

Your abstract submission has been received

Click [here](#) to print this page now.

You have submitted the following abstract to American Fisheries Society & The Wildlife Society 2019 Joint Annual Conference. Receipt of this notice does not guarantee that your submission was complete or free of errors.

Evaluating Water Level Management to Satisfy Competing Management Objectives for Fish, Fishery, and Birds in a Reservoir

Michael Colvin¹, Victoria Starnes¹, David Schumann¹, Steve Shaw², Chelsea Gilliland¹, Steve Reagan³, Leandro E. Miranda¹ and Bryan Davis¹, (1)Mississippi State University, (2)SUNY Environmental Science and Forestry, (3)US Fish and Wildlife Service

Abstract Text:

Reservoirs provide multiple uses including fish habitat, fisheries, and habitat for waterfowl and shorebirds. Bluff Lake water levels are managed by the USFWS to achieve management objectives related to aquatic species, fishing, endangered species, and birds. Achieving bird objectives requires releasing water during the summer to expose mudflats and provide shallow water foraging habitats. However, reservoir drawdowns negatively influence aquatic species and fishery yield. Water releases used to promote downstream passage of paddlefish are constrained by lake level management for bird species. Lake level management with competing objectives and water constraints and uncertainty in future water availability is a challenge. We developed a stochastic hydrodynamic model relating water inflow to climatic conditions and lake morphology so changes in lake volume due to water inflow and releases modified exposed area. Exposed lake bed area and amount of shallow water was function of a lake volume and related to the likelihood of achieving bird management objectives. Water volume influenced the likelihood of achieving fishery objectives and releases influenced paddlefish passage. A decision model was developed from the hydrodynamic lake model and used to identify optimal water levels given competing management objectives and water availability uncertainty providing a way to solve this problem.

Title: Evaluating Water Level Management to Satisfy Competing Management Objectives for Fish, Fishery, and Birds in a Reservoir

Submitter's E-mail Address: mec685@msstate.edu

Preferred Presentation Format: Oral -- *withdraw if not accepted for preferred format*

Keywords: Freshwater Fisheries Management; Habitat and Water Quality; Natural Resources Management;

Comments to Organizers: Will be arriving Monday and will need to present Tuesday or later.

Consider my paper for inclusion in a symposium

Symposia ID: 8359

Symposia Title: Problem solving in fisheries management

First Author

Presenting Author

Michael Colvin
Mississippi State University
Mississippi State, MS, 39759, USA

Email Address: michael.colvin@msstate.ed

Second Author

Victoria Starnes
Mississippi State University

Email Address: vrs93@msstate.edu -- Will not be published

Third Author

David Schumann
Mississippi State University
Wildlife, Fisheries, and Aquaculture
Mississippi State, MS, 39762, USA

Email Address: david.schumann@msstate.edu

Fourth Author

Steve Shaw
SUNY Environmental Science and Forestry

Email Address: sbshaw@esf.edu -- Will not be published

Fifth Author

Chelsea Gilliland
Mississippi State University
Wildlife, Fisheries, and Aquaculture
Starkville, MS, 39759, USA

Email Address: crg352@msstate.edu

Student? This author is a student

Sixth Author

Steve Reagan
US Fish and Wildlife Service

Email Address: steve_reagan@fws.gov -- Will not be published

Seventh Author

Leandro E. Miranda
Mississippi State University
Department of Wildlife, Fisheries and Aquaculture
Mississippi State, MS, 39762, USA

Email Address: smiranda@cfr.msstate.edu -- Will not be published

Eighth Author

Bryan Davis
Mississippi State University

Email Address: brian.davis@msstate.edu -- Will not be published

If necessary, you can make changes to your abstract submission

To access your submission in the future, use the direct link to your abstract submission from one of the automatic confirmation emails that were sent to you during the submission.

Any changes that you make will be reflected instantly in what is seen by the reviewers. You DO NOT need to go through all of the submission steps in order to change one thing. If you want to change the title, for example, just click "Title" in the abstract control panel and submit the new title.

When you have completed your submission, you may close this browser window.

[Home Page](#)