

Metadata Schema

Title¹	EVALUATION OF WETLAND MITIGATION IN THE GREATER YELLOWSTONE ECOSYSTEM: WILDLIFE POPULATION AND COMMUNITY RESPONSES
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Publication Date(s)	November 2017
Description/Abstract	<p>: The 2006–2013 reconstruction of US Highway 26/287 over Togwotee Pass, Wyoming, impacted or caused the loss of natural wetlands. To comply with U.S. Army Corps of Engineers permit conditions, the Wyoming Department of Transportation (WYDOT) recently completed construction or restoration of 38 mitigation wetlands along the Highway 26/287 corridor and at the aggregate pit site at the U.S. Forest Service Blackrock Ranger Station. This study provides WYDOT information on differences among wetlands created to mitigate for wetland loss (n=10), wetlands impacted but not destroyed (n=7), and natural wetlands (n=16) relative to various aspects of wildlife that use these habitats. We compare characteristics of amphibians, a pathogenic fungus, invertebrates, and birds. Created wetlands in this study area were significantly shallower than natural and impacted wetlands and had shorter hydroperiods; but impacted wetlands were similar in physical habitat characteristics to natural wetlands. Boreal toads (<i>Anaxyrus boreas</i>) rapidly colonized newly created wetlands and annual survival and recruitment rates were similar in created and natural wetlands. Boreal chorus frogs (<i>Pseudacris maculata</i>) were less than half as likely to occupy created wetlands as natural and impacted wetlands but population sizes were high in at least one created wetland. Barred tiger salamanders (<i>Ambystoma mavortium</i>) occurred in natural and impacted wetlands at similar levels, but we observed reproduction by Columbia spotted frogs (<i>Rana luteiventris</i>) at only one created wetland—they were common in natural and impacted wetlands. There was no difference in the prevalence of the pathogenic fungus between created & natural wetlands. Species richness of invertebrates was lower in created wetlands than in natural and impacted wetlands and the community composition of invertebrates differed among wetland types. Communities in created wetlands were more likely to be dominated by flying species compared to communities in natural wetlands that had more passive dispersers such as snails and clams. We recorded bird calls in two created & two natural wetlands; species richness was similar but some riparian specialists (e.g., willow flycatcher, Wilson’s warbler) were not detected at either created wetland.</p> <p>Our results suggest that wetland creation can be an important tool for conserving wetland-dependent wildlife. Understanding how animals use created wetlands sites is a critical component to understanding the efficacy of mitigation efforts and determining alternative (e.g., earlier) “endpoints”. This report highlights characteristics in created sites that are advantageous to species that are perhaps “non-focal”, but important members of the natural community. The data presented here provide support for earlier endpoints for determining success in created wetlands and a baseline for continued monitoring of these or other</p>

¹ To include alternate title; conference title; and journal title, if they are different.

	created sites.
Subject and Keywords	Wetland Mitigation: Amphibians, Invertebrates, Wyoming
Identifier² and/or source	
Collection and Related Documents	N/A
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Related Documents	N/A
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Access Restrictions	public (Data asset is or could be made publicly available to all without restrictions)
Intellectual Property and Other Rights	N/A
License	Public Domain
Code and software needs	N/A
Format	The machine-readable file format. May include media type or dimensions. Used to determine the software, hardware or other equipment needed to display or operate the resources.
Choice of Repository	ScienceBase

NOTE: Each separate report, dataset, collection, existing collection, and software developed must have its own table. All fields in this Schema must be completed at the time of the final report.

² To include record numbers; report numbers; NTIS number; TRIS Accession Number; OCLC Number; ISBN; ISSN; contract number; and DOI if available.

NOTE: This Metadata Schema is created as a derivative from the Common Core required fields which can be found at <https://project-open-data.cio.gov/schema/>.

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