PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM (PRRIP -or- Program)

TO: PRRIP Governance Committee (GC)
FROM: Jason Farnsworth, Executive Director (ED)
SUBJECT: PRRIP Scientific Data Storage and Release Policy
DATE: May 8, 2025

This document outlines the Platte River Recovery Implementation Program's (PRRIP or Program) official policy for data storage and public release. It draws upon existing policies from the United States Fish and Wildlife Service (USFWS), United States Geological Survey (USGS), and United States Bureau of Reclamation (Reclamation), incorporating best practices and common themes to ensure responsible data stewardship. This policy aims to promote transparency, accessibility, and the long-term preservation of PRRIP data, ultimately contributing to better decision-making and enhancing scientific credibility.

This policy is uniquely positioned to address the specific needs and challenges of the PRRIP by providing clear guidelines for managing the diverse data generated by the Program, including biological, hydrological, environmental, and geographic data. By promoting data sharing and accessibility, this policy fosters collaboration among stakeholders, supports informed decision-making, and enhances the Program's scientific rigor and transparency.

1. Data Storage

1.1. Data Management

Data management will be a component of design/protocol development for Program science activities. The Program currently develops protocols for data collection and implementation, data management and QA/QC, and data processing and analyses.

Data collection and implementation protocols include the following:

- **Procedures implemented:** Documents the planning, development, and implementation of experimental design.
- **Types of data to be collected:** Specifies the categories of data that will be gathered, including physical, biological, hydrological, and environmental data. Provides definitions of metrics to be collected.
- **Data collection methods:** Describes the procedures and methodologies employed for data acquisition, ensuring adherence to established scientific standards and ethical considerations.
- **Brief description of data quality assurance and quality control (QA/QC):** Outlines procedures for data validation, error checking, and quality control to maintain data integrity and reliability with reference to the relevant QA/QC protocols.
- **Brief description of data management, data processing, and analyses** for which the data are intended, with reference to more detailed data management and analyses protocols as appropriate.

Data management and QA/QC protocols include the following:

- **Data quality assurance and quality control (QA/QC):** Outlines procedures for data validation, error checking, and quality control to maintain data integrity and reliability.

- **Data formats and standards:** Preference will be given to non-proprietary, open formats to maximize data sharing and long-term accessibility.
- **Metadata creation and management:** Final datasets will be distributed with metadata for documenting data, ensuring comprehensive descriptions of data content, context, and quality.
- **Data storage:** Outlines temporary (field data) and long-term storage locations for data.

Data processing and analysis protocols include the following:

- Data sources and steps for acquisition.
- Data processing workflow from raw format to dataset utilized in analyses with description of final analyzed datasets.
- Definitions of explanatory variables and methods for deriving these metrics.
- Definitions of response variables and methods for deriving these metrics.
- Description of analytical frameworks, methods for performing analyses including checking assumptions.

1.2. Data Security, Access Control, and Preservation

- **Data storage:** Data are stored and secured on one of two storage solutions.
  - Whooping Crane, Piping Plover, and Interior Least Tern data – stored in custom databases hosted by the Program's website & database contractor.
  - Whooping Crane Telemetry data – The Whooping Crane Tracking Partnership provided satellite and cellular telemetry locations for whooping cranes for Program analyses. These data are stored on redundant physical servers at the Offices of the Executive Director in Kearney, NE and Lakewood, CO. Data are mirrored between servers.
  - Plover and Tern predator monitoring and management – Data stored on redundant physical servers at the Offices of the Executive Director in Kearney, NE and Lakewood, CO. Data are mirrored between servers.
  - Pallid Sturgeon data – Data collected by UNL and SIU are stored according to their respective university data storage policies. Data collected by UNL are shared with the Executive Director's office via access to a SharePoint file maintained by UNL. These data are periodically updated by UNL and subsequently downloaded by the EDO. USGS/ACOE also share data with the Program via a SharePoint file, from which both UNL and the EDO download and store the data. SIU shares data through annual reporting of genetic samples received and results of analyses performed. All sources of Pallid Sturgeon data are stored on redundant physical servers at the Offices of the Executive Director in Kearney, NE and Lakewood, CO. Data are mirrored between servers.
  - LiDAR and imagery data – stored on redundant physical servers at the Offices of the Executive Director in Kearney, NE and Lakewood, CO. Data are mirrored between servers.
  - Working files – stored on redundant physical servers at the Offices of the Executive Director in Kearney, NE and Lakewood, CO. Data are mirrored between servers and subject to daily cloud backup.
  - Work products – final approved work products are archived on Program servers and stored/hosted on the Program's public website.
- **Data Security:** Program data and working files are secured against unauthorized access, use, disclosure, disruption, modification, or destruction of data.

- **Data preservation:** Program data are hosted permanently to ensure long-term accessibility and integrity.

2. Procedures for Public Release

2.1. Data Release Principles

The PRRIP is committed to making data publicly available to the greatest extent possible, while adhering to legal, ethical, and security considerations. The following principles will guide data release decisions:

- **Transparency:** PRRIP will strive to provide clear and accessible information about its data holdings, including metadata.
- **Timeliness:** Data will be released as quickly as possible, following appropriate quality assurance and review procedures. PRRIP will immediately release remote sensing data and data associated with final peer reviewed work products. PRRIP will also work to quickly release data associated with ongoing monitoring and research activities, subject to internal QA/QC.
- **Accessibility:** Data will be made available in user-friendly formats and through accessible platforms.
- **Confidentiality:** PRRIP will protect sensitive information and ensure compliance with privacy regulations. Data will be carefully reviewed to identify and redact any sensitive information before public release.
- **Free of Charge:** PRRIP data will be made available to the public free of charge.

2.2. Data Release Process

- **Data Review and Approval:** Prior to public release, data will undergo a thorough review process to ensure accuracy, completeness, and consistency. This review may involve internal experts, external collaborators, and relevant stakeholders.
- **Metadata Completion:** Metadata will be created for each final dataset, providing detailed information about the data's content, context, and quality.
- **Data Preparation:** Data will be formatted for public release, ensuring it is in a user-friendly and accessible format (e.g., CSV, TXT).
- **Data Publication:** Data will be published through appropriate platforms, such as the PRRIP website, data repositories, or online data transfer portals (I.E. Google Drive).
- **Data Citation:** Clear instructions on how to cite PRRIP data will be provided to ensure proper attribution and acknowledgements.

2.3. Data Release Exceptions

While PRRIP is committed to data transparency, certain exceptions to public release may apply:

- **Sensitive Information:** Data containing personally identifiable information, confidential business information, or information that could compromise national security will not be released.
- **Proprietary Data:** Data owned by third parties or subject to intellectual property rights will only be released with the owner's permission.
- **Data with Restrictions:** Data with restrictions will be released according to the terms set by funding agencies or collaborators. In general – the Program will not release high resolution location data for target species due to concerns about potential for future disturbance.

3. Roles and Responsibilities

3.1. Data Stewards: Executive Director

- Responsible for the overall management and oversight of PRRIP data.
- Develop and implement data management plans.
- Ensure data quality, security, and accessibility.
- Oversee the data release process.

3.2. Data Producers: Executive Director's Office & Contractors

- Responsible for collecting, processing, and documenting data.
- Adhere to data management plans and best practices.
- Ensure data quality and accuracy.
- Create and maintain metadata.

3.3. Data Users:

- Responsible for using PRRIP data in a responsible and ethical manner.
- Cite PRRIP data appropriately.
- Respect data use restrictions and confidentiality.

4. Best Practices

The following best practices have been identified from reviewing data storage and release policies of the USFWS, USGS, and US Bureau of Reclamation:

- **Prioritize data management planning:** Including data management in protocol development is crucial for ensuring data quality, accessibility, and long-term preservation.
- **Use open data formats:** Open formats promote data sharing, interoperability, and long-term accessibility.
- **Ensure data quality through QA/QC procedures:** Implement robust quality assurance and quality control measures to maintain data integrity and reliability.
- **Preserve data in approved repositories:** Utilize trusted digital repositories for long-term data preservation and archiving.
- **Provide clear data documentation and metadata:** Comprehensive metadata are essential for data discovery, understanding, and reuse.

These best practices are integrated into the PRRIP Data Storage and Release Policy to ensure responsible data stewardship and maximize the value of PRRIP data.

5. Policy Review and Updates

This Data Storage and Release Policy will be reviewed and updated periodically to ensure it remains aligned with best practices, evolving technologies, and PRRIP's strategic goals.

6. Conclusion

This policy provides a comprehensive framework for responsible data management and public release within PRRIP, synthesizing best practices and guidance from established agencies like the USFWS, USGS, and Reclamation. By adhering to these guidelines, the PRRIP aims to promote transparency, accessibility, and the long-term preservation of its valuable data resources,

ultimately contributing to the program's success in recovering endangered species and rehabilitating the Platte River ecosystem. This policy is intended to be a living document and will be updated as needed to reflect changes in technology, policy, or best practices.

Relevant Agency Resources

1. Data Management | U.S. Fish & Wildlife Service, accessed January 24, 2025, https://www.fws.gov/program/data-management
2. Data Management | U.S. Fish & Wildlife Service, accessed January 24, 2025, https://www.fws.gov/policy-library/274fw1
3. Data Release | U.S. Geological Survey - USGS.gov, accessed January 24, 2025, https://www.usgs.gov/data-management/data-release
4. Preserve | U.S. Geological Survey - USGS.gov, accessed January 24, 2025, https://www.usgs.gov/data-management/preserve
5. U.S. Geological Survey (USGS) Public Access Policy - Data Cooperative - The University of Arizona, accessed January 24, 2025, https://data.library.arizona.edu/data-management/us-geological-survey-usgs-public-access-policy-data
6. Reclamation Manual | Bureau of Reclamation, accessed January 24, 2025, https://www.usbr.gov/recman/
7. The Data Release Process | U.S. Geological Survey - USGS.gov, accessed January 24, 2025, https://www.usgs.gov/sciencebase-instructions-and-documentation/data-release-process