refuse to list, a
27 species based on uncertainty alone. Rather, the Service must explain how any uncertainty
28

1 supports the listing decision. *Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1028
2 (9th Cir. 2011).

3 77. A reviewing court “shall hold unlawful and set aside agency action, findings, and
4 conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in
5 accordance with the law.” 5 U.S.C. § 706(2)(A). An agency’s decision is arbitrary and capricious
6 if the agency entirely failed to consider an important aspect of the problem, offered an
7 explanation for its decision that runs counter to the evidence before the agency, or is so
8 implausible that it could not be ascribed to a difference in view or the product of agency
9 expertise.

10 78. The Service’s not-warranted finding for the sand-verbena moth unlawfully
11 determined that the moth does not warrant listing as threatened or endangered, violating the ESA
12 and APA in at least four primary respects.

13 79. First, the Service arbitrarily relied on purported uncertainty to support its
14 decision. This included relying on alleged uncertainty regarding the moth’s dispersal capabilities,
15 present and historic range, and habitat needs. In doing so, the Service repeatedly failed to
16 consider the best available science in accordance with the ESA.

17 80. With regard to the moth’s dispersal capabilities, the Service arbitrarily concluded
18 that the moth may be capable of dispersing “great distances” sufficient to overcome habitat loss
19 by colonizing new habitat. SAF at 21. The best available scientific survey data for the moth show
20 that it is rarely found more than 25m away from yellow sand-verbena and has only been
21 documented greater than 100m from a dense patch of yellow sand-verbena on one occasion.

22 81. Instead of relying on this survey data for the sand-verbena moth, the Service
23 instead relied on two studies on the migration of *other* moth species, another study concluding
24 that “more information is required to assess [the sand-verbena moth’s] recolonization ability,”
25 and the single observation of a sand-verbena moth at James Island 475m from yellow sand-
26 verbena to infer that the species may be capable of long-distance dispersal.

27 82. The agency did not explain why it disregarded the available moth survey data or
28 why the migration behavior of other species—as opposed to dispersal behavior—should be used

1 to draw conclusions about the sand-verbena moth's dispersal capabilities. The Service's decision
2 to rely on other species' migration behavior rather than the best available scientific information
3 consistently showing the moth near yellow sand-verbena was arbitrary and capricious in
4 violation of the ESA and APA.

5 83. With regard to the moth's present range, the Service arbitrarily concluded that the
6 moth's range is uncertain such that there may be undiscovered populations that are robust and
7 self-sustaining. In reaching this conclusion, the Service failed to address scientists' estimation
8 that surveys in Washington have covered 90 percent of suitable habitat or a leading scientist's
9 statement that there is a slim chance of discovering additional populations. Rather, the Service
10 attempted to support its conjecture with the fact that surveyors discovered additional populations
11 of the moth between 2010 and 2019. When explaining its decision not to list the moth, the
12 Service conspicuously failed to mention that these discoveries took place as part of the ongoing
13 survey efforts that have largely ruled out the possibility of finding additional populations in the
14 United States, thus decreasing, not increasing, the likelihood of future surveys discovering
15 additional populations. This failure to consider the best available science, while instead making
16 an unsupported conclusion about the moth's potential range, was arbitrary and capricious in
17 violation of the ESA and APA.

18 84. With regard to the moth's historical range, the Service also stated that "the
19 available data does not provide any information on whether there is a declining or increasing
20 population trend, or whether the range of the species has expanded or contracted." SAF at 21.
21 However, this statement is directly at odds with the best available science. For instance,
22 COSEWIC (2013) determined that the moth and its habitat "are facing continuing declines" and
23 Fleckenstein et al. (2018) concluded that much of the species' formerly suitable habitat has been
24 destroyed, such that "there is no reason to believe that [the moth] did not range 25 kilometers
25 from Deception Pass to Crockett Lake and possibly another 10 kilometers south on Whidbey
26 Island." The Service's failure to consider these studies' conclusions, which clearly provide
27 information documenting a declining population trend, violates the ESA's best-available-science
28 standard and is arbitrary and capricious in violation of the ESA and APA.

1 85. Regarding the moth’s habitat needs, the Service arbitrarily cast doubt on the
2 science supporting the moth’s current range by referencing one moth sighting at Wickaninnish—
3 a site that the Service acknowledges does not satisfy the moth’s habitat requirements—before
4 stating that the agency may not know the “true number” of populations. SAF at 21. The Service
5 cannot reasonably assert that it “lack[s] information that clearly indicates what drive occurrence
6 at any given site.” SAF at 21. Based on Fleckenstein et al. (2018) and COSEWIC (2003), the
7 moth’s habitat needs are: large, flowering patches of yellow sand-verbena; light, sandy soils with
8 low abundance of woody debris; and the relatively warm, dry climate of the rain shadows of the
9 Coastal and Olympic Mountains. The Service failed to explain why a single detection outside of
10 this range calls into question the moth’s habitat needs which are well documented by the best
11 available science. This failure violates the ESA’s best-available-science standard and is arbitrary
12 and capricious in violation of the ESA and APA.

13 86. The Service also asserted that although the sand-verbena moth is “not abundant,”
14 the species’ distribution “allow[s] for potential recovery from stochastic events.” SAF at 21. The
15 best available science, however, such as Fleckenstein et al. (2018), states that the moth’s small
16 number of geographically isolated populations increases the risk of extirpation by stochastic
17 disturbances. The Service did not address Fleckenstein et al. (2018) in this respect or otherwise
18 address how the moth’s potential for recovery is limited specifically by its geographically
19 isolated populations. This failure violates the ESA’s best-available-science standard and is
20 arbitrary and capricious in violation of the ESA and APA.

21 87. The Service also arbitrarily determined that 2100 does not constitute the
22 “foreseeable future” when determining whether the moth warrants listing as threatened, despite
23 its determination that it was able to “reasonably predict the potential significant effects of some
24 risk factors [including climate change] . . . out to the year 2100.” SSA at 6. The Service’s sole
25 explanation for its decision to use IPCC climate change projections and sea level rise models
26 going out only to mid-century, not 2100, was that the former are based on a “higher degree of
27 certainty.” SAF at 21. Certainty in this regard is not a requirement of the ESA and the Service
28

1 did not otherwise explain why projections out to 2100 are not foreseeable given that they provide
2 reasonable predictions. The Service’s own regulations, in effect at the time, defined the
3 “foreseeable future” as “extend[ing] only so far into the future as the Services can *reasonably*
4 *determine* that both the future threats and the species’ responses to those threats are likely.” 50
5 C.F.R. § 424.11(d) (2019) (emphasis added).

6 88. The Service’s reliance on mid-century, rather than 2100, as the “foreseeable
7 future” impacted their analysis of whether the moth warrants listing as a threatened species
8 because the impacts of climate change will be much more severe by 2100. The Service’s
9 projections out to 2100 in the SSA specified whether extirpation was likely for each population
10 site under both a low- and high-end greenhouse gas emissions outcome. Whereas the moth is
11 likely to lose most of its habitat at five population sites by mid-century, the Service’s models out
12 to 2100 show that the moth is likely to be completely extirpated from four population sites by
13 2100 regardless of whether the planet experiences low- or high-end greenhouse gas emissions
14 and likely to be extirpated at a fifth site under high-end emissions.

15 89. It was arbitrary and capricious for the Service to ignore a reasonably reliable
16 projection showing that at least two thirds of the moth’s known populations are likely to be
17 extirpated in the foreseeable future. This failure to use the projections out to 2100 is also a
18 violation of the ESA’s best-available-science requirement.

19 90. The Service also conducted an unlawful significant portion of its range analysis
20 by arbitrarily dismissing Goose Spit as not a significant portion of the moth’s range, and by
21 failing to consider whether the five low-lying population sites facing a disproportionate impact
22 from sea level rise constitute a significant portion of the moth’s range.

23 91. Broadly, the Service’s significant portion of its range analysis was unlawful
24 because it failed to adequately explain how the agency determined whether any portion of the
25 moth’s range is significant. The Service rejected Goose Spit as not significant on the sole basis
26 that “Goose Spit does not stand out as an area with a particular concentration of stressors.” SAF
27 at 23. But the Service did not: explain why a concentration of stressors is necessary for a portion
28 of the moth’s range to be significant; explain why Goose Spit’s high risk of development does

1 not constitute a concentration of stressors; or address any other indicia of a portion's
2 significance, such as a portion's contribution to the conservation of the species.

3 92. Development poses a uniquely severe threat to the Goose Spit population due to
4 the site's proximity to a military training site for the Canadian Department of National Defense,
5 whereas the other five population sites are threatened by small-scale recreational
6 development. Yet the Service did not explain why a "low" or "moderate" risk of development
7 warrants the same status or significance as a "high" risk of development. *See* SAF at 14
8 (evaluating the risk that development poses to each population site and giving Goose Spit the
9 only "high" designation).

10 93. Beyond the bounds of the Service's standardless concentration-of-stressors
11 approach, the Goose Spit population is also significant to the viability of the sand-verbena moth
12 because the other five populations are geographically clustered such that "[i]f Goose Spit were to
13 become extirpated, there would be a reduction in the distribution of the species and therefore the
14 species would be at greater risk from catastrophic events." SAF at 19. Yet the Service ignores its
15 own conclusions regarding the importance of the Goose Spit population in its significant portion
16 of range analysis.

17 94. The Service also did not consider whether the five low-lying population sites
18 constitute a significant portion of the moth's range due to the disparate impact that rising sea
19 levels will have on the moth's habitat. The sand-verbena moth is likely to be mostly or
20 completely extirpated at each potential population site except American Camp in the foreseeable
21 future, which is protected from sea level rise by its location 40 to 50 meters above sea level. Yet
22 the Service failed to address whether these five low-lying populations are significant. The
23 Service's significant portion of its range analysis thus ignores the best available science in
24 violation of the ESA and is arbitrary and capricious.

25 95. For these and additional reasons, the Service's not-warranted finding is not based
26 on the best available science and is arbitrary, capricious, and otherwise not in accordance with
27 law, in violation of the ESA and the APA. *See* 16 U.S.C. § 1533; 5 U.S.C. § 706(2)(A).

REQUEST FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court enter judgment providing the following relief:

1. Declare unlawful, set aside, and vacate Defendants’ not-warranted finding;
2. Remand the not-warranted finding to Defendants and order the Service to issue a new listing determination by a date certain that is consistent with the ESA, APA, and this Court’s Order;
3. Award Plaintiff reasonable attorneys’ fees and costs as provided by the ESA, 16 U.S.C. § 1540(g)(4); and
4. Provide such other relief as the Court deems just and proper.

Respectfully submitted and dated this 26th day of February, 2025.

s/ Sarah Uhlemann

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Attorneys for Plaintiff