



INTRODUCTION

Seedskadee National Wildlife Refuge (NWR) contains about 25,970 acres of riverine, riparian woodland, floodplain wetland, and upland sagebrush steppe habitats along 36 miles of the Green River in Sweetwater County in southwestern Wyoming (Fig. 1). The refuge was authorized in 1956 through the Colorado River Storage Project Act (USFWS 2002). This Act provided for the development of wildlife habitat to offset the loss of habitat that resulted when Flaming Gorge Dam was built below, and Fontenelle Dam was built above the refuge on the Green River. Fontenelle Dam was built on the Green River from 1961-64 and in 1965 Seedskadee NWR was established through a Memorandum of Understanding between the U.S. Bureau of Reclamation and the U.S. Fish and Wildlife Service (USFWS). The name Seedskadee originated from the Shoshone Indian word “Sisk-a-dee-agie” meaning “river of the prairie hen.”

The area of southwestern Wyoming in and near Seedskadee NWR is rich in cultural history and resources because the area was used extensively by nomadic Indian tribes, fur trappers and traders, and early pioneers. Hundreds of thousands of pioneers crossed the Green River on the current Seedskadee NWR using the Oregon and Mormon Trails (Haines 1996). Jim Bridger, a trapper and frontiersman, and others operated ferries on the Green River in the 1840s

and 1850s. The Green River and its floodplain essentially was an “oasis” of water and lush vegetation that bisected the vast high desert sagebrush plains of southwest Wyoming and was a welcome respite

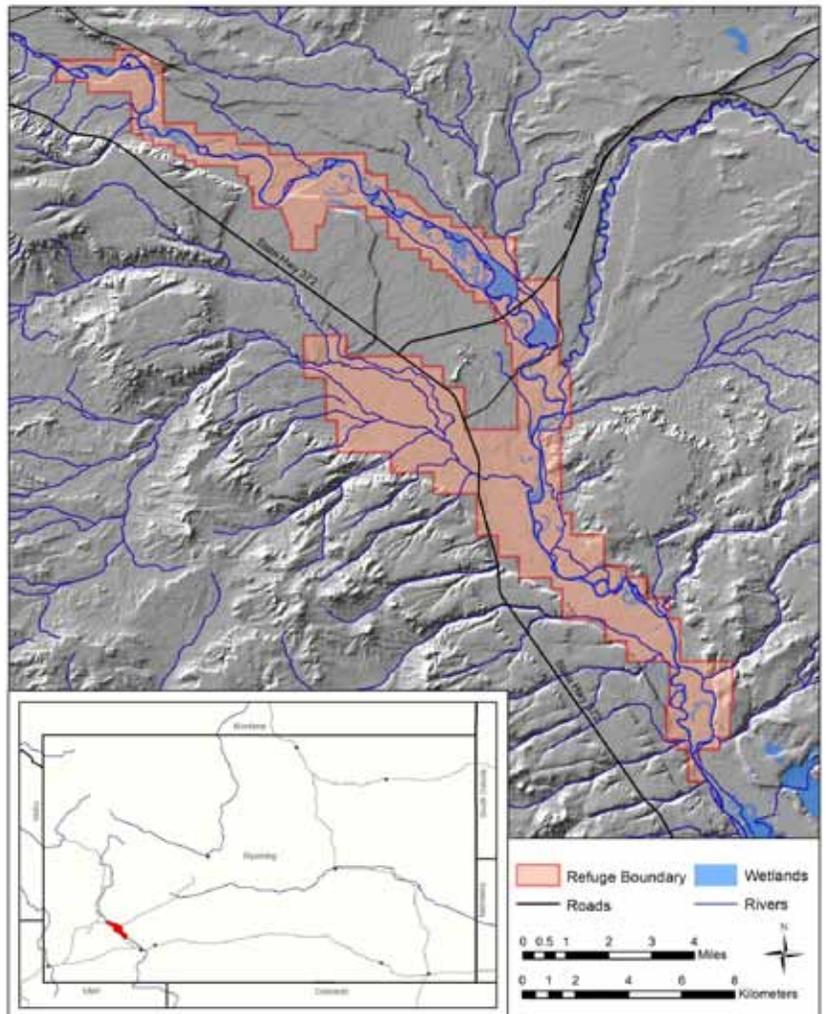


Figure 1. General location of Seedskadee National Wildlife Refuge on the Green River, Wyoming.

for travelers and settlers. Ecological resources in the Green River and its floodplain and adjacent sagebrush steppe habitats supported a diverse assemblage of plant communities and abundant populations of many fish and wildlife species (Dorn 1986).

Seedskaadee NWR is an important part of the Upper Green River ecosystem, contains priority communities for the Wyoming Landscape Conservation Initiative (WLCI 2008), and is a critical public land ownership part of the Great Northern Landscape Conservation Cooperative (USFWS 2010). In 2002, the USFWS completed a Comprehensive Conservation Plan (CCP) for Seedskaadee NWR. The CCP process sought to articulate the management direction for the refuge for 15 years and it developed goals, objectives, and strategies to define the role of the refuge and its contribution to the regional landscape in which it sets, and the overall mission of the NWR system. Design and implementation of the previously completed CCP for Seedskaadee NWR now is being facilitated by an evaluation of ecosystem restoration and management options using Hydrogeomorphic Methodology (HGM) (Heitmeyer 2007). HGM analyzes historical and current information about: 1) geology and geomorphology, 2) soils, 3) topography and elevation, 4) hydrologic condition and flood frequency, 5) aerial photographs and cartography maps, 6) land cover and vegetation communities, 7) key plant and animal species, and 8) physical anthropogenic features of the Seedskaadee ecosystem. HGM now is commonly used to evaluate ecosystems on NWR's (e.g., Heitmeyer and Fredrickson 2005, Heitmeyer and Westphall 2007,

Heitmeyer et al. 2009, Heitmeyer et al. 2010a,b) and provides a context to understand the physical and biological formation, features, and ecological processes of lands within the NWR and surrounding region. This historical assessment then provides the foundation, or baseline condition, to determine what changes have occurred in the abiotic and biotic attributes of the ecosystem and how these changes have affected ecosystem structure and function. Ultimately, HGM helps define the capability of the area to provide key ecosystem functions and values and identifies options that can help to restore and sustain fundamental ecological processes and resources.

This report provides HGM analyses for Seedskaadee NWR with the following objectives:

1. Identify the pre-European settlement (hereafter Presettlement) ecosystem condition and ecological processes in the Green River Valley near Seedskaadee NWR.
2. Evaluate changes in the Seedskaadee NWR ecosystem from the Presettlement period with specific reference to alterations in hydrology, vegetation community structure and distribution, and resource availability to key fish and wildlife species.
3. Identify restoration and management options and ecological attributes needed to successfully restore specific habitats and conditions within the Seedskaadee NWR region.



Cary Aloia

