

A PETITION FOR AN UPDATED ENVIRONMENTAL ASSESSMENT OF BEAVER DAMAGE MANAGEMENT IN WISCONSIN; AND NOTICE OF INTENT TO SUE UNDER THE ADMINISTRATIVE PROCEDURE ACT.

Petition Submitted to the U.S. Secretary of the United States Department of Agriculture acting through the Animal and Plant Health Inspection Service and the Secretary of the Wisconsin Department of Natural Resources



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**RE: Superior Bio-Conservancy's Petition for an Updated Environmental
Assessment of Beaver Damage Management in Wisconsin**

Dear Hon. Secretary Thomas Vilsack, APHIS Administrator Kevin Shea, Deputy Administrator Janet Bucknall, and Hon. Secretary Adam N. Payne:

This petition seeks urgent agency action to update the Environmental Assessment of Beaver Damage Management in Wisconsin pursuant to the National Environmental Protection Act (NEPA).¹ In addition, the undersigned organizations hereby give notice of intent to commence a civil action under the Administrative Procedure Act (APA),² should the responsible agencies fail to take action to bring this program into compliance.

Pursuant to the NEPA and the Council on Environmental Quality's (CEQ) implementing regulations,³ and provisions of the Administrative Procedure Act (APA),⁴ the undersigned organizations hereby petition the United States Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) division of Wildlife Services (Wildlife Services) to immediately commence an updated or supplemental environmental assessment (EA) or environmental impact statement (EIS) of federal beaver damage management activities within the State of Wisconsin. This action is necessary to address significant new information and changed circumstances relating to the current program's ongoing environmental impacts and potential to cause serious resource damage. Because Wildlife Services' previous EA, released in

¹ 42 U.S.C. §§ 4321 et seq.

² 5 U.S.C. § 702.

³ 40 C.F.R. §§ 1500-1508.

⁴ 5 U.S.C. § 553(e).

January 2013,⁵ provides no evaluation of this critical information, it must be updated.

In support of this petition, we are providing an Expert Review of Wildlife Services' 2013 EA and supporting documentation that identifies and explains the several ways in which the 2013 analysis is now outdated and deficient with respect to current scientific information and changed circumstances affecting beaver management decisions and their consequences.⁶ As explained below and further detailed in the attached documents,⁷ the previous environmental assessment relies on numerous findings and assumptions that are no longer valid, and thus is no longer adequate as an informational document.

I. Introduction

In January 2013, Wildlife Services issued a Final Environmental Assessment of Beaver Damage Management to Protect Coldwater Ecosystems, Forest Resources, Roads and Bridges, Sensitive Habitats, and Property in Wisconsin (2013 EA).⁸ This document examined the environmental impacts of the agency's statewide program of beaver damage management (BDM) activities, as implemented in coordination with other state, federal, and tribal authorities.⁹ The 2013 EA replaced an earlier 1996 EA on beaver damage management in Wisconsin.¹⁰

Based on the information included in the 2013 EA, Wildlife Services issued a decision and finding of no significant impact (FONSI) approving its preferred alternative of continuing its pre-existing BDM program of integrated wildlife damage management (IWDM).¹¹ Under this program, Wildlife Services provides beaver control services ranging from technical assistance to direct elimination of beavers and beaver dams on private, federal, tribal, state, county, and municipal lands throughout Wisconsin where landowners or land managers request such assistance.¹² Beaver removal is arranged by contract, often in response to beaver damage, which includes virtually any financial losses or property damage attributed to beaver activity,¹³ and may also be arranged to address anticipated beaver damage, as to eliminate beaver dams in flood prone watersheds and coldwater trout streams.¹⁴ This includes contracts and beaver damage

⁵ USDA-APHIS Wildlife Services, Final Environmental Assessment: Beaver Damage Management to Protect Coldwater Ecosystems, Forest Resources, Roads and Bridges, Sensitive Habitats and Property In Wisconsin (Hereinafter "2013 EA") (January 2013), https://www.aphis.usda.gov/wildlife_damage/nepa/states/WI/wi-2013-beaver-ea.pdf.

⁶ Robert Boucher, "Expert Review of *Final Environmental Assessment: Beaver Damage Management to Protect Coldwater Ecosystems, Forest Resources, Roads and Bridges, Sensitive Habitats, and Property in Wisconsin* (January 2013), prepared by United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services." Superior Bio-Conservancy (June 12, 2023) (Hereinafter "Expert Review of 2013 EA").

⁷ A compilation of full-text supporting documents, as outlined in Expert Review Appendix D, is provided on the enclosed flash drive and available online at: <https://5609432.box.com/s/ux68xtoxfe3cn8jnldxuta0hvayect35>.

⁸ USDA-APHIS Wildlife Services, 2013 EA, *supra* n. 5.

⁹ *Id.* at 6-7.

¹⁰ *Id.* at 6.

¹¹ USDA-APHIS Wildlife Services, Decision and finding of no significant impact for Environmental Assessment: Beaver Damage Management to Protect Coldwater Ecosystems, Forest Resources, Roads and Bridges, Sensitive Habitats and Property In Wisconsin (Hereinafter "2013 FONSI"), 2 (January 24, 2013), https://www.aphis.usda.gov/wildlife_damage/nepa/states/WI/wi-2013-beaver-fonsi.pdf.

¹² *Id.* at 2-3.

¹³ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n.5, at 7.

¹⁴ *Id.* at 11-13.

management activities requested by Wisconsin Department of Natural Resource (WDNR) and the United States Forest Service (USFS).¹⁵

As a result of changed conditions and new information, the 2013 EA that informs Wildlife Services' current BDM program in Wisconsin is no longer scientifically sound and adequate as an informational document. The 2013 EA did not anticipate or consider the adverse effects of climate change on beaver populations and habitat, and on non-target species that are adversely impacted by beaver trapping and control activities. The EA also failed to consider a growing body of new and ongoing scientific research confirming the role of beavers and beaver dams in providing ecological services, maintaining healthy watersheds, and mitigating the adverse effects of climate change. In addition, while the 2013 EA and FONSI acknowledged the need for continued monitoring to assess the ongoing impacts of the program on beaver or non-target species populations,¹⁶ no such population monitoring has occurred due to the absence of any strategy for adequate data collection. As a result of these significant new circumstances, the environmental consequences and continuing impacts of the Wisconsin BDM program are largely unknown.

Notably, Wildlife Services has also acknowledged the need for a new environmental assessment in recent annual monitoring reports that address the Wisconsin BDM program. For example, a recent monitoring report issued in 2020 states as follows:

Take of beaver exceeded levels anticipated in the EA in 2017-2019. Based on conversations with cooperators including the WDNR, requests for WS-WI to take beaver are likely to exceed levels established in the EA. Additionally the WDNR has discontinued collecting the population data that WS used to assess impacts on beaver in the EA. A revision of the EA is warranted to address increased take of beaver and develop a new strategy for assessing WS-WI impacts on the beaver population.¹⁷

Subsequent annual reports released in 2021 and 2022 make similar observations, concluding that “there is sufficient new information available that indicates a new NEPA analysis and decision may be warranted.”¹⁸

However, despite these acknowledged deficiencies, Wildlife Services has continued to rely on this inaccurate document to inform its beaver control activities in Wisconsin. Under this program, Wildlife Services has entered into contracts with local, state, and federal agencies, including the WDNR and the USFS, to facilitate a program of widespread beaver elimination

¹⁵ See e.g., WDNR, Wisconsin Beaver Management Plan 2015–2025, at 38-39 (2015),

<https://www.wisstatedocuments.org/digital/collection/p267601coll4/search/searchterm/931697415/field/dmoclcn0>.

¹⁶ USDA-APHIS WILDLIFE SERVICES, 2013 FONSI, *supra* n. 11, at 6.

¹⁷ Hirschert D. & W. D. Harris, Monitoring Status FY 2013-2019, at 8. USDA-APHIS Wisc. Wildlife Services. Dan Hirschert is the State Director of Wildlife Services for Wisconsin and Willie D. Harris is the Regional Director of Wildlife Services' Eastern Region. Unsigned document released by USDA-APHIS in response to FOIA Request No. 2023-APHIS-00294-F (Jan. 10, 2023).

¹⁸ Hirschert, D. & W. D. Harris (2021). Monitoring Status CY 2020, at 6. USDA-APHIS Wisc. Wildlife Services (2021); Hirschert, D. & W. D. Harris, Monitoring Status CY 2021, at 7. USDA-APHIS Wisc. Wildlife Services (2022). Unsigned document released by USDA-APHIS in response to FOIA Request No. 2023-APHIS-00294-F (Jan. 10, 2023).

and beaver dam removal. Thousands of beavers have been killed by Wildlife Services under the federal beaver damage management program informed by this document. In addition, the destruction of beaver dams under this program has harmed natural wetlands and wildlife habitat, and disrupted the hydrology of natural waterways. The continuation of these actions threatens to cause significant damage to wetlands and riparian wildlife habitat by reducing ecological diversity and resilience, and impairing natural water filtration and flood control. To prevent such harm to natural resources, Wildlife Services must re-assess the environmental impacts of its statewide BDM program in Wisconsin in light of new information and current scientific knowledge.

II. Legal Background

A. The National Environmental Protection Act.

Congress enacted NEPA to provide a “basic national charter for protection of the environment.”¹⁹ “The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.”²⁰ CEQ “regulations provide the direction to achieve this purpose.”²¹ “NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.”²²

Under NEPA, federal agencies are required to prepare an analysis of potentially significant environmental impacts prior to any major federal action.²³ Major federal actions include “new and continuing activities” and “programs entirely or partly financed, assisted, conducted, regulated, or approved by [f]ederal agencies.”²⁴ NEPA requires agencies “to take a ‘hard look’ at the ‘significance’ of the consequences of their actions”²⁵ before determining whether to issue an EA, an EIS, or a finding of no significant impact (FONSI).²⁶ “In considering whether the effects of the proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action,” including both short-term and long-term effects, and effects on public safety.²⁷ Notably, when the proposed action is “likely to have significant effects,” an EIS is appropriate.²⁸ Agencies are also required to “utilize ecological information in the planning and development of resource-oriented projects,”²⁹ and to consider the possibility that new information or changes to a project will occur after the

¹⁹ 40 C.F.R. § 1500.1(a).

²⁰ 40 C.F.R. § 1500.1(c).

²¹ 40 C.F.R. § 1500.1(c).

²² 40 C.F.R. § 1500.1(b).

²³ 42 U.S.C. § 4332 (C).

²⁴ 40 C.F.R. §§ 1508.1(g)(2); *see also* subd. (g)(3)(iii).

²⁵ *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989).

²⁶ *See* 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1501.3.

²⁷ 40 C.F.R. § 1501.3(b).

²⁸ 40 C.F.R. § 1501.3(a)(3).

²⁹ 42 U.S.C. § 4332 (H).

environmental review is completed.³⁰

In addition, NEPA requires agencies “to utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man’s environment.”³¹ This helps ensure that decision makers will not exclude consideration of important information from relevant disciplines beyond the lead agency’s area of expertise. An interdisciplinary approach acknowledges the diverse interests in natural resources and is necessary to provide for a sufficiently comprehensive analysis of a proposed action’s potentially significant impacts to the human environment. An interdisciplinary approach is also instrumental to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”³²

Because federal agencies have a “continuing responsibility” to promote environmental protection,³³ an updated or supplemental environmental analysis may be necessary when the environmental impact analysis for an ongoing federal program is no longer valid. CEQ regulations specify that an agency shall prepare a supplemental assessment of environmental impacts “if a major Federal action remains to occur, and . . . [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”³⁴ If new information indicates that a continuing federal program or action will impact the environment “in a significant manner or to a significant extent not already considered,” a supplemental analysis should be prepared.³⁵

B. The Administrative Procedure Act.

Congress enacted the APA to establish procedures for agency rulemaking and decision-making to secure the Constitutional guarantee of due process.³⁶ The APA sets forth general requirements for procedures for public notice and review of agency actions, decisions, and rule makings. This includes provisions protecting the rights of citizens to petition government agencies to undertake an action. Specifically, the APA requires that “[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.”³⁷ The term “rule” is defined to encompass the following:

‘[R]ule’ means the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy or describing the organization, procedure, or practice requirements of an agency and includes the approval or prescription for the future of rates, wages, corporate or financial structures or reorganizations thereof, prices, facilities,

³⁰ See *Marsh*, 490 U.S. at 374; *Highway J Citizens Grp. v. Mineta*, 349 F.3d 938, 959 (7th Cir. 2003) (citing *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 370-84.)

³¹ 42 U.S.C. § 4332 (A).

³² 42 U.S.C. § 4332 (E).

³³ 42 U.S.C. § 4331(b).

³⁴ 40 C.F.R. § 1502.9(d)(1)(ii); see also, e.g., *Sierra Club v. Gates*, 499 F. Supp. 2d 1101, 1127 (S.D. Ind. 2007).

³⁵ *Marsh v. Or. Nat. Res. Council*, 490 U.S. at 374 (1989).

³⁶ 5 U.S.C. §§ 551-559.

³⁷ 5 U.S.C. § 553(e).

appliances, services or allowances therefor or of valuations, costs, or accounting, or practices bearing on any of the foregoing.³⁸

The APA also provides for judicial review of agency actions.³⁹ “A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof.”⁴⁰ Agency actions subject to judicial review include those reviewable by statute and final agency actions for which there is no other adequate remedy in a court.⁴¹ Unless otherwise specified by statute, an action for judicial review of an agency action may be brought through any applicable form of legal action in a court of competent jurisdiction.⁴²

III. Interests of Petitioners.

Petitioner Superior Bio-Conservancy is a 501(c)(3) nonprofit corporation that works to protect and restore the biological integrity and hydrology of the Great Lakes Region and the Laurentian Forest Province, which includes much of Wisconsin. Its projects promote public education and the creation of easements to provide connective wildlife corridors between large tracts of public land (Federal, State and County forests) to prevent habitat fragmentation that can imperil species’ survival and biodiversity.

Current science indicates that healthy beaver populations are integral to the ecological integrity and hydrology of Wisconsin watersheds. Restoring beaver to native watersheds has been shown to benefit water quality, to maintain and restore riparian habitat and wetlands, to enhance species diversity and ecosystem resilience, and to mitigate adverse effects of climate change.⁴³ Conversely, the widespread removal of beavers and beaver dams from natural ecosystems threatens to undermine these benefits. Destruction of beaver dams also impairs water quality by eliminating natural sediment filtration and discharging pollutants into navigable waters. Petitioners have an established and ongoing interest in protecting beavers and beaver dams to protect and restore healthy watersheds.

Accordingly, petitioners have an established interest in ensuring that Wildlife Services’ statewide program for beaver damage management in Wisconsin is informed by and consistent with valid and current science and information, which is necessary to protect these values. Because the current BDM program is based on an inadequate environmental assessment and threatens significant harm to Wisconsin watersheds, climate security, and natural resources, petitioners have no other recourse but to exercise their rights under the APA.

IV. Requested Actions

Petitioners request that Wildlife Services promptly commence preparation of an Environmental Impact Statement, or a revised or supplemental environmental assessment, to

³⁸ 5 U.S.C. § 551(4).

³⁹ 5 U.S.C. §§ 701-706.

⁴⁰ 5 U.S.C. § 702.

⁴¹ 5 U.S.C. § 704.

⁴² 5 U.S.C. § 703.

⁴³ See generally, R. Boucher, Expert Review of 2013 EA, *supra* n. 6.

address the significant deficiencies of the 2013 EA. This assessment should examine current scientific knowledge and significant new information, including changed circumstances due to adverse effects of climate change. This assessment should also address the impacts of proposed management activities on opportunities for restoration of beaver to natural habitat throughout Wisconsin watersheds, including the Milwaukee River watershed.

Petitioners further request that Wildlife Services refrain from all non-emergency removal of beaver and beaver dams within the program area pending (1) the completion of a scientifically informed assessment of proposed beaver damage management activities and their alternatives (2) the establishment of a monitoring program sufficient to assess annual populations of beaver and non-target wildlife species impacted by ongoing beaver damage management activities.

V. Need for Action

The requested actions are necessary to examine the environmental impacts of Wildlife Services' current statewide BDM program for the State of Wisconsin in order to ensure that program activities will not cause significant damage to natural resources. The 2013 EA is inadequate as an informational document pursuant to NEPA because it fails to consider significant new scientific information concerning the impacts and underlying assumptions of the current management approach and fails to address changed conditions that require a reassessment of management priorities and method. Further, the scope and significance of the environmental impacts revealed by new scientific information and changed conditions is substantial enough to warrant preparation of a full EIS rather than an EA.

A. The 2013 EA is inadequate as an informational document because it is not based on current scientific knowledge as required by NEPA.

NEPA requires agencies to analyze environmental impacts based on high quality and accurate information,⁴⁴ and to “utilize ecological information in the planning and development of resource-oriented projects.”⁴⁵ The 2013 EA fails to meet these standard because it fails to consider current scientific knowledge addressing the role of beaver in maintaining wetlands and riparian habitat, water storage and flood control, biodiversity, and wildlife populations. It also relies on outdated studies to justify beaver removal from coldwater streams and excludes consideration of important ecological information in evaluating the potentially significant impacts of beaver dam removal. The EA also fails to provide any mechanism for monitoring the impacts of ongoing management activities on beaver populations and other impacted wildlife populations.

1. The 2013 EA fails to consider current scientific knowledge concerning the role of beaver in maintaining healthy watersheds.

The 2013 EA's analysis of environmental impacts predates a broad and growing scientific consensus concerning the integral role of beaver in maintaining wetlands and healthy watersheds. While the prefatory sections of the EA acknowledged the availability of some such

⁴⁴ 40 C.F.R. § 1500.1(b).

⁴⁵ 42 U.S.C. § 4332 (H).

studies,⁴⁶ the importance of this information with respect to potentially significant impacts of beaver and beaver dam removal was still emerging at that time. New research published after the completion of the 2013 EA has augmented and confirmed these early findings by further demonstrating the importance of beaver in maintaining natural wetlands, riparian ecosystems, water storage and flood control, and in enhancing wildlife habitat and biodiversity, and water quality. This includes scientific studies examining the effects of beaver on native trout and coldwater fisheries, the role of beaver dams on maintaining riparian habitat, wetlands, and biodiversity, and the effect of beaver dams on water quality.

Wetlands. The 2013 EA acknowledges that beavers and beaver dams contribute to the formation and maintenance of beneficial wetlands that provide many important ecological services,⁴⁷ but did not address the growing body of scientific information that has further examined and refined our understanding of these relationships since 2013. This new information indicates that the current BDM program’s emphasis on beaver and beaver dam removal may be causing significant adverse impacts on wetlands and their many ecological and hydrological services.⁴⁸

While the EA includes a section addressing “impacts on wetlands,” the 2013 analysis is skewed by the limiting assumption that only long-established wetlands have ecological value and others should be removed.⁴⁹ Impacts of removal, it opined, would be minimal because USACE restrictions will “minimize any impacts” and “[t]he intent of intent of most dam breaching/removal is not to drain established wetlands.”⁵⁰ As a result, the benefits of beaver-created wetlands, and ecological costs of their removal, were never evaluated. However, the EA’s distinction between “established wetlands” and beaver-created wetlands is not supported by current science. More recent studies of beaver-created wetlands have found them to provide very similar ecological benefits and services as those provided by established wetlands, and current research recognizes beaver ponds as a natural mechanism of wetland formation. In light of this new information, it makes no sense to discount or devalue one type of wetland or disregard the impacts of beaver dam removal on the ecological services, habitat value, and other benefits provided by beaver-created wetlands..

In fact, a growing body of research indicates that the benefits of beaver-created wetlands are substantial, and, conversely, the costs of beaver removal are significant. The U.S. Fish and Wildlife Service (USFWS) recently updated its Beaver Restoration Guidebook, originally published in 2015, to compile the best available science on the subject of using beaver to improve ecosystem functions.⁵¹ This compendium of research shows that beaver dams create wetlands that improve the water storage capacity of streams, raising water tables and improving

⁴⁶ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 9.

⁴⁷ *Id.* at 9.

⁴⁸ See R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, section 1.

⁴⁹ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 31-32.

⁵⁰ *Id.* at 32.

⁵¹ USFWS (2023), The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and Floodplains (Hereinafter “Beaver Restoration Guidebook”), v. 2.02., https://www.fws.gov/sites/default/files/documents/The-Beaver-Restoration-Guidebook-v2.02_0.pdf; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, sections C.1 and C.2.

base flows.⁵² Pondered water also creates a larger area of soil saturation within riparian zones, which supports the spread and restoration of riparian plant communities that provide important habitat and protects water quality.⁵³ Beaver dams also reduce peak flood flows by slowing and spreading water laterally, while dissipating the energy of flood events and reducing sediment transport.⁵⁴ These wetlands also have a moderating effect on impacts of climate change, by securing stream flows and improving groundwater recharge in areas impacted by increased drought, and by buffering against severe flooding in regions experiencing increased rainfall.⁵⁵ In contrast, beaver dam removal has the opposite effect and can lead to diminished stream flows, lower water tables, flash floods, and loss of habitat. One study concluded that “the removal of beaver from aquatic systems should be recognized as a wetland disturbance equivalent to in-filling, groundwater withdrawal, and other commonly cited wetland disturbances.”⁵⁶

In addition, beaver dams have been found to improve water quality through increased sediment retention, temperature moderation, nutrient cycling, and contaminant removal.⁵⁷ The EA notes that beaver ponds accumulate sediments,⁵⁸ but fails to recognize that this has a filtering effect that reduces sediment loads downstream, thereby reducing sedimentation of streambeds below the pond. In contrast, breaching beaver dams destabilizes these sediments and causes increased sediment loads downstream.⁵⁹ Similarly, the EA asserts repeatedly that beaver dams pose a threat to coldwater fish by increasing water temperatures.⁶⁰ In fact, current research has shown that the effects of beaver dams on water temperature are far more complex than formerly believed. Improved sampling methods have revealed that many beaver ponds display temperature stratification with significantly cooler water at lower depths, providing cold spots that act as refugia for coldwater fish on warm days.⁶¹ Higher water tables associated with beaver ponds can also retain cooler water below the surface, which in some cases can have a cooling effect by upwelling into streams.⁶² Overall, current research tends to show that beaver ponds have a moderating effect on stream temperatures,⁶³ which could be an important factor in improving resilience in fisheries threatened by climate change.⁶⁴

Ecological value of wetlands and riparian habitat. Beaver-created wetlands also serve as important wildlife habitat. The creation of ponds increases open water habitat for migratory birds, aquatic mammals like river otters, and other aquatic species such as amphibians and reptiles, while the effect of spreading water and raising water tables increases riparian vegetation

⁵² USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 4; *see also* R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, section 3.

⁵³ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 4-5.

⁵⁴ *Id.* at 5.

⁵⁵ *Id.* at 4-7.

⁵⁶ *Id.* at 4-5, citing Hood, G. A. and S. E. Bayley (2008), Beaver (*Castor canadensis*) mitigate the effects of climate on the area of open water in boreal wetlands in western Canada. *Biological Conservation* 141:556-567.

⁵⁷ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 7-10.

⁵⁸ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 30-31.

⁵⁹ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 7-8.

⁶⁰ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 12-13, 31.

⁶¹ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 9; *see also*, R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix B (B. Dittbrenner comments).

⁶² USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 9.

⁶³ *Id.* at 9.

⁶⁴ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.2.

and side channels that increase habitat for many other species.⁶⁵ More species rely on riparian areas than any other habitat type,⁶⁶ including many sensitive, threatened, and endangered species.⁶⁷ Expanding riparian vegetation can also increase biodiversity and provide habitat connectivity and migration corridors to link otherwise fragmented habitat.⁶⁸ These benefits may also improve ecosystem resilience and species adaptation in response to climate change. New research confirming the value of beaver-created wetlands in increasing habitat and biodiversity also points to the significant costs of eliminating these benefits through beaver dam removal.

Notably, the 2013 EA specifically excluded consideration of impacts to biodiversity,⁶⁹ because it perceived these to be negligible.⁷⁰ While the basis for that decision is not entirely clear, additional research in the last decade has eliminated any doubt that beaver ponds play a key role in maintaining biodiversity associated with wetlands and riparian habitats. Accordingly, further evaluation is consistent with NEPA's clear mandate to consider ecological information when making resource decisions.⁷¹ The 2013 EA fails to examine the extent to which the current BDM program adversely impacts these values.⁷² This is a substantial omission that may severely undermine the validity of the EA's impacts analysis and its conclusion finding no significant impact.

In addition, while the percentage of total beaver removal conducted by Wildlife Services is relatively small, this is misleading as an indicator of impact on wildlife because the location of these activities also affects the overall impact on biodiversity. The majority of Wildlife Services beaver removal activities are contracted by public agencies and impact public lands and resources, including National Forest lands and public trust lands where wildlife habitat is an important value.⁷³ The EA does not examine whether agency trapping and dam removal have a disproportionately large impact on biodiversity as compared to private trapping. The actual number of beavers killed by private trappers is also uncertain due to the absence of reporting requirements, which makes the percentage of total take attributable to Wildlife Services uncertain as well. An updated EIS or EA is necessary to evaluate the significant adverse impacts of beaver dam removal on wildlife habitat, biodiversity, and related ecosystem services not considered in the 2013 EA.

Flood control. The 2013 EA failed to consider the dynamic role of beaver dams in maintaining wetlands that help recharge water tables and reduce flooding through stormwater

⁶⁵ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 5-6; *see also* R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, sections 1 and 2.

⁶⁶ National Research Council (NRC), *Riparian Areas: Functions and Strategies for Management*, at 109-10, The National Academies Press (2002), <https://doi.org/10.17226/10327>.

⁶⁷ *See* USFWS, Listed species with spatial current range believed to or known to occur in Wisconsin, ECOS, <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=WI&stateName=Wisconsin&statusCategory=Listed> (last visited March 23, 2023).

⁶⁸ NRC, *Riparian Areas: Functions and Strategies for Management*, at 110, 127, The National Academies Press (2002), <https://doi.org/10.17226/10327>.

⁶⁹ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 33.

⁷⁰ *Id.* at 33-34.

⁷¹ 42 U.S.C. § 4332 (H).

⁷² USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 51.

⁷³ *See e.g.*, WDNR, Wisconsin Beaver Management Plan 2015–2025, at 51 (2015), <https://www.wistatedocuments.org/digital/collection/p267601coll4/id/10537/rec/1>.

storage.⁷⁴ Despite briefly acknowledging these benefits of beaver ponds,⁷⁵ the Wildlife Services BDM program identifies flood damage to crops, infrastructure, and other property as a key justification for beaver dam removal.⁷⁶ The EA did not recognize or address the inconsistency between these programmatic prescriptions and the growing body of scientific evidence indicating that beaver dams help control flooding by creating ponds and wetlands that improve overall water storage and increase a watershed's capacity to handle major flood events. The 2013 EA contains no analysis of the potentially significant environmental impacts of widespread beaver dam removal on wetlands, groundwater recharge, or downstream flooding. Instead, the EA asserts without explanation that floodplains are among the resources it determined “would not be adversely impacted” by any of the beaver management alternatives considered.⁷⁷ An updated EA is necessary to evaluate whether the beaver dam removal is a valid method for reducing flood damage, and to examine the potential adverse effects of widespread beaver dam removal on wetlands and downstream flood events.

The 2013 EA's cost-benefit analysis of various management activities also fails to place any economic value on the ecological services and stormwater storage provided by beaver activities in maintaining ponds and stabilizing wetlands.⁷⁸ While the EA claims that its beaver removal activities protect millions of dollars of natural resources, including trout habitat, by preventing beaver damage, it did not recognize or quantify the costs of these actions in terms of lost wetlands and water storage capacity or the increased risk of downstream flooding.⁷⁹ In fact, new information has shown that, as beavers return from near extinction, they are restoring wetlands, which provides billions of dollars in ecological services.⁸⁰ By failing to recognize the economic value of ecological services and water storage provided by beaver, the EA misrepresents the true costs and benefits of beaver management alternatives, which undermines NEPA's purpose of informed decision-making.

In addition, the 2013 EA did not examine the opportunity to utilize beaver to enhance watershed restoration. As the USFWS Guidebook reflects, there is now growing interest in tapping the natural proclivity of beavers in watershed improvement projects by restoring beaver to areas in need of enhanced wetlands, water storage, habitat, and flood control.⁸¹ For example, a recent study found that restoring beaver to the Milwaukee River Watershed could provide more than 3.3 billion dollars in ecological services by creating stormwater storage to prevent downstream flooding of homes and urban areas.⁸² Restoration of wetlands and floodplains has also been identified as an important climate adaptation strategy to reduce flood risk and protect

⁷⁴ See R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.2, and Appendix D, section 5.

⁷⁵ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 9.

⁷⁶ See, e.g., *id.* at 7, 69.

⁷⁷ *Id.* at 51.

⁷⁸ *Id.* at 36-37.

⁷⁹ *Id.* at 16.

⁸⁰ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.5, and Appendix D, section 5.

⁸¹ USFWS, Beaver Restoration Guidebook, *supra* n. 51; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, sections 7 and 8.

⁸² See R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.5; citing Liao, Q., Boucher, R., Wu, C., Noor, S. M., Liu, L., Rock, M., Flanner, M., & Holloway, L. (2020). Hydrological Impact of Beaver Habitat Restoration in the Milwaukee River Watershed. Milwaukee Metropolitan Sewerage District; <https://www.beaverinstitute.org/wp-content/uploads/2023/03/Beaver-Hydrology-impact-in-Milwaukee-final-1.pdf>.

water quality in the Midwest.⁸³ This would also benefit a wide range of species that rely on wetlands and riparian ecosystems. The 2013 EA does not consider these significant potential benefits of beaver relocation, which it dismisses as impractical and ineffective because early relocation efforts in other regions had varying results – and concern that Wildlife Services could be liable if a relocated beaver damages property.⁸⁴ The current Wisconsin BDM program does not include live capture and relocation among its methods of beaver damage management.⁸⁵ As a result, the EA provides no analysis of this option. An updated EA is needed to evaluate the potential benefits of relocation as an alternative management method in light of new information and improved understanding of how beaver relocation could contribute to watershed stabilization and climate adaptation.

2. The 2013 EA relies on inaccurate information concerning impacts of beaver on coldwater fish species.

The 2013 EA repeatedly asserts that beaver dam removal is necessary for maintaining coldwater trout fisheries as the core justification for its preferred management approach and beaver dam removal activities.⁸⁶ This appears to reflect an entrenched belief that gained traction in the 1950s and then continued to influence agency decision-making. Importantly, more recent science has discredited this view.⁸⁷ This is another key reason that Wildlife Services, as well as the WDNR, need to update their management approach to reflect new information.⁸⁸ The outdated analysis contained in the 2013 EA contains significant inaccuracies that skew its findings concerning impacts of beavers and beaver dams on coldwater fisheries, which is a principal justification for the current BDM program’s emphasis on beaver removal. Additional studies completed since 2013 have added to the weight evidence demonstrating that these early assumptions about beaver-fish interactions are no longer valid or reliable.⁸⁹ Resistance to change must not be allowed to prevent accurate information from informing agency decisions, under color of agency expertise. An updated EA is necessary to re-evaluate impacts of the current management approach in light of current information.

The EA explains that the program of beaver dam removal on coldwater trout streams is premised on the belief that beaver dams raise stream temperature. The EA attributes this view to a handful of reports and research conducted between 1935 and 1951, which later became enshrined in WDNR’s management guidelines for trout streams beginning in 1967.⁹⁰ The only additional support is from internal reports and studies conducted by a WDNR fisheries manager, Ed L. Avery, between 1982 and 2004. While the Avery studies purported to *prove* that beaver dams increase stream temperature and that beaver dam removal would improve fish survival, a subsequent analysis of this work revealed no significant correlation between beaver dams and

⁸³ U.S. Climate Resilience Toolkit, Midwest Region, “Biodiversity and Ecosystems,” <https://toolkit.climate.gov/regions/midwest/biodiversity-and-ecosystems> (last visited March 24, 2023); *see also* R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, sections 5 and 6.

⁸⁴ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 48-49.

⁸⁵ *Id.* at 48-49 and 94-100 (Appendix D).

⁸⁶ *Id.* at 12-13, 16, 26, 31, 34, 37, 38, 54, 58, 71, 95.

⁸⁷ *See* R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.3.

⁸⁸ *Id.*

⁸⁹ *Id.*, Appendix D, section 4.

⁹⁰ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 12-13; *see also* R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.3.

stream temperature.⁹¹ The Avery studies also asserted that beaver dams posed a significant obstacle to fish passage, another belief that has been disproven – and which Avery himself later admitted his own data did not support.⁹² Notably, when this assumption was questioned at a recent meeting of the WDNR Beaver Taskforce, taskforce members could produce no evidence that beaver impede trout or coldwater systems.⁹³

As noted above, current science has shown that beaver ponds have a moderating effect on stream temperatures and retain layers of cooler water at lower depths, which provides refugia for coldwater fish on warm days.⁹⁴ Numerous academic papers and peer-reviewed studies have now shown that beaver and beaver ponds have a significant beneficial impact on trout and salmonid species as a result of improving forage, biodiversity, stream health, stability of stream temperature, flood reduction, and water quality.⁹⁵ As discussed in the attached Expert Review, other studies have also demonstrated the importance of beaver ponds in providing habitat for juvenile fish.⁹⁶ For example, a meta-analysis of forty-four published studies examining trout/beaver interactions on Midwestern streams showed that beaver have beneficial impacts on trout.⁹⁷ Beaver ponds have also been found to provide habitat for aquatic insects that comprise an important food source for fish.⁹⁸

Despite the growing body of evidence that beaver dams have positive impacts on coldwater streams and fish, the current BDM program, as based on the outdated 2013 EA, continues to focus on beaver dam removal. A list of cooperative agreements in place for beaver damage management activities in 2023 shows that 78% of the 354 Wisconsin streams are being targeted for beaver removal solely because they contain trout habitat.⁹⁹ But instead of protecting fish, as previously believed, it is now clear that these misguided actions are likely to have a detrimental effect on fish – and will needlessly kill beaver. The mere presence of beaver on coldwater streams does not constitute *damage*, and must not be allowed to justify lethal action. These activities go beyond the scope of damage management. The current BDM program is inconsistent with current science and thus needs to be re-evaluated.

Accordingly, an updated EA is necessary to provide an accurate assessment of the

⁹¹ Jon Popelars, Using GIS to Reevaluate Beaver Dam Effects on Local Environments in Northern Wisconsin Brook Trout Streams During the 1980s (graduate thesis, 2008). Department of Resource Analysis, Saint Mary's University of Minnesota, Winona, MN 55987, <https://gis.smumn.edu/GradProjects/PopelarsJ.pdf>; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.3.

⁹² R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.3.

⁹³ *Id.*; see also WDNR, Draft Minutes from Beaver Task Force Meeting (Mead Wildlife Area, Dec. 16, 2022), at 2-3, 13. Milladore, Wisc.

⁹⁴ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 9; see also, R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix B (B. Dittbrenner comments).

⁹⁵ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, section 4.

⁹⁶ *Id.*

⁹⁷ Johnson-Bice, S. M., Renik, K. M., Windels, S. K., & Hafs, A. W. (2018). A review of Beaver-salmonid relationships and history of management actions in the Western Great Lakes (USA) region. *North American Journal of Fisheries Management*, 38(6), 1203–1225. <https://doi.org/10.1002/nafm.10223>; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.3.

⁹⁸ USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 14-17; R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, section 4.

⁹⁹ WDNR, WDNR-USDA Cooperative Agreement Streams List (2023) (Source: WDNR Fisheries Biologist Bradd Sims record request).

growing body of evidence that beaver dam removal has potentially significant adverse impacts on coldwater streams and fish habitat.¹⁰⁰ This should include recognition and valuation of the ecological services provided by beaver and beaver dams, which not only enhance fish habitat but may help moderate the adverse effects of climate change.¹⁰¹ In the meantime, beaver dam removal activities that are based solely on the presence of trout habitat should be immediately halted to prevent further damage to natural resources.

3. The 2013 EA fails to provide an analysis of the current BDM program's impacts on beaver populations.

The 2013 EA failed to provide any clear analysis of the BDM program's potentially significant impact on beaver populations. It also indicates that the state's estimates of overall population numbers and annual take are based on limited information and largely unverified survey data.¹⁰² In addition, the 2013 FONSI states that "WS will continue to monitor the impacts of its activities on . . . the state beaver population. . . ."¹⁰³ However, because the 2013 EA failed to provide an accurate estimate of beaver populations, it also fails to provide an adequate baseline for assessing the impacts of ongoing management activities on that population. Further, the number of beavers killed annually through the BDM program has increased by more than 250% since 2013. As noted above, even Wildlife Services' recent monitoring reports agree that this is a significant expansion that was never anticipated or evaluated in the 2013 EA, and thus warrants an updated impact analysis.¹⁰⁴

The EA includes a brief discussion of statewide beaver population data, which refers to an incomplete and unlabeled graph that appears to indicate a precipitous decline in beaver population occurred just a few years after Wildlife Services initiated its current Wisconsin BDM program in the early 1990s.¹⁰⁵ The EA's only explanation for this decline is to hypothesize that the earlier numbers may have been inflated due to inaccurate sampling techniques and later variations in sampling and modeling methodologies.¹⁰⁶ However, this theory is based only on "personal communication" with a WDNR staff member named David McFarland.¹⁰⁷ Other than noting that the use of helicopter surveys was explored in 1990-1992, the EA provides no information concerning how or where beaver populations were assessed, how this changed over the years, or why some methodologies should be considered more accurate than others.¹⁰⁸

Notably, there is also no documentation concerning the regional distribution or geographical connectivity of the state beaver population. The EA acknowledges that the state is divided into four beaver management zones, each of which has distinct management priorities, but provides no information on beaver populations within each zone from which to assess the

¹⁰⁰ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, section 4.

¹⁰¹ *Id.*, Appendix D, sections 5 and 6.

¹⁰² USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 58-59.

¹⁰³ USDA-APHIS WILDLIFE SERVICES, 2013 FONSI, *supra* n. 11, at 6.

¹⁰⁴ Hirschert & Harris, Monitoring Status FY 2013-2019, *supra* n. 17, at 8; Hirschert & Harris, Monitoring Status CY 2020, *supra* n. 18, at 6.; Hirschert & Harris, Monitoring Status CY 2021, *supra* n. 18, at 7.

¹⁰⁵ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 14-15, 59.

¹⁰⁶ See discussion in R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section B.2.

¹⁰⁷ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 14, 59.

¹⁰⁸ *Id.* at 14, 59.

impacts of various treatments.¹⁰⁹ The four management zones also have no clear connection to specific water basins or watershed planning units.¹¹⁰

Data concerning the annual harvest of beavers is also unreliable. The EA estimates that approximately 35,000 beavers were harvested annually in Wisconsin between 2007 and 2011, but then admits that there is no system in place for verifying the accuracy of these numbers.¹¹¹ Wisconsin has no bag limits or reporting requirements and the numbers are based solely on voluntary questionnaire responses returned by a sample of licensed trappers.¹¹² The EA states further that the survey data utilized for both population estimates and harvest estimates was collected solely from the two of the four management zones comprising the northern one-third of the state.¹¹³ In other words, no population surveys were conducted for the southern two-thirds of the state, for which the estimates are based on assumptions that Wildlife Services admits may not be accurate.¹¹⁴ The EA also admits that, for the period from 2007 to 2011, the “cumulative estimated beaver take was approximately 48% of the estimated state beaver population,” which is “higher than the sustainable harvest level of 30% noted in the WS programmatic EIS.”¹¹⁵

More recent population and annual take estimates remain problematic. As discussed in the Expert Review, there is still no method of validating overall population methods, and annual harvest estimates are based largely on self-reporting by voluntary surveys submitted by trappers.¹¹⁶ The state’s 2015 Wisconsin Beaver Management Plan also notes that intermittent helicopter surveys (once every three years) were used to estimate the number of beaver colonies in the northern third of the state through 2014, but acknowledges that these surveys had a margin of error exceeding 20%.¹¹⁷ The 2015 Plan also notes that the number of beavers killed on private property by landowners is unknown, since there are no legal prohibitions on private beaver removal and no reporting requirements.¹¹⁸ According to the state WDNR: “Development of direct empirically based population estimates for Zones C and D will be critical in monitoring beaver populations in these zones.”¹¹⁹ However, to date, no such method has been developed for verifying the beaver population within these Zones, which together account for approximately two-thirds of the state.

Despite this uncertainty concerning overall beaver populations, the number of beavers killed each year by Wildlife Services in Wisconsin has increased dramatically since 2013. As shown in the table below, annual reports posted online by USDA-APHIS document how the

¹⁰⁹ *Id.* at 14-15; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section B.1.

¹¹⁰ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 14-15.

¹¹¹ *Id.* at 58.

¹¹² *Id.* at 57-58.

¹¹³ *Id.* at 58.

¹¹⁴ *Id.* at 58-59.

¹¹⁵ *Id.* at 59, citing USDA [APHIS], Animal Damage Control Program Final Environmental Impact Statement (1997), pp. 4-10 – 4-17.

¹¹⁶ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section B.1.

¹¹⁷ WDNR, Wisconsin Beaver Management Plan 2015–2025, at 41, 43 (2015), <https://www.wistatedocuments.org/digital/collection/p267601coll4/search/searchterm/931697415/field/dmoclno>.

¹¹⁸ *Id.* at 44.

¹¹⁹ *Id.* at 43.

BDM program has expanded.¹²⁰ In particular, current data shows that the impact of the program on beaver populations has increased by more than 250% since it was evaluated in 2012-2013.¹²¹ In addition, the footprint of the BDM program has expanded from 31 counties in 2015 to 38 counties in 2022.¹²² These are significant changes that were never anticipated or evaluated in the 2013 EA.

Year	Number of Beavers Killed
2013	1,247
2014	1,400
2015	1,488
2016	1,817
2017	2,647
2018	2,731
2019	3,376
2020	3,469
2021	2,982
2022	3,492

An updated environmental analysis is thus critically necessary to evaluate how this substantial and unforeseen expansion of the number of beaver killed by Wildlife Services over the last decade has impacted Wisconsin beaver populations. An updated analysis is also needed to evaluate beaver management activities in light of current and reliable beaver population data and beaver harvest data. This analysis should also include consideration of the potential effects of climate change on beaver populations and beaver habitat. Without valid population data, there is no way to tell whether the ongoing impacts of the current management program are sustainable or potentially contributing to a decline in beaver populations.¹²³ Accordingly, a new EA or EIS is necessary to assess whether the current program is consistent with the goal of achieving sustainable beaver populations and to evaluate whether programmatic changes are needed to address changed conditions.

4. The 2013 EA fails to provide an any mechanism for monitoring impacts on beaver populations or populations of other impacted species.

The 2013 EA and FONSI both acknowledge the need for ongoing monitoring and review to assess the ongoing impacts of the Wisconsin BDM program and to verify whether the EA is still valid. The EA states that it will be “reviewed each year to determine if the impacts of WS

¹²⁰ See USDA-APHIS, Program Data Reports, Program Data Report G - Animals Dispersed / Killed or Euthanized / # Burrows/Dens Removed or Destroyed / Freed or Relocated (2013-2022); https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/SA_Reports/SA_PDRs.

¹²¹ *Id.*

¹²² Wisconsin Beaver Task Force Meeting, Draft Minutes at 4 (Mead Wildlife Area, Dec. 16, 2022); see Report of USDA Wildlife Services - Dan Hirschert.

¹²³ R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section B.1 and B.2.

beaver damage management activities are consistent with the impacts presented in this analysis.”¹²⁴ The FONSI elaborates further, stating that Wildlife Services “will continue to monitor the impacts of its activities on the issues analyzed in detail in the EA including impacts on the state beaver population and non-target species that could be affected by beaver damage management activities.”¹²⁵ However, there is no explanation as to how such a determination will be made in the absence of reliable population data. The FONSI states only that this will involve reporting and coordinating with WDNR,¹²⁶ but makes no comment as to how population and harvest data will be collected to address the deficiencies acknowledged in the 2013 EA.¹²⁷ In addition, neither document anticipated that WDNR would cease conducting helicopter surveys in 2014, after relying on this methodology to assess beaver populations from 1992 through 2014.¹²⁸ The EA and FONSI both assumed that WDNR would continue to conduct beaver population surveys. The termination of WDNR’s population surveys is a significant change that effectively prevents Wildlife Services from evaluating the ongoing impacts of its BDM program on beaver populations, as it expressly intended in 2013.¹²⁹ It is currently unknown whether beaver populations are stable or declining from over-trapping.¹³⁰

The EA and FONSI also fail to address how impacts on populations of non-target species, or bycatch, will be evaluated. The EA identifies otters, muskrats, raccoons, fish, and turtles as the species most likely to be captured in beaver traps and snares.¹³¹ Of these, river otters are the species most frequently captured by mistake, with at least 60-100 takings per year reported by Wildlife Services between 2009 and 2011.¹³² The EA suggests that this is a small percentage, 7-14%, of the total number killed by trappers each year, which it estimates at 700-900 per year out of a total population believed to be around 9000 to 11,000 otters.¹³³ However, the reliability of these estimates is unknown. As in the case of beaver population estimates, these numbers are based on voluntary surveys returned by a sample of licensed trappers.¹³⁴ Also, like the beaver population estimates, the EA cites numbers suggesting a decline in otter populations but dismisses as a probable sampling error without close examination.¹³⁵ In addition, more recent estimates place the number of non-targeted casualties much higher, including at least 140 river otter killed per year between 2017 and 2019.¹³⁶

Notably, based on the EA’s bycatch numbers, Wildlife Service’s beaver management activities account for 7-14% of estimated river otter bycatch but only 3% of the total beaver harvest.¹³⁷ This suggests that Wildlife Services’ beaver control activities are 2-4 times more

¹²⁴ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 18.

¹²⁵ USDA-APHIS WILDLIFE SERVICES, 2013 FONSI, *supra* n. 11, at 6.

¹²⁶ *Id.*

¹²⁷ See discussion, *infra*, section V.A.3., pp. 16-17; USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 58-59; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, sections B.1 and B.3.

¹²⁸ WDNR, 2015 Beaver Plan at 42-43; Hirschert & Harris, Monitoring Status FY 2013-2019, *supra* n. 15, at 1.

¹²⁹ See R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section B.1.

¹³⁰ Hirschert & Harris, Monitoring Status FY 2013-2019, *supra* n. 15, at 8.

¹³¹ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 27.

¹³² *Id.* at 66-67.

¹³³ *Id.*

¹³⁴ *Id.* at 67, citing Dhuey and Olsen, *Beaver trapper questionnaire*, WDNR (2011).

¹³⁵ *Id.* at 66.

¹³⁶ Hirschert & Harris, Monitoring Status FY 2013-2019, *supra* n. 17, at 2-3 [Table 2].

¹³⁷ USDA-APHIS WILDLIFE SERVICES, 2013 EA, *supra* n. 5, at 57.

likely to adversely impact river otters than other trapping and snaring by private trappers. Alternatively, this could mean that the number of otters taken by private trappers is under-reported. Again, the EA offers no analysis of this discrepancy or possible reasons for the disproportionately high number of river otters killed by Wildlife Services.

In addition, the 2013 EA also failed to consider the fact that river otters are listed as a protected species under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).¹³⁸ The historic decline of North American river otter populations strongly correlates with the elimination of beaver ponds and wetlands caused by beaver extirpation in the late 1800s.¹³⁹ The use of beaver ponds by river otters is well-documented.¹⁴⁰ However, the EA made no effort to examine whether Wildlife Services' further elimination of ponds and wetlands through beaver dam removal would have significant adverse impacts on river otter by eliminating habitat important to their recovery. This potential impact is in addition to the direct taking of river otters through unselective trapping. There is also no indication that sites are screened or evaluated for otter presence or potential impacts to otter habitat needs when deciding to remove beaver dams. As with beaver populations, an updated analysis is needed to assess impacts over time, including impacts due to the expansion of the BDM program, and to ensure that this impact analysis is based on current and reliable data.

The 2013 EA also fails to identify any methodology for ongoing monitoring of the beaver damage management impacts on wildlife populations. Based on recent information disclosed by WDNR to the Beaver Management Task Force, WDNR still has no data collection method in place to ensure valid and reliable estimates of beaver populations or bycatch of nontarget species. Again, without this data, the EA's and FONSI's assurances of ongoing monitoring are empty promises that misrepresent the reality that any ongoing monitoring is a guessing game based on unverified and nonrepresentative data and unreliable estimates. As a result, the cumulative impacts on beaver populations and other impacted wildlife after ten years of implementation the current beaver damage management practices are unknown. An updated environmental assessment is needed to evaluate these impacts and ensure that beaver management activities are properly monitored by including a defined implementation strategy and mechanism for tracking and verifying wildlife population data. In the absence of such data there is no evidence to support the claim that the current management approach is sustainable.

Because the 2013 EA fails to address current information concerning the potentially significant impacts and costs of Wildlife Services ongoing BDM program activities and emphasis on beaver and beaver dam removal, it is inadequate as an informational document to guide agency decision making. A new or supplemental EA is necessary to address new information and information disregarded in 2013.

¹³⁸ UNEP, CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA, Appendix II (updated Feb. 23, 2023), available at: <https://cites.org/eng/disc/text.php>.

¹³⁹ Internet Center for Wildlife Damage Management, "Otters," <https://icwdm.org/species/carnivores/otters/> (last visited March 20, 2023).

¹⁴⁰ *Id.*

B. An updated environmental assessment is necessary to significant new circumstances relating to the effects of climate change.

Under NEPA, an updated environmental assessment is appropriate when “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”¹⁴¹ In the period since the 2013 EA was prepared, the recognition that climate change is an important factor in evaluating resource management decisions has gained traction. The 2013 EA did not consider the effects of climate change in the evaluation of the environmental impacts of beaver management activities. However, because beaver activity provides important ecological services that can help moderate adverse effects of climate change, this constitutes significant new information that must be taken into account in order to properly assess the environmental impacts of beaver removal.¹⁴²

As noted above, current research shows that beaver ponds and wetlands improve water storage and flood control, which buffers watersheds against increased drought and extreme flooding.¹⁴³ In addition, by moderating water temperatures, beaver ponds can help stabilize water temperatures and enhance fish habitat to offset warming and habitat loss of habitat due to extreme temperatures, high heat, and increased evaporation.¹⁴⁴ Beaver-created wetlands and riparian habitat may also maintain biodiversity and assist the survival of other species impacted by climate change by offsetting habitat loss, increasing habitat connectivity and migration corridors, and improving ecosystem resilience.¹⁴⁵

Because climate change was not considered in the 2013 EA, a new or supplemental assessment is needed to examine the impacts of beaver removal on climate change adaptation and mitigation.

C. Significant impacts of beaver removal warrant preparation of an Environmental Impact Statement.

NEPA regulations promulgated by the CEQ requires federal agencies to determine the appropriate level of environmental review based on whether the proposed action is likely to have significant effects on the environment.¹⁴⁶ When an action is likely to have significant effects, the appropriate level of review is an environmental impact statement. In contrast, an environmental assessment is appropriate when the action is *unlikely* to have significant effects or the significance is unknown.¹⁴⁷ “In considering whether the effects of the proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects

¹⁴¹ 40 C.F.R. § 1502.9(d)(1)(ii).

¹⁴² R. Boucher, Expert Review of 2013 EA, *supra* n. 6, section C.2.

¹⁴³ See discussion, *supra* § V.A.1, pp. 8-9; USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 4-7.

¹⁴⁴ See discussion, *supra* § V.A.1, pp. 10-13; USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 8-9.

¹⁴⁵ U.S. Climate Resilience Toolkit, Midwest Region, “Biodiversity and Ecosystems,” <https://toolkit.climate.gov/regions/midwest/biodiversity-and-ecosystems> (last visited March 24, 2023); USFWS, Beaver Restoration Guidebook, *supra* n. 51, at 4-7; see also R. Boucher, Expert Review of 2013 EA, *supra* n. 6, Appendix D, sections 5, 6, and 9.

¹⁴⁶ 40 C.F.R. § 1501.3(a).

¹⁴⁷ *Id.*

of the action.”¹⁴⁸

Here, while in 2013, an environmental assessment was deemed appropriate based on the information available at that time, there is now a growing body of research indicating that the elimination of beavers and beaver dams from watersheds has significant effects on the environment. As noted above, beaver ponds and beaver-created wetlands provide numerous ecological and hydrological services, by expanding and stabilizing wetlands and riparian habitat, and by enhancing water storage capacity and flood control. Beaver ponds also trap sediments and improve water quality, and provide thermal refugia and food sources for fish, and create habitat for migratory birds and waterfowl. In addition, new research has shown that beavers and beaver-created wetlands are a key resource for mitigating the adverse impacts of climate change by increasing ecosystem resilience and buffering watersheds against floods and drought. These benefits and services are significantly impaired by the elimination of beavers and beaver dams. The Wisconsin BDM program destroys hundreds of beaver dams and thousands of beavers each year, impacting hundreds of miles of Wisconsin streams. We now know that eliminating beaver has significant adverse effects on watersheds by eliminating natural wetlands and riparian habitat, undermining climate resilience, and impairing the ecological services and hydrological functions provided by beavers.

Accordingly, the 2013 EA is not only in need of updating, but should be replaced by an EIS. New information that has emerged since 2013 makes clear that the Wisconsin BDM program is likely to have significant effects on the environment. The previous determination that an EA was adequate reflected an earlier perspective that predated important new studies examining the role of beaver in maintaining healthy watersheds and mitigating adverse impacts of climate change. In light of this additional information, an EIS is warranted as the appropriate level of environmental review.

VI. Conclusion

For the above stated reasons, Wildlife Services should immediately commence a revised or supplemental environmental impact analysis to address the significant inaccuracies and omissions of the 2013 EA. A new EA or EIS is necessary to examine current scientific knowledge and significant new information, including changed circumstances due to adverse effects of climate change. Given the wide-ranging impacts of this significant new information, preparation of an EIS would be more appropriate. This analysis should also address the impacts of proposed management activities on opportunities for restoration of beaver to natural habitat throughout Wisconsin watersheds.

In addition, Wildlife Services should immediately refrain from all non-emergency removal of beaver and beaver dams within the program area until such time as the agency has completed a scientifically informed analysis of its current and prospective beaver damage management activities in Wisconsin, including reasonable alternatives to the current program, and established a monitoring program sufficient to assess annual populations of beaver and non-target wildlife species impacted by the beaver damage management program.

¹⁴⁸ 40 C.F.R. § 1501.3(b).

Therefore, we urge you to commence an updated environmental impact analysis of the Wisconsin BDM program, with public notice and comment opportunities as required by the APA. In support of this petition, please find enclosed a copy of Robert Boucher's Expert Review of the 2013 EA and a collection of supporting documents provided via flash drive and digital drop box.¹⁴⁹ Thank you for your consideration.

Respectfully submitted,



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Jessica L. Blome
Greenfire Law, PC



Hannah Malicky
Superior Bio-Conservancy



Claire Loeb Davis
Animal & Earth Advocates,
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Enclosures:

Expert Review of 2013 EA
Supporting Documents (flash drive)

¹⁴⁹ Link to Supporting Documents folder: <https://5609432.box.com/s/ux68xtoxfe3cn8jnldxuta0hvayect35> (Box.com).