

**Southeast Aquatic Resource Partnership  
Southern Instream Flow Network**

**Instream Flow Research Agenda**

**Summary of WebEx held August 27, 2009  
And Follow up information**

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The fourth SIFN WebEx conference for 2009 was held on August 27, 2009 to address instream flow research needs to substantiate recommendations for instream flow criteria for state policies. Mary Davis, SIFN Technical Advisor, presented an overview of the need for better science-based instream flow criteria. Mike Kensler of the Water Resource Center at Auburn University spoke to the need for research that addresses applications for water managers and partnerships to collaborate the science and funding to meet those needs.

An Instream Flow Research Agenda was proposed to help guide development of scientific relationships of ecological responses to flow alteration in the Southeast. The first step in the Research Agenda is to compile existing studies that relate ecological responses to altered flows and how instream flow criteria are being set. Adam Munson of Jones Edmunds and Associates (formerly with the Southwest Florida Water Management District; SWFWMD) and Chuck Cichra of the University of Florida presented an approach to setting limits of withdrawals used by the SWFWMD and a call for studies where thresholds have been proposed or set. SWFWMD will use the studies to help substantiate their threshold for 15% loss of habitat. These studies will be further analyzed for the Instream Flow Research Agenda to help identify information gaps in setting instream flow criteria and additional research needs.

The 2-hour WebEx was attended by 40 representatives of 12 states and several universities, federal agencies, consulting firms, and non-profits. Discussion followed the presentations that clarified SWFWMD's approach and call for studies. Sources of information and studies were discussed. Participants contributed several links to relevant studies and information. Chuck Cichra followed up the meeting with several reports he co-authored for the St. Johns River Water Management District (SJRWMD) on the relationship between flows and fish population dynamics.

**Attachments:**

- A. Call for instream flow studies and contact information
- B. SJRWMD fish-flow study links
- C. Instream flow resource links from WebEx participants

**A. Call for examples of instream flow case studies where thresholds have been proposed or adopted:**

Contact: Chuck Cichra, Ph.D., Professor / Extension Fisheries Specialist

University of Florida, School of Forest Resources and Conservation, Fisheries and Aquatic Sciences, 7922 NW 71st Street, Gainesville, Florida 32653-3071  
Phone: (352)273-3621, Fax: (352)392-3672, E-mail: cecichra@ufl.edu

Thanks for allowing me to participate in the SIFN WebEx last week! As we discussed, here is a short description of what I am doing and what information I need.

Chapter 373, Florida Statutes, directs the five Florida Water Management Districts to develop minimum flows for watercourses within their boundaries. A minimum flow is defined in Florida as “the flow of a watercourse below which further water withdrawals will cause significant harm to the water resources or ecology of the area.”

Adam Munson indicated in his presentation that the South West Florida Water Management has developed and continues to improve methodologies for the establishment of MFLs in freshwater segments and in their estuarine reaches. An often applied “significant harm” criterion is “a no greater than 15% decline in available habitat.” Available habitat has been quantified in several different ways (e.g., no more than a 15% decrease in fish habitat for selected species as determined by use of the Physical Habitat Simulation Model or no greater than a 15% reduction in the volume of water within a given salinity zone). Peer review reports concerning the proposed flows and levels for the Upper Hillsborough and Braden Rivers have commented, “Arguments can and likely be made for both lower and higher percentages of habitat loss to be used for defining significant harm.

**I have been asked to compile and summarize all relevant literature to include primary literature and “gray literature” that addresses the quantitative establishment of minimum flows and levels also referred to as environmental flows.**

I need information on:

- either adopted or proposed flows
- specific systems, watersheds, regions, or states
- case studies or rules
- prior literature reviews

The information can be in the form of:

- electronic copies (Word, PDF, etc.)
- internet links
- paper copies ( I can make copies and return the paper originals, along with a scanned version, if need be)
- information for individuals that you feel I should contact

Feel free contact me if you have any questions. I look forward to working with everyone on getting this information together.

## **B. Reports from the St. Johns River Water Management District (Florida) relating hydrologic regimes to fish population dynamics.**

*1. Minimum flows and levels criteria development: Evaluation of the importance of water depth and frequency of water levels/flows on fish population dynamics: Literature review and summary: The effects of water levels on fish populations*

This report summarizes published and unpublished literature concerning the effects of water flow and level changes on fish populations, with an emphasis on freshwater fishes in Florida and the adjacent southeastern United States.

<http://sjr.state.fl.us/technicalreports/pdfs/SP/SJ2002-SP1.pdf>

*2. Minimum flows and levels criteria development: Evaluation of the importance of water depth and frequency of water levels/flows on fish population dynamics: Literature review and summary: Annotated bibliography for water level effects on fish populations*

This document is an annotated bibliography of the effects of water levels on fish populations, with special reference to Florida fishes, habitats, and systems. The coverage is primarily 1980-2000.

<http://sjr.state.fl.us/technicalreports/pdfs/SP/SJ2002-SP2.pdf>

*3. Biological synopsis of five selected Florida Centrarchid fishes with an emphasis on the effects of water level fluctuations*

This report presents a review of the literature for five selected Centrarchid species to provide information for the determination of biologically meaningful minimum flows and levels.

<http://sjr.state.fl.us/technicalreports/pdfs/SP/SJ2005-SP3.pdf>

*4. Biological synopsis of six selected Florida non-game, littoral fishes with an emphasis on the effects of water level fluctuations. Hill, J. E., and C. E. Cichra. 2005. Biological synopsis of six selected Florida non-game, littoral fishes with an emphasis on the effects of water level fluctuations. Final report. St. Johns River Water Management District, Palatka, Florida.*

<http://tal.ifas.ufl.edu/PDFs/Hill%20and%20Cichra%202005%20Nongame%20Lit%20Biological%20Synopsis%20Report%20FINAL.pdf>

### **C. WebEx Chat log with links to instream flow study resources:**

from Eloise Kendy (TNC) to All Participants: This is a database of environmental flow determinations worldwide, without judgment of their scientific validity or social acceptance:  
<http://dw.iwmi.org/ehdb/efr/wetlandvisitor/Information.aspx>

from Jason Hood SW FL Water Mgt. District to All Participants: Studies by SWFWMD to set several flow thresholds can be found at  
[http://www.swfwmd.state.fl.us/projects/mfl/mfl\\_reports.html](http://www.swfwmd.state.fl.us/projects/mfl/mfl_reports.html)

from Chris Konrad (TNC/USGS) to All Participants: Washington State has established instreamflows in many river basins. These are based on flow duration and IFIM studies (salmon focus) that can be found at  
<http://www.ecy.wa.gov/programs/wr/instream-flows/isfrs.html>

from Chris Konrad to All Participants: A map of basins in Washington state with instream flows can be viewed at: [http://www.ecy.wa.gov/programs/wr/instream-flows/Images/irpp\\_wrp/wsisf\\_0809.pdf](http://www.ecy.wa.gov/programs/wr/instream-flows/Images/irpp_wrp/wsisf_0809.pdf)

from Colin Apse (TNC) to All Participants: Here is the link to the PA Instream Flow Recommendations report- please contact me for any follow up:  
[http://www.depweb.state.pa.us/watershedmgmt/lib/watershedmgmt/water\\_allocation/pa\\_instream\\_flow\\_report-\\_tnc\\_growing\\_greener-\\_final.pdf](http://www.depweb.state.pa.us/watershedmgmt/lib/watershedmgmt/water_allocation/pa_instream_flow_report-_tnc_growing_greener-_final.pdf)