



# Infrastructure Investment and Jobs Act

## FLASH REPORT: ECOSYSTEM RESTORATION AND RESILIENCE PROGRAMS THE U.S. DEPARTMENT OF THE INTERIOR PREPARES TO SPEND \$1.36 BILLION

The President signed the Infrastructure Investment and Jobs Act (IIJA), Pub. L. No. 117–58, into law on November 15, 2021. The IIJA (§ 40804, “Ecosystem Restoration,”<sup>1</sup> and Title VI, “Department of the Interior, Environment, and Related Agencies”) provides new and additional funding to the Office of the Secretary (OS) and the U.S. Fish and Wildlife Service (FWS) for ecosystem restoration and resilience programs.

The ecosystem restoration funds are provided to restore habitat connectivity for aquatic species, advance habitat restoration, address the threat of invasive species, provide conservation of at-risk and listed endangered species, and deliver benefits to ecosystems. The IIJA specifically authorized and appropriated \$1.36 billion for fiscal years (FYs) 2022 through 2026 for the U.S. Department of the Interior (DOI) to administer Federal, State, and Tribal programs (see Figure 1).

We are issuing this flash report to provide information regarding these programs. We describe OS funding for ecosystem restoration projects as well as each major program administered by the FWS identified in the IIJA: the National Fish Passage Program, Klamath Basin Restoration, Sagebrush Steppe Ecosystem, the Delaware River Basin Restoration Program, and Lake Tahoe Invasive Species Management. We also discuss program risks, such as overlapping funding and potential capacity limitations across bureaus, offices, and external partners.

**Figure 1: IIJA DOI Funds for Ecosystem Restoration and Resilience Programs**

Bureau/Office	Purpose	Amount (\$)
OS	Collaboration with States, Tribes, and local communities through Activities 1–10 (see Figure 2)*	873,325,000
	Salaries, Expenses, and Administration (up to 3%)	27,150,000
FWS	Regional and National Funded Programs (see Figure 6)*	452,725,000
<b>Total</b>		<b>\$1,353,200,000*</b>

\* The IIJA requires 0.5 percent of the total DOI ecosystem restoration funds, or \$6,800,000, to be directly transferred to the DOI Office of Inspector General for oversight for both § 40804 (\$4,525,000) and Title VI, “Department of the Interior, Environment, and Related Agencies” (\$2,275,000).

<sup>1</sup> 16 U.S.C. § 6592(a).



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## Abbreviations in this Report

Full Name	Abbreviation
Bureau of Indian Affairs	BIA
Bureau of Land Management	BLM
Bureau of Reclamation	BOR
Infrastructure Investments and Jobs Act	IIJA
National Park Service	NPS
Office of Insular Affairs	OIA
Office of Inspector General	OIG
Office of Management and Budget	OMB
Office of the Secretary	OS
U.S. Department of Agriculture	USDA
U.S. Fish and Wildlife Service	FWS
U.S. Forest Service*	USFS
U.S. Geological Survey	USGS

\* The USFS is an agency under the USDA.

## Definitions

An **ecosystem** is the natural environment that includes plants and animals that live and interact within that environment.

**Ecosystem restoration** is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed to make the ecosystem sustainable, resilient, and healthy under current and future conditions.

**Ecosystem resiliency** is the capacity for an ecosystem to respond to agitation or disturbance by resisting damage and recovering quickly.

A **habitat** is an area, occupied or unoccupied, that provides physical and biological features needed for species' life processes and reproduction.

**Aquatic species** are plants and animals that depend on water for a least one stage of their lives.

**Invasive species** are plants and animals that are not native to an ecosystem and cause—or likely cause—environmental harm to the habitat or natural functions.

**Endangered species** include any species that are in danger of extinction according to the Endangered Species Act.

Animals and plants that are in a decline and may be in danger of extinction can be considered “**at-risk.**” These species are proposed, petitioned, or candidates for listing as endangered species.

A **watershed** is all the land that water moves across or under while flowing to a specific body of water. A watershed includes the land and water as well as the impacted plants, animals, and humans.



The DOI stated<sup>2</sup> that ecosystem restoration funds will be used to collaborate with States, Tribes, and local communities to invest millions of dollars annually. The DOI has said that these funds will be directed to projects to benefit several ecosystems by restoring habitat connectivity for aquatic species and advancing habitat restoration, controlling invasive species, and conserving at-risk and endangered species. According to the DOI, the funds will also be used to advance healthy forests, detect and eradicate invasive species, increase supply and availability of genetically appropriate seeds, restore recreation sites and National Parks, and mitigate hazards on mined lands.

The DOI created a Departmentwide Ecosystem Restoration Working Group, which includes the Office of the Solicitor. The working group, in addition to determining funding allocations, is also reported to be coordinating with the Office of Policy Analysis, activity subgroups, and the Office of Planning and Performance Management to establish monitoring and evaluation processes.

## IIJA Funds

The IIJA (§ 40804, “Ecosystem Restoration”) provides \$905 million to the OS for FYs 2022 through 2026 for ecosystem restoration and resilience programs.<sup>3</sup> The \$905 million will fund 7 of 10 activities described in § 40804 (see Figure 2).<sup>4</sup>

The IIJA provides funding to both the DOI and the USDA for ecosystem restoration and requires agency coordination for certain activities. The DOI and the USDA must submit to Congress a detailed description and estimation of costs for each project under Activity 1a for the next year’s planned spending no later than 90 days before the end of each fiscal year.

**Figure 2: DOI Ecosystem Restoration Activities Under § 40804 of the IIJA**

Activity	Description	Total Allocation (\$)
1a	Contracts to Restore Ecological Health on Federal Lands	50,000,000
1b	Working Capital Fund (for Activity 1a Contracts)	100,000,000
2	Good Neighbor Agreements with States and Tribes	40,000,000
4	Grants to States and Tribes for Voluntary Restoration	400,000,000
6	Invasive Species	100,000,000
7	Resilient Recreation Sites on Federal Lands	45,000,000
8	Revegetation and Hazard Mitigation on Mined Lands	100,000,000
9	National Revegetation Effort Including National Seed Strategy	70,000,000
<b>Total</b>		<b>\$905,000,000</b>

At Glen Canyon National Recreation Area, the NPS works with its partners to offer decontamination services for non agency controlled vessels (other than concessioner, contractor, and permittee) observed entering or exiting the park with confirmed visible or detectable attached quagga mussels or other aquatic invasive species when needed.

Source: NPS.



<sup>2</sup> “Ecosystem Restoration,” DOI. Available at <https://www.doi.gov/priorities/investing-americas-infrastructure/ecosystem-restoration>.

<sup>3</sup> The USDA Secretary received \$1.225 billion for FYs 2022 through 2026.

<sup>4</sup> The USDA is responsible for Activity 5 and must coordinate with the DOI for Activities 3 and 10 in § 40804.



# Office of the Secretary

The OS is accomplishing the activities by allocating the funding to DOI bureaus and offices to complete projects as well as the National Fish and Wildlife Foundation to administer grants for States, Tribes, and territories. The OS stated that it may revise future allocations based on input from bureaus and offices, States, Tribes, territories, and other stakeholders. OS officials stated that planned funding levels in FYs 2023 and 2024 are intended to advance urgent efforts to combat drought, wildfires, and flooding, among other conservation challenges.

## Highlighted Projects

The OS provided FY 2022 funds to bureaus and offices to complete restoration projects that are eligible for funding under IIJA § 40804. (See Figure 3 for projects by bureau and Figure 4 for some of the significant FY 2022 projects.)

**Figure 3: FY 2022 § 40804 Funding by Bureau**

Bureau/Office	Funding (\$)
BIA	5,151,266
BLM	25,808,971
BOR	1,505,512
NPS	12,902,434
OIA	2,253,439
FWS	87,100,478
USGS	8,268,915
<b>Total</b>	<b>\$142,991,015</b>



The NPS funds and uses a native seed increase field at the Upper Colorado Environmental Plant Center in Rio Blanco County, Colorado. According to the NPS website, it is working with partners to grow, collect, store, and distribute seeds and plants for current and future restoration projects across the Western United States.

Source: NPS.

**Figure 4: FY 2022 Top Funded Projects by Bureau and Office**

Bureau/Office	Project	Funding (\$)
BIA	Deploying National Revegetation and Seed Strategy projects. <b>(Activity 9)</b>	800,000
	Addressing Tribal capacity for identifying and treating invasive species. <b>(Activity 6)</b>	800,000
BLM	Providing support to continue systematic stabilization of closed Federal claims and abandoned mines in the watershed and addressing stream alignment issues that contribute to erosion of the Nome Creek Road. <b>(Activity 8)</b>	1,000,000
NPS	Eradicating invasive mosquitoes at Haleakala National Park. <b>(Activity 6)</b>	6,000,000
USGS	Deploying eDNA (organismal DNA that can be found in the environment) and READI Net (a network of robotic environmental DNA samplers to enhance the early detection of aquatic biological threats). <b>(Activity 9)</b>	1,237,795
OIA	Cleaning up wetland in Leone village and replanting more than 1,000 mangrove seedlings and riparian tree species. <b>(Activity 9)</b>	389,025
	Creating a habitat for the endangered tree boa by removing invasive rats on Savana Island. <b>(Activity 6)</b>	297,241
	Detecting, eradicating, and implementing preventative measures against the coconut rhinoceros beetle. <b>(Activity 6)</b>	280,351
FWS	Creating the America the Beautiful Challenge. <b>(Activity 4)</b>	71,500,000
	Constructing a new propagation facility to prevent the extinction of the endangered Hawaiian Honeycreepers. <b>(Activity 4)</b>	6,500,000
<b>Total</b>		<b>\$88,804,412</b>



Giant salvinia—an invasive free-floating fern native to southeastern Brazil—is growing along the Colorado River in Yuma, Arizona. Giant salvinia has been in the lower Colorado River since 1999, and the BOR stated that it performs annual surveys to monitor the invasive species.

Source: BOR.

The OS requires DOI bureaus and offices to submit a portfolio of FY 2023 projects that will respond to the Ecosystem Restoration Working Group’s guiding principles for the ecosystem restoration program and seven high-level restoration and resilience goals and associated keystone initiatives (see Figure 5 for goals and initiatives). According to OS-provided guidance to the bureaus and offices, these keystone initiatives will address challenges within the restoration and resilience goals by strategically focusing funding on a specific, representative conservation challenge within the broader restoration and resilience goal. According to the DOI’s guidance to bureaus and offices, the portfolio process will be used in future funding years but could include adjustments to the keystone initiatives.

**Figure 5: Ecosystem Restoration Working Group’s Restoration and Resilience Goals and Associated Keystone Initiatives**

Restoration and Resilience Goal	Associated Keystone Initiative
1. Resilient Islands	Foster native biodiversity in island ecosystems.
2. Resilient Coasts	Rehabilitate and realign coastal salt marsh.
3. Fire-Resilient Ecosystems	Protect and expand the core in sagebrush systems.
4. Drought-Resilient Basins	Build and expand drought resilience in the Klamath Basin.
5. Resilient Freshwater Systems	Gravel-to-Gravel: Assess and restore salmon habitat in the Arctic-Yukon-Kuskokwim Basin.
6. Conserve and Restore Cultural Resources	Bison, Birds, and Bees: Restore and protect grasslands for healthy wild bison herds, migratory bird populations, and critical pollinators.
7. Healthy Ecosystems for Healthy Human Communities	Improve human and environmental health in Appalachia.

### Tribal Spotlight: OS Funding

Pursuant to guidance from the OS, a minimum of 7 percent of funds for bureau and office ecosystem restoration activities will be awarded to Tribes across all activities except Activity 1b, “Working Capital Fund.” Activity 4 funds for “Grants to States and Tribes for Voluntary Restoration” will also seek to achieve this minimum funding level.



Title VI of the IJA provides \$455 million to the FWS for FYs 2022 through 2026 for the National Fish Passage Program and resource management of four regional ecosystem restoration areas (see Figure 6).

**Figure 6: IJA FWS Ecosystem Restoration Programs and Funding**

Program	Amount Authorized (\$)
National Fish Passage Program	200,000,000
Klamath Basin Restoration	162,000,000
Sagebrush Steppe Ecosystem	50,000,000
Delaware River Basin Restoration Program	26,000,000
Lake Tahoe Invasive Species Management	17,000,000
<b>Total</b>	<b>\$455,000,000</b>



**176%  
Funding  
Increase**

In addition to IJA funds, each of these preexisting FWS programs also received FY 2022 general appropriations. The FY 2022 IJA funding represents a 176 percent increase in the annual appropriated funds for the FWS-specific program funding (see Figure 7). With such a significant increase in funds, the FWS will need to evaluate staff capacity and hiring decisions to ensure continuous oversight and monitoring of projects so that they are completed and that benefits are achieved.

**Figure 7: FY 2022 General Appropriations Compared to FY 2022 IJA Funds**

Program	FY 2022 Appropriated Funds (\$)	FY 2022 IJA Funds (\$)	Total FY 2022 Funds (\$)
National Fish Passage Program	18,598,000	39,800,000	58,398,000
Klamath Basin Restoration	14,632,000	32,238,000	46,870,000
Delaware River Basin Restoration Program	10,500,000	5,174,000	15,674,000
Sagebrush Steppe Ecosystem	3,250,000	9,950,000	13,200,000
Lake Tahoe Invasive Species Management	4,338,000	3,383,000	7,721,000
<b>Totals</b>	<b>\$51,318,000</b>	<b>\$90,545,000</b>	<b>\$141,863,000</b>



## The National Fish Passage Program

The National Fish Passage Program works with local communities on a voluntary basis to restore rivers and conserve the United States aquatic resources by removing or bypassing barriers. (Barriers are anything that prevent or reduce the ability of aquatic species to move where needed to survive and complete their lifecycle.) Figure 8 describes the different types of barriers to fish passage.

The rivers, streams, and coastal systems of North America once supported vast annual runs of fish such as Atlantic salmon, American shad, blueback herring, and American eel; now, some of these species (e.g., Atlantic salmon) are listed as a threatened or endangered species due the effects of barriers.



According to the FWS, this too-small culvert perched above a creek is impeding 6 miles of rearing habitat for juvenile coho salmon in Gustavus, Alaska. This creek is also used by Dolly Varden and cutthroat trout. Through IJA funding, this culvert will be replaced with a timber bridge.

Source: FWS.

**Figure 8: FWS-Identified Physical and Environmental Fish Passage Barriers and Their Effects on Fish and Other Aquatic Species**

Barrier	Description and Effects
Culvert	Structures that channel water past an obstacle or to an underground waterway. An undersized or improperly placed culvert can impede or totally block fish and aquatic species from passing.
Dam	Barriers preventing the flow of water. Some fish are very poor jumpers and cannot get past even low-height dams.
Levee	Structures (usually earthen) that run parallel to the course of a river. Levees often cut off access to wetland areas that are critical to many aquatic species.
Sediment	Solid material that settles to the bottom of a body of water. Increased deposition of sediment in waterway changes the habitat and structure of the area and can result in the habitat becoming unpassable for aquatic species.
Temperature	Aquatic species are sensitive to changes and extremes in water temperature. Abnormal increases or decreases in water temperature can prevent fish movement.
Water Diversion	Water is sometimes diverted from its natural course for agricultural or other use. Fish can become redirected along with the water or can become caught on the water intake structure. Also, water diversions reduce the amount of habitat available to aquatic species by reducing the amount of water available in the stream.
Water Flow	Fish movement is affected by the velocity of the water. High velocities or lack of water can impede fish passage.
Water Quality	Fish may not be able to survive in or migrate through an area with poor water quality, such as low oxygen levels or high levels of contaminants.

Source: "What is Fish Passage," FWS. Available at <https://www.fws.gov/story/what-fish-passage>.



# U.S. Fish and Wildlife Service



The removal of the Bloede Dam in Maryland’s Patapsco Valley State Park in 2018 was funded in part by the FWS. The FWS stated that the removal restored to the Patapsco River and its tributaries more than 65 miles of spawning habitat for blueback herring, alewife, American shad, hickory shad, and American eel. According to the FWS, in 2018, there were 36 juvenile American eels using the eel passage on the dam, and, in 2022, there were an estimated 36,500 in the river. Image above before removal and image below after removal.

Source: FWS.



According to the FWS, from 1999 through November 2022, the program has worked with more than 2,000 local communities, private landowners, States, and Tribes to remove or bypass 3,400 barriers to fish passage and reopen access to 61,000 miles of upstream habitat and 193,783 acres of wetland habitat for fish and other animals.

## IIJA Funds

The IIJA provided the FWS with \$200 million for restoring fish and wildlife passage by removing barriers and providing technical assistance—such as planning, design implementing, and monitoring—for fish passage projects under the National Fish Passage Program. Specifically, the FWS announced that it plans to spend approximately \$40 million per year over 5 years to restore degraded aquatic habitats, decrease public safety hazards, and improve infrastructure resilience by reducing flood risks, removing obsolete dams, and improving water delivery for local agriculture irrigation districts.

## Highlighted Projects

The National Fish Passage Program had 40 IIJA-funded projects in FY 2022, which totaled more than \$37 million. Figure 9 shows the top five funded FY 2022 projects, totaling \$17,286,321.

**Figure 9: The National Fish Passage Program’s Top FY 2022 Projects**

Description	Total Funding (\$)
Numana Dam Fish Passage Project, which supports the recovery of the Cui-ui and Lahontan cutthroat trout in Washoe, Nevada.	8,292,215
Four Dam Initiative, which will ultimately reconnect all migratory fish passage to the upper watershed of the Virgin River System in Zion National Park, Utah.	3,520,000
Replacement of 13 barriers (mostly on Tribal land), which will result in the recovery of the Apache trout and ultimately delist the fish from the endangered species list in the Navajo/Apache Region of Arizona.	2,310,000
Replacement of an undersized culvert with a channel-spanning bridge to restore Coho salmon’s access to spawning and rearing habitat in one of the largest and most important salmon streams near Tyonek, Alaska.	1,614,106
High Street dam removal and riverbank restoration along the Taunton River system, which will reconnect alewife, blueback herring, American eel, sea lamprey, and American shad access to the river and habitat in Plymouth, Massachusetts.	1,550,000
<b>Total</b>	<b>\$17,286,321</b>



## Klamath Basin Restoration

The Klamath Basin covers more than 15,700 square miles across southern Oregon and northern California with the Klamath River running through the basin and flowing into the Pacific Ocean. According to the FWS, the Klamath Basin hosts approximately 80 percent of the migratory birds along the Pacific Flyway—a north-to-south flyway for birds migrating from breeding grounds in Alaska and Canada to wintering areas in South America—and hosts the largest wintering concentration of bald eagles in the lower 48 States.

Planning and executing restoration projects in the Klamath Basin is particularly challenging, as there are many Federal and State agencies, Tribes, irrigators, legislators, local governments, and local communities within the basin whose interests may be affected by this project.

### Impact of Drought Conditions on Klamath Basin Wildlife

Over the past 20 years, the Klamath Basin has faced challenges, such as ongoing drought conditions, limited water supply, and major wildfires. The BOR's *2021 SECURE Water Act Report* stated that there is an expected snowpack decline of 30-to-40 percent by 2030 as compared to snowpack from 1950 to 1999 and an expected 60-percent decline by the 2070s. Snowpack provides a significant portion of the water for the basin. The report also stated that, due to warming, more winter precipitation will occur as rainfall instead of snow, which will increase runoff basinwide. Runoff occurs when there is more water than the land can absorb and ultimately results in less water being available during the summer months.

According to the FWS, the Klamath River once supported the third most productive salmon run on the West Coast, and Upper Klamath Lake supported robust populations of Lost River and shortnose suckers, which are species of fish that can only be found in the upper Klamath River, in the Lost River Basins, and in the Klamath Basin National Wildlife Refuge Complex. Currently, Klamath Basin fish populations are in decline, including both spring-run and fall-run Chinook salmon and several species of fish that are listed under the Endangered Species Act, such as Lost River and shortnose suckers, bull trout, and coho salmon. On March 10, 2023, the National Oceanic and Atmospheric Administration took action to ban recreational and commercial spring ocean fishing to protect the Klamath River fall Chinook salmon, which had the second lowest abundance forecast since 1997.

The Tule Lake and Lower Klamath National Wildlife Refuges are part of the Pacific Flyway, providing critical waterfowl breeding, molting, and migration areas. In August 2022, the refuges announced closures to all game bird and waterfowl hunting for the upcoming fall and winter seasons. The FWS press release stated that the closures were due to ongoing and severe drought conditions and lack of available habitat—including food, water, and shelter—to support upland game and migratory water birds.



## IIJA Funds

The IIJA provided the FWS with \$162 million for Klamath Basin restoration activities. The FWS plans to spend approximately \$32 million per year over 5 years for activities that include habitat restoration, fish hatchery construction, and water quality and quantity improvements to conserve native Klamath Basin fish and wildlife species.

## Highlighted Projects

The FWS stated it has allocated \$30 million over the first 3 years to expand its Klamath Falls National Fish Hatchery with new ponds and updated hatchery and maintenance buildings; the FWS expects the project to be completed in 2026. The hatchery will focus on the Lost River and shortnose suckers in the Upper Klamath Basin, which are culturally significant to the

Klamath Tribes. The FWS' goal is to stabilize the fish population by 2032, though the hatchery will continue to rear the fish as the FWS continues to work toward full recovery of the species.

The FWS allocated \$2,668,147 of FY 2022 funds for improving wetland habitat at the Tule Lake and Lower Klamath Wildlife Refuges. Funding will be used to construct four pumping stations to improve water supply reliability and functionality on more than 20,000 acres of wetland habitat on both refuges.

The FWS also allocated \$1,198,378 of FY 2022 funds for transponder tags that will develop a basinwide fish tracking infrastructure to monitor the success of Klamath Basin restoration efforts.



The Lower Klamath National Wildlife Refuge in Tulelake, California, is nearly dry as seen in the comparison photos from 2009 (left) to 2022 (right). The wetland habitat on the Lower Klamath National Wildlife Refuge has been subject to chronic water shortages due to limited water supply.

Source: FWS.



## Tribal Spotlight: Importance of FWS Klamath Basin Funds

The IJA provides funding to restore culturally significant resources to the six federally recognized Tribes within the Klamath Basin. Below, we highlight the significance of fish populations for three Tribes within the Klamath Basin as explained to us by Tribal officials and summarized in materials provided to us by Tribal representatives.

### KLAMATH TRIBES

The Klamath Tribes are located within the Klamath Basin of Oregon and include the Klamath, the Modoc, and the Yahooskin-Paiute. The Klamath Tribes have approximately 5,300 enrolled members. According to materials provided to us by the Klamath Tribes, the Lost River sucker (C'WAAM) and shortnose sucker (Koptu) not only provide sustenance for the Klamath Tribes, but they are also essential to the Tribes' ability to maintain and exercise cultural and spiritual practices. These species are indigenous to the Klamath Basin. The materials provided by the Klamath Tribes stated that they have a responsibility to restore and steward the Lost River and shortnose suckers and voluntarily stopped fishing for suckers in 1986, and now—for ceremonial purposes—catch and release only two fish each year.

### HOOPA VALLEY TRIBE

The Hoopa Valley Tribe is located on the lower reaches of the Trinity River and Mid-Klamath River and has approximately 3,000 enrolled members. According to a Hoopa Valley Tribal official, the Hupa have maintained a strong tie to their homeland and sacred sites. Salmon is a significant part of the Hupa people's diet, way of life, religion, and cultural identity. According to the Hoopa Valley Tribal official, many traditional ceremonies require salmon as an offering to heal the ailments of Tribal members. The Hoopa Valley Tribe also holds the Boat Dance to kick off the fall-run Chinook salmon. In addition to salmon, the steelhead and the lamprey eel runs on the Trinity River are vital to the Tribe for sustenance.

### YUOK TRIBE

The Yurok Tribe currently has more than 5,000 enrolled members and is the largest Tribe in California. According to a Yurok Tribal official, the Klamath and Trinity Rivers are the lifeline of the Yurok people because most of their food supply—salmon (ney-puy), sturgeon (Kaa-ka), and candlefish (kwor-ror)—are in the river. The Yurok Tribe has depended on the Klamath River salmon for sustenance and ceremony. According to the Yurok Tribal official, in exchange for the river's bounty, the Yurok Tribe has a cultural obligation to be a strong steward of the intricately interconnected watershed. To protect the salmon, the Yurok Tribe has cancelled its commercial salmon fishery for the past seven seasons. The Tribe continues to harvest salmon but only for sustenance due to the decline in fish populations.



The Lost River sucker has been listed as an endangered species under the Endangered Species Act since 1988. Since 2002, the population has decreased by almost 65 percent. The Klamath Tribes Fish Hatchery and the Klamath Falls National Fish Hatchery are both working to supplement the population.

Source: Klamath Tribes.



According to the Hoopa Valley Tribe, the Hupa People have traditionally used "eel baskets," which are funnel traps, to catch Pacific lamprey eel. The eels are directed into the trap through a large opening that then narrows down to a hole just big enough for eels to swim through. The Hupa People made traditional traps from willow branches (left) but now use different materials, such as bicycle rims and wire (right).

Source: Hoopa Valley Tribe.



In 2018, the Yurok Tribe and a nonprofit created the Blue Creek Salmon Sanctuary along the 25-mile Blue Creek Stream in the Northern Coast Ranges of California. At 15,000 acres, the Blue Creek Salmon Sanctuary supports runs of wild Chinook and coho salmon as well as steelhead trout.

Source: Yurok Tribe.



## Sagebrush Steppe Ecosystem

The sagebrush steppe ecosystem is the largest contiguous ecotype in the United States, comprising one-third of the land mass of the lower 48 States and spanning more than 175 million acres across 13 Western States. More than 350 species of plants and wildlife across these States—such as pronghorn, elk, mule deer, and greater sage-grouse—rely on sagebrush for their habitat.

According to the USGS' 2022 report, *A Sagebrush Conservation Design to Proactively Restore America's Sagebrush Biome*, to halt sagebrush ecosystem degradation, 1.3 million acres per year will need to be targeted for restoration and management. The FWS will be using the Sagebrush Conservation Design, which it co-produced with the Western Association of Fish and Wildlife Agencies and other Federal and nongovernmental partners, to plan distribution of IIJA funds.

The FWS Sagebrush Ecosystem Team (SET) is the lead entity for IIJA-funded sagebrush steppe recovery projects. SET is collaborating to defend and grow intact, functioning sagebrush ecosystems and mitigate primary threats to sagebrush ecological health.

### IIJA Funds

The IIJA provided the FWS with \$50 million for sagebrush steppe ecosystem restoration. IIJA

## DOI-Identified Threats to the Sagebrush Ecosystem

**Invasive plants and animals** can threaten the sagebrush ecosystem. These invasive species include juniper and pinyon pine trees, cheatgrass and Medusahead, and wild horses.

**Human modification** has also played a role in the reduction of the sagebrush ecosystem through urban development, resource extraction, and energy development. Converting native sagebrush to other landcover results in habitat loss for wildlife dependent on sagebrush, including the sage-grouse and the Brewer's sparrow. Additionally, humans have contributed to invasive plant encroachment through movement of transported goods as well as by machinery and vehicles (the plants stick to the goods and vehicles and are spread to another location).

funds will also be used to (1) protect the intact core sagebrush ecosystems and (2) grow them by working outward to more degraded sagebrush ecosystems. According to the FWS' spend plan, the FWS is planning to spend \$10 million per year over 5 years to expand work with partners to restore and conserve strategic areas within the sagebrush ecosystem.

Wild horses among sagebrush near Lander, Wyoming. Wild horse populations contribute to the movement of invasive plants by disturbing the invasive plants in one area and then introducing the invasive plants to a new area. This occurs because the plants can stick to the horses and move with them or be kicked up into the air and spread to another location.

Source: OIG.





Two male greater sage-grouse near Seedskaadee National Wildlife Refuge in Wyoming. The sagebrush of the Intermountain West is the only habitat where greater sage grouse can live. Greater sage-grouse currently occupy 56 percent of their original range because of habitat loss, degradation, and fragmentation. Additionally, the sage grouse primarily eat leaves from the sagebrush.

Source: FWS.



## Highlighted Projects

In addition to the planned IIJA spending, the FWS anticipates that partners will contribute \$22.5 million in matching funds for sagebrush ecosystem restoration projects in FYs 2022 and 2023. Many of these projects are intended to increase resilience to drought and rangeland wildfires by restoring water resources and combating nonnative grasses that

increase the threat of wildfire, reduce habitats for wildlife, and reduce forage for livestock. Below are FWS descriptions of FY 2022 projects and who the FWS anticipates working with:

- The FWS will work with the USDA, Wyoming, the Eastern Shoshone and Northern Arapaho Tribes, local governments, and other partners to manage invasive grasses and defend approximately 100,000 acres of high-quality sagebrush habitats from further deterioration on mixed-ownership lands in Wyoming. A total of \$6.9 million will be invested into these efforts: \$1.5 million in IIJA funds from the FWS and \$5.4 million in partner matching funds.
- The FWS will also work with Idaho, the USDA, the BLM, and other partners to accelerate efforts to manage more than 600,000 acres of encroaching conifers across key multijurisdictional sagebrush landscapes. A total of \$5.24 million will be invested into these efforts: \$240,000 in IIJA funds from the FWS and \$5 million in partner matching funds.
- The FWS will work with universities, the USDA's Natural Resources Conservation Service, and other partners to hold field and virtual workshops, create new custom technical products and content (e.g., field guides and brochures), and develop a training curriculum to equip land managers to combat invasive grasses. A total of \$1.5 million will be invested into these efforts: \$300,000 in IIJA funds from the FWS and \$1.2 million in partner matching funds.

## Tribal Spotlight: Dependence on the Sagebrush Ecosystem

According to the FWS, the sagebrush ecosystem includes both Tribal and non-Tribal rural communities that depend on natural resource-based economies, such as livestock production and energy development. The FWS stated that IIJA funding is being used to restore, protect, and enhance the sagebrush ecosystem for economic, cultural, and recreational activities.



## The Delaware River Basin Restoration Program

The Delaware River Watershed covers 13,500 square miles of land and water in New York, Pennsylvania, New Jersey, and Delaware. More than 8 million people live on the watershed, and it provides drinking water to more than 13 million people. The watershed is home to native brook trout, red knots, river herring, freshwater mussels, oysters, and many other species that are economically, ecologically, and culturally important to the region. The Delaware River is the longest undammed river east of the Mississippi, has 2,000 tributaries, and connects cities, towns, forests, mountains, marshes, beaches, and more.

Congress authorized the Delaware River Basin Restoration Program in 2016 through the Delaware River Basin Restoration Act (Pub. L. No. 114-322) and directed the DOI to create a basinwide strategy to maximize conservation outcomes. The DOI worked with partners to conserve and restore lands and waters to support wildlife and established the following focus areas:

1. Reducing flooding and runoff.
2. Restoring fish and wildlife habitats.
3. Improving water quality.
4. Enhancing safe recreational access for the public.

In 2021, the FWS facilitated the establishment of the Delaware River Watershed Conservation Collaborative with the Delaware River watershed States, other agencies, and partner organizations. The conservation collaboration is a voluntary partnership that sets funding priorities with the goal of ensuring that investments reflect shared goals and contribute to large area conservation gains.



Funding from the Delaware Watershed Conservation Fund went to a nonprofit to remove the Columbia Dam in Knowlton Township, New Jersey. The dam was originally constructed for ice harvesting and to supply power, but it also stopped American shad from reaching spawning grounds. According to New Jersey Fish and Wildlife, within 6 months of the last portion of the dam being removed, American shad were seen upstream of the dam for the first time in more than 110 years.

Source: FWS.



## IIJA Funds

The IIJA provided the FWS with \$25 million for continued conservation efforts under the Delaware River Basin Conservation Act. The FWS is planning to spend approximately \$5 million a per year over 5 years for activities to protect and make ecosystems and communities more resilient to change, including ensuring clean water and providing flood protection.

## Highlighted Projects

The FWS provides the National Fish and Wildlife Foundation with funding to award grants through the Delaware Watershed Conservation Fund, which has the mission of contributing to the social health and economic vitality of the communities in the Delaware River Watershed. With IIJA funding, the foundation awarded 12 Delaware Watershed Conservation Fund projects in FY 2022, totaling more \$4.7 million. Figure 10 shows the top five funded FY 2022 projects, totaling \$3,511,800.

**Figure 10: Delaware Watershed Conservation Fund’s Top FY 2022 IIJA Projects**

Description	Total Funding (\$)
Removing three dams on the Bushkill Stream in Easton, Pennsylvania, to restore fish passage.	1,000,000
Removing the Spring Garden Dam on Neshaminy Creek in Newtown, Pennsylvania, to restore fish passage for American shad, alewife, and blueback herring.	750,000
Improving passage for aquatic organisms using nature-based solutions in the Upper Delaware River watershed in New York.	635,500
Restoring streambank along Bushkill Creek at the Jacobsburg Environmental Education Center in Bushkill Township, Pennsylvania.	626,300
Collecting data, designing, consulting, and permitting for fish passage at Dam No. 5 on the Brandywine Creek in Delaware.	500,000
<b>Total</b>	<b>\$3,511,800</b>

## Tribal Spotlight: Working With Tribes

The Delaware River Watershed Conservation Collaborative Steering Committee has three members from the indigenous Lenape people of the Delaware River Watershed. The FWS stated that it is collaborating with these Tribes with the goal of including their input in the Delaware River Basin projects.



## Lake Tahoe Restoration Invasive Species Management

Lake Tahoe is one of the deepest lakes in the world at 1,645 feet and is designated as an Outstanding National Resource Water under the Clean Water Act (33 U.S.C. §§ 1251–1389).<sup>5</sup> At an elevation of 6,225 feet, Lake Tahoe is also the largest alpine lake in North America. Furthermore, the Lake Tahoe Basin is a recreational resource, contributing significantly to the California, Nevada, and United States economies by bringing in approximately 15 million visitors each year. As set forth in the Lake Tahoe Restoration Act (Pub. L. No. 106–506), the economy in the Lake Tahoe Basin depends on the conservation and restoration of the area.

The *Lake Tahoe Region Aquatic Invasive Species Action Agenda 2021–2030* identified the following major threats to Lake Tahoe and the Region:

- Loss and degradation of wetlands.
- Tree mortality caused by fire suppression and drought.
- Loss of biological diversity.
- Wildfires.
- Insect infestations.
- Aquatic and terrestrial invasive species.

The FWS is working closely with a Lake Tahoe planning agency and a multipartner Aquatic Invasive Species Coordinating Committee (which consists of 40 public, private, and Tribal stakeholders) to identify priority areas for funding under the IIJA.

### IIJA Funds

The IIJA provided the FWS with \$17 million to implement the Lake Tahoe Restoration Act's section

on invasive species management.<sup>6</sup> The FWS is planning to spend \$3.4 million per year over 5 years to collaborate with partners and implement strategies to prevent the introduction and spread of aquatic invasive species in the Lake Tahoe region.

The IIJA funds will be used to collaborate with partners and implement and evaluate the control measures taken under the *2014 Lake Tahoe Region Aquatic Invasive Species Management Plan* and the *2019 Lake Tahoe Region Aquatic Invasive Species Action Agenda 2021–2030*. The action agenda's goal is to increase the pace and scale of aquatic invasive species control, and it identifies priorities for aquatic invasive species investment in the coming years. IIJA projects will focus on removing aquatic invasive species, limiting aquatic invasive species migration, reestablishing a native food chain for the ecosystem, and providing adaptive program management strategies.



The Lahontan cutthroat trout has been listed as an endangered species under the Endangered Species Act since 1970. Its population has dwindled due to the introduction of nonnative sportfish such as lake trout, rainbow trout, and kokanee salmon.

Source: FWS.

<sup>5</sup> Specifically, Lake Tahoe is included as part of the Act's antidegradation policy. 40 C.F.R. § 131.12. Lake Tahoe is identified as "impaired" under the Clean Water Act § 303(d) due to its nitrogen, phosphorus, and sediment levels.

<sup>6</sup> See Pub. L. No. 114–332 § 3603(d), 130 Stat. 1786–1787 (2016).



# U.S. Fish and Wildlife Service

The Taylor and Tallac creeks and marshes on the southwest shore of Lake Tahoe are infested with approximately 17 acres of Eurasian watermilfoil—an invasive aquatic weed that was introduced to Lake Tahoe in the early 1960s. According to the FWS, these creeks have the potential to provide habitat for every native species residing in the Tahoe basin. The FWS provided \$1,550,000 in funds to the Lake Tahoe planning agency, which stated that it is coordinating with the USFS’ Lake Tahoe Basin Management Unit to install barriers that smother invasive aquatic plants and block sunlight to prevent photosynthesis. Barriers can be seen in the circled portion of the photo.

Source: FWS.



## Highlighted Projects

The FWS distributed FY 2022 IIJA funding in the amounts of approximately \$2.3 million and \$700,000 through cooperative agreements awarded to a Lake Tahoe planning agency and a Tribe respectively. The objectives of the cooperative agreements are aimed to benefit the Lahontan cutthroat trout and Lake Tahoe ecosystem, climate change resiliency, and disadvantaged communities. Figure 11 shows the allocation of the FY 2022 funding.

**Figure 11: FY 2022 IIJA Funding for Lake Tahoe Projects**

Project	Cost (\$)
Taylor-Tallac Aquatic Invasive Species Control Project	1,550,000
Permanent Watercraft Inspection Stations	500,000
Lake Tahoe Marina Redesign Feasibility Study	206,229
Bilingual Aquatic Invasive Species Education and Outreach	64,635
<i>Subtotal</i>	<i>2,320,864</i>
Tribe Priorities	681,724
<b>Total</b>	<b>\$3,002,588</b>

## Tribal Spotlight: Invasive Species Impact

According to the FWS and Tribal officials, Lake Tahoe and the Lahontan cutthroat trout are culturally significant to the Washoe Tribe of Nevada and California, whose ancestral lands are surrounding Lake Tahoe. According to the FWS, Lake Tahoe’s fisheries were once abundant with the Lahontan cutthroat trout, which are the only native trout to the basin; these fish have significantly declined and are listed as a threatened species under the Federal Endangered Species Act due to overfishing, damage to their spawning area, and introduction of nonnative fish. Lake Tahoe ecosystem restoration projects funded by the IIJA, including removal and prevention of watermilfoil, are aimed at addressing the threats to the Lahontan cutthroat trout.



# Ecosystem Restoration Program Risks

**E**cosystem restoration funding in the IIJA was not limited to the DOI—significant funding was also provided to other Federal agencies. Without coordination and collaboration, the DOI risks duplicating ecosystem restoration efforts where IIJA projects overlap. In addition, the funding provided in the Inflation Reduction Act (IRA)<sup>7</sup> could overlap with the IIJA. Further, DOI bureaus and offices have stated that their staff capacity may affect their ability to make and oversee awards. Finally, bureaus and offices must clearly state and monitor performance measures to meet restoration goals.

## Avoiding Duplicative IIJA Efforts

### Funding Awarded for Similar Activities To Other Federal Agencies

The IIJA provided Federal funding across many agencies for ecosystem restoration activities, which creates an opportunity to collaborate and leverage collective resources but also may create a risk of duplicative efforts due to similar language in the IIJA and the IRA. Potentially overlapping activities include the following:

- \$7.81 billion in funding to the USDA and the DOI for forestry, Federal land management, and wildfire-related activities, many of which relate directly or indirectly to ecosystem restoration activities.
- \$1.9 billion to the U.S. Army Corps of Engineers for ecosystem restoration construction projects.
- \$1.72 billion to the U.S. Environmental Protection Agency for restoration activities in specific water bodies, such as the Great Lakes and the Chesapeake Bay.

- \$1 billion to the U.S. Department of Transportation for the new National Culvert Removal, Replacement, and Restoration Grant Program.
- \$491 million to the National Oceanic and Atmospheric Administration for habitat restoration activities and \$400 million for restoring fish passage by removing barriers.

The OMB stated in its Memorandum M-22-12, *Advancing Effective Stewardship of Taxpayer Resources and Outcomes in the Implementation of the Infrastructure Investment and Jobs Act*, issued April 29, 2022, that the OMB and the White House Infrastructure Implementation Team will convene agencies as appropriate to consider coordinated and complementary implementation strategies for related programs across priority areas and inform program-level plans. Officials from the DOI and its bureaus and offices told us during interviews and site visits<sup>8</sup> that some coordination is taking place, but additional coordination will likely be needed to understand the funding of each awarding agency and how their programs complement each other.

### Funding Awarded for Similar Programs Within the DOI

According to OMB Memorandum M-22-12, agencies are encouraged to explore related programs for complementary or related objectives and administration goals and consider what should be addressed when formulating program-level implementation plans. The OMB also stated in the memorandum that it is available to work with an agency that is administering more than one closely related program to determine if an implementation plan should be developed for any identified groups of related programs rather than for each separate program. OMB Memorandum M-21-19, *Transmittal of Appendix C to OMB Circular A-123, Requirements for Payment Integrity Improvement*, encourages the DOI bureaus and offices that have closely related

<sup>7</sup> The President signed the Inflation Reduction Act (Pub. L. No. 117-169) into law on August 16, 2022. The Act appropriated over \$6.6 billion for programs such as drought mitigation, endangered species, Tribal climate resilience, and ecosystem restoration.

<sup>8</sup> Interviews and site visits included FWS staff as well as other Federal agencies and recipients.



# Ecosystem Restoration Program Risks

programs to consider coordinating to discuss funding for projects and the use of data analytics to identify duplicate payments across programs.

We note that there are in fact DOI programs currently administering closely related IIJA funded projects. For example, for Klamath Basin projects, the FWS and the OS must coordinate efforts because of funding overlaps. Specifically, the FWS will be investing more than \$161 million in Klamath Basin restoration projects over the next 5 years, and the OS has also identified the Klamath Basin as a keystone initiative under the Drought Resilient Basin Restoration and Resilience Goal. The OS is soliciting portfolio and project submissions from and stated that it is holding discussions with bureaus and offices before determining funding allocations in the Klamath Basin.

In addition, many of the IIJA provisions appropriated annual funding in amounts considerably greater than recent annual appropriations for existing restoration programs, initiatives, and activities (see Figure 7).

## Overlap with the IRA

Along with the IIJA, the IRA also includes provisions for activities similar to IIJA-funded ecosystem restoration activities, including:

- \$5 billion to the USFS for forest restoration, management, and planning activities.
- \$4 billion to the BOR for drought mitigation, including ecosystem and habitat restoration.
- \$2.6 billion to the National Oceanic and Atmospheric Administration for conservation, restoration, and protection of coastal and marine habitats, resources, and Pacific salmon and other marine fisheries.
- \$250 million to the NPS and the BLM for conversation, ecosystem, and habitat restoration projects.

- \$125 million to the FWS for Endangered Species Act recovery plan development and implementation.
- \$125 million to the FWS for National Wildlife Refuge System unit and State wildlife management area restoration and rebuilding, including addressing the threat of invasive species.

Risk for overlap are similar to those described above under “Avoiding Duplicative IIJA Efforts.”

## Capacity and Performance Measurements

Due to the influx of funds, several DOI officials from bureaus and offices receiving IIJA and IRA ecosystem restoration funds stated that they need to increase staff capacity to ensure compliance with guidance and provide appropriate oversight of the funds that are expended. These officials stated that they are attempting to hire employees, but some bureaus that are having capacity-building issues—such as the BLM—stated that they are at 20-to-30 percent below full-time capacity within the bureau.

Additionally, OMB Memorandum M-22-12 sets forth requirements for agencies to design programs with clear goals and objectives. According to the memorandum, these goals and objectives should be consistent with statutory requirements, informed by an understanding of the people they are meant to serve, draw from the best available data and evidence about effective strategies for similar programs and investments, and consider programmatic risks upfront.

Specifically, agencies should ensure program goals, objectives, and performance measures are included and documented in the award agreement.



## Scope and Methodology

We conducted our inspection in accordance with the *Quality Standards for Inspection and Evaluation* as put forth by the Council of the Inspectors General on Integrity and Efficiency. To accomplish our objectives, we identified the IJJA's ecosystem restoration requirements; gathered data for ecosystem restoration projects with DOI bureaus and offices; discussed program details with DOI management to determine how funds are anticipated to be spent and how data will be managed; and obtained an understanding of DOI bureau and office programs.

## LOOKING AHEAD

Given the large amount of funding that is being distributed, there is an increased risk of fraud and misuse. Our planned oversight efforts of the ecosystem restoration program include the following:

### *Planned Oversight Efforts*

- We will review contract and grant oversight and compliance with Federal regulations, award terms, and the IJJA.



## To prevent fraud, waste, and abuse, our office anticipates that we will regularly:

- Host discussions and provide training to DOI employees, grant recipients, and contractors.
- Enhance detection through data analysis and the development of sources of investigative information.
- Improve oversight through focused training of investigators, auditors, and inspectors.
- Coordinate oversight efforts throughout the Inspector General community and share results, trends, and best practices.



# REPORT FRAUD, WASTE, ABUSE, AND MISMANAGEMENT

The Office of Inspector General (OIG) provides independent oversight and promotes integrity and accountability in the programs and operations of the U.S. Department of the Interior (DOI). One way we achieve this mission is by working with the people who contact us through our hotline.



If you wish to file a complaint about potential fraud, waste, abuse, or mismanagement in the DOI, please visit the OIG's online hotline at [www.doioig.gov/hotline](http://www.doioig.gov/hotline) or call the OIG hotline's toll-free number: **1-800-424-5081**

## Who Can Report?

Anyone with knowledge of potential fraud, waste, abuse, misconduct, or mismanagement involving the DOI should contact the OIG hotline. This includes knowledge of potential misuse involving DOI grants and contracts.

## How Does it Help?

Every day, DOI employees and non-employees alike contact the OIG, and the information they share can lead to reviews and investigations that result in accountability and positive change for the DOI, its employees, and the public.

## Who Is Protected?

Anyone may request confidentiality. The Privacy Act, the Inspector General Act, and other applicable laws protect complainants. Section 7(b) of the Inspector General Act of 1978 states that the Inspector General shall not disclose the identity of a DOI employee who reports an allegation or provides information without the employee's consent, unless the Inspector General determines that disclosure is unavoidable during the course of the investigation. By law, Federal employees may not take or threaten to take a personnel action because of whistleblowing or the exercise of a lawful appeal, complaint, or grievance right. Non-DOI employees who report allegations may also specifically request confidentiality.