

From: [Patel, Kashyap](#)
To: [Andrea Travnicek](#)
Cc: [Jim Kurth](#); [Stephen Guertin](#); [Morris, Charisa](#); [Maureen Foster](#); [Wendy Fink](#); [Tasha Robbins](#)
Subject: Fwd: Withdrawal of Memorandum Titled, "Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System"
Date: Friday, September 7, 2018 9:56:59 AM
Attachments: [\(signed\) Withdrawal of Memorandum Titled, Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System.pdf](#)

Good morning, Andrea!

Please find attached our GMO letter you requested this morning. Let me know if I can get you anything else.

Thanks,
Kashyap

----- Forwarded message -----

From: Sheehan, Greg <greg_j_sheehan@fws.gov>
Date: Thu, Aug 2, 2018 at 2:54 PM
Subject: Withdrawal of Memorandum Titled, "Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System"
To: FWS Directorate & Deputies <fwsdirectanddep@fws.gov>
Cc: Jim Kurth <Jim_Kurth@fws.gov>, Steve Guertin <Stephen_Guertin@fws.gov>, Cynthia Martinez <cynthia_martinez@fws.gov>, FWS Regional Refuge Chiefs <fws_regional_refuge_chiefs@fws.gov>, Charisa Morris <charisa_morris@fws.gov>, Patel, Kashyap <kashyap_patel@fws.gov>

Good afternoon Directorate members,

Please see the attached memorandum regarding the use of agricultural practices in the National Wildlife Refuge System as a wildlife management practice used to deliver specific conservation objectives.

This memorandum withdraws in full the July 17, 2014 memorandum that had universally banned the use of genetically modified crops on refuges and established restrictions on the use of neonicotinoid pesticides. The NWRS will now determine the appropriateness of the use of those crops on a case-by-case basis, in compliance with all relevant and controlling legal authorities (including NEPA) and Service policies. Review of those authorities should be done in conjunction with the Solicitor's Office.

Thank you,

Greg Sheehan
Principal Deputy Director
US Fish and Wildlife Service
1849 C Street NW, Room 3358
Washington, DC 20240
Office 202-208-4545
Cell 202-676-7675

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Kashyap_Patel@fws.gov | acting Deputy Chief of Staff, Office of the Director | U.S. Fish & Wildlife Service
| [1849 C Street NW, Room 3348](#) | [Washington, DC 20240](#) | (202) 208-4923 | Txt/Cell: 703-638-4640



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

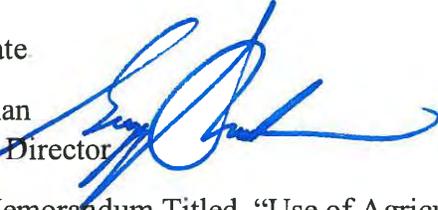


In Response Reply to:
FWS/D/068621

Memorandum

AUG 02 2018

To: Service Directorate

From: Gregory J. Sheehan
Principal Deputy Director 

Subject: Withdrawal of Memorandum Titled, "Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System" (July 17, 2014)

For the past 100 years in America there have been many successful measures to advance wildlife conservation through the development of trained wildlife professionals and their proven efforts to restore and enhance wildlife populations. No other country has been as successful as the United States at building robust fish and wildlife populations that can be enjoyed in a sustainable manner by hunters, anglers, and watchers. The efforts that were undertaken by these wildlife professionals were based on their ability to use active and adaptive management techniques that best reflected the localized needs of the species. Normal human expansion in our nation will continue to eliminate wildlife habitats that have previously been relied upon for successful wildlife restoration. Therefore, our professional wildlife managers will need to work more diligently than ever to ensure that those remaining important places have the best available food resources and other important conditions to ensure they can persist.

Throughout the expansion of the National Wildlife Refuge System (NWRS), many refuges were acquired for the purposes of specifically benefiting and enhancing waterfowl and other migratory bird species. Further, in recognition of the need to provide adequate forage for waterfowl and migratory birds many refuges currently, and historically, maintain active farming practices that produce a variety of crops to support birds and other species.

For many years, the U.S. Fish and Wildlife Service (Service) Joint Ventures have carefully worked with the North American Waterfowl Management Plan to determine population targets and needs. These population targets are then translated into daily energy demands which are expressed as duck energy days. Despite the intense level of planning and coordination there are still instances where a State or regional area does not meet its habitat objectives and the energetic impact of losing private farm land cannot be readily alleviated by increasing production on State or Federal areas under current management practices. Additionally, some National Wildlife Refuge lands are no longer able to provide the amount or quality of food that they once did due to changes in cooperative farming practices within the Refuge system.

Realizing that farming practices will continue into the foreseeable future within the NWRS to adaptively fulfill the energetic needs as identified, we must ensure that we are appropriately

making use of farm practice innovations as we actively manage farmed areas. Genetically modified organisms (GMO's), and more specifically GMO seeds have been developed and proven effective in contributing to the maximization of crop production.

On July 17, 2014, a memorandum was issued by the Chief of the National Wildlife Refuge System stating that certain agricultural practices, particularly the use of genetically engineered crop seeds and the use of neonicotinoid pesticides across the NWRS, would be phased out in refuges. In some cases the phasing out of those practices was appropriate and expedient.

There may be situations, however, where use of GMO crop seeds is essential to best fulfill the purposes of the refuge and the needs of birds and other wildlife as described above. A blanket denial of GMOs does not provide on-the-ground latitude for refuge managers to work adaptively and make field level decisions about the best manner to fulfill the purposes of the refuge.

Therefore, by this memorandum, I am withdrawing the July 17, 2014 memorandum in full, thereby reversing the decision to universally ban the use of genetically modified crops on refuges. The NWRS will now determine the appropriateness of the use of those crops on a case-by-case basis, in compliance with all relevant and controlling legal authorities (including NEPA) and Service policies.¹ Review of those authorities should be done in conjunction with the Solicitor's Office.

In addition, I am withdrawing the 2014 memorandum's restrictions with regard to neonicotinoid pesticides that are often used in conjunction with GMO seed, but that may, or may not, be needed to fulfill needed farming practices. Consideration of their use should also be decided on a case-by-case basis, in compliance with all the appropriate authorities noted above.

Refuges that may consider the options of GMO seed use include, but are not limited to: Tule Lake, Upper and Lower Klamath, Crab Orchard, Wheeler, Eufaula, Bald Knob, Cache River, White River, Wapanocca, Big Lake, Overflow, Felsenthal, Merced, San Joaquin River, Sacramento River, Bombay Hook, Prime Hook, Upper Ouachita, Lacassine, Catahoula, Tensas River, Red River, Grand Cote, Lake Ophelia, Bayou Cocodrie, Blackwater, Clarence Cannon, Mingo, Tallahatchie, Coldwater River, Dahomey, Yazoo, Panther Swamp, Hillside, Morgan Brake, Theodore Roosevelt, Holt Collier, St. Catherine Creek, Alligator River, Pocosin Lakes, Mattamuskeet, Bosque del Apache, Valle de Oro, Montezuma, Sequoyah, Bear Valley, Klamath Marsh, Clear Lake, Santee, Reelfoot, Chickasaw, Hatchie, Lower Hatchie, Tennessee, and Cross Creeks, through the appropriate processes described above, of GMO seed use practices.

For any additional questions or concerns regarding this directive, please contact the Service's National Wildlife Refuge System Chief, Ms. Cynthia Martinez at Cynthia_martinez@fws.gov.

¹ NOTE: Pursuant to the 2011 settlement agreement reached in *Delaware Audubon Soc'y et al., v. Salazar* (D. Del. Compl. filed 2010), GMO use may not resume in Region 5 until NEPA review is completed, plaintiffs are afforded 60-days notice, and provided a draft of the farming agreement at least 30 days prior to execution.

From: [Skipwith, Aurelia](#)
To: [Susan Combs](#)
Cc: [Maureen Foster](#); [Gregory Sheehan](#)
Subject: FWS Congressional Correspondence
Date: Sunday, June 10, 2018 5:19:39 PM
Attachments: [FWS Congressional Correspondence Tracker_10June2018.docx](#)
[FWS noncong overdue June 1 \(1\).pdf](#)
[FWS con overdue June 1 \(1\).pdf](#)

Susan,

I hope you are having a wonderful weekend.

The attached is FWS's latest update of Congressional correspondence. I reviewed with them at COB Friday so that you can have an update on Monday morning. Attached is FWS's tracking form, which they'll provide daily updates. ExSec uses a different tracking form and numbering system, so the two left columns (on FWS's tracker) can be used to match up the correspondence.

Based on DOI's Exec Sec June 3, 2018 Overdue Reports, FWS has a total of ten overdue correspondences, in which nine are Congressional. Of those nine Congressional, three are with FWS and the remaining six are with OCL for clearance. FWS has four correspondences that were not in DOI's tracking sheet and are indicated by 'unknown' in the EST column. FWS is checking with ExSec to find out why they do not appear in ExSec's report. Also, there are two correspondences that are not yet overdue, according to FWS's Manual - you'll see those at the end of FWS's tracker.

Please let me know if you have any questions. I'll keep you posted.

Aurelia Skipwith

Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208-5837

NOTE: *Every email I send or receive is subject to release under the Freedom of Information Act.*

U.S. Fish and Wildlife Service Office of Congressional and Legislative Affairs
Status of Congressional Correspondence

June 8, 2018

Cleared FWS – DOI action needed
With FWS

DCN (FWS tracking numbers)	EST (DOI's ACCN – tracking number)	Package Title	From (lead office)	To	Letter Date	Date Loaded into DTS	Date Due	Location since 6/3/18
Nonresponsive Records	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

DCN (FWS tracking numbers)	EST (DOI's ACCN – tracking number)	Package Title	From (lead office)	To	Letter Date	Date Loaded into DTS	Date Due	Location since 6/3/18
		Nonresponsive Records						
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

DCN (FWS tracking numbers)	EST (DOI's ACCN – tracking number)	Package Title	From (lead office)	To	Letter Date	Date Loaded into DTS	Date Due	Location since 6/3/18
		Nonresponsive Records						
Below the Line: Not overdue (FWS has 10 working days to respond – FWS Manual 282 FW 2)								
NA	NA	Letter on GMO policy on NWRs	Abraham	Sec. Zinke	5/8/18	NA	NA	Not in DTS as of 6/4/18
Nonresponsive Records								



UNITED STATES DEPARTMENT OF THE INTERIOR
EXECUTIVE SECRETARIAT CORRESPONDENCE MANAGEMENT SYSTEM

NON-CONGRESSIONAL OVERDUE REPORT FWS
AS OF 06/03/2018

<u>AO</u>	<u>ACCN</u>	<u>SRC</u>	<u>DUE DATE</u>	<u>FROM</u>	<u>SUBJECT</u>	<u>SIG</u>	<u>STATUS</u>
Nonre sponst ve	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Totals For FWS 1

From: [Morris, Charisa](#)
To: [Aurelia Skipwith](#)
Cc: [Greg Sheehan](#); [Foster, Maureen](#)
Subject: GMO briefing materials
Date: Thursday, October 5, 2017 10:23:25 AM
Attachments: [569 FW 1 Integrated Pest Management- 2010.pdf](#)
[601 FW 3 BIDEH \(2\).pdf](#)
[2014 0717_Memo_RefugeChief to RRChiefs Agricultural Practices in Wildlife Management \(2\).pdf](#)
[2017 0831 Brief Blackwater NWR ag practices and GMOs.docx](#)
[2017 0901 Brief re BIDEH ag practices GMOs and NWRs_V2.docx](#)

Same email, same attachments, new ACCURATE subject line.

----- Forwarded message -----

From: **Morris, Charisa** <charisa_morris@fws.gov>
Date: Thu, Oct 5, 2017 at 11:20 AM
Subject: Fwd: PLEASE PRINT--Documents for Shaun/Cynthia's 1:30pm Briefing today
To: Aurelia Skipwith <aurelia_skipwith@ios.doi.gov>
Cc: "Foster, Maureen" <maureen_foster@ios.doi.gov>, Greg Sheehan <greg_j_sheehan@fws.gov>

Good morning, Aurelia-

As requested, attached are briefing materials and attachments on the GMO issue. One briefing paper is on GMO use within the NWRS and the other is specific to Blackwater NWR. Let me know if you need anything else.

Thanks,
Charisa

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Charisa_Morris@fws.gov | Chief of Staff, Office of the Director | U.S. Fish & Wildlife Service | 1849 C Street NW, Room 3348 | Washington, DC 20240 | (202) 208-3843 | For urgent matters, please dial cell: 301-875-8937

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Charisa_Morris@fws.gov | Chief of Staff, Office of the Director | U.S. Fish & Wildlife Service | 1849 C Street NW, Room 3348 | Washington, DC 20240 | (202) 208-3843 | For urgent matters, please dial cell: 301-875-8937

**FISH AND WILDLIFE SERVICE
ENVIRONMENTAL QUALITY**

Environmental Quality

Part 569 Pest Management

Chapter 1 Integrated Pest Management

569 FW 1

1.1 What is the purpose of this chapter? This chapter:

- A.** Establishes policy, procedures, and responsibilities for pest management activities on and off U.S. Fish and Wildlife Service (Service) lands. It is consistent with the Department of the Interior (Department) Integrated Pest Management policy (517 DM 1) and other applicable authorities;
- B.** Adopts Integrated Pest Management (IPM) as our method for making pest management decisions; and
- C.** Provides guidance to employees on how to implement IPM for all pest management activities.

1.2 What is Integrated Pest Management (IPM)? IPM is:

A. A sustainable approach to managing pests that uses the following kinds of tools in a way that minimizes health, environmental, and economic risks:

- (1)** Biological (e.g., predators, parasites, and pathogens),
- (2)** Cultural (e.g., crop rotation, alterations in planting dates, and sanitation),
- (3)** Physical (e.g., barriers, traps, hand-pulling, hoeing, mowing, and tilling), and
- (4)** Chemical (e.g., pesticides, such as herbicides, insecticides, or fungicides).

B. A science-based, decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species and the environment and preventing unacceptable levels of pest damage.

1.3 What are pests? Pests are living organisms, including invasive plants and introduced or native organisms, that may interfere with achieving our management goals and objectives on or off our lands, or that jeopardize human health or safety.

1.4 What is the Service's pest management policy? Our policy is to:

- A.** Promote and adopt pest prevention as the first line of defense by using a pathway management strategy such as Hazard Analysis and Critical Control Point (HACCP) planning to prevent unintended spread of species and biological contamination. (See 750 FW 1 for more information on HACCP planning).
- B.** Focus on conserving more pristine habitats, monitor these areas, and protect them from invaders.
- C.** Design and maintain the stability of structures, museum collections, and developed landscapes, and restore and maintain habitats to prevent and reduce conditions conducive to the introduction or spread of pests.
- D.** Use IPM methods to eliminate or reduce impacts from vertebrate and invertebrate pests to achieve site-management goals and objectives.
- E.** Use cost-effective pest management practices that pose the least risk to humans, natural and cultural resources, facilities, and the environment.

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F. Use our best professional judgment and available scientific information to select the lowest risk, most effective IPM method or combination of methods that is feasible for each pest management project. When appropriate, we will include IPM methods into short- and long-term management planning documents such as refuge Comprehensive Conservation Plans, IPM plans, National Environmental Policy Act (NEPA) documents, and invasive species plans. Service IPM planning guidance is on the Internet.

G. Encourage pest management activities that benefit natural resources and provide long-term environmentally sound solutions to pest management problems on and off Service lands. This includes planting native species that promote beneficial species, like native pollinators, and promoting beneficial organisms and natural processes that inherently suppress potential pest populations.

H. Complete necessary environmental documentation and procedures before conducting pest management activities. This may include:

- (1)** Preparing Pesticide Use Proposals (PUPs) for approval before applying pesticides,
- (2)** Entering pesticide usage information annually into the online IPM and Pesticide Use Proposal System (PUPS) database,
- (3)** Conducting Endangered Species Act consultations, and
- (4)** Following NEPA requirements.

I. Use and promote pest management research, methods, education, and technical and financial assistance programs to develop, support, and implement IPM strategies.

J. Use appropriate monitoring techniques before, during, and after any IPM activity to determine whether we achieved pest management goals and objectives and if the activity caused any unanticipated impacts.

K. When possible, incorporate IPM principles into procurement activities, contracts, leases, and agreements, including activities such as:

- (1)** Cooperative farming,
- (2)** Construction,
- (3)** Habitat management,
- (4)** Fire management,
- (5)** Grazing,
- (6)** Forestry,
- (7)** Operation and maintenance of irrigation systems and dams,
- (8)** Concessions management,
- (9)** Road and rights-of-way construction and maintenance,

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(10) Public health,

(11) Animal management, and

(12) Fish culture.

1.5 What is the scope of this policy? This chapter applies to all pest management activities we conduct, approve, or fund on or off Service lands.

1.6 When will the Service manage pests? We will manage pests if:

A. The pest causes a threat to human or wildlife health or private property; action thresholds for the pest are exceeded; or Federal, State, or local governments designate the pest as noxious;

B. The pest is detrimental to site management goals and objectives; and

C. The planned pest management actions will not interfere with achieving site management goals and objectives.

1.7 How does the Service choose which pest management methods to use? We choose pest management methods by considering the following in this order of importance:

A. Human safety,

B. Environmental integrity,

C. Effectiveness, and

D. Cost.

1.8 What are the authorities for this chapter?

A. 517 DM 1, Integrated Pest Management Policy.

B. Noxious Weed Control and Eradication Act (7 U.S.C. 7701 *et seq.*, Subtitle E).

C. Federal Property Management Regulations, Facility Management (41 CFR 102-74.30).

D. Agriculture Risk Protection Act (PL 106-224) (supersedes the Federal Noxious Weed Act, except Sections 11 and 15).

E. Executive Order 13112, Invasive Species.

F. National Wildlife Refuge System Administration Act (16 U.S.C. 668dd- 668ee), as amended by the National Wildlife Refuge System Improvement Act (P.L. 105-57).

G. National Invasive Species Act (P.L. 104-332).

H. Aquatic Nuisance Prevention and Control Act (P.L. 101-646).

I. Endangered Species Act (16 U.S.C. 1536).

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- J. Occupational Safety and Health Act (P.L. 91-596).
- K. The National Environmental Policy Act (42 U.S.C. 4321-4370d).
- L. Federal Water Pollution Control Act (33 U.S.C. 1251 – 1376) (also known as Clean Water Act).
- M. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136).
- N. Migratory Bird Treaty Act (16 U.S.C. 703-716).
- O. Official Animal Control Operations (50 CFR 31.14).

1.9 Who is responsible for IPM?

A. The **Director** approves Servicewide IPM policy.

B. The Assistant Director – Fisheries and Habitat Conservation:

- (1) Designates a National IPM Coordinator to coordinate a consistent Servicewide approach to pest management,
- (2) Designates a liaison in the Fisheries program to work closely with the National IPM Coordinator to promote policy compliance and coordination, and
- (3) Ensures the development and distribution of information on innovative and updated pest management techniques.

C. The Assistant Director – National Wildlife Refuge System:

- (1) Designates a liaison to work closely with the National IPM Coordinator to ensure the Refuge System's policy compliance and coordination,
- (2) Supports national IPM activities, including maintenance of the national IPM and PUPS database, and
- (3) Designates an IPM and PUPS database administrator (owner) for the Refuge System.

D. The Assistant Director – Wildlife and Sport Fish Restoration Program encourages grantees to implement IPM strategies when managing pest species on projects and lands for which we provide grants.

E. The Assistant Director – External Affairs ensures that the National Conservation Training Center develops and offers IPM and other pesticide-related training.

F. The Assistant Director – Business Management and Operations ensures we incorporate IPM principles into procurement activities, contracts, leases, and agreements.

G. The Regional Directors:

- (1) Ensure Regional compliance with this policy.
- (2) Designate a Regional IPM Coordinator who informs employees about innovative and new IPM techniques.

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(3) Ensure that employees receive training necessary to competently develop and implement IPM programs. Such training may include IPM planning, pesticide applicator certification, and pest species management.

(4) Ensure that performance plans and annual work activity guidance for employees responsible for pest management reflect the goals and objectives of this policy.

(5) Use funds allocated for pest management for appropriate pest management projects.

(6) Ensure that staff keep records of IPM techniques, including use of pesticides, biocontrols, and other pest management tools on lands we manage, and that these records are available as needed.

H. The National IPM Coordinator:

(1) Develops, maintains, and distributes information about innovative and current pest management techniques to Regional personnel.

(2) Attends and helps organize a national IPM workshop annually or as needed. This workshop is for national, Regional, and field staff who participate in IPM activities.

(3) Serves on a Federal IPM Coordination Group with IPM Coordinators from many Federal agencies, including the Environmental Protection Agency, U.S. Department of Agriculture, General Services Administration, Bureau of Land Management, and the National Park Service. Serves on other IPM coordination groups as appropriate.

(4) Approves or disapproves IPM plans and PUPs that require Washington Office review and approval to ensure compliance with applicable laws and other authorities (see section 1.11).

(5) Promotes awareness of and compliance with the Departmental IPM policy to provide a consistent national approach to pest management.

(6) Reviews annual Regional IPM reports, including pesticide use data, generated by the PUPS database.

(7) Coordinates closely with field and Regional staff implementing IPM activities to ensure environmental compliance and to promote the most streamlined procedures and reporting methods.

(8) Works with field and Regional staff implementing IPM to develop updates, as necessary, to national guidance, including the appropriate review level for different IPM activities (e.g., specific pesticide applications).

I. Regional IPM Coordinators:

(1) Approve or disapprove IPM plans and PUPs requiring their review to ensure compliance with applicable laws and other authorities (see section 1.11). This includes reviewing PUPs in an emergency when an unanticipated outbreak occurs. If a PUP requires Washington Office review, the Regional IPM Coordinator must send it to Washington even in an emergency.

(2) Provide the National IPM Coordinator with information concerning pesticide applications or other IPM techniques, when requested.

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(3) Coordinate with the National IPM Coordinator when the National IPM Coordinator has to review a PUP from their Region.

(4) Work with the National IPM Coordinator to develop updates, as necessary, to national guidance, including the appropriate review level for different IPM activities (e.g., specific pesticide applications).

(5) Provide Regional personnel with information about environmental hazards and updated pest management techniques.

J. Project Leaders:

(1) Ensure that pest management decisions are consistent with this policy, the pesticide safety policy (242 FW 7), laws, and regulations, including, but not limited to:

(a) Local, State, and Federal requirements for informing employees and visitors of pesticide use,

(b) The Endangered Species Act (for some projects this may include consultation under section 7 of the Act),

(c) NEPA, and

(d) The Federal Insecticide Fungicide and Rodenticide Act (FIFRA).

(2) Develop IPM plans, as appropriate, consistent with NEPA documentation.

(3) Work with the Regional IPM Coordinator to ensure pest management activities use IPM strategies consistent with resource management goals and objectives, such as those stated in Comprehensive Conservation Plans or similar plans.

(4) Promote and encourage IPM practices to land owners and others whose pesticide use may affect Service lands and resources.

(5) Ensure that anyone applying pesticides, releasing biological control agents, and conducting other IPM activities has the appropriate training and equipment necessary to protect their safety and health (also see 242 FW 7).

(6) Ensure we apply pesticides only after the appropriate reviewer (see section 1.11) approves the PUP. We determine who must review and approve PUPs based on pesticide characteristics and its usage pattern. The National IPM Coordinator works with a national team of Regional IPM and Invasive Species Coordinators to determine the level of review and approval each pesticide receives.

(7) Help establish threshold levels of damage or pest populations according to Service or field station goals and objectives and applicable laws.

(a) Before the treatment, verify that the site has damage levels or pest populations that exceed threshold levels.

(b) After the treatment, determine whether the pest management action achieved the desired results and whether there were any unanticipated or non-target impacts.

(8) Provide the Regional IPM Coordinator with summaries of IPM activities at his/her request.

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(9) Ensure that staff store, handle, and dispose of pesticides and pesticide containers in accordance with the label, as required by law, and in a manner that safeguards human, fish, and wildlife health and prevents soil, air, and water contamination.

1.10 What kind of training do employees need before they can apply pesticides?

A. People who apply pesticides on Service lands must have proper training and pesticide certification, as required by Federal and State laws.

B. To purchase, use, or supervise the use of Restricted Use Pesticides, the person must be a Certified Pesticide Applicator (Commercial Applicator), under Section 4 of FIFRA or under the direct supervision of Certified Pesticide Applicator.

(1) A Restricted Use Pesticide is a pesticide product that has a relatively high degree of potential for human or environmental hazard even when it's used according to label directions.

(2) We encourage people who apply general pesticides (non-Restricted Use Pesticides) or supervise these applications to become Certified Pesticide Applicators (see 242 FW 7), even if certification is not required by law.

1.11 What do employees have to do before applying pesticides? We may only apply pesticides after filling out a PUP and getting PUP approval. A PUP is an online document that identifies important considerations related to a pesticide application (e.g., goals, objectives, IPM techniques, best management practices, pesticide application rates and methods, etc.).

A. The appropriate field station or facility employee must complete a PUP in the online PUPS database. We use the PUPS database to develop, duplicate, submit, review, and approve or disapprove a PUP.

B. PUP reviewer(s) examine the PUP for compliance with applicable regulations to ensure that employees use the least risk and the most specific and effective pesticide(s) to manage the target pest. The National IPM Coordinator works with a national team of Regional IPM and Invasive Species Coordinators to determine the level of review and approval each pesticide receives. The National IPM Coordinator updates this review and approval hierarchy and the resulting pesticide lists as needed.

C. Approvals and disapprovals only apply to the specific application regime, time, location, pesticide, and target pest.

(1) Depending on the PUP, the Project Leader may review and approve it, or he/she may send it to the Regional IPM Coordinator for review and approval. The Regional IPM Coordinator has to send some PUPs to the National IPM Coordinator for review and approval.

(2) Regardless of whether the PUP needs just the approval of the Project Leader or the approval of the Regional or National IPM Coordinator, or both, each approving authority has 30 days to conduct the review (so a PUP that has to go to the National IPM Coordinator could take up to 90 days).

(3) The review period may take longer depending on what changes the PUP may need and the PUP workloads at the different reviewer levels. Also, an expedited PUP review may be necessary when there is an emergency pest outbreak.

1.12 Does the Service require IPM plans for pesticide applications? No. We encourage employees engaging in pest management practices to include a separate pest management plan or incorporate IPM strategies into other resource planning documents (e.g., Comprehensive Conservation Plans,

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Environmental Assessments, and Environmental Impact Statements). When developing an IPM plan, we encourage employees to ensure it conforms to the parameters of an Environmental Assessment or Environmental Impact Statement, as appropriate. Doing this benefits Project Leaders because they may receive multi-year approvals of certain proposed pesticide uses that would normally require Regional or national level review.

1.13 What is the relationship among IPM plans, Comprehensive Conservation Plans, and NEPA?

Employees must develop the appropriate level of NEPA documentation (conforming to the parameters of a categorical exclusion, Environmental Assessment, or Environmental Impact Statement) and provide public involvement, as needed, when they develop IPM plans. If you have identified, addressed, and authorized specific pest management strategies in a Comprehensive Conservation Plan and fully evaluated these strategies in the Comprehensive Conservation Plan's NEPA document, you do not need further NEPA documentation. For more information on NEPA compliance, see Departmental and Service NEPA guidance in 516 DM 6, Appendix 1 and 550 FW 3.

/sgd/ Jeffrey L. Underwood
ACTING DEPUTY DIRECTOR

Date: August 3, 2010



U.S. FISH AND WILDLIFE SERVICE TRANSMITTAL SHEET

PART 601 FW 3	SUBJECT National Wildlife Refuge System Biological Integrity, Diversity, and Environmental Health	RELEASE NUMBER 366
FOR FURTHER INFORMATION CONTACT Division of Natural Resources		DATE April 16, 2001

EXPLANATION OF MATERIAL TRANSMITTED:

This chapter provides policy for maintaining and restoring, where appropriate, the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

Acting *K Adams*
Deputy DIRECTOR

FILING INSTRUCTIONS:

Remove:

None

Insert:

601 FW 3, 04/19/01, FWM 366, (4 sheets)

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REFUGE MANAGEMENT**

Refuge Management

Part 601 National Wildlife Refuge System

Chapter 3 Biological Integrity, Diversity, and Environmental Health

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3.1 What is the purpose of this chapter? This chapter provides policy for maintaining and restoring, where appropriate, the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

3.2 What is the scope of this policy? This policy applies to all units of the System.

3.3 What is the biological integrity, diversity, and environmental health policy? The policy is an additional directive for refuge managers to follow while achieving refuge purpose(s) and System mission. It provides for the consideration and protection of the broad spectrum of fish, wildlife, and habitat resources found on refuges and associated ecosystems. Further, it provides refuge managers with an evaluation process to analyze their refuge and recommend the best management direction to prevent further degradation of environmental conditions; and where appropriate and in concert with refuge purposes and System mission, restore lost or severely degraded components.

3.4 What are the objectives of this policy?

A. Describe the relationships among refuge purposes, System mission, and maintaining biological integrity, diversity, and environmental health.

B. Provide guidelines for determining what conditions constitute biological integrity, diversity, and environmental health.

C. Provide guidelines for maintaining existing levels of biological integrity, diversity, and environmental health.

D. Provide guidelines for determining how and when it is appropriate to restore lost elements of biological integrity, diversity, and environmental health.

E. Provide guidelines to follow in dealing with external threats to biological integrity, diversity, and environmental health.

3.5 What are the authorities for this policy? National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Refuge Administration Act). Section 4(a)(4)(B) of this law states that "In administering the System, the Secretary shall . . . ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans . . ." This is one of 14 directives to the Secretary contained within the Refuge Administration Act.

3.6 What do these terms mean?

A. Biological Diversity. The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and communities and ecosystems in which they occur.

B. Biological Integrity. Biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms, and communities.

C. Environmental Health. Composition, structure, and functioning of soil, water, air, and other abiotic features comparable with historic conditions, including the natural abiotic processes that shape the environment.

D. Historic Conditions. Composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to substantial human related changes to the landscape.

E. Native. With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

3.7 What are the principles underlying this policy?

A. Wildlife First. The Refuge Administration Act, as amended, clearly establishes that wildlife conservation is the singular National Wildlife Refuge System mission. House Report 105-106 accompanying the National Wildlife Refuge System Improvement Act of 1997 states ". . . the fundamental mission of our System is wildlife conservation; wildlife and wildlife conservation must come first." Biological integrity, diversity, and environmental health are critical components of wildlife conservation.

B. Accomplishing refuge purposes and maintaining biological integrity, diversity, environmental health of the System. The Refuge Administration Act states that each refuge will be managed to fulfill refuge purpose(s) as well as to help fulfill the System mission, and we will accomplish these purpose(s) and our mission by ensuring that the biological integrity, diversity, and environmental health of each refuge are maintained, and where appropriate, restored. We base our decisions on sound professional judgment.

C. Biological integrity, diversity, and environmental health in a landscape context. Biological integrity, diversity, and environmental health can be described at various landscape scales from refuge to ecosystem, national, and international. Each landscape scale has a measure of

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biological integrity, diversity, and environmental health dependent on how the existing habitats, ecosystem processes, and wildlife populations have been altered in comparison to historic conditions. Levels of biological integrity, diversity, and environmental health vary among refuges, and often within refuges over time. Individual refuges contribute to biological integrity, diversity, and environmental health at larger landscape scales, especially when they support populations and habitats that have been lost at an ecosystem, national, or even international scale. In pursuit of refuge purposes, individual refuges may at times compromise elements of biological integrity, diversity, and environmental health at the refuge scale in support of those components at larger landscape scales. When evaluating the appropriate management direction for refuges, refuge managers will consider their refuges' contribution to biological integrity, diversity, and environmental health at multiple landscape scales.

D. Maintenance and restoration of biological integrity, diversity, and environmental health. We will, first and foremost, maintain existing levels of biological integrity, diversity, and environmental health at the refuge scale. Secondly, we will restore lost or severely degraded elements of integrity, diversity, environmental health at the refuge scale and other appropriate landscape scales where it is feasible and supports achievement of refuge purpose(s) and System mission.

E. Wildlife and Habitat Management. Management, ranging from preservation to active manipulation of habitats and populations, is necessary to maintain biological integrity, diversity, and environmental health. We favor management that restores or mimics natural ecosystem processes or functions to achieve refuge purpose(s). Some refuges may differ from the frequency and timing of natural processes in order to meet refuge purpose(s) or address biological integrity, diversity, and environmental health at larger landscape scales.

F. Sound Professional Judgment. Refuge managers will use sound professional judgment when implementing this policy primarily during the comprehensive conservation planning process to determine: the relationship between refuge purpose(s) and biological integrity, diversity, and environmental health; what conditions constitute biological integrity, diversity, and environmental health; how to maintain existing levels of all three; and, how and when to appropriately restore lost elements of all three. These determinations are inherently complex. Sound professional judgment incorporates field experience, knowledge of refuge resources, refuge role within an ecosystem, applicable laws, and best available science including consultation with others both inside and outside the Service.

G. Public Use. The priority wildlife-dependent public uses, established by the National Wildlife Refuge System Improvement Act of 1997, are not in conflict with this policy

when determined to be compatible. The directives of this policy do not generally entail exclusion of visitors or elimination of public use structures; e.g., boardwalks and observation towers. However, maintenance and/or restoration of biological integrity, diversity, and environmental health may require spatial or temporal zoning of public use programs and associated infrastructures. General success in maintaining or restoring biological integrity, diversity, and environmental health will produce higher quality opportunities for wildlife-dependent public use.

3.8 What are our responsibilities?

A. Director.

- (1) Provides national policy, goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (2) Ensures that national plans and partnerships support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (3) Ensures that the national land acquisition strategy for the System is designed to enhance the biological integrity, diversity, and environmental health of the System at all landscape scales.

B. Regional Director.

- (1) Provides regional policy, goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the System, including guidance to resolve any conflicts with biological integrity, diversity, and environmental health at an individual refuge versus at the larger landscape scales.
- (2) Ensures that regional and ecosystem plans, and regional partnerships support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (3) Resolves conflicts that arise between maintaining biological integrity, diversity, and environmental health at the refuge level landscape scale versus at larger landscape scales.

C. Regional Chief.

- (1) Ensures that individual refuge comprehensive conservation plans support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (2) Reviews and ensures those refuge management programs that occur on many refuges (e.g., fire management) are consistent with this policy.

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D. Refuge Manager.

- (1) Follows the procedure outlined in paragraph 3.9.
- (2) Incorporate the principles of this policy into all refuge management plans and actions.

3.9 How do we implement this policy? The Director, Regional Directors, Regional Chiefs, and Refuge Managers will carry out their responsibilities specified in paragraph 3.8. In addition, refuge managers will carry out the following tasks:

A. Identify the refuge purpose(s), legislative responsibilities, refuge role within the ecosystem, and System mission.

B. Assess the current status of biological integrity, diversity, and environmental health through baseline vegetation, population surveys and studies, and any other necessary environmental studies.

C. Assess historic conditions and compare them to current conditions. This will provide a benchmark of comparison for the relative intactness of ecosystems' functions and processes. This assessment should include the opportunities and limitations to maintaining and restoring biological integrity, diversity, and environmental health.

D. Consider the refuge's importance to refuge, ecosystem, national, and international landscape scales of biological integrity, diversity, and environmental health. Also, identify the refuge's roles and responsibilities within the Regional and System administrative levels.

E. Consider the relationships among refuge purpose(s) and biological integrity, diversity and environmental health, and resolve conflicts among them.

G. Through the comprehensive conservation planning process, interim management planning, or compatibility reviews, determine the appropriate management direction to maintain and, where appropriate, restore, biological integrity, diversity, and environmental health, while achieving refuge purpose(s).

H. Evaluate the effectiveness of our management by comparing results to desired outcomes. If the results of our management strategies are unsatisfactory, assess the causes of failure and adapt our strategies accordingly.

3.10 What factors do we consider when maintaining and restoring biological integrity, diversity, and environmental health? We plan for the maintenance and restoration of biological integrity, diversity, and environmental health while considering all three in an integrated and holistic manner. The highest measure of biological integrity, diversity, and environmental health is viewed as those intact and self-

sustaining habitats and wildlife populations that existed during historic conditions.

A. Biological Integrity.

(1) We evaluate biological integrity by examining the extent to which biological composition, structure, and function has been altered from historic conditions. Biological composition refers to biological components such as genes, populations, species, and communities. Biological structure refers to the organization of biological components, such as gene frequencies, social structures of populations, food webs of species, and niche partitioning within communities. Biological function refers to the processes undergone by biological components, such as genetic recombination, population migration, the evolution of species, and community succession [see 602 FW 3.4C(1)(e), Planning Area and Data Needs].

(2) Biological integrity lies along a continuum from a biological system extensively altered by significant human impacts to the landscape to a completely natural system. No landscape retains absolute biological integrity, diversity, and environmental health. However, we strive to prevent the further loss of natural biological features and processes; i.e., biological integrity.

(3) Maintaining or restoring biological integrity is not the same as maximizing biological diversity. Maintaining biological integrity may entail managing for a single species or community at some refuges and combinations of species or communities at other refuges. For example, a refuge may contain critical habitats for an endangered species. Maintaining that habitat (and, therefore, that species), even though it may reduce biological diversity at the refuge scale, helps maintain biological integrity and diversity at the ecosystem or national landscape scale.

(4) In deciding which management activities to conduct to accomplish refuge purpose(s) while maintaining biological integrity, we start by considering how the ecosystem functioned under historic conditions. For example, we consider the natural frequency and timing of processes such as flooding, fires, and grazing. Where it is not appropriate to restore ecosystem function, our refuge management will mimic these natural processes including natural frequencies and timing to the extent this can be accomplished.

(5) We may find it necessary to modify the frequency and timing of natural processes at the refuge scale to fulfill refuge purpose(s) or to contribute to biological integrity at larger landscape scales. For example, under historic conditions, an area may have flooded only a few times per decade. Migratory birds dependent upon wetlands may have used the area in some years, and used other areas that flooded in other years. However, many wetlands have been converted to agriculture or other land uses, the remaining wetlands

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must produce more habitat, more consistently, to support wetland-dependent migratory birds. Therefore, to conserve these migratory bird populations at larger landscape scales, we may flood areas more frequently and for longer periods of time than they were flooded historically.

B. Biological Diversity.

(1) We evaluate biological diversity at various taxonomic levels, including class, order, family, genus, species, subspecies, and—for purposes of Endangered Species Act implementation—distinct population segment. These evaluations of biological diversity begin with population surveys and studies of flora and fauna. The System's focus is on native species and natural communities such as those found under historic conditions [see 602 FW 3.4C(1)(e)]. The Natural Heritage Network databases for respective States should prove a valuable tool for this initial evaluation.

(2) We also evaluate biological diversity at various landscape scales, including refuge, ecosystem, national, and international. On refuges, we typically focus our evaluations of biological diversity at the refuge scale; however, these refuge evaluations can contribute to assessments at larger landscape scales.

(3) We strive to maintain populations of breeding individuals that are genetically viable and functional. We provide for the breeding, migrating, and wintering needs of migratory species. We also strive to maximize the size of habitat blocks and maintain connectivity between blocks of habitats, unless such connectivity causes adverse effects on wildlife or habitat (e.g., by facilitating the spread of invasive species).

(4) At the community level, the most reliable indicator of biological diversity is plant community composition. We use the National Vegetation Classification System to identify biological diversity at this level.

C. Environmental Health.

(1) We evaluate environmental health by examining the extent to which environmental composition, structure, and function have been altered from historic conditions. Environmental composition refers to abiotic components such as air, water, and soils, all of which are generally interwoven with biotic components (e.g., decomposers live in soils). Environmental structure refers to the organization of abiotic components, such as atmospheric layering, aquifer structure, and topography. Environmental function refers to the processes undergone by abiotic components, such as wind, tidal regimes, evaporation, and erosion. A diversity of abiotic composition, structure, and function tends to support a diversity of biological composition, structure, and function [see 602 FW 3.4 C (1)(e), Planning Area and Data Needs].

(2) We are especially concerned with environmental features as they affect all living organisms. For example, at the

genetic level, we manage for environmental health by preventing chemical contamination of air, water, and soils that may interfere with reproductive physiology or stimulate high rates of mutation. Such contamination includes carcinogens and other toxic substances that are released within or outside of refuges.

(3) At the population and community levels, we consider the habitat components of food, water, cover, and space. Food and water may become contaminated with chemicals that are not naturally present. Activities such as logging and mining or structures such as buildings and fences may modify security or thermal cover. Unnatural noise and light pollution may also compromise migration and reproduction patterns. Unnatural physical structures, including buildings, communication towers, reservoirs, and other infrastructure, may displace space or may be obstacles to wildlife migration. Refuge facility construction and maintenance projects necessary to accomplish refuge purpose(s) should be designed to minimize their impacts on the environmental health of the refuge.

3.11 How do we apply our management strategies to maintain and restore biological integrity, diversity, and environmental health?

A. We strive to manage in a holistic manner the combination of biological integrity, diversity, and environmental health. We balance all three by considering refuge purpose(s), System mission, and landscape scales. Considered independently, management strategies to maintain and restore biological integrity, diversity, and environmental health may conflict.

B. For example, physical structures and chemical applications are often necessary to maintain biological integrity and to fulfill refuge purpose(s). We may use dikes and water control structures to maintain and restore natural hydrological cycles, or use rotenone to eliminate invasive carp from a pond. These unnatural physical alterations and chemical applications would compromise environmental health if considered in isolation, but they may be appropriate management actions for maintaining biological integrity and accomplishing refuge purpose(s).

C. We may remove physical structures to promote endangered species recovery in some areas, or we may remove plants or animals to protect structures, depending upon refuge purpose(s). Unless we determine that a species was present in the area of a refuge under historic conditions, we will not introduce or maintain the presence of that species for the purpose of biological diversity. We may make exceptions where areas are essential for the conservation of a threatened or endangered species and suitable habitats are not available elsewhere. In such cases, we strive to minimize unnatural effects and to restore or maintain natural processes and ecosystem components to the extent practicable without jeopardizing refuge purpose(s).

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3.12 How do we incorporate information from historic conditions into our management decisions?

A. Maintaining biological integrity, diversity, and environmental health requires an ecological frame of reference. A frame of reference allows us to contrast current conditions of our resources with historic conditions. The reference guides us in two ways. It provides information on how the landscape looked prior to changes in land use that destroyed and fragmented habitats and resulted in diminished wildlife populations and the extirpation or extinction of species. It also allows us to examine how natural ecosystems function and maintain themselves. We use these conditions as a frame of reference in which to develop goals and objectives.

B. We use historical conditions as the frame of reference to identify composition, structure, and functional processes that naturally shaped ecosystems. We especially seek to identify keystone species, indicator species, and types of communities that occurred during the frame of reference. We also seek to ascertain basic information on natural ecosystem structure such as predator/prey relationships and distribution of plant communities. Finally, we seek to identify the scale and frequency of processes that accompanied these components and structures, such as fire regimes, flooding events, and plant community succession. Where appropriate and feasible, we also pursue biological integrity, diversity, and environmental health by eliminating unnatural biotic and abiotic features and processes not necessary to accomplish refuge purpose(s).

C. We do not expect, however, to reconstruct a complete inventory of components, structures, and functions for any successional stage occurring during the frame of reference. Rather, we use sound professional judgment to fit the pieces to create a conceptual picture of our resources under historic conditions.

D. We ensure that our management activities result in the establishment of a community that fits within what we reasonably believe to have been the natural successional series, unless doing so conflicts with accomplishing refuge purpose(s). We may choose to maintain nonclimax communities pursuant to refuge purpose(s) or for maintaining biological integrity, diversity, and environmental health at the regional, national, or international landscape scale. We favor techniques such as fire or flooding that mimic or result in natural processes to maintain these nonclimax communities. However, where it will support fulfillment of refuge purpose(s), we allow or, if necessary, encourage natural succession to proceed.

3.13 Where do we get information on historic conditions?

A. Information on historic conditions may be historical, archeological, or other. Historical information includes the written and, in some cases, the pictographic accounts of Native Americans, explorers, surveyors, traders, and early settlers. Archeological information comes from collections of cultural artifacts maintained by scientific institutions. We may obtain other data from a range of sources, including research, soil sediments, and tree rings.

B. We obtain information on historic conditions from our investigations and from partners in academia, conservation organizations, and other Federal, State, Tribal, and local government agencies. In many cases, we use historical vegetation maps to provide data. Such historical maps are usually drawn at relatively coarse scales, perhaps to the level of vegetation alliance. Generally a comprehensive historical list of plant and animal species is not available or necessary. We will base the determination of natural species and ecosystem composition on sound professional judgment. We periodically update our information on historic conditions with results from ongoing historical, archeological, and other studies.

3.14 How do we manage populations to maintain and restore biological integrity, diversity, and environmental health?

A. We encourage cooperation and coordination with State fish and wildlife management agencies in setting refuge population goals and objectives. To the extent practicable, our regulations pertaining to fishing or hunting of resident wildlife within the System are consistent with State fish and wildlife laws, regulations, and management plans.

B. We maintain, or contribute to the maintenance of, populations of native species. We design our wildlife population management strategies to support accomplishing refuge purpose(s) while maintaining or restoring biological integrity, diversity, and environmental health. We formulate refuge goals and objectives for population management by considering natural densities, social structures, and population dynamics at the refuge level, and population objectives set by national plans and programs – such as the North American Waterfowl Management Plan – in which the System is a partner.

C. Natural densities are relatively stable for some species and variable for others. We manage populations for natural densities and levels of variation, while assuring that densities of endangered or otherwise rare species are sufficient for maintaining viable populations. We consider population parameters such as sex ratios and age class distributions when managing populations to maintain and restore where appropriate biological integrity, diversity, and environmental health.

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D. On some refuges, including many of those having the purpose of migratory bird conservation, we establish goals and objectives to maintain densities higher than those that would naturally occur at the refuge level because of the loss of surrounding habitats. We more closely approximate natural levels at larger landscape scales, such as flyways, by maintaining higher densities at the refuge level.

E. We do not, however, allow densities to reach excessive levels that result in adverse effects on wildlife and habitat. The effects of producing densities that are too high may include disease, excessive nutrient accumulation, and the competitive exclusion of other species. We use planning and sound professional judgment to determine prudent limits to densities.

F. Where practical, we support the reintroduction of extirpated native species. We consider such reintroduction in the context of surrounding landscapes. We do not introduce species on refuges outside their historic range or introduce species if we determine that they were naturally extirpated, unless such introduction is essential for the survival of a species and prescribed in an endangered species recovery plan, or is essential for the control of an invasive species and prescribed in an integrated pest management plan.

3.15 How do we manage habitats to maintain and restore biological integrity, diversity, environmental health?

A. We will, first and foremost, maintain existing levels of biological integrity, diversity, and environmental health at the refuge scale. Following that, we will restore lost or degraded elements of biological integrity, diversity, and environmental health at all landscape scales where it is feasible and supports fulfillment of refuge purposes.

B. Our habitat management plans call for the appropriate management strategies that mimic historic conditions while still accomplishing refuge objectives. For example, prescribed burning can simulate natural fire regimes or water level management can mimic natural hydrological cycles. Farming, haying, logging, livestock grazing, and other extractive activities are permissible habitat management practices only when prescribed in plans to meet wildlife or habitat management objectives, and only when more natural methods, such as fire or grazing by native herbivores, cannot meet refuge goals and objectives.

C. We do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s). For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats. Where feasible and consistent with refuge purpose(s), we restore degraded or modified habitats in the pursuit of biological integrity, diversity, and environmental

health. We use native seed sources in ecological restoration. We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplishing refuge purpose(s) and the Director approves the use.

3.16 How do we manage non-native species to maintain and restore biological integrity, diversity, and environmental health?

A. We prevent the introduction of invasive species, detect and control populations of invasive species, and provide for restoration of native species and habitat conditions in invaded ecosystems. We develop integrated pest management strategies that incorporate the most effective combination of mechanical, chemical, biological, and cultural controls while considering the effects on environmental health.

B. We require no action to reduce or eradicate self-sustaining populations of non-native, noninvasive species (e.g., pheasants) unless those species interfere with accomplishing refuge purpose(s). We do not, however, manage habitats to increase populations of these species unless such habitat management supports accomplishing refuge purpose(s).

3.17 How does this policy affect the acquisition of lands for the System?

A. We consider the mission, goals, and objectives of the System in planning for its strategic growth. We will take a proactive approach to identifying lands that are critical for maintaining or restoring the biological integrity, diversity, and environmental health of the System at all landscape scales. We will integrate this approach into all Service strategies and initiatives related to the strategic growth of the System. We incorporate the directives of this policy when evaluating an area's potential contribution to the conservation of the ecosystems of the United States.

B. We use the Land Acquisition Priority System to rank potential acquisitions once the Director approves significant expansions or new refuges. Our Land Acquisition Priority System includes components that gauge the contributions of refuges to maintaining and restoring biological integrity, diversity, and environmental health.

3.18 What is the relationship between biological integrity, diversity, and environmental health and compatibility? When completing compatibility determinations, refuge managers use sound professional judgment to determine if a refuge use will materially interfere with or detract from the fulfillment of the System mission or the refuge purpose(s). Inherent in fulfilling the System mission is protection of the biological integrity, diversity, and environmental health of the System. Specific policy for compatibility is found in 603 FW 2.

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3.19 What is the relationship between biological integrity, diversity, and environmental health and comprehensive conservation planning?

A. We integrate the principles of this policy into all aspects of comprehensive conservation planning, including pre-planning guidance (see 602 FW 3.4C(1)(e)) as we complete plans to direct long-range refuge management and identify desired future conditions for proposed refuges (see 602 FW 1.7D).

B. Refuge purpose(s) and the System mission serve as the basis for goals and objectives at all levels of the System (e.g., System, Regional, ecosystem, and refuge level). When we develop refuge goals and objectives during the Comprehensive Conservation Plan process we include goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the refuge.

C. While developing Comprehensive Conservation Plans, we make management decisions based on sound professional judgment. We subsequently evaluate the effectiveness of these decisions by comparing results to desired outcomes. If the results are unsatisfactory, we assess the causes of failure and adapt our management decisions accordingly. In part, we base management decisions on natural resource-related research that has been conducted on refuges. This type of research adds to the general body of information related to natural resource management and aids us in continually adapting our management decisions. We generally encourage natural resource-related research on refuges.

3.20 How do we protect biological integrity, diversity, and environmental health from actions outside of refuges? Events occurring off refuge lands or waters may injure or destroy the biological integrity, diversity, and environmental health of a refuge. Given their responsibility to the public resources with which they have been entrusted, refuge managers should address these problems. It is critical that they pursue resolution fully cognizant and respectful of legitimate private property rights, seeking a balance between such rights and the refuge manager's own responsibility to the public trust. While each situation will be different, the following is a suggested procedure which emphasizes our desire for cooperative resolutions. The time and effort expended, and the rate at which a refuge manager escalates the process, will depend on the severity of threat and the resources at risk.

A. We first seek resolution by directly contacting the landowner(s), corporation, agency or other entity from which the problem originates.

B. Where direct discussions fail, managers might seek resolution through collaborative discussions with State or local authorities or other organizations that can help in cooperative resolution of the problem.

C. An appropriate next step might be to pursue resolution at the local level through planning and zoning boards or other regulatory agencies at the city and county level. Failing that, the manager may seek avenues through State administrative and regulatory agencies. Regulatory solutions are a serious step, and a manager should take this route only after careful consideration and in close consultation with the Regional Offices.

D. If the above efforts fail, we may take action within the legal authorities available to the Service and with full respect to private property rights. In such cases, refuge managers will consult with the Office of the Solicitor for assistance in identifying appropriate remedies and obtain concurrence from the Regional Director.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240



July 17, 2014

Memorandum

To: Regional Refuge Chiefs, Regions 1-8

From: Chief, National Wildlife Refuge System

James W. Kurth

Subject: Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System

This Memorandum records the decision of the National Wildlife Refuge System Leadership Team (Leadership Team) regarding the use of agricultural practices for wildlife management on national wildlife refuges. On May 21, 2014, we concluded discussion about current agricultural practices across the National Wildlife Refuge System (System) to meet refuge objectives, the use of genetically engineered crop seeds, and the use of pesticides.

The Leadership Team agreed that by January 2016, the System will only use an agricultural practice where it specifically contributes to wildlife objectives. This conforms to 601 FW 3, the Service's Biological Integrity, Diversity and Environmental Health policy (BIDEH). BIDEH directs us to maintain and restore the biological integrity, diversity, and environmental health of refuges and is based on the underlying principle of wildlife conservation that favors management that restores or mimics natural ecosystem processes or functions to achieve refuge purpose(s).

By January 2016, we will no longer use neonicotinoid pesticides in agricultural practices used in the System. Service policy 569 FW 1 Pest Management directs that we use long-standing integrated pest management principles to guide and evaluate our pesticide use practices. We have determined that prophylactic use, such as a seed treatment, of the neonicotinoid pesticides that can distribute systemically in a plant and can potentially affect a broad spectrum of non-target species is not consistent with Service policy. We make this decision based on a precautionary approach to our wildlife management practices and not on agricultural practices.

There can be appropriate and specialized uses of neonicotinoid pesticides and decisions for those uses in the Service are subject to review through all applicable laws, regulations, and policies including, but not limited to, the National Environmental Policy Act.

By January 2016, we will phase out the use of genetically modified crops to feed wildlife. Service policy 601 FW 3.15 C states: "We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplishing refuge purpose(s) and the Regional Chief, National Wildlife Refuge System, approves the use." Refuges throughout

the country successfully meet wildlife management objectives without the use of genetically modified crops. We have demonstrated our ability to successfully accomplish refuge purposes over the past two years without using genetically modified crops, therefore, it is no longer possible to say that their use is essential to meet wildlife management objectives. We will no longer use genetically modified crops to meet wildlife management objectives System-wide.

Agricultural practices are sometimes used in habitat restoration and the techniques are variable for different locations, therefore, we will consider whether the temporary use of genetically modified crops in habitat restoration is essential on a case-by-case basis.

Finally, the Leadership Team recognized that transitioning any refuge land from a primarily agricultural use to restored, native habitat works to achieve the Service goal of minimizing our carbon footprint as set forth in *Rising to the Urgent Challenge, Strategic Plan for Responding to Accelerating Climate Change* (USFWS 2010). The Leadership Team agreed to assess and identify refuges that have the ability to replace row crops used to meet wildlife management objectives with moist soil management or other techniques that restore or mimic natural ecosystem processes or functions to meet wildlife and carbon objectives.

Refuges with lands mandated for agricultural purposes, including, but not limited to, Tule Lake, Upper and Lower Klamath NWRs subject to Public Law 88-567 (Kuchel Act 1964) and Crab Orchard NWR subject to Public Law 80-361 may follow these agreements, however, the mandates which direct those refuges' purposes are their primary authority.

If there are any questions, please contact Deputy Refuge Chief Cynthia Martinez at (703) 358-2632 or by email at Cynthia_Martinez@fws.gov.

INFORMATION/BRIEFING MEMORANDUM

DATE: August 31, 2017
FROM: Chief, National Wildlife Refuge System
SUBJECT: Agricultural practices and Blackwater National Wildlife Refuge

PURPOSE:

This brief provides background on agricultural practices, including the past use of genetically modified seeds in providing wildlife forage, at Blackwater National Wildlife Refuge (NWR).

BACKGROUND:

- Cooperative farming was used to meet the refuge's 2006 CCP priority goal to "Protect and enhance Service trust resources and other species and habitats of special concern." The first subgoal is to "Provide habitats to sustain 10 percent of each of Maryland's wintering waterfowl populations of Atlantic Population (AP) Canada geese, snow geese, and dabbling ducks." Refuge objectives include monitoring wintering waterfowl populations, restoring emergent marsh, managing ~ 460 acres of impoundments for moist soil management, and managing ~ 420 acres of croplands.
- Blackwater NWR used genetically modified organisms (GMOs) until the July 17, 2014, Chief's memorandum recorded the renewed the leadership commitment to comply with the U.S. Fish and Wildlife Service's (Service) policy on Biological Integrity, Diversity, and Environmental Health (601 FW 3, 2001) and the Pest Management policy (569 FW 1, 2010; 7 RM 14, 1982).
- Once the refuge implemented the BIDEH policy on the use of GMOs, farmers would not agree to cooperatively farm due to the restrictions. The refuge placed a contract for bid in 2016, and one bid came in significantly higher than estimated; not financially possible at (\$60,000 vs \$40,000).
- Refuge maintenance staff have been conducting all farming since it is a key element of the CCP. Currently, about 370 acres are in crops, primarily with clover, but also milo, corn, winter wheat, millet, and Egyptian wheat. At this time, the issue of GMOs on refuge exists in the 50 to 100 acres of corn planted to provide "hot energy foods" for waterfowl. Other crop species planted on over 300 acres are not GMOs.

DISCUSSION:

The Project Leader has taken steps to ensure strong communications and collaboration with the local community and political representatives. These include:

- quarterly briefings to the County Council
- closed sessions to the Council regarding upcoming potential acquisitions
- regular email updates to the local landowners and politicians and
- "neighbor" meetings twice a year with the local landowners (mostly farmers)

Each of the neighbor meetings have had 25-50 in attendance, including State Senator Addie Eckardt, Delegates Mautz and Adams, Council members, and the County Manager. Next meeting is Sept. 27th 8-10am. The refuge will assist Del. Mautz in a snakehead tournament to raise funds for the local fire department and he has not raised any recent concerns regarding the GMO issue at the refuge. Local farmers have come in to the refuge and expressed their satisfaction with the farming they observe (including some of our biggest past critics).

INFORMATION/BRIEFING MEMORANDUM

DATE: September 1, 2017

FROM: Chief, National Wildlife Refuge System

SUBJECT: Agricultural practices and National Wildlife Refuges

PURPOSE:

This brief provides background information on the Fish and Wildlife Service's (Service) Biological Integrity, Diversity, and Environmental Health policy, genetically modified seeds, and agricultural practices on National Wildlife Refuges.

BACKGROUND:

- The Service's Biological Integrity, Diversity and Environmental Health policy (2001, 601 FW 3) provides policy for maintaining and restoring, where appropriate, the biological integrity, diversity and environmental health of the National Wildlife Refuge System (NWRS).
- BIDEH (3.14B) states that we maintain or contribute the maintenance of, populations of native species.
- BIDEH (3.15C) states that we use native seed sources in restoration and that we do not use genetically modified organisms (GMOs) in refuge management unless we determine their use is essential to accomplish the refuge purpose.
- The Service's Pest Management policy (569 FW 1, 2010; 7 RM 14, 1982) directs us to use methods that present the lowest risk to wildlife, fish and their habitats. The prophylactic use of pesticides that accompanies the use of genetically modified seed treatments is not consistent with the Service's Integrated Pest Management policy and long-standing IPM principles. We base this on the precautionary approach to wildlife management practices and not on agricultural practices.

DISCUSSION:

In 2009 and again in 2010, two lawsuits by public interest groups in the Northeast Region (Prime Hook NWR and Bombay Hook NWR) led to the discontinuation of GMO use on NWRs in the entire region. In 2011, the Service was sued twice on the use of GMO crop seeds; these lawsuits were in the Southeast and Midwest regions. In the Southeast Region, the Service was instructed by the court to farm without the use of GMO crops seeds until National Environmental Policy Act (NEPA) compliance could be completed. In the meantime, refuges in the Southeast Region were able to successfully meet wildlife objectives without the use of GMO crop seeds. The Midwest Region lawsuit ended with GMO crops seeds no longer being used for agricultural practices to meet wildlife objectives.

INFORMATION/BRIEFING MEMORANDUM

In 2014, the NWRS leadership (Chiefs and Deputies) recognized that refuges throughout the country successfully meet wildlife management objectives without the use of genetically modified crops. Refuges have demonstrated the ability to successfully accomplish refuge purposes without using genetically modified crops to meet wildlife objectives for providing wildlife forage. Leadership renewed the commitment to not use genetically modified crops to meet wildlife objectives System-wide. This is in conformance with the BIDEH policy. As of January 2016, GMO seed use in agricultural practices to accomplish wildlife objectives for providing wildlife forage has been phased out in the NWRS.

ATTACHMENTS

BIDEH policy 601 FW 3

Chief's Memo 2014

From: [Kashyap Patel](#)
To: [Greg Sheehan](#)
Cc: [Morris, Charisa](#)
Subject: MigBirds BP on Wintering Waterfowl Energetics
Date: Thursday, July 26, 2018 3:46:19 PM
Attachments: [201807 BP Winter Waterfowl Energetics.docx](#)

Hi Greg,

Please find attached our BP on Waterfowl Energetics.

I've copied it below in case it's easier to read.

I. STATEMENT OF PURPOSE

Provide the Principal Deputy Director with information regarding how the energetic requirements for wintering waterfowl are calculated and measured.

II. BACKGROUND

Managing for wintering waterfowl includes ensuring the food resources are available to support their daily energy needs. Calculating this need begins by consulting the North American Waterfowl Management Plan's population goals which are stepped down to each Joint Venture.

The wintering habitat Joint Ventures use these population goals to plan for how they, with Federal, State and private partners can meet the food resource needs of these birds. These population targets can then be translated into daily energy demands which are expressed as duck energy days (or duck use days). This planning is done at the Joint Venture or regional level by the Joint Ventures.

The Joint Ventures calculate the number of duck energy days that are needed based on the population goals. They also consider the wintering distribution of the birds across the area based on mid-winter waterfowl counts and harvest information.

Using geo-spatial analysis, the JVs and partners inventory the amount of existing habitat and determine the amount of food that is available based on habitat type, land management, and land ownership. These factors are used in models to assess the landscape capacity to meet the needed wintering waterfowl energetic demands (number of duck use days). Federal and State-owned lands are seen as the most secure habitats. Private agricultural land that is not under any type of management agreement or easement (e.g., CRP or WRP) are seen as the least secure and often have the lowest habitat values associated with them.

These calculations are used by the Joint Ventures and their partners to determine Regional and State goals for habitat, and to make management decisions when private land is converted to a non-habitat use. Despite the intense level of planning and coordination there are still instances where a State or regional area does not meet its habitat objectives and the energetic impact of losing private farm land cannot be readily alleviated by increasing production on a State or Federal area. For example, some National Wildlife Refuge lands are no longer able to provide the amount or quality of food that they once did due to changes in cooperative farming practices within the Refuge system.

III. DISCUSSION

The duck use day deficit within some states or regional areas may result in additional stresses on the

birds as they need to search further for food, or start their spring migration in less than optimal body condition.

--

Kashyap_Patel@fws.gov | acting Deputy Chief of Staff, Office of the Director | U.S. Fish & Wildlife Service
| [1849 C Street NW, Room 3348](#) | [Washington, DC 20240](#) | (202) 208-4923 | Txt/Cell: 703-638-4640

INFORMATION MEMORANDUM FOR THE PRINCIPAL DEPUTY DIRECTOR

DATE: May 8, 2018
FROM: Assistant Director Migratory Bird Program
SUBJECT: Supporting the energetic requirements of wintering waterfowl

I. STATEMENT OF PURPOSE

Provide the Principal Deputy Director with information regarding how the energetic requirements for wintering waterfowl are calculated and measured.

II. BACKGROUND

Managing for wintering waterfowl includes ensuring the food resources are available to support their daily energy needs. Calculating this need begins by consulting the North American Waterfowl Management Plan's population goals which are stepped down to each Joint Venture.

The wintering habitat Joint Ventures use these population goals to plan for how they, with Federal, State and private partners can meet the food resource needs of these birds. These population targets can then be translated into daily energy demands which are expressed as duck energy days (or duck use days). This planning is done at the Joint Venture or regional level by the Joint Ventures.

The Joint Ventures calculate the number of duck energy days that are needed based on the population goals. They also consider the wintering distribution of the birds across the area based on mid-winter waterfowl counts and harvest information.

Using geo-spatial analysis, the JVs and partners inventory the amount of existing habitat and determine the amount of food that is available based on habitat type, land management, and land ownership. These factors are used in models to assess the landscape capacity to meet the needed wintering waterfowl energetic demands (number of duck use days). Federal and State-owned lands are seen as the most secure habitats. Private agricultural land that is not under any type of management agreement or easement (e.g., CRP or WRP) are seen as the least secure and often have the lowest habitat values associated with them.

These calculations are used by the Joint Ventures and their partners to determine Regional and State goals for habitat, and to make management decisions when private land is converted to a non-habitat use. Despite the intense level of planning and coordination there are still instances where a State or regional area does not meet its habitat objectives and the energetic impact of losing private farm land cannot be readily alleviated by increasing production on a State or Federal area. For example, some National Wildlife Refuge lands are no longer able to provide the amount or quality of food that they once did due to changes in cooperative farming practices within the Refuge system.

III. DISCUSSION

The duck use day deficit within some states or regional areas may result in additional stresses on the birds as they need to search further for food, or start their spring migration in less than optimal body condition.

From: [Kodis, Martin](#)
To: [Greg Sheehan](#)
Cc: [Kashyap Patel](#); [Wainman, Barbara](#)
Subject: DRAFT email text for memo transmittals
Date: Thursday, August 2, 2018 10:19:52 AM

Greg,

For your consideration for emails you send to transmit the GMO and Easement memos.

Please let me know if you'd like anything further on this.

Marty

Easement Memo -- draft email to Directorate.

Good afternoon Directorate members.

Over the last year, I have got to see first-hand, the vital role the Service plays in the local communities in which we serve and have been continually impressed by the way that responsibility is met by our refuge managers, regional refuge chiefs and refuge staff. I am truly proud of our place in those communities as a good neighbor.

Many of our staff also have responsibilities relating to easements on neighboring properties. My goal with today's memorandum is to provide guidance for all managers on how to initiate contact with our neighbors and how to ensure we build a firm foundation for a long-term beneficial relationship. While the majority of managers do this instinctively well, the attached memo lays out a basic yet fundamental framework for initiating and maintaining contact with landowners that can guide us and ensure we are consistent and positive in our approach.

GMO Memo -- draft email to Directorate.

Good afternoon Directorate members,

Please see the attached memorandum regarding the use of agricultural practices in the National Wildlife Refuge System as a wildlife management practice used to deliver specific conservation objectives.

This memorandum withdraws in full the July 17, 2014 memorandum that had universally banned the use of genetically modified crops on refuges and established restrictions on the use of neonicotinoid pesticides. The NWRS will now determine the appropriateness of the use of those crops on a case-by-case basis, in compliance with all relevant and controlling legal authorities (including NEPA) and Service policies. Review of those authorities should be done in conjunction with the Solicitor's Office.

GMO Memo -- draft email to Partners

Good afternoon XXX,

The National Wildlife Refuge System, the public lands network managed by the U.S. Fish and Wildlife Service, employs a number of wildlife management practices to deliver specific conservation objectives on each of their 566 national wildlife refuges. These practices include water management, fire management, cooperative farming and others. Service managers periodically review this suite of practices as they work to meet specific conservation objectives for waterfowl and other species.

On July 17, 2014, a memorandum was issued by the Chief of the National Wildlife Refuge System stating that certain agricultural practices used in cooperative farming, particularly the use of genetically engineered crop seeds and the use of

neonicotinoid pesticides across the NWRS, would be phased out in refuges. In some cases the phasing out of those practices was appropriate.

There may be situations, however, where use of GMO crop seeds is essential to best fulfill the purposes of the refuge and the needs of birds (in particular, waterfowl) and other wildlife as described above. A blanket denial of GMOs does not provide on-the-ground latitude for refuge managers to work adaptively and make field level decisions about the best manner to fulfill the purposes of the refuge.

Therefore, today I issued this by this memorandum that withdraws the July 17, 2014 memorandum. The NWRS will again determine the appropriateness of the use of those crops on a case-by-case basis, in compliance with all relevant and controlling legal authorities (including NEPA) and Service policies.

--

Martin Kodis
Chief, Division of Congressional and Legislative Affairs
U.S. Fish and Wildlife Service

5275 Leesburg Pike
Falls Church, VA 22041

703-358-2241 ph
703-358-2245 fax

From: [Chambers, Micah](#)
To: [Greg Sheehan](#)
Subject: Fwd: [EXTERNAL] GMO in MWR Letters
Date: Wednesday, May 16, 2018 10:16:34 AM
Attachments: [Dan Ashe USFWS ag practice memo - 092414.pdf](#)
[USFWS Farming Letter_FINAL.pdf](#)
[05-08-18 -- RLA EA Letter to SEC INT re GMO in NWR.pdf](#)
[601 FW 3 BIDEH \(FWS Manual, 2001\).pdf](#)
[Chief Kurth GMO memo \(2014\).pdf](#)

More background.

----- Forwarded message -----

From: **Verrill, Ted** <Ted.Verrill@mail.house.gov>
Date: Tue, May 8, 2018 at 4:53 PM
Subject: [EXTERNAL] GMO in MWR Letters
To: "micah_chambers@ios.doi.gov" <micah_chambers@ios.doi.gov>

Hello Micah,

Please find the current Congressional letter, as well as letters from a few years ago when this issue first arose.

Best,

Ted Verrill

Deputy Chief of Staff & Legislative Director

Congressman Ralph Abraham, MD

Louisiana's 5th Congressional District

417 Cannon House Office Building

Washington DC, 20515

(202) 225-8490 | ted.verrill@mail.house.gov

--

Micah Chambers

Deputy Director
Office of Congressional & Legislative Affairs
Office of the Secretary of the Interior



September 24, 2014

Mr. Dan Ashe
Director, U.S. Fish and Wildlife Service
1849 C St, NW
Washington, D.C. 20240

Dear Director Ashe:

We write today to express our deep disappointment with your recent decision to begin the elimination of the long-standing practice of cooperative farming on National Wildlife Refuges (Refuge). We find it disturbing that this decision was made internally, with no input from those of us who have worked hard to be good partners with the Fish and Wildlife Service (Service), and then without sharing the decision with any of your outside partners (i.e. Joint Ventures, state agencies, not for profit partners such as Ducks Unlimited, National Wild Turkey Federation or Pheasants Forever). Unfortunately, we had to learn of the decision by obtaining the internal memorandum signed by Jim Kurth on July 17th from employees in the Refuge System concerned that they won't be able to deliver the assigned wildlife use days established in the Comprehensive Conservation Plans (CCP).

Ducks Unlimited (DU), National Wild Turkey Federation (NWTF) and Pheasants Forever (PF), represent well over a million supporters and sportsmen and women from across the country, and have all been strong, longstanding partners with the Service in collaboratively delivering wildlife habitat conservation across the United States. As we understand the directives in the Kurth memo, the landscape-level plans and CCPs that have been developed and are being implemented by these partnerships would likely be significantly disrupted by the Service's independent decision. While we respect the Service's authority to make decisions regarding the management of the public lands for which it is responsible, we also expect the Service to honor the individual CCPs that were developed with significant assistance by those of us in the public that foster a strong Refuge System. It would seem to us that the potential impacts on the partnerships within which the Service works, and upon which the Service is in large part dependent to successfully fulfill its mission, would strongly suggest that this discussion should have been conducted among those partners, and not have been restricted to the Service's Refuge Leadership Team.

The Kurth memo records three inter-related decisions, all to be implemented by January 2016:

1. "[T]he System will only use an agricultural practice where it specifically contributes to wildlife objectives."
2. "[W]e will no longer use neonicotinoids pesticides in agricultural practices used in the System."
3. "[W]e will phase out the use of genetically modified crops to feed wildlife."

For each of these declarations, the memo references related Service policies that purport to support the decisions regarding agricultural practices. However, for each of these declarations, there are also qualifications and caveats laid out that could lead to a wide range of interpretations by individual refuge managers and/or Service regions, varying from no change to the status quo, to the elimination of crop production on NWRs. For each of these declarations, however, there currently exists Service policy to evaluate and document decisions based on science and public involvement. This directive appears to circumvent those policies and processes in favor of a unilateral decision without providing scientific debate or justification.

As you know, the use of agricultural practices on some refuges in some landscapes plays a critically important role in directly providing for the energetic requirements of migrating and wintering populations of waterfowl and other migratory birds, as well as providing important food resources for non-migratory species like wild turkeys and pheasants. In addition, the provision of these food resources on Refuges is often an integral component of implementing the collaborative, landscape-level plans of JVs and other partnerships. Agricultural practices are often used as a disturbance tool to ensure that the use of native plants remains productive and cost-effective. In the Lower Mississippi Valley, for example, agricultural practices are commonly used as a part of a multi-year rotation to maintain early successional habitats in a productive state. Eliminating this tool would either (1) reduce the productivity and availability of wildlife food resources in these areas, or (2) increase the cost to the Service of using other tools to set back succession in order for the refuge to be able to meet its habitat management obligations as expressed in partner plans and CCPs. Thus, the apparent intention of the Service to ultimately eliminate the production of agricultural foods on Refuge lands (except for Refuges with practices required by the Kuchel Act) could significantly disrupt and likely reduce the ability of the surrounding landscape to provide for the needs of many species. Your partners should be afforded the opportunity to work collaboratively with you to ensure that such potential decisions will not impair the ability of these partnerships to achieve their shared wildlife management goals.

The motivation for the elimination of GMO crops is also not clear. While we are fully aware of the controversy surrounding GMO crops, we are unaware of science that would demonstrate that their elimination would in any way benefit wildlife management or other objectives of the refuge system. For example, it is our understanding that it is becoming extremely difficult, if not virtually impossible in some areas and for some crops, to find sources of seed that are not GMO-based seeds. Clearly, this could have important implications with respect to the ability of the refuge and the landscape-based partnership to achieve its wildlife management objectives. Again, we are disappointed that this potentially unrealistic position was taken without any public input and in disregard of the approval process established by the Environmental Protection Agency for seed safety.

We are aware of the increasing evidence that neonicotinoid pesticides could be having important deleterious impacts on aspects of the environment and associated organisms that are also important to achieving wildlife management objectives. For example, evidence that neonicotinoids can accumulate in aquatic environments and significantly affect and disrupt aquatic invertebrate populations, an important component of the base of the food chain for many waterfowl species, is growing. Our concern is that the Service's Pesticide Use Policy, required for use of all pesticides on Refuges, was not allowed to be employed. This policy was developed specifically for this type of question yet, in this case, has been removed from the decision-making process of the Refuge Manager.

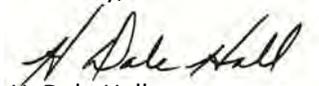
Mr. Dan Ashe

September 24, 2014

In light of the above discussion and concerns, we reiterate our significant disappointment that the Service decided to act unilaterally on such an important management issue, recommend that the Service allow the CCPs to operate as intended under the Refuge Improvement Act in concert with long-standing Service policies, and urge the Service to rescind this internal guidance. We look forward to continuing our long term partnership with the Service and hope future decisions of this importance will acknowledge those partners that have a proven record of support over the decades.

Please feel free to contact any of us if you have additional questions or we may be of assistance.

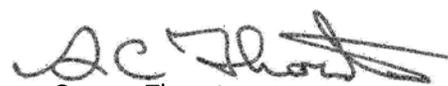
Sincerely,



H. Dale Hall
CEO, DUI



Howard Vincent
President/CEO PF & QF



George Thornton
President/CEO NWTF

cc: Secretary Sally Jewell

Mississippi / Louisiana MAV Conservation Delivery Network

15 October 2015

David Viker
Chief of National Wildlife Refuges, Southeast Region
U.S. Fish and Wildlife Service
Atlanta, GA

Dear David,

Subject: Agriculture on National Wildlife Refuges

I am writing on behalf of the Mississippi/Louisiana MAV Conservation Delivery Network (CDN) to express support for the continued use of modern agricultural crop propagation practices on National Wildlife Refuges (NWRs). The Lower Mississippi Valley Joint Venture (LMVJV) chartered CDN is a broad, locally-based coalition of state and federal agency, and non-governmental organization personnel focused on translating sound science into effective delivery of natural resources conservation programs and practices in the Mississippi and NE Louisiana Delta. We are concerned that the recently established U.S. Fish and Wildlife Service (Service) policy prohibiting the use of genetically modified crops and neonicotinoid pesticides has reduced the effectiveness of an important bird habitat management tool, particularly with regard to migratory birds, on NWRs. As you know, modern agriculture and cooperative farming on NWRs provides foraging habitat for birds, aids in the control of invasive species, and supports local, rural communities. The impacts of losing this management tool will be far-reaching, and we are concerned that this action will eventually facilitate the loss of farming on many NWRs in the MAV, even if unintentional.

Agriculture plays a key role in providing foraging habitat for a wide range of wildlife species across the country, and cooperative farming on NWRs in the MAV is an important tool that accomplishes a significant portion of the waterfowl foraging habitat goals identified under the North American Waterfowl Management Plan (NAWMP). However, a Duck Energy Day analysis recently conducted by the LMVJV partnership identifies a foraging habitat deficit in relation to its NAWMP goals. Crop restrictions will reduce the ability of local NWRs to meet these habitat goals, and certainly a total loss of agricultural crops on NWRs would lead to potentially insurmountable habitat deficits.

Cooperative farming on NWRs provides a relatively inexpensive method of setting back plant succession on large acreages, as well as providing agricultural crops as a valuable, additional high energy food source for migratory waterfowl. In the absence of cooperative farming, accomplishing this important habitat work will require the investment of additional time and resources from NWR staff that are already stretched due to budget reductions. Many CDN members, based on

experience working with MAV refuges, are very concerned that most NWR budgets are not set up to support active management of large tracts of early successional habitats (i.e., frequent disking, mowing, spraying and/or crop production), and cooperative farming has been a surrogate for these activities. Furthermore, as a general rule, refuge personnel are not farmers; they are natural resources professionals (wildlife biologists, foresters, etc) trained to manage wildlife populations and their habitats. The Service should continue to take advantage of the expertise of farmers to ensure the production of high-yielding crops to meet foraging goals. Cooperative farming on NWRs also benefits local communities through provision of jobs, which helps to support local economies.

To that end, we urge the Service to work with its natural resource partners to identify an alternative strategy for managing NWR lands, and to include a strong agricultural component in future plans, so that NAWMP goals can be reached in this region and beyond.

Please do not hesitate to contact me to discuss this issue further. We look forward to your response.

Sincerely,

A handwritten signature in cursive script, appearing to read "John Gruchy", with a long horizontal flourish extending to the right.

John Gruchy

Chair, Mississippi/Louisiana MAV CDN

johng@mdwfp.state.ms.us

662-274-1050

Congress of the United States
Washington, DC 20515

May 8, 2018

The Honorable Ryan Zinke
Secretary, U.S. Department of the Interior
1849 C Street, N.W.
Washington, DC 20240

Dear Secretary Zinke:

We write to bring to your attention a pressing matter related to the U.S. Fish & Wildlife Service's ban on the use of genetically modified (GMO) seed by commercial agriculture on National Wildlife Refuges.

The Fish & Wildlife Service regularly enters into so-called Cooperative Agriculture Agreements with farmers to plant and raise crops on National Wildlife Refuge (NWR) land, and to leave a portion of that crop standing over the winter in order to provide cover and forage for wildlife. It is our understanding the Service currently contractually bars farmers who enter into these agreements from planting GMO seed. We have been provided with two documents regarding this policy, a document marked 601 FW 3, which states U.S. Fish and Wildlife Service's policy position regarding *Biological Integrity, Diversity, and Environmental Health*, and a Memorandum dated July 17, 2014 from then National Wildlife Refuge System Chief James Kurth. It is further our understanding that Chief Kurth's decision to bar farmers from using GMO seed as part of these share agreements was based on an interpretation of a seemingly out-of-context excerpt of Section 3.15(C):

We use native seed sources in ecological restoration. We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplish refuge purpose(s) and the Director approves their use.

By itself this language barring the use of GMO seed seems deceptively clear, it is only when read in the larger context of the entire Section 3.15(C) that it becomes apparent that the language barring GMO seeds applies *to restoration work or the long-term maintenance of native plant communities*, and **does not apply** to share agreements where farmers are raising an annual commercial crop, such as Soybean, in order to harvest it, where even the share portion will be

plowed under in the regular course of commercial agriculture in order to prepare the field for the next year's crop:

We do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s). For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats. Where feasible and consistent with refuge purpose(s), we restore degraded or modified habitats in the pursuit of biological integrity, diversity, and environmental health. We use native seed sources in ecological restoration. We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplish refuge purpose(s) and the Director approves their use.

Accordingly, we request that you re-evaluate in a timely manner the apparently flawed policy stated in Chief Kurth's July 17, 2014 Memorandum that bans the use of GMO crops in commercial agriculture conducted on NWR land. It is our sincere hope that you find that the interpretation of 3.15(C) was incorrectly applied to commercial agricultural crops grown on NWR land and that clauses in contracts between the US Fish & Wildlife Service and farmers that bar the use of GMO seed in raising commercial crops will therefore not be enforced, and will no longer be used.

Thank you for your prompt attention to this matter.

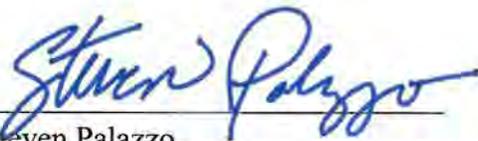
Sincerely,



Ralph Abraham, M.D.
MEMBER OF CONGRESS



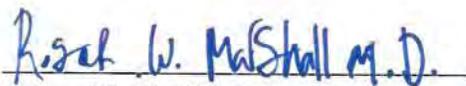
Paul Gosar, D.D.S.
MEMBER OF CONGRESS



Steven Palazzo
MEMBER OF CONGRESS



Trent Kelly
MEMBER OF CONGRESS



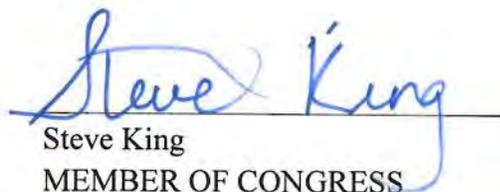
Roger Marshall, M.D.
MEMBER OF CONGRESS



Ralph Norman
MEMBER OF CONGRESS



Adrian Smith
MEMBER OF CONGRESS



Steve King
MEMBER OF CONGRESS



Andy Harris, M.D.
MEMBER OF CONGRESS



Rick Crawford
MEMBER OF CONGRESS



Greg Gianforte
MEMBER OF CONGRESS



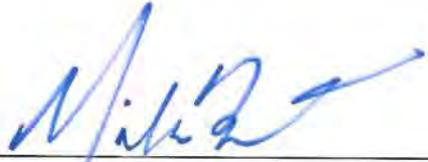
Ted S. Yoho DVM
MEMBER OF CONGRESS



James Comer
MEMBER OF CONGRESS



Ron Estes
MEMBER OF CONGRESS



Mike Bost
MEMBER OF CONGRESS



Kristi Noem
MEMBER OF CONGRESS



Bruce Westerman
MEMBER OF CONGRESS



U.S. FISH AND WILDLIFE SERVICE TRANSMITTAL SHEET

PART 601 FW 3	SUBJECT National Wildlife Refuge System Biological Integrity, Diversity, and Environmental Health	RELEASE NUMBER 366
FOR FURTHER INFORMATION CONTACT Division of Natural Resources		DATE April 16, 2001

EXPLANATION OF MATERIAL TRANSMITTED:

This chapter provides policy for maintaining and restoring, where appropriate, the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

Acting *K Adams*
Deputy DIRECTOR

FILING INSTRUCTIONS:

Remove:

None

Insert:

601 FW 3, 04/19/01, FWM 366, (4 sheets)

**FISH AND WILDLIFE SERVICE
REFUGE MANAGEMENT**

3.1 What is the purpose of this chapter? This chapter provides policy for maintaining and restoring, where appropriate, the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

3.2 What is the scope of this policy? This policy applies to all units of the System.

3.3 What is the biological integrity, diversity, and environmental health policy? The policy is an additional directive for refuge managers to follow while achieving refuge purpose(s) and System mission. It provides for the consideration and protection of the broad spectrum of fish, wildlife, and habitat resources found on refuges and associated ecosystems. Further, it provides refuge managers with an evaluation process to analyze their refuge and recommend the best management direction to prevent further degradation of environmental conditions; and where appropriate and in concert with refuge purposes and System mission, restore lost or severely degraded components.

3.4 What are the objectives of this policy?

A. Describe the relationships among refuge purposes, System mission, and maintaining biological integrity, diversity, and environmental health.

B. Provide guidelines for determining what conditions constitute biological integrity, diversity, and environmental health.

C. Provide guidelines for maintaining existing levels of biological integrity, diversity, and environmental health.

D. Provide guidelines for determining how and when it is appropriate to restore lost elements of biological integrity, diversity, and environmental health.

E. Provide guidelines to follow in dealing with external threats to biological integrity, diversity, and environmental health.

3.5 What are the authorities for this policy? National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Refuge Administration Act). Section 4(a)(4)(B) of this law states that "In administering the System, the Secretary shall . . . ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans . . ." This is one of 14 directives to the Secretary contained within the Refuge Administration Act.

3.6 What do these terms mean?

A. Biological Diversity. The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and communities and ecosystems in which they occur.

B. Biological Integrity. Biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms, and communities.

C. Environmental Health. Composition, structure, and functioning of soil, water, air, and other abiotic features comparable with historic conditions, including the natural abiotic processes that shape the environment.

D. Historic Conditions. Composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to substantial human related changes to the landscape.

E. Native. With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

3.7 What are the principles underlying this policy?

A. Wildlife First. The Refuge Administration Act, as amended, clearly establishes that wildlife conservation is the singular National Wildlife Refuge System mission. House Report 105-106 accompanying the National Wildlife Refuge System Improvement Act of 1997 states ". . . the fundamental mission of our System is wildlife conservation; wildlife and wildlife conservation must come first." Biological integrity, diversity, and environmental health are critical components of wildlife conservation.

B. Accomplishing refuge purposes and maintaining biological integrity, diversity, environmental health of the System. The Refuge Administration Act states that each refuge will be managed to fulfill refuge purpose(s) as well as to help fulfill the System mission, and we will accomplish these purpose(s) and our mission by ensuring that the biological integrity, diversity, and environmental health of each refuge are maintained, and where appropriate, restored. We base our decisions on sound professional judgment.

C. Biological integrity, diversity, and environmental health in a landscape context. Biological integrity, diversity, and environmental health can be described at various landscape scales from refuge to ecosystem, national, and international. Each landscape scale has a measure of

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biological integrity, diversity, and environmental health dependent on how the existing habitats, ecosystem processes, and wildlife populations have been altered in comparison to historic conditions. Levels of biological integrity, diversity, and environmental health vary among refuges, and often within refuges over time. Individual refuges contribute to biological integrity, diversity, and environmental health at larger landscape scales, especially when they support populations and habitats that have been lost at an ecosystem, national, or even international scale. In pursuit of refuge purposes, individual refuges may at times compromise elements of biological integrity, diversity, and environmental health at the refuge scale in support of those components at larger landscape scales. When evaluating the appropriate management direction for refuges, refuge managers will consider their refuges' contribution to biological integrity, diversity, and environmental health at multiple landscape scales.

D. Maintenance and restoration of biological integrity, diversity, and environmental health. We will, first and foremost, maintain existing levels of biological integrity, diversity, and environmental health at the refuge scale. Secondly, we will restore lost or severely degraded elements of integrity, diversity, environmental health at the refuge scale and other appropriate landscape scales where it is feasible and supports achievement of refuge purpose(s) and System mission.

E. Wildlife and Habitat Management. Management, ranging from preservation to active manipulation of habitats and populations, is necessary to maintain biological integrity, diversity, and environmental health. We favor management that restores or mimics natural ecosystem processes or functions to achieve refuge purpose(s). Some refuges may differ from the frequency and timing of natural processes in order to meet refuge purpose(s) or address biological integrity, diversity, and environmental health at larger landscape scales.

F. Sound Professional Judgment. Refuge managers will use sound professional judgment when implementing this policy primarily during the comprehensive conservation planning process to determine: the relationship between refuge purpose(s) and biological integrity, diversity, and environmental health; what conditions constitute biological integrity, diversity, and environmental health; how to maintain existing levels of all three; and, how and when to appropriately restore lost elements of all three. These determinations are inherently complex. Sound professional judgment incorporates field experience, knowledge of refuge resources, refuge role within an ecosystem, applicable laws, and best available science including consultation with others both inside and outside the Service.

G. Public Use. The priority wildlife-dependent public uses, established by the National Wildlife Refuge System Improvement Act of 1997, are not in conflict with this policy

when determined to be compatible. The directives of this policy do not generally entail exclusion of visitors or elimination of public use structures; e.g., boardwalks and observation towers. However, maintenance and/or restoration of biological integrity, diversity, and environmental health may require spatial or temporal zoning of public use programs and associated infrastructures. General success in maintaining or restoring biological integrity, diversity, and environmental health will produce higher quality opportunities for wildlife-dependent public use.

3.8 What are our responsibilities?

A. Director.

- (1) Provides national policy, goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (2) Ensures that national plans and partnerships support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (3) Ensures that the national land acquisition strategy for the System is designed to enhance the biological integrity, diversity, and environmental health of the System at all landscape scales.

B. Regional Director.

- (1) Provides regional policy, goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the System, including guidance to resolve any conflicts with biological integrity, diversity, and environmental health at an individual refuge versus at the larger landscape scales.
- (2) Ensures that regional and ecosystem plans, and regional partnerships support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (3) Resolves conflicts that arise between maintaining biological integrity, diversity, and environmental health at the refuge level landscape scale versus at larger landscape scales.

C. Regional Chief.

- (1) Ensures that individual refuge comprehensive conservation plans support maintaining and restoring the biological integrity, diversity, and environmental health of the System.
- (2) Reviews and ensures those refuge management programs that occur on many refuges (e.g., fire management) are consistent with this policy.

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D. Refuge Manager.

- (1) Follows the procedure outlined in paragraph 3.9.
- (2) Incorporate the principles of this policy into all refuge management plans and actions.

3.9 How do we implement this policy? The Director, Regional Directors, Regional Chiefs, and Refuge Managers will carry out their responsibilities specified in paragraph 3.8. In addition, refuge managers will carry out the following tasks:

A. Identify the refuge purpose(s), legislative responsibilities, refuge role within the ecosystem, and System mission.

B. Assess the current status of biological integrity, diversity, and environmental health through baseline vegetation, population surveys and studies, and any other necessary environmental studies.

C. Assess historic conditions and compare them to current conditions. This will provide a benchmark of comparison for the relative intactness of ecosystems' functions and processes. This assessment should include the opportunities and limitations to maintaining and restoring biological integrity, diversity, and environmental health.

D. Consider the refuge's importance to refuge, ecosystem, national, and international landscape scales of biological integrity, diversity, and environmental health. Also, identify the refuge's roles and responsibilities within the Regional and System administrative levels.

E. Consider the relationships among refuge purpose(s) and biological integrity, diversity and environmental health, and resolve conflicts among them.

G. Through the comprehensive conservation planning process, interim management planning, or compatibility reviews, determine the appropriate management direction to maintain and, where appropriate, restore, biological integrity, diversity, and environmental health, while achieving refuge purpose(s).

H. Evaluate the effectiveness of our management by comparing results to desired outcomes. If the results of our management strategies are unsatisfactory, assess the causes of failure and adapt our strategies accordingly.

3.10 What factors do we consider when maintaining and restoring biological integrity, diversity, and environmental health? We plan for the maintenance and restoration of biological integrity, diversity, and environmental health while considering all three in an integrated and holistic manner. The highest measure of biological integrity, diversity, and environmental health is viewed as those intact and self-

sustaining habitats and wildlife populations that existed during historic conditions.

A. Biological Integrity.

(1) We evaluate biological integrity by examining the extent to which biological composition, structure, and function has been altered from historic conditions. Biological composition refers to biological components such as genes, populations, species, and communities. Biological structure refers to the organization of biological components, such as gene frequencies, social structures of populations, food webs of species, and niche partitioning within communities. Biological function refers to the processes undergone by biological components, such as genetic recombination, population migration, the evolution of species, and community succession [see 602 FW 3.4C(1)(e), Planning Area and Data Needs].

(2) Biological integrity lies along a continuum from a biological system extensively altered by significant human impacts to the landscape to a completely natural system. No landscape retains absolute biological integrity, diversity, and environmental health. However, we strive to prevent the further loss of natural biological features and processes; i.e., biological integrity.

(3) Maintaining or restoring biological integrity is not the same as maximizing biological diversity. Maintaining biological integrity may entail managing for a single species or community at some refuges and combinations of species or communities at other refuges. For example, a refuge may contain critical habitats for an endangered species. Maintaining that habitat (and, therefore, that species), even though it may reduce biological diversity at the refuge scale, helps maintain biological integrity and diversity at the ecosystem or national landscape scale.

(4) In deciding which management activities to conduct to accomplish refuge purpose(s) while maintaining biological integrity, we start by considering how the ecosystem functioned under historic conditions. For example, we consider the natural frequency and timing of processes such as flooding, fires, and grazing. Where it is not appropriate to restore ecosystem function, our refuge management will mimic these natural processes including natural frequencies and timing to the extent this can be accomplished.

(5) We may find it necessary to modify the frequency and timing of natural processes at the refuge scale to fulfill refuge purpose(s) or to contribute to biological integrity at larger landscape scales. For example, under historic conditions, an area may have flooded only a few times per decade. Migratory birds dependent upon wetlands may have used the area in some years, and used other areas that flooded in other years. However, many wetlands have been converted to agriculture or other land uses, the remaining wetlands

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must produce more habitat, more consistently, to support wetland-dependent migratory birds. Therefore, to conserve these migratory bird populations at larger landscape scales, we may flood areas more frequently and for longer periods of time than they were flooded historically.

B. Biological Diversity.

(1) We evaluate biological diversity at various taxonomic levels, including class, order, family, genus, species, subspecies, and—for purposes of Endangered Species Act implementation—distinct population segment. These evaluations of biological diversity begin with population surveys and studies of flora and fauna. The System's focus is on native species and natural communities such as those found under historic conditions [see 602 FW 3.4C(1)(e)]. The Natural Heritage Network databases for respective States should prove a valuable tool for this initial evaluation.

(2) We also evaluate biological diversity at various landscape scales, including refuge, ecosystem, national, and international. On refuges, we typically focus our evaluations of biological diversity at the refuge scale; however, these refuge evaluations can contribute to assessments at larger landscape scales.

(3) We strive to maintain populations of breeding individuals that are genetically viable and functional. We provide for the breeding, migrating, and wintering needs of migratory species. We also strive to maximize the size of habitat blocks and maintain connectivity between blocks of habitats, unless such connectivity causes adverse effects on wildlife or habitat (e.g., by facilitating the spread of invasive species).

(4) At the community level, the most reliable indicator of biological diversity is plant community composition. We use the National Vegetation Classification System to identify biological diversity at this level.

C. Environmental Health.

(1) We evaluate environmental health by examining the extent to which environmental composition, structure, and function have been altered from historic conditions. Environmental composition refers to abiotic components such as air, water, and soils, all of which are generally interwoven with biotic components (e.g., decomposers live in soils). Environmental structure refers to the organization of abiotic components, such as atmospheric layering, aquifer structure, and topography. Environmental function refers to the processes undergone by abiotic components, such as wind, tidal regimes, evaporation, and erosion. A diversity of abiotic composition, structure, and function tends to support a diversity of biological composition, structure, and function [see 602 FW 3.4 C (1)(e), Planning Area and Data Needs].

(2) We are especially concerned with environmental features as they affect all living organisms. For example, at the

genetic level, we manage for environmental health by preventing chemical contamination of air, water, and soils that may interfere with reproductive physiology or stimulate high rates of mutation. Such contamination includes carcinogens and other toxic substances that are released within or outside of refuges.

(3) At the population and community levels, we consider the habitat components of food, water, cover, and space. Food and water may become contaminated with chemicals that are not naturally present. Activities such as logging and mining or structures such as buildings and fences may modify security or thermal cover. Unnatural noise and light pollution may also compromise migration and reproduction patterns. Unnatural physical structures, including buildings, communication towers, reservoirs, and other infrastructure, may displace space or may be obstacles to wildlife migration. Refuge facility construction and maintenance projects necessary to accomplish refuge purpose(s) should be designed to minimize their impacts on the environmental health of the refuge.

3.11 How do we apply our management strategies to maintain and restore biological integrity, diversity, and environmental health?

A. We strive to manage in a holistic manner the combination of biological integrity, diversity, and environmental health. We balance all three by considering refuge purpose(s), System mission, and landscape scales. Considered independently, management strategies to maintain and restore biological integrity, diversity, and environmental health may conflict.

B. For example, physical structures and chemical applications are often necessary to maintain biological integrity and to fulfill refuge purpose(s). We may use dikes and water control structures to maintain and restore natural hydrological cycles, or use rotenone to eliminate invasive carp from a pond. These unnatural physical alterations and chemical applications would compromise environmental health if considered in isolation, but they may be appropriate management actions for maintaining biological integrity and accomplishing refuge purpose(s).

C. We may remove physical structures to promote endangered species recovery in some areas, or we may remove plants or animals to protect structures, depending upon refuge purpose(s). Unless we determine that a species was present in the area of a refuge under historic conditions, we will not introduce or maintain the presence of that species for the purpose of biological diversity. We may make exceptions where areas are essential for the conservation of a threatened or endangered species and suitable habitats are not available elsewhere. In such cases, we strive to minimize unnatural effects and to restore or maintain natural processes and ecosystem components to the extent practicable without jeopardizing refuge purpose(s).

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3.12 How do we incorporate information from historic conditions into our management decisions?

A. Maintaining biological integrity, diversity, and environmental health requires an ecological frame of reference. A frame of reference allows us to contrast current conditions of our resources with historic conditions. The reference guides us in two ways. It provides information on how the landscape looked prior to changes in land use that destroyed and fragmented habitats and resulted in diminished wildlife populations and the extirpation or extinction of species. It also allows us to examine how natural ecosystems function and maintain themselves. We use these conditions as a frame of reference in which to develop goals and objectives.

B. We use historical conditions as the frame of reference to identify composition, structure, and functional processes that naturally shaped ecosystems. We especially seek to identify keystone species, indicator species, and types of communities that occurred during the frame of reference. We also seek to ascertain basic information on natural ecosystem structure such as predator/prey relationships and distribution of plant communities. Finally, we seek to identify the scale and frequency of processes that accompanied these components and structures, such as fire regimes, flooding events, and plant community succession. Where appropriate and feasible, we also pursue biological integrity, diversity, and environmental health by eliminating unnatural biotic and abiotic features and processes not necessary to accomplish refuge purpose(s).

C. We do not expect, however, to reconstruct a complete inventory of components, structures, and functions for any successional stage occurring during the frame of reference. Rather, we use sound professional judgment to fit the pieces to create a conceptual picture of our resources under historic conditions.

D. We ensure that our management activities result in the establishment of a community that fits within what we reasonably believe to have been the natural successional series, unless doing so conflicts with accomplishing refuge purpose(s). We may choose to maintain nonclimax communities pursuant to refuge purpose(s) or for maintaining biological integrity, diversity, and environmental health at the regional, national, or international landscape scale. We favor techniques such as fire or flooding that mimic or result in natural processes to maintain these nonclimax communities. However, where it will support fulfillment of refuge purpose(s), we allow or, if necessary, encourage natural succession to proceed.

3.13 Where do we get information on historic conditions?

A. Information on historic conditions may be historical, archeological, or other. Historical information includes the written and, in some cases, the pictographic accounts of Native Americans, explorers, surveyors, traders, and early settlers. Archeological information comes from collections of cultural artifacts maintained by scientific institutions. We may obtain other data from a range of sources, including research, soil sediments, and tree rings.

B. We obtain information on historic conditions from our investigations and from partners in academia, conservation organizations, and other Federal, State, Tribal, and local government agencies. In many cases, we use historical vegetation maps to provide data. Such historical maps are usually drawn at relatively coarse scales, perhaps to the level of vegetation alliance. Generally a comprehensive historical list of plant and animal species is not available or necessary. We will base the determination of natural species and ecosystem composition on sound professional judgment. We periodically update our information on historic conditions with results from ongoing historical, archeological, and other studies.

3.14 How do we manage populations to maintain and restore biological integrity, diversity, and environmental health?

A. We encourage cooperation and coordination with State fish and wildlife management agencies in setting refuge population goals and objectives. To the extent practicable, our regulations pertaining to fishing or hunting of resident wildlife within the System are consistent with State fish and wildlife laws, regulations, and management plans.

B. We maintain, or contribute to the maintenance of, populations of native species. We design our wildlife population management strategies to support accomplishing refuge purpose(s) while maintaining or restoring biological integrity, diversity, and environmental health. We formulate refuge goals and objectives for population management by considering natural densities, social structures, and population dynamics at the refuge level, and population objectives set by national plans and programs – such as the North American Waterfowl Management Plan – in which the System is a partner.

C. Natural densities are relatively stable for some species and variable for others. We manage populations for natural densities and levels of variation, while assuring that densities of endangered or otherwise rare species are sufficient for maintaining viable populations. We consider population parameters such as sex ratios and age class distributions when managing populations to maintain and restore where appropriate biological integrity, diversity, and environmental health.

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Refuge Management

Part 601 National Wildlife Refuge System

Chapter 3 Biological Integrity, Diversity, and Environmental Health

601 FW 3

D. On some refuges, including many of those having the purpose of migratory bird conservation, we establish goals and objectives to maintain densities higher than those that would naturally occur at the refuge level because of the loss of surrounding habitats. We more closely approximate natural levels at larger landscape scales, such as flyways, by maintaining higher densities at the refuge level.

E. We do not, however, allow densities to reach excessive levels that result in adverse effects on wildlife and habitat. The effects of producing densities that are too high may include disease, excessive nutrient accumulation, and the competitive exclusion of other species. We use planning and sound professional judgment to determine prudent limits to densities.

F. Where practical, we support the reintroduction of extirpated native species. We consider such reintroduction in the context of surrounding landscapes. We do not introduce species on refuges outside their historic range or introduce species if we determine that they were naturally extirpated, unless such introduction is essential for the survival of a species and prescribed in an endangered species recovery plan, or is essential for the control of an invasive species and prescribed in an integrated pest management plan.

3.15 How do we manage habitats to maintain and restore biological integrity, diversity, environmental health?

A. We will, first and foremost, maintain existing levels of biological integrity, diversity, and environmental health at the refuge scale. Following that, we will restore lost or degraded elements of biological integrity, diversity, and environmental health at all landscape scales where it is feasible and supports fulfillment of refuge purposes.

B. Our habitat management plans call for the appropriate management strategies that mimic historic conditions while still accomplishing refuge objectives. For example, prescribed burning can simulate natural fire regimes or water level management can mimic natural hydrological cycles. Farming, haying, logging, livestock grazing, and other extractive activities are permissible habitat management practices only when prescribed in plans to meet wildlife or habitat management objectives, and only when more natural methods, such as fire or grazing by native herbivores, cannot meet refuge goals and objectives.

C. We do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s). For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats. Where feasible and consistent with refuge purpose(s), we restore degraded or modified habitats in the pursuit of biological integrity, diversity, and environmental

health. We use native seed sources in ecological restoration. We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplishing refuge purpose(s) and the Director approves the use.

3.16 How do we manage non-native species to maintain and restore biological integrity, diversity, and environmental health?

A. We prevent the introduction of invasive species, detect and control populations of invasive species, and provide for restoration of native species and habitat conditions in invaded ecosystems. We develop integrated pest management strategies that incorporate the most effective combination of mechanical, chemical, biological, and cultural controls while considering the effects on environmental health.

B. We require no action to reduce or eradicate self-sustaining populations of non-native, noninvasive species (e.g., pheasants) unless those species interfere with accomplishing refuge purpose(s). We do not, however, manage habitats to increase populations of these species unless such habitat management supports accomplishing refuge purpose(s).

3.17 How does this policy affect the acquisition of lands for the System?

A. We consider the mission, goals, and objectives of the System in planning for its strategic growth. We will take a proactive approach to identifying lands that are critical for maintaining or restoring the biological integrity, diversity, and environmental health of the System at all landscape scales. We will integrate this approach into all Service strategies and initiatives related to the strategic growth of the System. We incorporate the directives of this policy when evaluating an area's potential contribution to the conservation of the ecosystems of the United States.

B. We use the Land Acquisition Priority System to rank potential acquisitions once the Director approves significant expansions or new refuges. Our Land Acquisition Priority System includes components that gauge the contributions of refuges to maintaining and restoring biological integrity, diversity, and environmental health.

3.18 What is the relationship between biological integrity, diversity, and environmental health and compatibility? When completing compatibility determinations, refuge managers use sound professional judgment to determine if a refuge use will materially interfere with or detract from the fulfillment of the System mission or the refuge purpose(s). Inherent in fulfilling the System mission is protection of the biological integrity, diversity, and environmental health of the System. Specific policy for compatibility is found in 603 FW 2.

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Refuge Management

Part 601 National Wildlife Refuge System

Chapter 3 Biological Integrity, Diversity, and Environmental Health

601 FW 3

3.19 What is the relationship between biological integrity, diversity, and environmental health and comprehensive conservation planning?

A. We integrate the principles of this policy into all aspects of comprehensive conservation planning, including pre-planning guidance (see 602 FW 3.4C(1)(e)) as we complete plans to direct long-range refuge management and identify desired future conditions for proposed refuges (see 602 FW 1.7D).

B. Refuge purpose(s) and the System mission serve as the basis for goals and objectives at all levels of the System (e.g., System, Regional, ecosystem, and refuge level). When we develop refuge goals and objectives during the Comprehensive Conservation Plan process we include goals and objectives for maintaining and restoring the biological integrity, diversity, and environmental health of the refuge.

C. While developing Comprehensive Conservation Plans, we make management decisions based on sound professional judgment. We subsequently evaluate the effectiveness of these decisions by comparing results to desired outcomes. If the results are unsatisfactory, we assess the causes of failure and adapt our management decisions accordingly. In part, we base management decisions on natural resource-related research that has been conducted on refuges. This type of research adds to the general body of information related to natural resource management and aids us in continually adapting our management decisions. We generally encourage natural resource-related research on refuges.

3.20 How do we protect biological integrity, diversity, and environmental health from actions outside of refuges? Events occurring off refuge lands or waters may injure or destroy the biological integrity, diversity, and environmental health of a refuge. Given their responsibility to the public resources with which they have been entrusted, refuge managers should address these problems. It is critical that they pursue resolution fully cognizant and respectful of legitimate private property rights, seeking a balance between such rights and the refuge manager's own responsibility to the public trust. While each situation will be different, the following is a suggested procedure which emphasizes our desire for cooperative resolutions. The time and effort expended, and the rate at which a refuge manager escalates the process, will depend on the severity of threat and the resources at risk.

A. We first seek resolution by directly contacting the landowner(s), corporation, agency or other entity from which the problem originates.

B. Where direct discussions fail, managers might seek resolution through collaborative discussions with State or local authorities or other organizations that can help in cooperative resolution of the problem.

C. An appropriate next step might be to pursue resolution at the local level through planning and zoning boards or other regulatory agencies at the city and county level. Failing that, the manager may seek avenues through State administrative and regulatory agencies. Regulatory solutions are a serious step, and a manager should take this route only after careful consideration and in close consultation with the Regional Offices.

D. If the above efforts fail, we may take action within the legal authorities available to the Service and with full respect to private property rights. In such cases, refuge managers will consult with the Office of the Solicitor for assistance in identifying appropriate remedies and obtain concurrence from the Regional Director.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240



July 17, 2014

Memorandum

To: Regional Refuge Chiefs, Regions 1-8

From: Chief, National Wildlife Refuge System *James W. Kurth*

Subject: Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System

This Memorandum records the decision of the National Wildlife Refuge System Leadership Team (Leadership Team) regarding the use of agricultural practices for wildlife management on national wildlife refuges. On May 21, 2014, we concluded discussion about current agricultural practices across the National Wildlife Refuge System (System) to meet refuge objectives, the use of genetically engineered crop seeds, and the use of pesticides.

The Leadership Team agreed that by January 2016, the System will only use an agricultural practice where it specifically contributes to wildlife objectives. This conforms to 601 FW 3, the Service's Biological Integrity, Diversity and Environmental Health policy (BIDEH). BIDEH directs us to maintain and restore the biological integrity, diversity, and environmental health of refuges and is based on the underlying principle of wildlife conservation that favors management that restores or mimics natural ecosystem processes or functions to achieve refuge purpose(s).

By January 2016, we will no longer use neonicotinoid pesticides in agricultural practices used in the System. Service policy 569 FW 1 Pest Management directs that we use long-standing integrated pest management principles to guide and evaluate our pesticide use practices. We have determined that prophylactic use, such as a seed treatment, of the neonicotinoid pesticides that can distribute systemically in a plant and can potentially affect a broad spectrum of non-target species is not consistent with Service policy. We make this decision based on a precautionary approach to our wildlife management practices and not on agricultural practices.

There can be appropriate and specialized uses of neonicotinoid pesticides and decisions for those uses in the Service are subject to review through all applicable laws, regulations, and policies including, but not limited to, the National Environmental Policy Act.

By January 2016, we will phase out the use of genetically modified crops to feed wildlife. Service policy 601 FW 3.15 C states: "We do not use genetically modified organisms in refuge management unless we determine their use is essential to accomplishing refuge purpose(s) and the Regional Chief, National Wildlife Refuge System, approves the use." Refuges throughout

the country successfully meet wildlife management objectives without the use of genetically modified crops. We have demonstrated our ability to successfully accomplish refuge purposes over the past two years without using genetically modified crops, therefore, it is no longer possible to say that their use is essential to meet wildlife management objectives. We will no longer use genetically modified crops to meet wildlife management objectives System-wide.

Agricultural practices are sometimes used in habitat restoration and the techniques are variable for different locations, therefore, we will consider whether the temporary use of genetically modified crops in habitat restoration is essential on a case-by-case basis.

Finally, the Leadership Team recognized that transitioning any refuge land from a primarily agricultural use to restored, native habitat works to achieve the Service goal of minimizing our carbon footprint as set forth in *Rising to the Urgent Challenge, Strategic Plan for Responding to Accelerating Climate Change* (USFWS 2010). The Leadership Team agreed to assess and identify refuges that have the ability to replace row crops used to meet wildlife management objectives with moist soil management or other techniques that restore or mimic natural ecosystem processes or functions to meet wildlife and carbon objectives.

Refuges with lands mandated for agricultural purposes, including, but not limited to, Tule Lake, Upper and Lower Klamath NWRs subject to Public Law 88-567 (Kuchel Act 1964) and Crab Orchard NWR subject to Public Law 80-361 may follow these agreements, however, the mandates which direct those refuges' purposes are their primary authority.

If there are any questions, please contact Deputy Refuge Chief Cynthia Martinez at (703) 358-2632 or by email at Cynthia_Martinez@fws.gov.

From: [Greg Sheehan](#)
To: (b) (6)
Subject: Fwd: article
Date: Sunday, August 12, 2018 11:23:36 PM

Greg Sheehan
Principal Deputy Director
US Fish and Wildlife Service
202-208-4545 office
202-676-7675 cell

Begin forwarded message:

From: "Swift, Heather" <heather_swift@ios.doi.gov>
Date: August 9, 2018 at 3:31:02 PM CDT
To: Lori Mashburn <lori_mashburn@ios.doi.gov>, Greg Sheehan <greg_j_sheehan@fws.gov>, John Bockmier <john_bockmier@ios.doi.gov>
Subject: article

INTERIOR

Top official exits Fish and Wildlife Service

Michael Doyle, E&E News reporter
Published: Thursday, August 9, 2018

Greg Sheehan is leaving his position as principal deputy director of the Fish and Wildlife Service and returning to his Utah home.

In an email sent to Interior Department colleagues last night, Sheehan said family priorities drove his decision to leave the job he's held since June 2017 ([Greenwire](#), June 5, 2017).

"My departure is based entirely on my need to rejoin my wife and family that have been most patient and understanding while I have been working with all of you at the FWS," Sheehan wrote. "It has, however, become apparent that I should rejoin them now."



Greg Sheehan, Fish and Wildlife Service

Sheehan added that he expects to leave late next week, after which he will "begin a new role with a small company in Utah later this month."

The departure will create another vacancy in a department still maneuvering around several other unfilled slots, as the Trump administration has yet to nominate anyone to serve as director of the Fish and Wildlife Service or as assistant secretary for fish, wildlife and parks.

This week, Interior designated Andrea Travnicek to oversee FWS and the National Park Service as acting assistant secretary for fish, wildlife and parks. She replaces Susan Combs, who will now become acting assistant secretary for policy, management and budget ([Greenwire](#), Aug. 8).

A 1986 graduate of Utah State University, Sheehan formerly headed Utah's Division of Wildlife Resources for about 4 ½ years before joining the Trump administration. He also worked for the Utah agency for a number of years before becoming its director.

The friendly, soft-spoken holder of an MBA from the University of Phoenix said his decision was made with a "heavy heart," adding that he "did come here with the sincere intent of serving a full term with you as I originally committed to Secretary [Ryan] Zinke."

During his tenure, Sheehan made a concerted push for help with addressing FWS's \$1.3 billion deferred maintenance backlog.

"Some of these areas get to a point where we just have to shut them off for public use, because of public safety," Sheehan told E&E News earlier this year. "Some are closed for seismic standards. Many others [are closed] because restrooms, boardwalks, visitor centers just aren't usable or safe."

He has also had to work within the administration's overall budget constraints, which included proposed cuts in FWS deferred maintenance, and he has championed some controversial policies, such as a decision to reverse an Obama-era ban on some pesticides and genetically modified crops on national wildlife refuges.

Yesterday, the Center for Biological Diversity and Center for Food Safety notified FWS that they would sue over the policy enunciated by Sheehan in an Aug. 2 memo ([E&E News PM](#), Aug. 8).

"Greg Sheehan has been an incredible asset to the Interior team and was tremendous in helping Secretary Zinke expand access for hunting and fishing on over a quarter million acres of public lands across the country," Interior spokeswoman Heather Swift said in a statement today. "We will miss working with him and wish him and his family nothing but the best."

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Heather Swift
Press Secretary

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