

**MEMORANDUM OF UNDERSTANDING
BETWEEN the
U.S. FISH AND WILDLIFE SERVICE
and the
STATE OF MONTANA**

WHEREAS, the U.S. Fish and Wildlife Service (“Service”) is the primary Federal agency charged with fish and wildlife resource protection and restoration, and with the responsibility for administration of the lands and waters of the National Wildlife Refuge System pursuant to the Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j), as amended, the Migratory Bird Conservation Act (16 U.S.C. 715a-715r), and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) as amended by the National Wildlife Refuge System Improvement Act of 1997 (P.L. 105-57);

WHEREAS, the Montana Reserved Water Rights Compact Commission (“Commission”), pursuant to §85-2-703, MCA, is authorized to negotiate settlement of water rights claims filed by the United States for areas in which the United States claims reserved waters within the State of Montana;

WHEREAS, the United States, acting through the Service and the State of Montana, acting through the Commission (collectively “the Parties”) have agreed to a water rights Compact (“Compact”), codified at §85-20-1301, MCA, and approved by the Department of Interior in 2008, settling the Service’s federal reserved water rights claims for the Bowdoin National Wildlife Refuge (“Bowdoin” or “the Refuge”) and agree that this Memorandum of Understanding (“MOU”) is incorporated into that Compact and attached thereto as Appendix 3;

WHEREAS, the Parties recognize a concern that Bowdoin suffers from a salinity problem that threatens the viability of the Refuge and poses risks to the off-Refuge community;

WHEREAS, the Parties agree that the exercise of the Service’s rights to water recognized in the Compact can ameliorate this salinity problem but also that, improperly utilized, these rights can exacerbate the problem instead;

WHEREAS, the Service completed a Comprehensive Conservation Plan (CCP) for management of Bowdoin on August 11, 2011;

NOW THEREFORE; the Service and the State hereto agree as follows:

1. Capitalized and underlined terms in this MOU have the meaning assigned to them in the Compact unless specifically defined herein;
2. The Compact recognizes federal reserved water rights for Bowdoin from three sources: surface flows from Beaver Creek in the amount of 24,714 Acre-Feet per Year; surface flows that

drain naturally into the Refuge (predominantly from Black Coulee); and ground water in the amount of 223 Acre-Feet per Year extracted from one or more well(s) located within the boundaries of the Refuge, and 5,300 Acre-Feet of Deep Ground Water. These reserved water rights are subordinated to all water rights existing under State law at the time the Compact was ratified, as well as to all future development excepted from State permitting law (such as small domestic and stock uses). The Refuge's federal reserved water rights are also conditioned on the execution of this MOU that establishes restrictions on the use of these water rights to ensure that they do not exacerbate the salt problems that the Refuge experiences.

3. No water will be released into Beaver Creek from Lake Bowdoin except when floodwater from Beaver Creek encroaches into Lake Bowdoin and the releases will not cause harm to the owners of downstream water rights. When it is determined that a release is eminent, the Service will notify the Montana Department of Environmental Quality (DEQ), the Montana Department of Natural Resources and Conservation (DNRC), and local irrigation districts (including but not necessarily limited to the Malta Irrigation District and the Glasgow Irrigation District). Conductivity measurements will be made by the Service at the outlet of Lake Bowdoin and along Beaver Creek upstream and downstream where the outlet of Lake Bowdoin meets Beaver Creek. The refuge manager following these notifications will determine release rates, but such releases shall stop immediately at such time as the Service or the DEQ determines that the volume of water in Beaver Creek has decreased to the point that continued discharges from the Refuge pose a risk to the water quality or soils of downstream water users.

4. Dry Lake will not be used as an evaporative pond for disposal of saline water from Lake Bowdoin. Water that is delivered from Lake Bowdoin to Dry Lake will only be released from Dry Lake when floodwater from Beaver Creek encroaches into Lake Bowdoin and the releases will not cause harm to the owners of downstream water rights. Any such releases will follow the same conditions and be for the same duration as set forth in numbered paragraph 3 of this MOU. However, Dry Lake may be operated as a separate wetland as long as it receives its water from sources other than Lake Bowdoin that are not high in accumulated salts (e.g. Milk River Project, Lakeside unit, Beaver Creek). The Service may, at its discretion, release water from Dry Lake into Beaver Creek. Such releases shall stop immediately when the Service or the DEQ determines that the volume of water in Beaver Creek has decreased to the point that continued discharges from the Refuge pose a risk to the water quality or soils of downstream water users.

5. The overriding target of the salt management process is to improve the water quality on the Refuge over time and to provide a reliable method for managing the Lake's salt balance. To reverse the trend of salt accumulation in Lake Bowdoin, the Service intends to install a deep well injection system that will remove salts from Lake Bowdoin at an average annual rate that is equal to or greater than the annual rate of salt input, currently approximately 7,000 tons per year. Until such time as the well (or a suitable alternative) is installed and becomes operational, and the accumulated salt in Lake Bowdoin is reduced to 80,000 tons or less (equivalent to 7,000 mg/l when Lake Bowdoin is at an elevation of 2209 feet), water deliveries from manmade canals will

be limited to periods when Lake Bowdoin is at an elevation under 2210' in order to reduce the risk of spilling saline water downstream. The parties recognize that flood events and natural drainage into Lake Bowdoin may elevate the water surface elevation above the 2210' elevation.

6. The Service will implement and maintain a monitoring program to quantify the inflows, outflows, and storage of water (surface and groundwater). The Service will also implement and maintain a water quality monitoring program that will characterize the inflows, outflows, and storage of constituents (e.g. salts and metals) that can be used to assist in evaluating impacts to water quality in addition to evaluating potential harmful impacts on refuge wildlife. Monitoring methods and detection limits will be consistent with standard methods required by the DEQ for assessing water bodies. The list of sample parameters will include but not necessarily be limited to: Arsenic, Uranium, Selenium, Mercury, Iron, Lead, Copper, Zinc, Cadmium and Aluminum. Sample methods and detection limits must be consistent with standard methods required by DEQ for assessing water bodies. These parameters will be monitored along Beaver Creek by the State of Montana.

7. The Service will continue to update a salt balance model as more data is collected, and will use the model to inform future water management decisions. The model will build upon the current model developed by the State of Montana, which models salt and water fluxes. An equivalent model mutually agreed to by the Service and the State may be used in lieu of the model being used at the time of the execution of this MOU.

8. With the finalization of the CCP, the Service has begun implementation of the strategies outlined in that CCP to reduce delivery of salt to the Refuge. The opportunities to reduce the salt inputs will require working closely with surrounding landowners and organizations focused on salinity issues in Montana, in particular the Montana Salinity Control Association. Strategies to reduce the delivery of salt to the Refuge include:

- a. Working with the Montana Salinity Control Association and others to develop a plan that reduces salinity inputs in the watershed;
- b. Developing and implementing a salinity management program by working with landowners and the local community, the Phillips Conservation District, the Natural Resources Conservation Service, USFWS Partners for Fish and Wildlife, and the DNRC on voluntary projects;
- c. Working with the Malta Irrigation District, Glasgow Irrigation District, and landowners to improve irrigation water management to reduce salt leaching into shallow ground water that eventually re-surfaces when ground water evaporates;
- d. Working with the Malta Irrigation District to line portions of Dodson South Canal known to leak and cause salt accumulation on the Refuge;
- e. Working with the Montana Bureau of Mines & Geology to determine how deep the injection well(s) should be drilled to avoid potable ground water and where the best placement location(s) for any such well;

- f. Continuing to implement the strategies outlined by the U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. The 2007 and 2012 Montana Step-down Strategic Plans specifically identify the Milk River Basin as a focus area for voluntary private lands habitat restoration and enhancement projects. The Step-down plans identify mallards and greater sage grouse as focal species for working with private landowners.
- g. Continuing to participate in cost share agreements and grants, which promote partnerships between the Service and other private organizations, state organizations, and individuals. Cost share agreements typically involve projects on Refuge land and will match contributions from a non-Federal Government source.

9. This MOU may be modified at any time by the mutual consent of the Parties.

10. This MOU remains in effect until modified or terminated by the mutual agreement of the Parties.

 2/26/2013

Regional Director, United States Fish and Wildlife Service, Department of Interior Date

 25 JAN 2013

Steve Bullock, Governor, State of Montana

Date