

Jim Woodruff Interim Operations Plan

Biological Opinion
Reasonable and Prudent Measure No. 3
Terms and Conditions

Drought Provision Workshop
13 December 2006

Formal Section 7 Consultation

- Interim Operations Plan for releases from Jim Woodruff Dam to the Apalachicola River
 - Based on basin inflow
 - Incorporates elements developed or agreed to during informal consultation
 - Incorporates new information collected during informal consultation and during the consultation process

Formal Section 7 Consultation

- Formal Consultation initiated by letter dated 7 March 2006
- USFWS letter dated 9 March 2006 noted consultation would be completed by 21 July 2006
- Technical modeling workshop held on 24-25 May 2006
- Request for adjustments to IOP submitted by letter dated 12 June 2006

Formal Section 7 Consultation

- USFWS requested 45-day extension of consultation by letter dated 13 June 2006
- COE agreed to extension to 5 September 2006 by letter dated 28 June 2006
- Technical modeling Workshop on adjusted IOP held on 12 July 2006
- Biological Opinion issued by USFWS on 5 September 2006

Intent of Interim Operations Plan

- Provide year-round operations to support flow needs for sturgeon spawning, young sturgeon, mussels, and host fish for mussels
- Minimize or avoid impacts of low flow operations on listed species or critical habitat
- Provide for storage when water is more plentiful to allow for future augmentation during low flows in support of mussels
- Minimize conflicts with management for other fish and wildlife species (e.g., reservoir fish management)
- Minimize impact to other project purposes

Final IOP for March - May

Based on 7-day Avg. Basin Inflows (BI)

- If $BI \geq 37,400$ cfs, Woodruff outflow $\geq 37,400$ cfs
- If $BI > 20,400$ and $< 37,400$ cfs, outflow $\geq 20,400$ cfs and at least 70% of BI
- If $BI \leq 20,400$ cfs, outflow = BI
- Outflow $\geq 5,000$ cfs

Final IOP for June - February

- If $BI > 23,000$ cfs, Woodruff outflow not less than 16,000 cfs
- If $BI > 10,000$ and $< 23,000$ cfs, outflow $> 10,000$ cfs and at least 70% of BI
- If $BI < 10,000$ cfs, outflow = BI
- Outflow $> 5,000$ cfs

Final IOP Ramping Rates

- If flows $> 30,000$ cfs, no ramping restriction
- If flows $> 20,000$ cfs and $\leq 30,000$ cfs
1.0 to 2.0 ft. per day
- Exceeds Powerhouse Capacity (16,000 cfs)
but $\leq 20,000$ cfs
0.5 to 1.0 ft/ day*

*Consistent with safety requirements, flood control operations, and equipment constraints

Final IOP Ramping Rates (cont.)

- Within Powerhouse Capacity and $>8,000$ cfs
0.25 to 0.5 ft/day*
- Within Powerhouse Capacity and $<8,000$ cfs
0.25 ft/day or less*

*Consistent with safety requirements, flood control operations, and equipment constraints

Reasonable and Prudent Measures Incorporated into Biological Opinion

- Measures determined necessary and appropriate to minimize “incidental take” of endangered or threatened species; or adverse modification or destruction of critical habitat
- Terms and conditions are mandatory in order to implement the reasonable and prudent measures and to avoid “incidental take”

Reasonable and Prudent Measure 3

Drought Provisions

- Develop modifications to the IOP that provide a higher minimum flow when reservoir storage and hydrological conditions permit
 - Higher minimum flows than 5,000 cfs are supportable during normal and wet periods and when reservoirs are relatively full
 - It may be prudent to store water during certain times of the year in order to insure minimum water availability later in the year

Reasonable and Prudent Measure 3

Drought Provisions

- Identify “drought trigger” when the lower minimum flow would be prudent
- Possible components and/or drought triggers
 - Corps reservoir action zones
 - Cumulative reservoir storage remaining
 - Total basin inflows
 - Indicators of fish spawn
 - Climatic condition indices
 - Flow levels at gages downstream of Chattahoochee gage

Terms and Conditions for RPM3

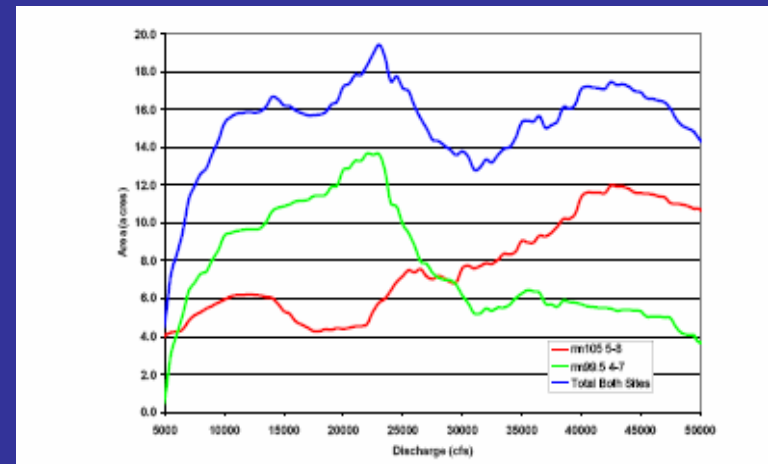
- Initiate IOP drought provisions by 30 Jan 07
 - Identify the reservoir, climatic, hydrologic or species conditions to allow supporting a higher minimum flow in the Apalachicola River
 - Identify recommended water management measures to be implemented when conditions reach the identified “drought trigger” points

Terms and Conditions for RPM3

- If modifications to the IOP for months of Mar-May are adopted as part of the drought provision, the Corps will
 - assess the potential affects to Gulf sturgeon and floodplain inundation/connectivity
 - provide models and prepare biological assessment
 - re-consult as necessary on proposed changes to the IOP

Threatened Gulf Sturgeon

- Flows in support of spring spawning activities and critical habitat (Mar-May)
- Spawning documented at water depths of 8.5 – 17.8 ft over hard bottom habitat

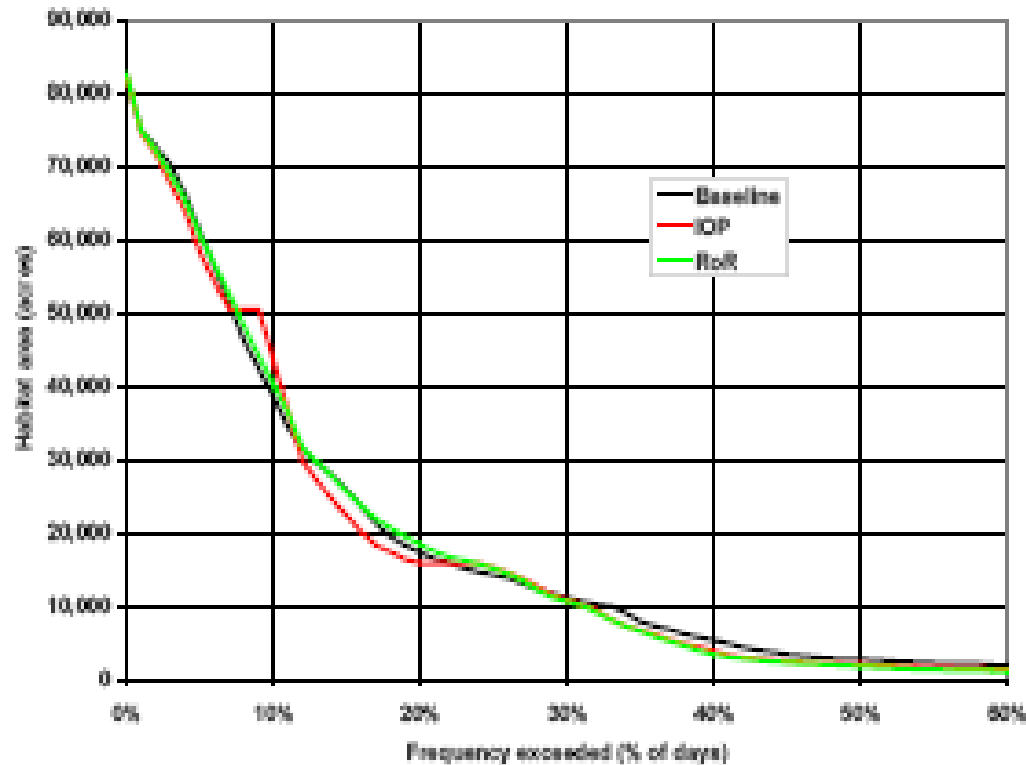


Threatened Purple bankclimber Endangered Fat threeridge

- Mussels collected in habitats inundated by flows of 10,000 cfs and less (most below 8,000 cfs)
- Swift slough and certain other habitat areas isolated or exposed at 5,600 cfs to approx. 6,500 cfs



Floodplain Connectivity



Percent days of connectivity to main river channel during the growing season (Apr-Oct)