

U.S. Fish and Wildlife Service
Questions and Answers, September 5, 2006
Biological Opinion on U.S. Army Corps of Engineers' Interim Operations Plan
(IOP) for Jim Woodruff Dam and associated releases to the Apalachicola River

1. What is the purpose of the Fish and Wildlife Service's Biological Opinion?

Under section 7 of the Endangered Species Act (ESA), Federal agencies are required to consult with the Fish and Wildlife Service (Service) when their actions may affect listed species. The Army Corps of Engineers (Corps) has asked the Service to consult on management of available water in the Apalachicola-Chattahoochee-Flint (ACF) system.

The Interim Operations Plan (IOP) has evolved over the last few years to govern flow releases from Woodruff Dam. It was designed considering the needs of listed species, specifically Gulf sturgeon and freshwater mussels (fat threeridge, purple bankclimber and Chipola slabshell). This Biological Opinion (BO) is the Service's analysis of the effects of the IOP, and whether or not this one action will jeopardize the future existence of listed species. The BO also lays out mandatory actions that the Corps must take to minimize take of listed species.

This BO **is not** the result of a consultation on a water control plan for the entire Apalachicola-Chattahoochee-Flint (ACF) system. This BO **is not** the result of a consultation on the Corps' actions related to water contracts, allowing additional or modified water intakes or discharges, dredging navigation channels, spoil disposal or other actions associated with managing the system.

2. What does the IOP say?

The IOP is the description of how the Corps is currently managing water releases from Jim Woodruff Dam into the Apalachicola River. It has been developed over the last several years through informal consultation between the Service and the Corps, and is designed to minimize adverse affects to listed species while also meeting the Corps' responsibilities to provide water for a number of authorized uses (flood control, navigation, hydropower, recreation, water supply, water quality, and fish and wildlife).

The IOP calls for releases from Woodruff Dam to be regulated based on month and current flow conditions. It defines a high, mid, and low range of flows from March through May, and for June through February.

Table 1.2.A from the page 11 of the IOP (below) outlines the flows the Corps proposed to maintain in the IOP. During extreme low flows, the Corps will ensure a minimum flow below the dam of 5000 cfs. This minimum flow has been in place since the late 1980s, several years before either the mussels or the sturgeon were listed under the Act, and it is important not only for imperiled species but also for water supply, hydropower generation, and a host of other reasons.

The IOP also says that when basin inflows are between 8,000 cfs and 23,000 cfs in June through February, the Corps may store 30 percent of the inflow while releasing not less than 8,000 cfs. The BO modifies the IOP to replace the 8,000 cfs threshold with a 10,000 cfs threshold.

Table 1.2.A. IOP minimum discharge from Woodruff Dam by month and by basin inflow (BI) rates.

Months		Basin Inflow (cfs) ^a	Releases from Woodruff Dam (cfs)
March - May	High	>= 37,400	not less than 37,400
	Mid	>= 20,400 and < 37,400	>= 70% BI; not less than 20,400
	Low	< 20,400	>= BI; not less than 5,000
June - February	High	>= 23,000	not less than 16,000
	Mid	>= 8,000 and < 23,000	>= 70% BI; not less than 8,000
	Low	< 8,000	>= BI; not less than 5,000

^a The running 7-day average daily inflow to the Corps' ACF reservoir projects, excluding releases from project storage.

3. What does the Service’s BO conclude?

Under the law, the Service has determined that the IOP does not jeopardize the continued existence of the four species (i.e. the IOP does not appreciably reduce the likelihood of survival and recovery of the four species), or appreciably affect the ability of the proposed and designated critical habitat to provide for the conservation of the species. In addition, the Service and the Corps have agreed upon a list of Reasonable and Prudent Measures (RPMs) that the Corps must implement to reduce the loss of individuals, considered “take” under the ESA (see Question #7).

4. How did the Service reach the “no-jeopardy” conclusion?

The Service’s lengthy analysis compared the effects of the ongoing IOP to the effect of water management under two scenarios: 1) historic water management from 1975-2001, referred to in the BO as the “environmental baseline,” and 2) a “Run-of-River” scenario in which the dams are in place but the Corps does not manipulate water levels and releases. Extensive analysis showed that flows under the IOP are better in some cases for listed species, and worse in some cases for listed species. However, the adverse effects do not amount to an appreciable impact to the species and their habitats.

5. Is the BO consistent with the Service’s past declaration to the U.S. District Court?

Yes. In July 2006, the Service told the Court that even though our analyses had not been completed, based on the best information available to us at that time, we believed that our eventual conclusion would be that the IOP would not keep mussel and sturgeon populations from surviving and recovering. Additional information gathered since that time continues to suggest that the IOP is not likely to jeopardize the continued existence of the species.

6. Does this mean that no mussels or sturgeon will die with the IOP in place?

The Service concludes that no take is expected to occur of Gulf sturgeon and Chipola slabshell under the IOP. However, for the fat threeridge and purple bankclimber, some loss of individuals may occur. The IOP, as proposed, increases the frequency of flows between 8,000 to 10,000 cfs, which in turn increases the chance of harm to these mussels. [Note: the BO requires that this effect be avoided, see Question 7 below.] The frequency of flows less than 8,000 cfs is also greater under the IOP than historically, but this impact is due to the higher level of consumptive water uses in the basin today compared to the past.

Loss of individual animals can be authorized in the ESA. Loss or injury of some number of animals or their habitat is a routine part of many land or water development activities. Where loss of animals occurs, the ESA requires that Federal agencies minimize the loss and insure that the loss is not likely to cause the species to become extinct or preclude it from recovering. In this case, the Service's "no jeopardy" determination means that the loss of mussels or sturgeon in the Apalachicola River under the IOP will be minimal enough that it is not likely to cause these species to become extinct, nor will preclude the species ultimate recovery.

7. What kind of mandatory actions does the Service prescribe for the Corps in the BO?

Under the ESA, the Service is to suggest reasonable and prudent measures to avoid and minimize the effects of the proposed action. For the IOP, the Service and the Corps agreed to a number of Reasonable and Prudent Measures (RPMs) that the Corps must implement to comply with the BO, including:

- Replace the proposed 8,000 cfs threshold in the IOP with a threshold of 10,000cfs.
- Identify ways to minimize harm as new information is collected.
- Develop modifications to the IOP that provide a higher minimum flow to the Apalachicola River when reservoir storage and hydrologic conditions permit.
- Improve the understanding of the channel morphology and the dynamic nature of the Apalachicola River so that take of mussels can be minimized.
- Monitor the level of take associated with the IOP and evaluate ways to minimize take by studying the distribution and abundance of the listed mussels in the action area.

8. Don't the IOP and the Service's BO call for more water to be released down stream than before? How is it possible to do that and still meet recreational and consumptive demands?

The IOP supports a minimum flow of 5,000 cfs and regulates how fast river levels may decline. But the IOP and the BO do not call for special releases specifically for listed species. Instead, the IOP puts limitations on when the Corps reduces flow to the Apalachicola River. Managing water flows is a complicated process that the Corps is faced with daily. The Corps' analysis suggests that they can meet the requirements of the BO and continue to meet other demands on the system.

9. Is this the Service's final assessment of water releases from Woodruff Dam?

No. The Service and the Corps will continue to gather additional data on the listed species and how they are affected by the IOP and other water management activities in the ACF. As with many science-based decisions, additional scientific information will help to better predict the impacts of actions on species or to better describe the parameters needed to conserve species. The Service's BO identifies a number of information gaps that should be filled in order to make even more informed decisions. We will review this information regularly and, if appropriate, will reinstate discussion with the Corps and if needed, re-open the BO and adjust our conclusions and recommendations based on any significant new findings.

10. How will the IOP benefit the species?

The IOP will benefit the species by eliminating flows of less than 5,000 cfs, and by removing operations as a cause of flows less than 10,000 cfs. In other words, flows of less than 10,000 cfs will be due to other factors (e.g. drought, evaporation, consumptive uses) – not the result of the IOP. This will reduce the risk of exposure and subsequent mortality or reproductive failure to mussels due to the IOP.

The IOP is one part of the much bigger picture of the health of the ACF system. The ACF system has been altered drastically over the past century, and it no longer supports the number or types of species it once did. Gulf sturgeon and mussel populations have been reduced in number. As water demands outside the scope of this consultation increase, such as non-federal water uses and increased municipal and industrial uses, these species may further decline. The IOP for Jim Woodruff Dam is a small step toward species' benefits, but much more could be done by carefully planning for both human needs and the health of these species throughout the entire ACF system. For instance, there is a requirement in the BO to develop modifications to the IOP that provide a higher minimum flow to the Apalachicola River when reservoir storage and hydrologic conditions permit.

11. Other biologists have suggested that the Gulf sturgeon and the fat threeridge mussel are headed for extinction. Is the Service saying they are not in trouble?

The Service believes that the Gulf sturgeon and the listed freshwater mussels now live in a highly altered system. However, the Service's analysis indicates that the IOP will provide some benefits to the species and losses due to the IOP will be minimal. Under the IOP the amount of Gulf sturgeon spawning habitat is not reduced. The BO describes our belief that the high number of dead mussels in the summer of 2006 is an anomalous impact, the species will survive, and the river will continue to meet the requirements of the species. Also, the Service's BO calls for the Corps to begin addressing channel changes that are occurring and ways to continue to avoid and minimize harm to the species.

12. Will the Service consult with the Corps on other actions in the ACF Basin?

Federal agencies are required to consult with the Service when their actions may affect endangered or threatened species. We anticipate future consultations with the Corps and all Federal agencies on future actions, including water supply storage

contracts, hydropower contracts, the water control master operations manual, and impoundments or withdrawals that require a federal permit.

13. What else can be done to conserve these species?

We recognize the competing demands on the ACF system. We are committed to seeking common sense solutions that achieve balance between these competing demands and the conservation needs of these species. While these competing demands are not as evident during wet years, low rainfall years will continue to pose problems. The explosive growth of metro Atlanta and an increase in agricultural water use has made it more difficult for the Corps to meet all of the demands on the ACF during drought years.

With these problems come the opportunity for local, State, and Federal agencies to work together to develop creative approaches that conserve water across all sectors. For example, the State of Georgia has requested funds from the Service to develop a Habitat Conservation Plan (HCP) for the Flint River Basin that will address ways to balance agricultural water use with the water needs of listed mussels. The Service will also work cooperatively with Georgia as it implements the Flint River Basin Water Development and Conservation Plan, which can help conserve water in the basin and provide additional water downstream.

14. How will this BO affect ongoing mediation efforts between Alabama, Florida, and Georgia?

The Service will continue to provide technical assistance to the three States and the Corps as they seek resolution in the ongoing water disputes. We hope that our extensive analysis will help the States better understand the needs of the species, and to factor fish and wildlife health into their ongoing discussions. We are optimistic the ongoing mediation process will have positive results and foster creative solutions to address the myriad of challenges we face relative to water uses throughout the ACF basin.

15. Did the Service develop its own models for the analysis in the BO?

No. Although the Service did much comparing of flow statistics, the agency relied on models (e.g., HEC-5) and data provided by the Corps to predict water demand and flows. Georgia has questioned some of the Corps' assumptions. At this time, the Corps' models are the best tool currently available for this assessment, and the assumptions represent the Corps' understanding of how the system is used to meet the project purposes.

16. Are the dams of the ACF impacting fish and wildlife?

Yes, over the last 50 years the dams have had a significant adverse affect to the native fish and wildlife. Dams change the natural flow regime by storing water and trapping sediment. The U.S. Geological Survey has documented that in the past 50 years, many portions of the Apalachicola have become wider and deeper. Fish have less of the floodplain available for spawning.

17. Is the Service considering delisting the fat threeridge or other mussel species of the ACF?

The Service is required by law to periodically review the status of all threatened and endangered species. In the coming months, we will be reviewing the status of the fat threeridge. As documented in the Biological Opinion, we believe the current population of the fat threeridge declined due to the substantial mortality that occurred during the drought this summer. Although this impact is substantial, we believe the species will survive it. Evidence of recent recruitment following the 1999-2001 droughts has been documented. The adverse effects of this year's drought was limited to one area of the Apalachicola that was severely affected by the combination of low flow and channel instability. This evidence suggests to us that the fat threeridge will be able to recover from this impact. Unless the circumstances leading to the 2006 die-off are repeated soon, we believe the species could return to a stable or increasing trend in the foreseeable future. However, we will not be able to consider reclassifying or delisting the species until such a trend is documented over a number of years.