**UNITED STATES DISTRICT COURT**
**FOR THE DISTRICT OF COLUMBIA**

CENTER FOR BIOLOGICAL DIVERSITY,
378 N. Main Avenue
Tucson, AZ 85701,

*Plaintiff*,

v.

DOUG BURGUM, in his official capacity as Secretary of the U.S. Department of the Interior,
1849 C Street N.W.
Washington, D.C. 20240,

BRIAN NESVIK in his official capacity as Director of the U.S. Fish and Wildlife Service,
1849 C Street N.W.
Washington, D.C. 20240, and

U.S. FISH AND WILDLIFE SERVICE,
1849 C Street N.W.
Washington, D.C. 20240,

*Defendants*.

**Civil Action No.: 26-cv-938**

**COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF**

## INTRODUCTION

1. Plaintiff, Center for Biological Diversity ("Center"), challenges the unlawful decision of the U.S. Fish and Wildlife Service ("Service") to deny Endangered Species Act ("ESA") protection to the Illinois Chorus Frog (*Pseudacris illinoensis*).

2. The Illinois Chorus Frog is a member of the "fat frog" clade of chorus frogs. They are about an inch and a half long, with gray, tan, or occasionally green coloring on their backs and white on their bellies.

*Photo: Jacob Cackowski, U.S. Fish and Wildlife Service*

3. The Illinois Chorus Frog historically lived in midwestern sand prairies containing vernal pools, but most of its natural habitat has been lost or developed for agriculture and other purposes. 76% of the frog's range has been converted to cropland. With the disappearance of its native grassland habitat, the frog has become dependent on agricultural lands for breeding and survival.

4. Habitat loss, combined with climate change and other threats, has pushed the Illinois Chorus Frog to the brink of extinction. The frog now survives only in a few isolated locations in Illinois, Arkansas, and Missouri. Scientists warn that its disappearance from the state of Arkansas is imminent.

5. The Center petitioned the Service to list the species as endangered or threatened under the ESA in 2012. After more than a decade of delay, and despite the numerous threats to the frog detailed in the petition and the scientific research, the Service found that listing the Illinois Chorus Frog was not warranted. *Endangered and Threatened Wildlife and Plants; Two Species Not Warranted for Listing as Endangered or Threatened Species*, 88 Fed. Reg. 47839 (July 25, 2023).

6. The Service's not warranted finding is arbitrary and unlawful because: (i) its assessment of the health of Illinois Chorus Frog populations is not supported by the best available

science; (ii) the Service failed to articulate a rational basis for its conclusion that all agricultural land was suitable habitat for the frog without accounting for wetlands loss, and (iii) the Service arbitrarily determined that portions of the frog's range where it is at the highest risk of extirpation were insignificant.

7. Consequently, the Center brings this action against Doug Burgum, in his official capacity as Secretary of the U.S. Department of the Interior, Brian Nesvik, in his official capacity as director of the U.S. Fish and Wildlife Service, and the Service to remedy the Service's violations of the ESA, 16 U.S.C. §§ 1531–1544, under the Administrative Procedure Act's (APA), 5 U.S.C. § 706(2) arbitrary and capricious standard of review. Specifically, the Center challenges the Service's determination that listing the Illinois Chorus Frog as endangered or threatened under the ESA is not warranted. *See* 88 Fed. Reg. 47839.

8. The Center requests that this Court declare the Service has violated the ESA. The Center also seeks an order vacating and remanding the Service's not warranted finding with orders to make a new determination for the Illinois Chorus Frog that applies the requisite legal and scientific standards by a date-certain. Such relief is necessary to afford the frog the full protection of the law, which it is entitled to and needs to survive and recover from its impending extinction.

## JURISDICTION AND VENUE

9. Plaintiff brings this action pursuant to the ESA citizen suit provision, 16 U.S.C. § 1540(g), and the APA, 5 U.S.C. § 702, which waive Defendants' sovereign immunity.

10. This Court has jurisdiction pursuant to 28 U.S.C. § 1331 (federal question jurisdiction); 28 U.S.C. §§ 2201–2202 (declaratory judgments and further relief); 16 U.S.C. § 1540(c) (district court jurisdiction); 16 U.S.C. § 1540 (g)(1)(C) (action arising under the ESA citizen-suit provision); and 5 U.S.C. §§ 702–704 (APA).

11. Venue is proper in the District of Columbia pursuant to 16 U.S.C. § 1540(g)(3)(A) and 28 U.S.C. § 1391(e), as this civil action is brought against an agency of the United States and officers and employees of the United States acting in their official capacities and under the color of legal authority, and because no real property is involved in this action. Plaintiff also maintains an office in this judicial district.

## PARTIES

12. Plaintiff, CENTER FOR BIOLOGICAL DIVERSITY, is a national non-profit conservation organization with more than 101,611 members, including many who live and recreate in the Illinois Chorus Frog's range. The Center works through science, law, and creative media to secure a future for all species, great and small, hovering on the brink of extinction, with a focus on protecting the lands, waters, and climate that species need to survive. The Center is headquartered in Tucson, Arizona, with offices throughout the United States, including in Washington, D.C.

13. The Center brings this action on behalf of its members who maintain professional, scientific, aesthetic, recreational, and other legally protected interests in the Illinois Chorus Frog and its habitat and rely on the Center to protect these interests.

14. Center member Dr. Lori Neuman-Lee is an amphibian researcher and associate professor at Arkansas State University who studies the Arkansas population of the Illinois Chorus Frog. She leads groups of students in surveys for the frog in Clay County, Arkansas, west of the St. Francis River. She has plans to continue studying the frog in the future to better understand its behavior and life cycle. In addition to her professional interest in the frog, Dr. Neuman-Lee derives recreational and aesthetic value from the frog's existence, and she enjoys listening to frogs calling. She believes that it is our moral imperative to protect the frog and that the frog and other species

that live on agricultural land have great value in allowing people to interact with wildlife in places that lack natural landscapes and wild spaces.

15. Center member and scientist Will Harlan grew up in Missouri and Illinois. The Illinois bottomlands of East St. Louis are one of the last strongholds for the Illinois Chorus Frog, and he spent much of his childhood there, as well as in Alton, Illinois, near the Pelican Island Natural Area and Columbia Bottom Conservation Area, where Illinois Chorus Frogs would sing. He has fond memories of chorus frog symphonies filling his home and expresses sadness at noting that the chorus is fading. Mr. Harlan regularly visits the area where the frog occurs in Illinois, including Cahokia Mounds State Historic Site and Horseshoe Lake State Park. He visits at least twice per year to visit family and observe native wildlife, like the frog. Mr. Harlan recalls searching for the frog in wetlands near his family home and now brings his own children to the area to search for and listen for it. He takes joy in the knowledge that the chorus frog still exists near his childhood home and finds that it adds significant aesthetic value to the places where it is found.

16. The Service's denial of ESA protection for the frog has caused Plaintiff's members to suffer a concrete and particularized injury that is actual and imminent. A species does not receive any protection under the ESA until it is listed as endangered or threatened. Without ESA protection, the frog is likely to continue declining towards extinction. Plaintiff's members' injuries will persist unless the Court grants the relief sought in this Complaint.

17. Defendant, DOUG BURGUM, is the Secretary of the Interior ("Secretary") and has the ultimate responsibility to administer and implement the provisions of the ESA. Plaintiff sues Defendant Burgum in his official capacity.

18. Defendant, U.S. FISH AND WILDLIFE SERVICE, is a federal agency within the Department of the Interior. The Secretary of the Interior has delegated to the Service the authority to administer the ESA for non-marine species. 50 C.F.R. § 402.01(b).

19. Defendant, BRIAN NESVIK, is the Director of the Service and is charged with ensuring that agency decisions comply with the law. Plaintiff sues Defendant Nesvik in his official capacity.

20. Pursuant to the ESA citizen suit provision, Plaintiff provided Defendants, Burgum, Nesvik, and the Service with 60 days' notice of intent to sue for ESA violations on March 17, 2025, more than 60 days prior to the filing of this Complaint.

## STATUTORY AND REGULATORY BACKGROUND

### The Endangered Species Act

21. Congress passed the ESA to "provide a program for the conservation of … endangered species and threatened species" and "to provide a means whereby ecosystems upon which endangered species and threatened species depend may be conserved." 16 U.S.C. § 1531(b).

22. The ESA requires that "all Federal departments and agencies… seek to conserve endangered species and threatened species and…utilize their authorities in furtherance of the purposes" of the ESA. *Id.* § 1531(c)(1).

23. Species are afforded protection under the ESA only if the Service lists them as threatened or endangered. A species is "endangered" if it "is in danger of extinction throughout all or a significant portion of its range." *Id.* § 1532(6). A species is "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* § 1532(20).

24. Any person may petition the Service to list a species under the ESA. 16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.14(a). After receiving a petition to list a species as threatened or endangered, the Service has 90 days to "make a finding as to whether the petition presents substantial scientific or commercial information indicating that" listing may be warranted. 16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.14(h). This determination is known as a "90-day finding."

25. If the Service makes a positive 90-day finding in response to a petition, it must publish that finding in the Federal Register and proceed with a scientific review of the species' status, known as a "status review." 16 U.S.C. § 1533(b)(3)(A).

26. During the status review, the Service must determine whether any species is endangered or threatened because of any of the following factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. *Id.* § 1533(a)(1).

27. If a species meets the definition of threatened or endangered because it is imperiled by any one, or a combination of these five factors, the Secretary must list the species. *Id.*; 50 C.F.R. § 424.11(c). The Secretary must base all listing determinations "solely on the basis of the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A).

28. The mandate that the Service rely on the "best scientific and commercial data *available*," 16 U.S.C. § 1533(b)(1)(A) (emphasis added), means that it must act based on the science available to the agency and cannot dismiss threats to or refuse to list a species based on uncertainty alone. Congress's intent in directing the Service to list a species based on the best scientific data available, rather than requiring scientific certainty, was for the Service to act and

provide ESA protections to imperiled species before they stood on the brink of extinction and beyond any likely hope of recovery. *See* H.R. Rep. No. 412, 93d Cong., 1st Sess. 5 (1973) ("In the past, little action was taken until the situation became critical and the species was dangerously close to total extinction. This legislation provides us with the means of preventative action." (remarks of Rep. Clausen); *Id.* ("By heeding the warnings of possible extinction today, we will prevent tomorrow's crisis.") (remarks of Rep. Gilman)).

29. Following completion of the status review, and within 12 months of receiving the petition, the Service must publish one of three findings: (1) listing is "warranted," (2) listing is "not warranted," or (3) listing is "warranted but precluded" by other pending proposals to list species, provided certain circumstances are met. *Id.* § 1533(b)(3)(B).

30. If the Service issues a finding that listing the species is "warranted," it must publish a proposed rule to list the species as endangered or threatened in the Federal Register. *Id.* § 1533(b)(5). Within one year of publishing a proposed rule to list a species, the Service must, with limited exceptions, issue a final rule listing the species and designating critical habitat for it. *Id.* § 1533(a)(3), (b)(6)(A), (C).

31. If the Service issues a finding that listing the species is "not warranted," that finding is a final agency action subject to judicial review. *Id.* § 1533(b)(3)(C)(ii). A species receives the numerous substantive protections of the ESA only after it is listed as an endangered or threatened species. For example, Section 7 of the ESA requires that all federal agencies ensure that their actions do not "jeopardize the continued existence" of any listed species or "result in the destruction or adverse modification" of a listed species' critical habitat. *Id.* § 1536(a)(2). Section 9 of the ESA prohibits, among other things, "any person" from intentionally or incidentally "taking" listed species without a lawful authorization from the Service. *Id.* §§ 1538(a)(1)(B), 1539.

Other provisions require the Service to designate "critical habitat" for listed species, *id.* § 1533(a)(3), and "develop and implement" recovery plans for listed species, *id.* § 1533 (f), and authorize the Service to make federal funds available to states to assist their efforts to preserve and protect threatened and endangered species, *id.* § 1535(d).

32. If the Service determines that the species is neither endangered nor threatened throughout all of its range, the ESA then requires the agency to examine whether it is endangered or threatened throughout any *significant portion* of that range. *Id.* § 1532(6), (20).

**The Administrative Procedure Act**

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

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

## FACTUAL BACKGROUND

**The Illinois Chorus Frog**

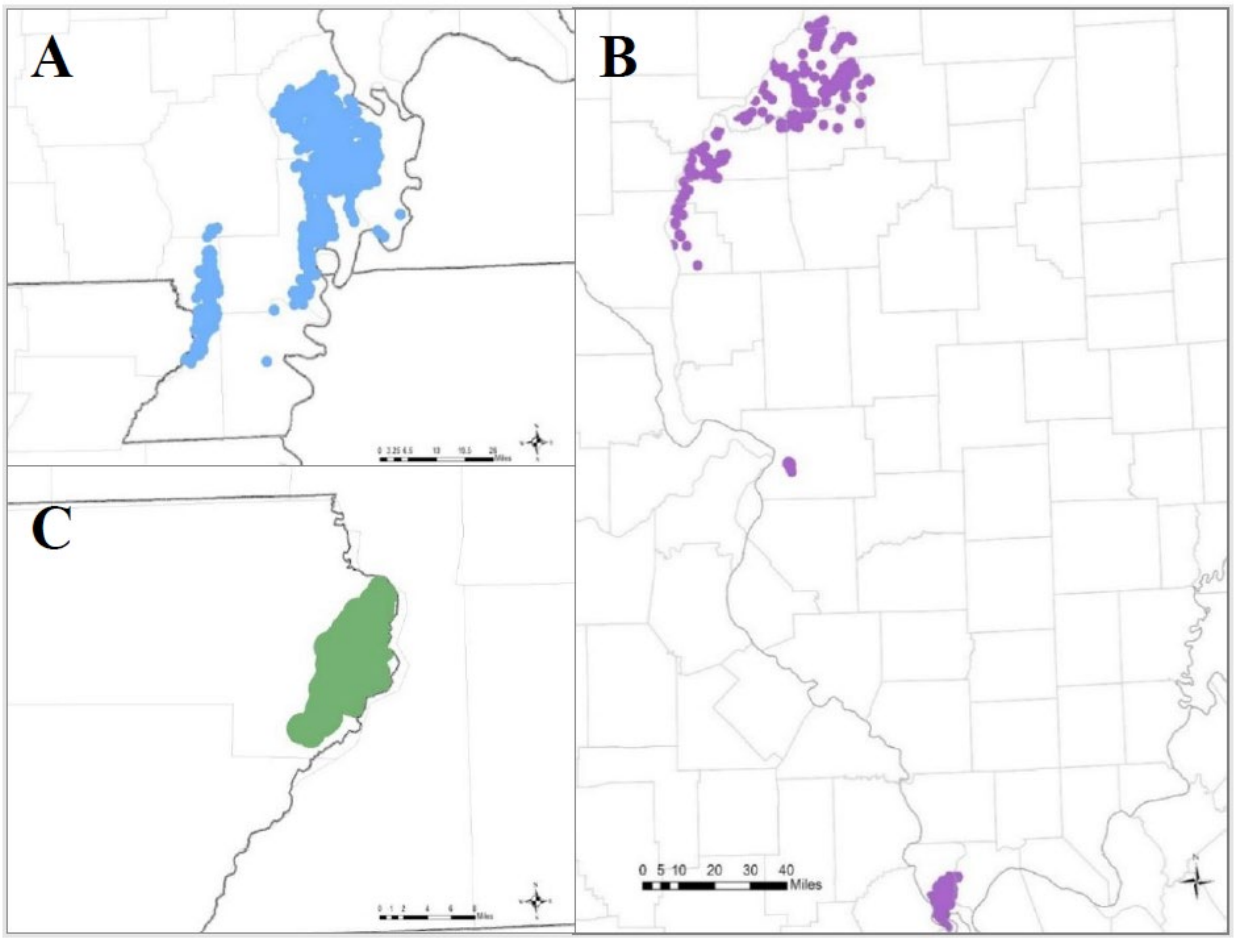
35. The Illinois Chorus Frog is a small, chubby, pond-breeding amphibian. It is a fossorial species, meaning it emerges only for a few weeks per year during breeding season and spends most of its adult life buried in the sand.

36. The Illinois Chorus Frog requires both terrestrial and aquatic habitats. Shallow, temporary pools and ephemeral wetlands provide breeding habitat for its larval (tadpole) stage, and sandy terrestrial habitat allows it to burrow underground in adulthood, including during winters to avoid freezing.

37. The Illinois Chorus Frog has suffered a near-total loss of its natural sand-prairie habitat due to historic and ongoing drainage of wetlands and land conversion for development and agricultural purposes. 76% of the frog's historic and current range has been converted to agriculture, with the remaining consisting of developed or other unsuitable land.

38. Climate change further threatens the frog, increasing the likelihood, frequency, and severity of drought, flooding, and heatwaves.

39. The Illinois Chorus Frog is now restricted to isolated portions of northeastern Arkansas, southeastern Missouri, and along the Mississippi and Illinois Rivers in Illinois.




*U.S. Fish and Wildlife Service, Illinois Chorus Frog population Analysis Units in Missouri (A), Illinois (B), and Arkansas (C).*

40. The remaining, scattered populations rely on agricultural fields with temporary flooded depressions for breeding as a substitute for their natural aquatic habitat, but management practices on these agricultural lands can render them unsuitable for the frog. Such agricultural practices include wetland filling and precision land leveling, which destroy breeding habitats by eliminating the depressions in fields that form ephemeral pools.

41. The State of Illinois has classified the frog as threatened within the state, and the State of Missouri has identified the frog as a species of concern. Scientists warn that the species' extirpation from Arkansas is imminent. 96% of the Illinois Chorus Frog's range in these states is completely unprotected.

**Listing History**

42. On July 11, 2012, in an effort to halt the frog's continued decline, the Center petitioned the Service to list the Illinois Chorus Frog as a threatened or endangered species under the ESA.

43. Nearly three years after the determination was due, on July 1, 2015, the Service published its 90-day finding concluding that the petition presented substantial scientific or commercial information indicating that listing the Illinois Chorus Frog may be warranted. 80 Fed. Reg. 37568 (July 1, 2015).

44. After several years of additional delay, in 2020, the Center sued the Service for its failure to make a listing decision, and the parties reached a settlement wherein the Service agreed to deliver its finding by September 28, 2023. 88 Fed. Reg. 47840.

45. The Service then initiated a status review for the frog, which culminated in the production of the Species Status Assessment for the Illinois Chorus Frog (*Pseudacris illinoensis*) ("SSA"), published October 2022. The SSA purportedly summarizes the best available science regarding the frog's current and future status, but does not conclude whether the frog warrants listing under the ESA.

46. On July 25, 2023, the Service published its finding that listing the frog was not warranted. 88 Fed. Reg. 47839. The underlying reasoning for the decision was set forth in a Species Assessment and Listing Priority Assignment Form ("SAF").

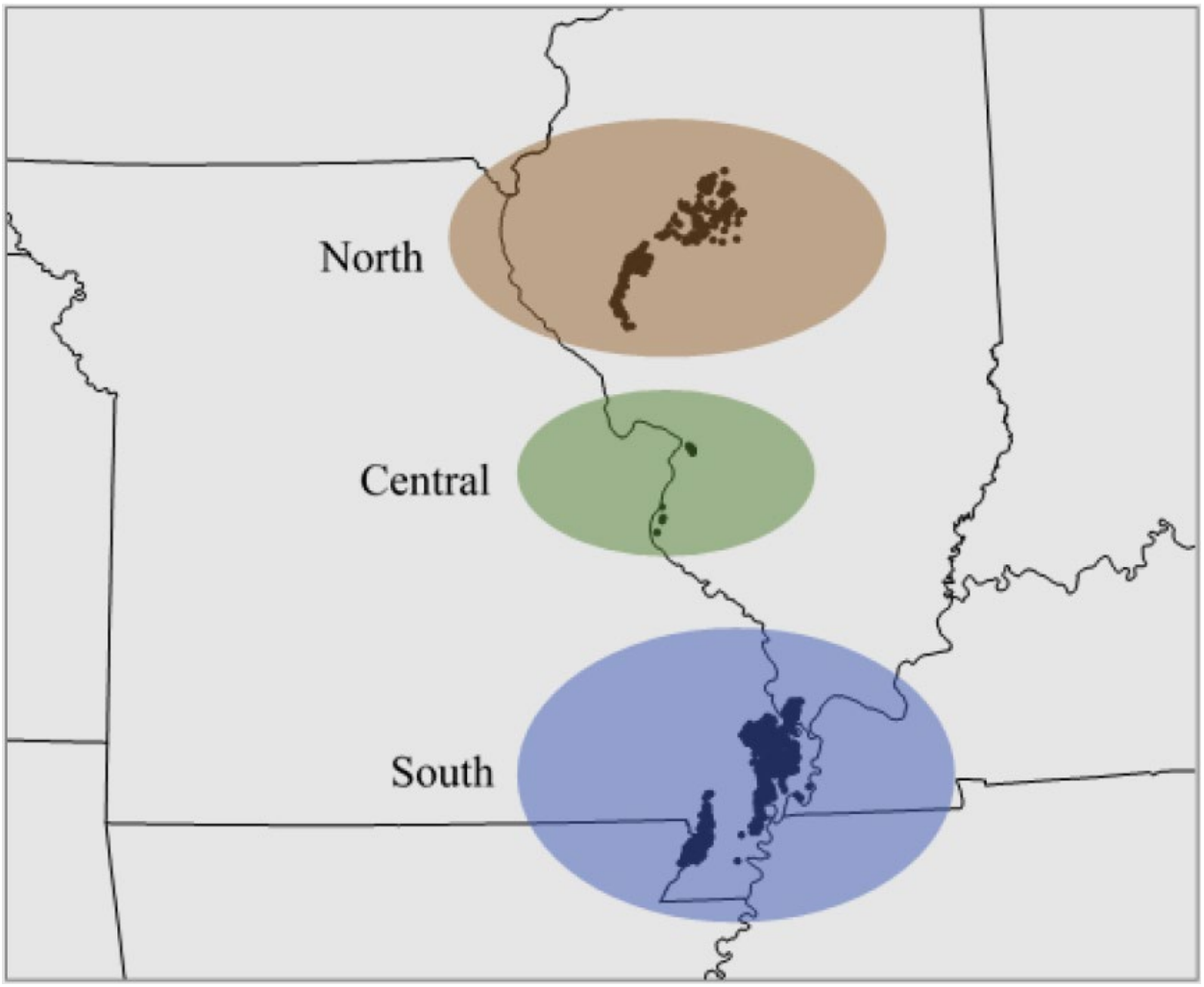
**The Challenged Agency Action: The Service's Not-Warranted Finding**

47. To assess the health of Illinois Chorus Frog populations, the Service divided Illinois Chorus Frog breeding sites into 31 "Analysis Units."

48. The Service defined an Analysis Unit "as the area in which a group of individuals is likely to frequently interact and breed."

49. The Service delineated Analysis Units by drawing 2 kilometer buffers around each breeding site to represent areas of presumed occupancy, then grouped the areas where buffers overlapped into Analysis Units. The Service excluded areas where there were barriers that would likely prevent frequent frog movement, such as large rivers or highways consisting of four or more lanes.

50. The Service also grouped the Analysis Units into three "Representation Units" (RPUs): North RPU, Central RPU, and South RPU. These Representation Units encompass the three major geographic areas where the frog persists: north-central and central Illinois; southwest-central Illinois; and southern Illinois, southeast Missouri, and northeast Arkansas, respectively.




*SSA, Figure 2-6.*

51. The Service determined that there are 31 Analysis Units, comprised of 23 in the North Representation Unit, 1 in the Central Representation Unit, and 7 in the South Representation Unit.

52. The Service concluded that, out of its 31 Analysis Units for Illinois Chorus Frog populations, only 7 were healthy. Despite the small number of healthy populations, the Service expansively defined the boundaries of these 7 units to encompass the vast majority of the frog's historic and current populations – 92% of breeding sites and 85% of the frog's historic range. 88 Fed. Reg. 47840. Based on its conclusions about the extent of breeding sites and suitable habitat

remaining there, the Service determined that listing the frog as endangered or threatened was not warranted.

*The Service's conclusion that 92% of Illinois chorus frog breeding populations are "healthy" is arbitrary.*

53. The Service used three metrics to declare an Analysis Unit as "healthy": (i) the presence of at least five breeding sites with a "strong breeding chorus" within an Analysis Unit, (ii) more than ten documented breeding sites within an Analysis Unit, and (iii) connectivity between those breeding sites. The Service failed to provide a rational basis for each of those metrics.

*Strong Breeding Chorus*

54. For the first metric, "at least five breeding sites with 'strong breeding chorus," the Service surveyed the frog's breeding sites, then listened for male frogs calling at those sites. Based upon what it heard, the Service estimated the number of frogs calling at each breeding site and assigned that number to an index of 1, 2, or 3. An index of one meant 0 to 5 males calling, two meant 6 to 10 males calling, and three was intended to represent a "strong breeding chorus" with 11 or more males calling.

55. The Service did not provide a rational basis for its use and application of the call index to measure whether sites had a "strong breeding chorus."

56. First, the Service's Call Index 3 criterion was not clearly defined. The Service never established how many calling frogs were needed for a chorus to qualify as Call Index 3, even though the metrics for assigning call index differed across all three states in the frog's range. In Illinois, for example, the Service stated that a call index of 3 consisted of "11 or more males" heard calling. In Arkansas, a call index of 3 was described generically as a "full chorus" without specifying the number of individuals. In Missouri, where surveys have been conducted since 1991,

a call index of 3 had previously been assigned only to choruses of 30 or more calling males. Jeff Briggler, *Status Assessment of the Illinois Chorus Frog (Pseudacris illinoensis) in Missouri*, Mo. Dep't of Conservation (2020).

57. Prior to making its decision, the Service initially used the Missouri Call Index, assigning a call index of three only when there were 30 or more calling males. Later, however, the Service began using a metric of 11 or more males for Index 3.

58. The Service did not articulate any basis for selecting the lower number of 11 or more calling males as the indicator of a strong breeding chorus, and it did not provide any explanation for the change. Rather than use Missouri's Index 3 criteria or articulate a basis for rejecting it, the Service ignored it in the Species Status Assessment and its decision.

59. The Service's arbitrary use of 11 or males as Index 3 resulted in a disproportionately large number of additional breeding sites being defined as having a strong breeding chorus, especially in Missouri. The Missouri Department of Conservation concluded in 2019 that only 113 sites met the Index 3 criterion across the state. In an effort to manufacture uniformity, the Service took Missouri's estimates about the number of calling males and reclassified them according to its own lower Index 3 criteria, resulting in a higher number of sites that qualified as having a "strong breeding chorus." Based on the lower standard, the Service characterized 405 breeding sites in a single Analysis Unit (MO-3) as "Index 3," in contrast to the 113 sites that Missouri had identified as Index 3 *statewide* in 2019.

60. Because its reliance on the lower Index 3 criteria was arbitrary and did not represent the best available science, the Service's assessment of the number of breeding sites with a "strong breeding chorus" lacked a rational basis. And, because the Service relied on its flawed inventory

of sites with a strong breeding chorus to assess whether an Analysis Unit was healthy, its conclusions about the health of each Analysis Unit were likewise unsupportable.

*Breeding Sites*

61. Further compounding its arbitrary analysis, the Service extrapolated that the existence of as few as five breeding sites with a "strong breeding chorus" and ten breeding sites per Analysis Unit merited characterizing that entire Analysis Unit as "healthy."

62. The Service used the highest call index since the year 2000 to calculate the number of breeding sites with a strong breeding chorus. If a breeding site had a strong breeding chorus (Index 3) even one time over the course of two decades, that breeding site would be counted towards the Service's five breeding site tally. Sites would be included even if the presence of a breeding chorus there was anomalous or even if there had not been a single breeding chorus there in the last five, ten, or fifteen years.

63. By counting sites where only a single or sporadic strong breeding chorus had been documented, the Service contradicted its own finding that continued documentation of a strong breeding chorus at a breeding site for *consecutive surveys* is necessary to indicate that successful recruitment is occurring.

64. Using this method, the Service inaccurately inflated the number of breeding sites with strong breeding choruses across the Analysis Units. As a result, the Service characterized an artificially high number of Analysis Units as healthy.

65. The Service likewise did not articulate any rational basis for using five breeding sites with a strong breeding chorus or ten breeding sites overall as a baseline for whether an Analysis Unit was healthy. It did not cite any studies, scientific research, or otherwise explain how

the use of five breeding sites represented the best scientific data available as to whether those numbers reflected the health of an Analysis Unit.

*Choruses as a Proxy for Recruitment*

66. Even without these errors, the Service's reliance on a "strong breeding chorus" as a metric of frog population health lacked any rational basis in the first place.

67. The best available science makes clear that the presence of calling frogs is not reliable evidence of population health because the presence of calling frogs alone does not indicate recruitment.

68. Recruitment is the process by which new individuals are added to a population.

69. For Illinois Chorus Frogs, recruitment is shown by the presence and survival of tadpoles.

70. Recruitment is one of the most important indicators of population health for Illinois Chorus Frogs.

71. The Service was aware of and had access to scientific information showing both that recruitment was a critical component of Illinois Chorus Frog population health and that frog choruses did not indicate recruitment. For example, Phillips, C.A., A. Kuhns, and J. Crawford. 2018. Monitoring the impacts of management activities on the Illinois chorus frog in central Illinois. T-62-D-1. 5 pp. (Phillips et al. 2018), specifically noted that using frog choruses to establish occupancy "can be misleading because there is a significant disconnect between the presence of calling males and actual recruitment of metamorphosis at a given wetland." That study found tadpoles present at only three of seven sites where frogs were heard calling.

72. Peer reviewers also brought this concern to the Service's attention. For example, one peer reviewer observed, "Data are available that demonstrate that recruitment is the leading

cause of failure of ICF populations in newly constructed wetlands in the Northern RPU." He noted that of 17 ponds noted to be occupied by Illinois Chorus Frogs based on calling surveys, only five had tadpoles, and cautioned, "This not only begs for more data on this critical stage in the ICF life cycle, but it also calls into question the utility of basing all projections in this SSA on anuran call surveys."

73. Although the Service itself acknowledged that the presence of calling males does not indicate recruitment, it nonetheless still used the presence of a "strong breeding chorus" as the primary indicator of the health of frog populations in its Analysis Units. Its decision to do so was arbitrary and contradicted the best available science.

74. The Service attempted to justify its use of frog choruses as a proxy for frog population health by stating that tadpole survey data was not available.

75. The Service, however, relied on scientific studies showing that tadpole survey data was both reliable and attainable, including Phillips et al. (2018), which found, "Occupancy of [Illinois Chorus Frog] tadpoles appears to be easily assessed by dip-netting."

76. A peer reviewer also noted that "detection of late-stage tadpole using dip-net sweeps was accurate and efficient."

77. The Service's failure to acknowledge and rationally explain its disregard of tadpole survey data to assess the population health of Illinois Chorus Frogs was arbitrary.

*Dispersal and Connectivity*

78. The Service's delineation of Analysis Units was also arbitrary and capricious because the Service defined Analysis Units for the frog based on dispersal distances that are not supported by the best available science.

79. The best available science indicates that, on average, dispersal of Illinois Chorus Frogs occurs within 0.5 kilometers (0.31 miles) of the frog's breeding site, with a maximum dispersal distance of 0.9 kilometers (0.6 miles). John K. Tucker, "Status of Illinois chorus frogs in Madison County, Illinois," in *Status and conservation of midwestern amphibians,* ed. M. J. Lannoo (University of Iowa Press, 1998), 97 (Tucker 1998). Using the average dispersal distance, breeding sites within 1 kilometer of each other could be considered connected.

80. Without explanation or acknowledgment, the Service ignored the data on average dispersal distance; instead, it looked to the extreme distance of 0.9 kilometers (0.6 miles) and took it even further, contending that frogs could likely travel 3.2 to 4.8 kilometers (2-3 miles). The Service then used these extremes to draw two important conclusions about the frog, which, in turn, undermined its whole analysis.

81. First, using the maximum dispersal of 0.9 kilometers (0.6 miles), the Service concluded that sites within a 2 kilometer (1.2 mile) radius were sufficiently connected to each other to be considered a single Analysis Unit. Rather than using data-supported averages, and without explanation, the Service spatially defined the boundaries and size of Analysis Units by outliers.

82. Peer reviewers criticized the use of outlier data and encouraged the Service to use average known dispersal rates to define Analysis Units.

83. Peer reviewers also raised concerns about the Service's finding that Illinois Chorus Frogs could disperse 2 -3 miles because it was based on a personal communication made in 1991. According to one peer reviewer, this personal communication was "likely an off-the cuff comment … that was never intended to be used as it was in this SSA," and there is "no valid reason to accept [the personal communication] that adult ICFs can travel 2-3mi to find suitable breeding habitat."

84. The Service does not offer a rational basis for its use of outlier criteria to define Analysis Units.

85. Second, the Service used the exaggerated dispersal distances to support its connectivity analysis.

86. Connectivity refers to the flow of individual frogs between populations, which ensures genetic diversity. For connectivity to occur, breeding sites must be sufficiently close to each other such that individuals from different sites can disperse and encounter each other, enabling them to breed.

87. The Service determined that connectivity between breeding sites was necessary for an Analysis Unit to be healthy.

88. Using the outlier dispersal distances and delineation of Analysis Units based on a 2 kilometer (1.2 mile) radius, the Service estimated that breeding sites must be within 4 kilometers (2.5 miles) of each other (from center to center) for frequent gene flow to occur. The Service did not provide a rational basis for this genetic connectivity metric, which is 250% larger than the best available science supports.

89. The Service further concluded that gene flow could occur between breeding sites as far as 6 kilometers (3.8 miles) apart. This was based on the Service's presumption that individuals could occasionally disperse 50% further than the 2 kilometer (1.2 mile) radius to a total of 3 kilometers (1.9 miles), and its doubling of that distance on the premise that breeding frogs would meet somewhere in the middle.

90. The 6 kilometer (3.8 mile) distance is not found anywhere in scientific literature. It is an extrapolation from dispersal distances that were themselves considered outliers. The Service failed to provide any rational explanation for its approach.

91. By using outlier numbers to delineate Analysis Units and further inflating those numbers to establish genetic connectivity, the Service created Analysis Units that were arbitrarily large. It relied on the gerrymandered Analysis Units to make the conclusion that, while only 7 of 31 Analysis Units were "healthy," they encompassed 92% of breeding populations. As a result, the Service presents a rosier picture of the health of Illinois Chorus Frog populations than is supported by the best available science.

92. These flaws pervade its analysis and undermine its conclusion that listing the Illinois Chorus Frog was not warranted.

*The Service failed to articulate a rational basis for its conclusion that all agricultural land was suitable habitat for the frog without accounting for wetlands loss.*

93. While there are numerous threats to the Illinois Chorus Frog, habitat loss is the main driver of its decline towards extinction.

94. For survival and reproduction, the Illinois Chorus Frog needs sandy soils in which individuals can burrow and ephemeral wetlands in which to breed.

95. The main source of habitat loss is the conversion of sand prairie habitat to human-dominated land use.

96. With the loss of sandy plains across the Midwest, Illinois Chorus Frogs now persist primarily in isolated patches of this agricultural land. The Service estimates that 76% of the frog's range has been converted to agricultural use.

97. The frogs can survive on agricultural land if two requirements are met: sandy soils that allow the frogs to burrow, and ephemeral (temporary) wetlands for them to breed.

98. Ephemeral wetlands can form on agricultural lands in depressions in pastures or agricultural fields, roadside or drainage ditches, and borrow pits.

99. Land management practices on agricultural land can compact soils or prevent the formation of ephemeral wetlands and, as a result, render those lands unsuitable as habitat for Illinois Chorus Frogs.

100. Management practices that can negatively affect frogs on agricultural land include soil compaction, wetlands filling, and precision-leveling. In particular, precision land leveling uses laser-guided land leveling equipment to reshape the surface of the land to planed grades. Joy B. Trauth, Stanley E. Trauth, and Ronald L. Johnson, "Best Management Practices and Drought Combine to Silence the Illinois Chorus Frog in Arkansas," *Wildlife Society Bulletin* 34, No. 2 (June 2006): 514. (Trauth et al. 2006).

101. Precision land leveling removes the depressions that serve as amphibian breeding pools and rearranges the top layers of soil that the frogs use for burrowing. (Trauth et al. 2006). This practice destroys suitable habitat for the Illinois Chorus Frog, and it is expanding.

102. In 2006, a scientific study documented precision-leveling in 85% of historic breeding sites in Clay County, Arkansas, and cautioned that Illinois Chorus Frogs were likely to become extinct in the state of Arkansas as a result of this practice. That same study noted that precision-leveling was being used on 42% of irrigated farmland in southeastern Missouri.

103. Notwithstanding that precision-leveling and other land management practices can completely eliminate breeding habitat for Illinois Chorus Frogs on agricultural land, the Service treated all agricultural land as suitable habitat.

104. The Service even went so far as to acknowledge that the frogs were vulnerable to management practices on agricultural land, yet treated all of it as suitable habitat anyway.

105. The conclusion that all agricultural land is suitable habitat is not supported by the best available science.

106. The Service also projected only minor changes in land-use and land cover within the frog's range. It projected that there would be no change or a minor 2% change in the amount of cropland over the next 35 to 55 years. As a result, it concluded that in the future, suitable habitat will decrease only slightly within the Illinois Chorus Frog's range.

107. Again, by treating all agricultural land the same, the Service failed to account for changes in land management practices that could render cropland unsuitable for Illinois Chorus Frogs in the future. It ignored scientific research that showed that harmful land management practices, such as precision land leveling, were increasing.

108. The Service's findings about the impact of habitat loss on the frog was also flawed because its land use modeling failed to account for wetlands destruction.

109. In order to evaluate the impacts of land-use and cover changes, the Service relied on a study that modeled land cover under different land-cover use and climate scenarios but did not include aquatic habitat (FORE-SCE).

110. Specifically, the Service used the model to calculate current and future scenarios for cropland, grassland, barren, and mining as suitable habitat for the species, but did not use the model's projections about wetlands loss. It rationalized that the wetlands included in the model – herbaceous and woody wetlands – were not suitable habitat for the frog.

111. The Service, however, did not use *any* models to assess the impact of current or future wetlands loss within the Illinois Chorus Frog's range. It made no projection about the current or future condition of the aquatic habitat the frog requires.

112. By failing to account for wetlands loss, the Service ignored numerous scientific studies showing that wetlands loss was the primary driver of the Illinois Chorus Frog's decline.

*See e.g.* Consentino, Examining occupancy and detection probability after three years of monitoring for the Illinois chorus frog (Pseudacris streckeri illinoensis) (2018); Trauth et al. 2006.

113. The Service's failure to account for wetlands loss was a drastic departure from the early versions of its own analysis and the scientific literature it cited in those versions, including a national wetlands study, which showed that wetlands loss was the most significant threat to Illinois Chorus Frogs.

114. By failing to account for wetlands impacts in its analysis of current and future habitat loss, the Service failed to consider an important aspect of the problem, which renders its not warranted finding arbitrary and capricious.

*The Service arbitrarily determined that the Central RPU is not a significant portion of the frog's range.*

115. In its not warranted finding, the Service also made a determination as to the frog's status in a "significant portion of its range," 16 U.S.C. § 1532(6), (20) (emphasis added). It found that the only portion that warranted further evaluation was the Central Representation Unit (RPU).

116. The Service admits that the threats from habitat loss, development, and isolation are greatest within the Central RPU. The outlook for this population is extremely bleak, as all Analysis Units are isolated from each other, none are considered "healthy," and the suitable habitat there is predicted to decrease substantially by 2075.

117. Further, the Central RPU has already experienced a 59% reduction in range, according to the Service's own estimation, and the number of Analysis Units has declined from 4 to 1. The Central RPU is clearly highly vulnerable to extinction.

118. The Service concluded that although habitat loss and pressure from development are greatest within the Central RPU, the Central RPU was not a significant portion of the frog's

range, where it warrants listing because of the Central RPU's small size and allegedly minimal contribution to the species' overall survival.

119. The dire, worsening condition of the Central RPU indicates the urgency of protecting the species; instead, the Service disregarded it.

120. In disregarding the Central RPU, the Service ignored peer reviewer comment "agree[ing] that the health of the AU in the Central RPU is already low, but that shouldn't be used as an excuse to downplay the loss of suitable habitat projected for this AU. In fact, that the health is already low should motivate the opposite reaction. It makes it even more imperative to stress the potential negative impact of projected habitat loss in this region."

121. The Service's conclusion is unlawful because it renders the significant portion of range provision of the ESA superfluous. Under this approach, the more endangered a species is in a portion of its range, the less likely the Service is to consider it significant, because it could always conclude that a small population in poor condition contributes minimally to overall viability.

*The Service arbitrarily determined that Arkansas is not a significant portion of the frog's range.*

122. The Service also failed to consider whether the portion of the species' range in Arkansas is a significant portion of its range where it is threatened or endangered, despite evidence in the best available science that the frog is at risk of "imminent" extirpation from the state.

123. Scientific data shows that the frog has already experienced a 61% range reduction in Arkansas due to drought and the widespread and ongoing use of precision land leveling. Trauth et al. 2006.

124. The Arkansas portion of the frog's range is also likely "significant" to the species' adaptive diversity, as it is thought to be larger or otherwise genetically and morphologically unique in Arkansas.

125. It was arbitrary and capricious, and contrary to the best available science for the Service not to analyze whether Arkansas is a significant portion of the frog's range where it faces extinction.

126. The Service did not assess whether the portion of the species' range in Arkansas is a significant portion of the frog's range, despite scientists' warnings about its imminent extinction from the state and the heightened risks of precision land leveling there.

## FIRST CLAIM FOR RELIEF

### Violation of the ESA

*The Service's determination that the Illinois Chorus Frog does not warrant listing throughout its range is arbitrary, capricious, and fails to rely on the best available scientific data.*

127. Plaintiff realleges and incorporates by reference the preceding paragraphs.

128. The Service "shall… determine whether any species is an endangered species or a threatened species" because of any one or combination of five listing factors. 16 U.S.C. § 1533(a)(1).

129. When making a listing decision, the Service must rely "solely on the basis of the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A).

130. Under the APA, a reviewing court "shall hold unlawful and set aside agency action, findings, and conclusions found to be… arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). An agency's decision is arbitrary and capricious if the agency entirely fails to consider an important aspect of the problem, offers an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

131. The Service's finding that the Illinois Chorus Frog is not warranted for listing under the ESA as threatened or endangered was unlawful. The Service relied on breeding choruses as

proof of the health of Illinois Chorus Frog populations, even though this metric lacked a rational basis and contradicted the best available science. The Service used outlier data on frog dispersal rates to inflate its Analysis Units and bolster its claims of genetic connectivity. These flawed analyses allowed the Service to arbitrarily conclude that 92% of the frog's breeding populations were healthy. The Service also ignored land management practices, including precision land-leveling and the filling of wetlands, to arbitrarily conclude that all agricultural land is suitable habitat for the frog without ever assessing the loss of aquatic habitat. This false assumption allowed the Service to dismiss the impact of habitat loss on the frog's risk of extinction. These errors pervade the Service's not warranted finding.

132. The Service's not-warranted finding for the frog is contrary to the best available science, and is arbitrary, capricious, and otherwise not in accordance with law, in violation of the ESA and the APA. 16 U.S.C. § 1533; 5 U.S.C. § 706(2)(A).

## SECOND CLAIM FOR RELIEF

**Violations of the ESA**

*The Service's determination that the Illinois chorus frog is not threatened or endangered in a significant portion of its range was arbitrary and capricious.*

133. The Center realleges and incorporates by reference the preceding paragraphs.

134. A species is "endangered" if it is "in danger of extinction throughout all *or a significant portion of its range,"* and "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all *or a significant portion of its range*." 16 U.S.C. § 1532(6), (20) (emphasis added).

135. Accordingly, the Service must ask whether there are any portions of the frog's range in which the species' status may warrant its listing as threatened or endangered; for instance,

whether the frog has suffered or will suffer greater declines in abundance or habitat in a particular portion of its range.

136. The Service found that the Illinois Chorus Frog is not threatened or endangered throughout a significant portion of its range because it "found no biologically meaningful portion of the [frog's] range where threats are impacting individuals to an extent that the status of the species in that portion does not differ from any other portion of the species' range."

137. The Service's not-warranted finding arbitrarily disregards the Central RPU as not "significant" and fails to analyze whether the portion of the species' range in Arkansas is a significant portion of the frog's range where it faces an increased risk of extinction.

138. It was arbitrary, capricious, and contrary to the best available science for the Service not to analyze whether the Central RPU or Arkansas warrants consideration as a significant portion of the frog's range where the species faces extinction.

139. Accordingly, the Service's not-warranted finding violates the ESA and is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with the law. 16 U.S.C. § 1533; 5 U.S.C. § 706(2)(A).

## REQUEST FOR RELIEF

Plaintiff respectfully requests that this Court:

(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, costs, and expenses; and

(4) Grant Plaintiff such further and additional relief as the Court may deem just and proper.

DATED: March 18, 2026

Respectfully submitted,

*/s/ Daniel H. Waltz*
Daniel Waltz (D.D.C. No. D00424)
dwaltz@biologicaldiversity.org

Lindsay E. Reeves (La. Bar No. 32703)*
lreeves@biologicaldiversity.org

Brian Segee (Cal. Bar No. 200795)*
bsegee@biologicaldiversity.org

CENTER FOR BIOLOGICAL DIVERSITY
1411 K Street NW, Suite 1300
Washington, DC 20005
(202) 386-6155

*Pro hac vice application pending

*Attorneys for Center for Biological Diversity*