



PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

FISCAL YEAR 2025 DRAFT SCIENCE PLAN BUDGET AND ANNUAL WORK PLAN

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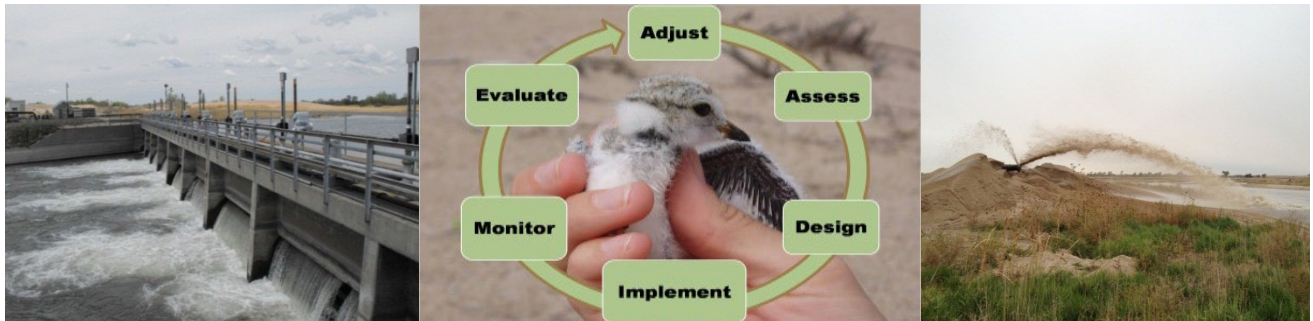
PRRIP Governance Committee (GC)
Drue DeBerry, United States Fish and Wildlife Service, 2024 GC Chair

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October XX, 2024





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Introduction

The Platte River Recovery Implementation Program (“Program” or “PRRIP”) initiated on January 1, 2007, as a basin-wide effort between the states of Colorado, Wyoming, and Nebraska and the Department of Interior to provide land, water, and scientific monitoring and research to evaluate Program benefits for the target species. The Program is being implemented in an incremental manner, with the First Increment covering the 13-year period from 2007 through 2019 and the First Increment Extension covering a 13-year period from 2021 through 2032. In general, the purpose of the Program is to implement certain aspects of the U.S. Fish and Wildlife Service’s (Service) recovery plans for the target species that relate to the Program’s identified “associated habitats” in the central Platte River by securing defined benefits for those species and their habitats. The Program will also provide ESA compliance for existing and certain new water-related activities in the Platte basin upstream of the Loup River confluence for potential effects on the target species; help prevent the need to list more Platte River species under the ESA; mitigate the adverse effects of certain new water-related activities through approved depletions plans; and establish and maintain an organizational structure that will ensure appropriate state and federal government and stakeholder involvement in the Program.

The Program is led by a Governance Committee (GC) consisting of representatives of Colorado, Wyoming, Nebraska, the Bureau of Reclamation, the Service, South Platte River water users, North Platte River water users, Nebraska water users, and environmental groups. The Program established key standing Advisory Committees to assist the GC in implementing the Program. Those committees include the Technical Advisory Committee (TAC), the Land Advisory Committee (LAC), the Water Advisory Committee (WAC), the Finance Committee (FC), and the Independent Scientific Advisory Committee (ISAC).

Jason Farnsworth serves as Executive Director (ED) of the Program. Farnsworth and staff in the Executive Director’s Office (EDO) maintain offices in Nebraska and Colorado. The EDO worked closely with the GC, the Advisory Committees and their subcommittees and working groups, Program cooperators and partners, and others to develop the FY 2024 Program Budget and Work Plan based on guidance from the Final Program Document and Program goals and priorities.

This document presents a quick reference snapshot of the FY25 Program [Science Plan](#) Budget Spreadsheet (which is a separate document that is incorporated by reference) and the FY25 Program [Science Plan](#) Annual Work Plan.





Table 1. Quick-reference snapshot of the FY 2025 PRRIP [Science Plan](#) Budget Spreadsheet, including a Table of Contents reference page number corresponding to the beginning page location for each budget line item in this FY2025 Work Plan.

PRRIP Budget ID	PRRIP Line-Item Description	FY 2025 Estimated New Money	FY 2025 Work Plan Page #
LAND PLAN			
LP-2	Habitat Restoration and Management Actions on Program Lands	\$ 567,000	4
LP-2-P	Trapping Projects	\$ 106,900	5
WP-1(b)	<i>Phragmites</i> Control	\$ 200,000	6
PD-22	Sediment Augmentation Implementation	\$ 203,000	7
PD-15	Environmental Permitting	\$ 50,000	10
SCIENCE PLAN			
ED-1	EDO Science Plan Implementation	\$ 1,205,200	11
G-1	Remote Sensing Data Collection	\$ 367,900	13
TP-1	Tern and Plover Monitoring & Research	\$ 3,000	14
WC-1	Whooping Crane Monitoring & Research	\$ 136,700	16
PS-1	Pallid Sturgeon Monitoring & Research	\$ 244,500	18
G-5	Geomorphology & Vegetation Monitoring and Research	\$ 487,000	20
IMRP-3	EDO Special Advisors - Science Plan	\$ 48,000	23
ISAC-1	ISAC Stipends & Expenses	\$ 248,000	25
PD-3	PRRIP Peer Review and Publications	\$ 12,000	27
PD-11	PRRIP Science Workshops	\$ 25,000	28
Sub-Total		\$ 3,924,200	



PROGRAMTASK & ID: LP-2. Habitat Restoration and Management Actions on Program Lands

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$567,000		

Task Description

Implementation of target species habitat restoration and maintenance activities at Program habitat complexes and non-complex properties. Activities generally include creation and maintenance of tern and plover on and off-channel nesting habitats and creation and maintenance of on and off-channel whooping crane roosting habitat. Specific management actions include tree clearing, nesting island maintenance, channel disking, herbicide application, and seeding.

Notes on Cost

The general breakdown of estimated costs for proposed Science Plan related management actions in 2025 is as follows:

Location	Estimated FY25 Cost
Non-complex	\$143,000
Plum Creek Complex	\$32,348
Cottonwood Ranch Complex	\$103,342
Elm Creek Complex	\$34,634
Pawnee Complex	\$20,000
Fort Kearny Complex	\$64,841
Audubon Rowe Complex	\$30,000
Clark Island Complex	\$56,225
Shoemaker Island Complex	\$48,331
Chapman Complex	\$34,279
TOTAL	\$567,000



PROGRAM TASK & ID: LP2-P. Trapping Projects

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$106,900		

Task Description

Mammalian predator trapping will be conducted under the existing agreement between the Program and USDA-APHIS. Mammalian predator trapping occurs at all managed tern and plover nesting sites to increase productivity within the AHR and beaver trapping occurs along the State Channel at the North Platte Choke Point maintain flow through the State Channel improvements. The effectiveness of predator management at off-channel tern and plover nesting sites, including mammalian trapping and removal, will be evaluated to address Extension Science Plan Big Question #9.

Notes on Cost

Based on the estimated costs for FY25 under a 5-year Cooperative Agreement with the USDA within the AHR, including seven off-channel sand and water nesting sites for FY25, and additional trapping needs at the North Platte Choke Point. Trapping costs are itemized as follows:

Category	Estimated FY24 Cost
Salary/Benefits	\$58,701.68
Vehicle/Transportation	\$10,608.00
Travel Cost	\$9,724.00
Equipment/Supplies	\$5,000.00
Subtotal	\$84,033.68
Pooled Costs (11%)	\$ 9,243.70
Overhead (16.15%)	\$ 13,571.44
Total	\$106,848.82 Round up to \$106,900

Products

- Increased tern and plover productivity from the AHR.
- Predator trapping data that will be summarized and included in the annual tern and plover monitoring report.
- Maintain flow conveyance at the North Platte Choke Point.

**PROGRAM TASK & ID: WP-1 (b). *Phragmites* Control**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$200,000		

Task Description

The objective of the Active Channel Capacity Improvements task is to fund management actions (primarily herbicide application) to prevent invasive vegetation infestation of the channel and maintain flow capacity and target species habitat. Channel capacity improvements will assist the Program in maintaining suitable on-channel roosting habitat for whooping cranes as well as make it easier to deliver Program water to and through the AHR. The effectiveness of herbicide application to control *Phragmites* expansion and maintain suitable whooping crane roosting habitat is being investigated as a part of Extension Science Plan Big Question #2.

Notes on Costs

The Platte Valley Weed Management Area estimates it will cost on the order of \$600,000 annually to control approximately 2,000 acres of *Phragmites* within the Platte River Basin into perpetuity. It is estimated that \$200,000/year will be requested of and likely required by the Program for *Phragmites* control to maintain or improve flow conveyance throughout the Platte River Basin to allow the Program to test FWS target flows and other Program flow management activities.

Annual cost breakdowns for allocation of the budget shown in Table below are based on control expenditures made by the Platte Valley Weed Management Area in previous years. The actual distribution of expenditures in any given year varies among categories and may include other categories associated with channel maintenance and enhancement such as river tillage operations for vegetation control in addition to herbicide-based control efforts.

Category	Amount	Approximate Unit Cost	Total Cost
Control (helicopter)	160 hrs.	\$2100/hr.	\$336,000
Control (Airboat)	450 hrs.	\$200/hr.	\$90,000
Herbicide	2,051 gals	\$85/gal	\$174,375
Total (Rounded)			\$600,000

Annual work activities will consist of control, removal, and monitoring of invasive vegetation within Platte River channels and its tributaries in Keith, Lincoln, Deuel, Dawson, Buffalo, Phelps, Hall, Merrick, and Polk counties. The activities will promote channel conveyance and desired vegetation communities by controlling invasive vegetation within the Platte River. By focusing on the entire system, the project will maximize resources through a collaborative partnership focused on rehabilitation of the active channel, promoting long-term maintenance, and developing an early detection and rapid response protocol to prevent re-infestations.



PROGRAM TASK & ID: PD-22. Sediment Augmentation Implementation

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$203,000		

Task Description

Big Question #3 of the Extension Science Plan asks whether it is necessary to augment sediment below the J-2 return in the south channel to create and/or maintain suitable whooping crane habitat. In June of 2022, the GC directed a halt to sediment augmentation for 2023 and directed the EDO to hire an independent contractor to examine viability of modifications to the Jeffrey Island sand dam to pass sediment to the south channel during high flows. At the October 10-12, 2023, Quarterly TAC meeting and Fall ISAC meeting, both the TAC and the ISAC favored examining a broader set of alternatives for sediment augmentation. An independent contractor was hired in August of 2024 with a proposed budget of \$250,000. Approximately \$200,000 of the proposed budget remains for continuation of the study into FY25. Evaluation of effectiveness of sediment augmentation has been a focus of discussion for the TAC, ISAC, and GC in 2024 as well. At their March 11, 2024 meeting the GC made the decision to conduct a no augmentation experiment to compare results with and without augmentation. A monitoring plan will be implemented to evaluate channel incision annually and provide information for decision-makers on whether to continue the no augmentation experiment or to mechanically augment sediment. The monitoring plan includes additional collection of field data to supplement what is provided via remote sensing as specified below. Monitoring data will help inform location, quantity, and method of augmentation if that decision is made. Feedback from the ISAC and independent peer review of the Sediment Augmentation Synthesis Chapters has been incorporated into continued channel monitoring and evaluation of effectiveness efforts.

Notes on Cost

The FY25 tasks and estimated costs for continuation of the passive sediment augmentation alternatives study and analysis of sediment samples collected as part of the monitoring plan for the J2 Return Channel under conditions of no augmentation are as follows:

Task Description	Estimated FY25 Cost
Passive sediment augmentation alternatives study performed by independent contractor	\$200,000
J2 Return Channel sediment sample analysis	\$3,000
Total	\$203,000

Alternatives Study: Following TAC feedback and GC approval in June of 2024, the Program advertised a new technical study of the ability for transport of sediment from the north channel to the J2 Return channel through retrofitting of the sand dam and/or other alternatives to passively augment sediment. A contractor was hired in August 2024. The study period is one year. The scope of work for the study includes:



- Scoping, background, and data inventory.
- Identification of additional design alternatives that should be considered and further development of existing design alternatives discussed in the project overview (North channel sediment option, Sand Dam Channel sediment option). The Consultant should consider augmentation strategies 118 across a wide range of costs and other considerations, with a focus on long-term success, sustainability, and low annual effort compared to the existing implementation strategy. The Consultant will assemble a list of alternatives and, in cooperation with EDO and PRRIP committees, develop a process for screening alternatives for more intensive analysis.
- Development and calibration of a mobile bed hydrodynamic model. It will be used to simulate the geomorphic effects of proposed alternatives on the North Channel and the J2 Return Channel.
- Conduct a feasibility analysis of alternatives.
- Check in regularly with the EDO and Program technical committees to ensure that choices made align with the Program's interests.

The feasibility report, model(s) and report, and results for each scenario in a georeferenced format will be the final deliverable of this project.

No augmentation monitoring plan: The Program has decided to suspend sediment augmentation to better understand and separate the benefits of mechanical sediment augmentation from natural channel adjustment. The no augmentation period is expected to last five years (until 2027), with the caveat that annual review of channel morphology will be used to determine if the experiment must end early. Additional data collected during the no augmentation period includes:

- Tri-annual cross section surveys acquired with RTK-GPS will provide sub-annual (March, July, November) elevation data and evidence of channel changes throughout the reach at anchor points (APs) with historical data and at actively transitioning locations (Station 70,000). These surveys will also be used to check the accuracy of LiDAR data collected each November.
- In-channel sediment sieve analysis sampling provides valuable information on the connection between flow and changes in channel form. These data are useful for estimating sediment movement in purely hydraulic models and verifying results of mobile-bed models, interpreting rates and patterns of channel change visible in DEMs, REMs, and longitudinal surveys, and understanding sedimentology of bars and banks. However, a full-scale, dedicated sediment sampling scheme consumes much time and resources and does not in itself provide direct evidence for channel changes. Thus, the plan for sediment sampling is focused on obtaining simple, easily-accessible data that can be used to provide insight into the value of a potentially enhanced sampling scheme implemented in the future and provide comparisons and ground-truth for drone-based sediment characterization efforts.
- Aerial longitudinal bed armoring sampling will be conducted. Anecdotally, armoring appears to be present within the upstream portion of the J2 channel likely because the



clearwater discharge from the J2 Return contains no incoming sediment. Sediment sizes on exposed bars will be determined directly from imagery obtained aurally from drones. It is expected that the drone imagery surveys will not require substantial increases in workload of the field crew while capturing spatial variability of armoring. The efficacy of imagery-based sediment size classification and the importance of these data for understanding channel form and sediment transport in J2 will be assessed and altered, stopped, or expanded according to results.

- A particular focus of the no augmentation monitoring plan is to perform drone surveys concurrent with other field work and assess the efficacy of using imagery and video to complement continued and new data acquisition. For hydraulic and hydrologic analyses, drone surveys will be used to estimate high-flow marks during floods to confirm modeling results and will be used to estimate flow velocity and discharge in difficult-to-reach locations like the breakthrough channel. In terms of channel morphology, drone surveys will directly measure bar-surface sediment sizes and sediment armoring ratio, will be used to aid in interpretation of sub-annual vegetation characteristics, and will be used to obtain sub-annual channel morphology using three-dimensional photogrammetry

Data collected during implementation of the no augmentation monitoring plan will be incorporated in annual status reports and an updated Sediment Augmentation Data Synthesis Report that compiles information on channel response during mechanical sediment augmentation and during a period of no sediment augmentation.



PROGRAM TASK & ID: PD-15. Environmental Permitting

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$50,000		

Task Description

Contract services to secure or maintain environmental permits associated with adaptive management and/or water projects.

Notes on Cost

HDR was awarded a contract for permitting services in 2022 that expires on 12/31/2025. The multi-year contract amount was \$200,000 and specific dollar amounts were developed for specific services, as needed. Estimated annual costs for 2025 remain at \$50,000 based on previous permitting work for the Program and are high enough to ensure enough budget is available to account for unforeseen eventualities in the permitting process that could slow down permit acquisition.



PROGRAM TASK & ID: ED-1. EDO Science Plan Implementation

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$1,205,200		

Task Description

Salaries, travel, and other direct costs associated with ED and staff in ED Offices (EDO). ED-1 Science Plan Implementation consists of implementation of baseline target species and physical process monitoring and research by EDO staff.

Notes on Cost

Staff time and reimbursable expenses are broken down by science plan implementation category and summed to arrive at estimated FY25 costs by category. FY25 costs are estimated based upon 2024 staffing, allocation of hours and expenses to Program tasks. Prior to 2024 seasonal technician time and science equipment costs were located in Science Plan line items. All of those costs were consolidated into ED-1 for the 2024 budget and many direct costs have been absorbed into labor rates. The FY25 tasks and estimated costs are as follows:

SCIENCE PLAN IMPLEMENTATION CATEGORY	PROFESSIONAL SERVICES HOURS AND FEE		REIMBURSABLE COSTS	Estimated FY25 Cost
	Hours	Fee		
Whooping Crane Monitoring, Research & Data Analysis	5,868	\$418,213	\$19,850	\$438,063
Tern and Plover Monitoring, Research & Data Analysis	4,440	\$278,731	\$25,735	\$304,466
Geomorphology and Vegetation Monitoring, Research & Analysis	2,888	\$301,191	\$1,575	\$302,766
Sediment Augmentation Monitoring, Research & Data Analysis	820	\$88,440	\$1,575	\$90,015
Wet Meadows Monitoring, Research & Data Analysis	-	\$-	\$-	\$-
Pallid Sturgeon Monitoring, Research & Data Analysis	340	\$44,619	\$-	\$44,619
Other Species of Concern, Monitoring & Data Analysis	380	\$20,720	\$4,530	\$25,250
TOTAL	14,736	\$1,151,914	\$53,265	\$1,205,179 Round to \$1,205,200



Products

- Target species monitoring reports.
- Technical reports providing updates on target species habitat selection.
- Geomorphology and vegetation monitoring reports.
- Research to address Extension Big Questions
- Collaborative development of protocols, data analysis plans, technical reports, and publications with Program committees.
- Communication of status updates and research results in written and oral format at TAC, ISAC and GC meetings and upon request by stakeholders.

**PROGRAM TASK & ID: G-1. Remote Sensing Data Collection**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$367,900		

Task Description

Bathymetric LiDAR and aerial photography data collection for all Platte River channels within the Associated Habitat Reach (AHR) during the summer and fall. Field data collection and data reduction and analyses will be performed by the EDO. Remotely sensed products are utilized to measure habitat response to water management actions to address Extension Science Plan Big Questions 1-3, as well as identify habitat characteristics associated with whooping crane stopovers, stay lengths, and seasonal use of the Associated Habitat Reach as described in Extension Science Plan Big Questions 4-6. Remotely sensed products are used to check-in on First Increment learning about whooping crane riverine roost site and diurnal use site selection as well as plover and tern nesting site selection. Additionally, these products have been used to help develop tools for evaluation of hydrologic characteristics of wet meadow sites to address Extension Science Plan Big Question #10.

Notes on Cost

Budget estimates are based on an existing 4-year contract which expires at the end of 2027. The FY25 tasks and estimated costs for data collection based upon the current contract are as follows:

Task Description	Estimated FY25 Cost
Summer aerial imagery	\$78,529
Fall aerial imagery	\$35,126
Fall full reach bathymetric LiDAR	254,211
Total	\$367,866 Round up to \$367,900

Products

Processed LiDAR point data, three digital elevation models including topo-bathymetric bare earth, hydro-flattened bare earth, and highest hit, and 6-inch resolution 4-band (CIR and true-color) aerial photography. Collection specifications are identical for summer and fall acquisitions. Summer imagery acquisition coverage encompasses entire AHR within 3.5 miles of the channel. Fall imagery acquisition limited to channel areas. LiDAR coverage for all channels within the entire AHR.



PROGRAM TASK & ID: TP-1. Tern & Plover Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$3,000		

Task Description

The EDO will implement the PRRIP tern and plover monitoring protocol during the 2025 nesting season. Monitoring efforts will be similar to 2024 and will include implementation of the monitoring protocol through outside monitoring efforts. Additional track surveys and camera monitoring of nests, shorelines, and predator fencing will be implemented to document predator presence and nest and/or brood predation. The research protocol for predator management to increase tern and plover nest and chick survival within the AHR, including predator exclosure fencing and predator deterrent lights will continue in 2025 following guidance received by the TAC at their July 2024 meeting. In addition to implementation of the tern and plover monitoring protocol, the EDO will also perform data analyses and annual reporting. The funding included in this line item provides the equipment required to perform baseline monitoring of tern and plover monitoring from outside nesting sites as well as assess the impact of predation on tern and plover productivity and the effectiveness of predator management actions the Program takes to improve productivity of terns and plovers as per Extension Science Plan Big Questions #8 and #9.

Notes on Cost

FY25 funding in this line item includes costs for renewal of PRRIP’s federal USFWS monitoring permit in 2025 and for biologists to receive miner safety training required for MSHA certification to conduct monitoring at active mining sites. Following TAC guidance, FY25 costs include estimates for maintaining existing video and camera monitoring equipment and predator deterrent lighting that were purchased in prior years. Costs associated with personnel and vehicles are included in the ED-1 budget.

Expense Category	Estimated FY25Cost
Direct Costs	
Federal USFWS monitoring permit renewal	\$100
MSHA training and certification	\$700
Video camera monitoring maintenance (data and protection plan)	\$290
Trail camera supplies (SD cards, batteries, posts, avian spikes, zip ties)	\$1830
Total	\$2,920 Round to \$3,000



Products

- Annual report detailing nest and brood activity, bird activity, and habitat conditions; data for long-term analysis of effects of Program actions.
- Data quantifying predator presence and impact on tern and plover productivity at off-channel sites within the AHR.
- Data on efficacy of predator exclosure fencing and predator deterrent lights for reducing predator presence on off-channel nesting sites and improving reproductive success of terns and plovers in the AHR.
- Data will be summarized in annual reports and final results will be published during the First Increment Extension.


PROGRAM TASK & ID: WC-1. Whooping Crane Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$136,700		

Task Description

The EDO will implement the PRRIP whooping crane monitoring protocol, perform data analyses and reporting for the spring and fall 2025 monitoring seasons. The GC approved a change in PRRIP's monitoring dates at their June 2023 meeting. Beginning in 2024, the spring monitoring period will run from March 5 through April 19, shortening this monitoring period to 46 days. The fall monitoring period will run from October 15 through November 18, shortening this monitoring period to 35 days. Within these shorter survey windows monitoring efforts will be similar to those prior to 2024 and will include implementation of the monitoring protocol through systematic aerial monitoring with ground confirmations as necessary. The monitoring data collected will be used to address Extension Science Plan Big Questions #4 - #6 as well as provide First Increment learning check-ins on whooping crane roost site and diurnal use site selection. USFWS did not conduct a 2023-2024 winter survey to estimate population size of the Aransas-Wood Buffalo population due to lack of funding to cover survey costs. The TAC discussed PRRIP support for this effort at their May 2024 meeting. USFWS anticipated sufficient funds to conduct the survey during the winter of 2024-2025 but was open to partnerships to support this effort beginning in 2025-2026. Expenditure of funds to support a 2025-2026 winter survey of the Aransas-Wood Buffalo whooping crane population is contingent upon continued discussions with the USFWS, TAC, and GC regarding the benefits and costs associated with this effort.

Notes on Cost

FY25 funding in this line item includes direct costs associated with aircraft rental and pilot services. Costs are based on past aerial flight services contracted through a competitive selection process. The shorter monitoring periods were accounted for in estimating 2025 costs. FY25 costs also include replacement of a non-functional aviation headset. Costs associated with monitoring personnel (other than the pilot) and vehicles are included in the ED-1 budget. Also included are the costs associated with partnering with the USFWS to conduct winter surveys of the Aransas-Wood Buffalo whooping crane population in 2025-2026. The budget for PRRIP spring and fall 2025 aerial flight surveys and a USFWS 2025-2026 winter survey is as follows:

Expense Category	Estimated FY25 Cost
FY25 Spring Whooping Crane Monitoring Direct Costs	
Aircraft rental with pilots (2 planes, 2 pilots)	\$66,020
Aviation headset	\$413
FY25 Fall Whooping Crane Monitoring Direct Costs	
Aircraft rental with pilots (2 planes, 2 pilots)	\$50,232
FY25 USFWS Winter Survey at Aransas	\$20,000
Total	\$136,665 Round to \$136,700



Products

- Spring and fall 2025 Whooping Crane Reports detailing monitoring effort, whooping crane use locations, numbers of individuals sighted, and habitat conditions associated with sightings.
- Data for long-term analysis of effects of Program actions.



PROGRAM TASK & ID: PS-1. Pallid Sturgeon Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$244,500		

Task Description

Extension Big Question #7 asks what effects Program water management for target species in the central Platte may have on pallid sturgeon use of the lower Platte River. In June of 2021 the GC approved a 3-step framework for addressing this Big Question, the first step of which was research to gather information on lower Platte pallid sturgeon habitat, spawning, and genetics. The EDO will coordinate two research efforts dedicated to filling Program information gaps for pallid sturgeon. Genetics research by Dr. Ed Heist at Southern Illinois University, Carbondale, is designed to address issues with pallid sturgeon identification, hybridization, population structure and dynamics. Habitat and spawning research by Dr. Mark Pegg, Dr. Jonathan Spurgeon, and Kirk Steffensen at the University of Nebraska, Lincoln, is expected to provide data on the contribution of the lower Platte River to pallid spawning habitat, reproduction, recruitment, and population dynamics. This research will also provide information on seasonal pallid movements in and out of the lower Platte River and help quantify the environmental patterns (flow, temperature, turbidity) associated with these movements.

In fall 2022 the current PRRIP remote sensing contractor collected bathymetric LiDAR on the lower Platte River (LPR) to be used by an independent contractor to develop a 2D hydrodynamic river model for the LPR. These data and the subsequent model will be used to help inform ongoing pallid sturgeon habitat research on the LPR and to help match LPR flow, Program flow management, and pallid sturgeon habitat/use in the LPR for the PRRIP Water Management Study as described in the Pallid Sturgeon Agreement Framing Document, as approved by the GC in June 2021.

Notes on Cost

Genetics research in 2025 includes costs associated with genetic sequencing of 1,000 samples, supplies, and a graduate student research assistantship.

Habitat and spawning research in 2025 include costs associated with one graduate student research assistantship, two field technicians, and a research associate to provide field season support. The current MS student is expected to graduate at the end of 2024. His vacancy will be filled by a research associate position without additional total project costs to the Program as discussed at the March 2024 GC meeting. Equipment, travel, supplies, boat storage rental space, facilities and administration costs are also included.

Costs associated development of a 2D hydrodynamic river model for the LPR by an independent contractor will be wrapped up in 2024, thus are not included here. Development of a Water Management Study by an independent contractor is not planned until 2026.



The budget for 2024 is as follows:

Expense Category	Estimated FY25Cost
Genetic research (SIU) Year 4	
Supplies & labor at \$45/sample for 1000 samples	\$45,000
Habitat & spawning research (UNL) Year 4	
Personnel, Support, Facilities & Administration	\$154,692
Equipment, Travel, Supplies, Facilities & Administration	\$44,766
Total	\$244,458 Round to \$244,500

Products

- Research products will include annual report and presentation of results, accomplishments, and interpretations. Presentations at regional pallid sturgeon meetings and American Fisheries Society meetings are also expected.
- The genetics research is expected to focus field efforts on tracking and collection of habitat and spawning information for genetically identified pallid sturgeon. It will also address important issues related to species identification, hybridization, population structure and population demographics. Results will be widely applicable to the conservation stocking program, wider field efforts to characterize pallid sturgeon habitat, and population viability assessments. As such, we expect this research to contribute to a more focused and efficient management plan for this species.
- Habitat and spawning research is expected to fill knowledge gaps about lower Platte River contribution to pallid spawning habitat, reproduction, recruitment, and population dynamics, including the documentation of successful spawning on the Platte River (in conjunction with genetics research) and identification and description of pallid spawning habitat. An extensive passive telemetry network is expected to provide information on seasonal pallid movements in and out of the lower Platte River and help quantify the environmental patterns (flow, temperature, turbidity) associated with these movements.
- Development by an independent contractor of a 2D hydrodynamic river model using lower Platte River LiDAR data acquired in fall 2022. That model will be used to inform UNL habitat research and for development of the PRRIP Water Management Study as outlined in the June 2021 Pallid Sturgeon Agreement Framing Document.



PROGRAM TASK & ID: G-5. Geomorphology & Vegetation Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$487,000		

Task Description

The effectiveness of inundating the channel during the growing season to suppress germination of perennial woody species such as cottonwoods and willows as well as slowing *Phragmites* expansion to maintain suitable whooping crane roosting habitat is being investigated as a part of Extension Science Plan Big Questions #1 - #2. The EDO performed *Phragmites* patch monitoring and mapping in response to flow in 2022 and 2023. A consultant was hired in April of 2024 to perform *Phragmites* patch monitoring and mapping following a protocol developed by the EDO and reviewed by TAC and the ISAC. The Scope of Work for 2024 was limited to field data collection, data QA/QC and processing. Expenditure of funds for *Phragmites* research in FY25 is contingent upon continued discussions at the TAC and GC regarding the benefits and costs associated with this effort. Upon TAC recommendation and GC approval, an RFP and Scope of Work for *Phragmites* research in 2025 will be developed and reviewed by the TAC and GC. If approved, monitoring and mapping of *Phragmites* patches to document changes in *Phragmites* patch size in response to natural flows, target flows, and all AMP-related flow management activities will be conducted throughout the growing season. Stage gages will be installed at *Phragmites* monitoring field sites to monitor water surface elevations and validate modeled water surface elevations used to quantify inundation of *Phragmites* patches. The Scope of Work for 2025 will include the additional effort and costs associated with a consultant working in collaboration with the EDO to perform data analyses to evaluate *Phragmites* response to channel inundation and the natural flow regime. As part of our reach-wide effort to monitor vegetation along the active channel, time-lapse camera data will be collected to monitor the efficacy of natural flows, target flows, and all AMP-related flow management activities at reducing vegetation establishment or removing vegetation from the channel. Together, these efforts are designed to measure efficacy of Program management to reduce vegetation expansion into the river channel and maintain or improve whooping crane roosting habitat suitability throughout the AHR. The *Phragmites* research will be conducted by an independent contractor in 2025. All other vegetation-related data collection and analyses to evaluate vegetation response to flow will be performed by the EDO.

Surveys of vegetation composition and succession within PRRIP managed grasslands has occurred every three years since 2013, providing a long-term dataset from which land management strategies can be assessed. FY25 is the next sequential survey period. Expenditure of funds for a 2025 grassland vegetation survey is contingent upon discussions with the TAC, LAC and GC regarding the benefits and costs associated with this effort.



Notes on Cost

Contingent upon continued discussion at the TAC and GC, an RFP and Scope of Work will be developed and advertised for *Phragmites* research in early 2025, for work to begin in April of 2025. The estimated cost is based upon a senior level project manager and spatial data analyst as well as a mid-level spatial data analyst to work with the EDO to perform data analysis to evaluate *Phragmites* response to flow. The mid-level spatial analyst will perform data QA/QC and processing of field data. A team of two to four field technicians will perform sequential *Phragmites* patch mapping over the growing season in three study reaches. Estimated costs also include field equipment (distance wheel, measuring and marking tape, etc.), transportation costs, lodging, and meal expenses. Total annual *Phragmites* project cost is estimated to be approximately \$370,000. The FY25 estimated cost for acquiring, maintaining, and installing time-lapse cameras on the bank line of Program Habitat Complexes is estimated to be \$700. The FY25 cost estimate for the grassland vegetation survey is based upon continuation with previous survey design and effort and is estimated at approximately \$120,000. These costs include senior level project management, data analysis, and reporting as well as a field coordinator and field crew for data collection. Costs for equipment, transportation, lodging, and meals are also included. Discussions with the TAC, LAC, and GC during the first quarter of 2025 will determine final costs.

Expense Category	Estimated FY25 Cost
Phragmites Response to Flow	
Senior level project manager and data analyst	\$96,000
Mid-level spatial analyst	\$42,000
Field coordinator and lead technician	\$60,480
Field technicians (3)	\$117,600
Equipment (flagging, distance wheel, measuring and marking tapes)	\$500
Transportation	\$15,000
Lodging	\$30,000
Meals	\$5,000
Subtotal	\$366,580
Geomorphology and Vegetation Response to Flow	
Time-lapse camera supplies (SD cards, batteries, posts, zip ties)	\$700
Subtotal	\$700
Grassland Vegetation Survey	
Senior level project manager and data analyst	\$24,000
Mid-level data entry and processing	\$6,000
Field coordinator and lead technician	\$13,600
Field Technicians (5)	\$51,000
Equipment (paper, ink, batteries, flagging, measuring and marking tapes,	\$500
Transportation	\$2,000
Lodging	\$16,800
Meals	\$5,760
Subtotal	\$119,660
Total	\$486,940 Round to \$487,000



Products

- Products will include a spatially explicit dataset including shapefiles of monitored *Phragmites* patches through time, patch characteristics such as area, height, density, composition, phenological stage, and plant health as response variables associated with data collected on elevation, river flow and stage, patch inundation, distance to water, herbicide application, and mechanical management.
- *Phragmites* consultants will provide intermediate products (data analysis plans, summary tables and figures, presentations, and reports) to the EDO and Program technical committees to ensure that work aligns with the Program’s interests. A final technical report will be the final deliverable of this project.
- Products will include time-lapse imagery of channel inundation flows and vegetative response.
- Reach wide vegetation monitoring data will be assessed annually to produce an annual report of results in addition to providing data for long-term analysis of effects of Program actions.
- Products from grassland surveys will include raw data files for all transects surveyed at each sample site, 2025 vegetation composition dataset for each property surveyed, site-specific summaries of the vegetation community using standardized diversity and community composition indices, and a final annual report of results with assessments of change in community composition over time (comparison to prior survey results).



PROGRAM TASK & ID: IMRP-3. EDO Special Advisors – Science Plan

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$48,000		

Task Description

- **Animal Movement Ecology/Telemetry (TBD)** – A Special Advisor to the EDO on Science Plan-related specialty topic of animal movement ecology (with emphasis on movement through landscapes, migration, and analysis of telemetry data) will be retained to review Program documents, research/monitoring design, modeling, and data analysis. The Special Advisor will attend planning meetings and provide feedback at work group meetings and the summer science meeting. This special advisor will be retained to specifically address Extension Big Questions #4 - #6 on the factors important for whooping crane stopovers, stay length, and to address differences in seasonal patterns of movement.

It is anticipated that a Special Advisor will be retained in the first or second quarter of 2025 after consultation with the ISAC, the TAC, and/or others with recommendations for individuals to consider.

Notes on Cost

This FY25 budget line item is for expert assistance for the Executive Director’s Office (EDO) on key topics for the Program. The budget breakdown for this line item is as follows:

Name	Area of Expertise	Hourly Rate	Estimated 8-hour Days	FY24 Total
<i>TBD</i>	Animal movement ecology; spatial ecology; telemetry; factors influencing animal migratory patterns and movement across the landscape	\$225	20	\$36,000
Other Direct Costs (i.e., travel and expenses for 2025 Summer Science Meeting, trips to Kearney, NE, etc.)				\$12,000
Total not to exceed				\$48,000

General note on all Special Advisor budget line items: Please refer to the third paragraph in the “Exceptions” section of the revised PRRIP Procurement Policy (effective July 1, 2021) – “Retention of Special Advisors to the ED of a technical or legal nature is exempt from the procedures provided in this directive.”

Consequently, Special Advisors are not selected through a competitive process involving advertised RFQs or RFPs. Special Advisors are selected by the Executive Director based on qualifications – education, relevant experience, expertise and skills, reliability, credibility, and ability to work effectively with the ED and the staff of the EDO. Special Advisors and the firms they are associated



with cannot do any other work for the Program, individually or as part of a team, while retained as a Special Advisor. This is a critical restriction and generally orients Special Advisor selection to individuals who are sole proprietors or part of small firms that would not likely be doing significant levels of work for the Program on other specific, larger projects.

The billing rates are negotiated with the Special Advisors by the ED and are kept within the industry standard of practice based on each individual's qualifications. While industry standard of practice may not be precisely defined, anyone who is a practicing member of that professional community understands the limits of reasonableness associated with those boundaries. Appropriate expertise to make this assessment resides with the ED or EDO staff. The industry standard of practice rates guidelines used in this process is established based on an on-going market survey process comparing labor rates of similarly qualified professionals in the field.

In the case of Special Advisors, individuals with similar experience and qualifications have been part of consultant teams selected through the Program's competitive procurement process. Comparison of the Special Advisor rates to the rates charged by comparable individuals through the competitive procurement process provides an indisputable basis for comparison. In all cases the Special Advisor rates are not only within the range of rates seen on the consultant teams which have been selected competitively, but typically at the middle to lower end of the range. As rates charged by Special Advisors are at the middle to low end of the range of rates for similar work acquired through the Program's competitive procurement process, the estimate for Special Advisors is considered fair and reasonable.

The anticipated level of effort for the upcoming year is also discussed with the Special Advisors by the ED and members of the EDO staff, but all work is assigned on an as-needed basis with no guarantee of any minimum level of assignments. During the budgeting process, the Special Advisors anticipated to be needed and roughly the level of effort expected to accomplish the work plan for the budget year is discussed with the appropriate Advisory Committees, the Finance Committee, and the Governance Committee. Input is taken under advisement from all these sources as to the appropriateness of the budgets for these line items with appropriate adjustments made prior to budget approval.

Products

Review of Program documents and providing feedback on proposed research/monitoring design, modeling, and data analysis plans. Provides advice on specific actions related to Science Plan and Water Plan implementation. Participation in requested Program work groups and meetings (Whooping Crane Telemetry Work Group, TAC meetings, ISAC meetings, annual Summer Science Meeting, etc.).



PROGRAM TASK & ID: ISAC-1. ISAC Stipends & Expenses

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$248,000		

Task Description

ISAC-1 budget for FY25 includes stipends for six (6) ISAC members for providing the PRRIP independent scientific advice, counsel, and insight related to the proposed Scope of Work below. Also includes estimated travel expenditure reimbursement related to the September 2025 in-person ISAC meeting in Kearney, NE and additional stipend amounts for two (2) ISAC Co-Chairs.

Notes on Cost

The FY25 ISAC-1 budget is based on the following proposed 2025 ISAC Scope of Work:

- **Quarter 1 (January-March)** – ISAC to consider higher-order issues/questions related to the direction, amount, and type of Program science/adaptive management. Written report in February, virtual discussion with GC/TAC/EDO in late February/early March. Includes ISAC Member virtual participation in at least a portion of the March 2025 GC Quarterly Meeting.
 - Q1 stipend per ISAC member = \$9,000 (\$54,000 total)
- **Quarter 2 (April-June)** – ISAC to consider a more specific technical Program efforts, likely related to data analyses and assessments after several years of implementation. Written report in first half of June, virtual discussion with GC/TAC/EDO in last half of June. Includes ISAC Member virtual participation in at least a portion of the June 2025 GC Quarterly Meeting.
 - Q2 stipend per ISAC member = \$9,000 (\$54,000 total)
- **Quarter 3 (July-September)** – ISAC in-person meeting in Kearney, NE the week of September 15, 2025. This would be in conjunction with the GC Quarterly Meeting in Kearney. Two objectives: 1) start with a workshop with GC and ISAC to discuss big picture PRRIP science issues and then 2) move into more typical technical discussion with the TAC and EDO about specific PRRIP science questions. Possible field visit to introduce new ISAC Member, Dr. Gary Lamberti, to PRRIP activities and sites on the ground. Includes pre-meeting discussions and document review/consideration. Includes ISAC Member in-person participation in the 2025 September GC Quarterly Meeting.
 - Q3 stipend per ISAC member = \$9,000 (\$54,000 total)
 - Q3 estimated travel expense reimbursement per ISAC member = \$2,000 (\$12,000 total)
- **Quarter 4 (October-December)** – ISAC written report by end of October in response to specific questions from September in-person meeting, virtual discussion with GC/TAC/EDO in November. Includes ISAC Member virtual participation in at least a portion of the December 2025 GC Quarterly Meeting.
 - Q4 stipend per ISAC member = \$9,000 (\$54,000 total)
- **2025 ISAC Co-Chairs** – coordinate ISAC discussions, develop presentations and written reports, and other duties as assigned (e.g., participation on the ISAC Selection Panel for the



process of considering and recommending new ISAC Members as directed by the GC).

- Additional stipend per ISAC Co-Chair = \$10,000 (\$20,000 total)

The daily service rate for ISAC members is based on industry standard rates for individuals of the caliber and stature required for the ISAC. A review of standard rates for Ph.D. senior level scientists revealed rates routinely in the range of \$150 to \$300 or more on an hourly basis. The EDO proposes an ISAC-member hourly rate increase of 2.2% to \$230/hour for FY2025. Labor rates for ISAC members is compared against individuals of similar qualifications and experience that are part of consultant teams that are awarded contracts with the Program through competitive processes in conformance with the PRRIP Procurement Policy. The level of effort is established by comparison of level of effort for similar tasks contained in contracts with consultants for the Program that were awarded through competitive processes in conformance with the PRRIP Procurement Policy.

Products

ISAC review of the Extension Science Plan and implementation of that plan, experimental design, monitoring, data analysis and synthesis, and other Program science products and activities; work will culminate in reports and presentations to the GC.

**PROGRAM TASK & ID: PD-3. PRRIP Peer Review & Publications**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$12,000		

Task Description

- During FY25 we do not anticipate any products for PRRIP peer review.
- Publication of four (4) Program manuscripts.

Products

- Four (4) publications in refereed journals.

Notes on Cost – Publication

Publication estimate of \$3,000 per manuscript for open-access publication based on professional publication experience of EDO staff; costs could be higher or lower depending on the journal. The EDO expects to seek GC approval to publish:

- Manuscript on Wet Meadows Hydrology based on Program research.
- Manuscript based on Sediment Augmentation Synthesis Report.
- Manuscript on Whooping Crane Riverine Roost Site Selection.
- Manuscript on Whooping Crane Diurnal Use Site Selection (Collaborative process for rerunning WEST Report analysis with refined landcover dataset from Baasch et al. 2022 Ecotope article).

For FY25, estimated publication expenses are:

Potential Manuscript	Author	Manuscript Type	Target Journal	FY24 Cost
Wet Meadows Hydrology	EDO	Hydrology, Groundwater Modeling	<i>TBD</i>	\$3,000
Sediment Augmentation Synthesis Report	EDO	Geomorphology	<i>Geomorphology</i>	\$3,000
Whooping Crane Riverine Roost Site Selection	EDO	Ecology	<i>TBD</i>	\$3,000
Whooping Crane Diurnal Use Site Selection	EDO	Ecology	<i>TBD</i>	\$3,000
Total				\$12,000



PROGRAM TASK & ID: PD-11. PRRIP Science Workshops

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2025	\$25,000		

Task Description

In-person ISAC Meeting in Kearney, NE the week of September 15, 2025 to discuss status of Science Plan implementation, overall Program science, and to support ISAC member field trips to PRRIP management and science activities on the ground. Will include a joint workshop with the GC.

Notes on Cost

EDO facilitation of one in-person ISAC meeting/workshop:

Expense Category	Estimated FY25 Cost
2025 ISAC Fall Meeting @ Kearney, NE – September 2025	
Hotel meeting room and equipment rental; breakfast and lunch meals, snacks, beverages, field visit costs	\$25,000
Total	\$25,000

General Notes on Meeting Costs

The 2025 Fall ISAC Meeting in Kearney, NE will be conducted in-person. Estimated costs are based on actual expenditures in FY23 and FY24 for ISAC meetings in Kearney, NE as well as experience with previous Science Plan Reporting Sessions held in Omaha, NE. This estimate factors in recent price increases for food, beverages, and facilities over and above the final bill for similar previous meetings.

Products

- ISAC responses to comments/questions from the GC, TAC, and EDO.
- Updated Science Plan implementation and evaluation approaches based on ISAC feedback.