Southern Instream Flow Network

Instream Flow Research Agenda:
What do we already know?

August 27, 2009

Objectives

To present the:

1. Call for better science-based instream flow recommendations

2. Development of the SIFN Instream Flow Research Agenda

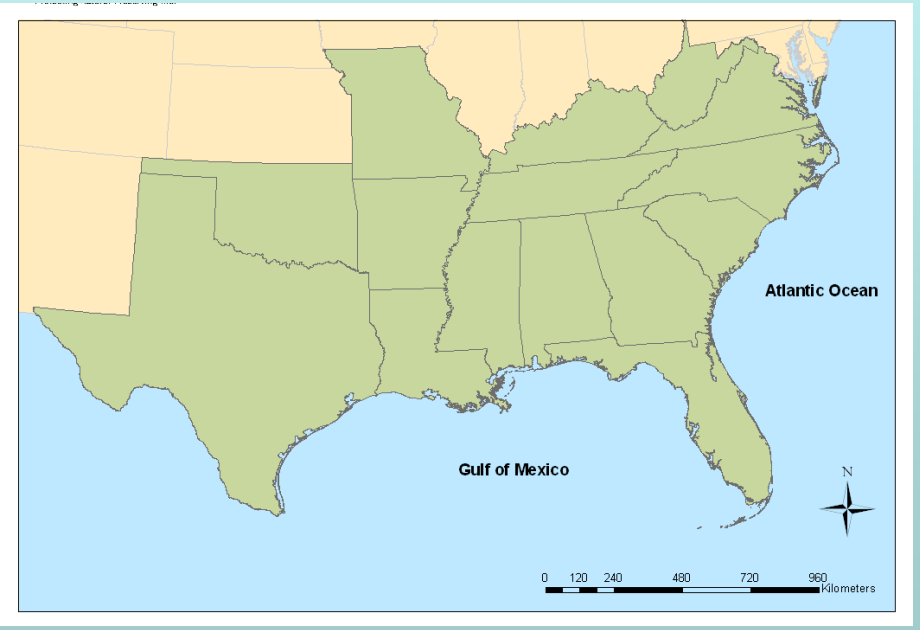
3. Approach to compile what is already known

4. Plan to identify research needs and next steps

SOUTHEAST AQUATIC RESOURCES PARTNERSHIP

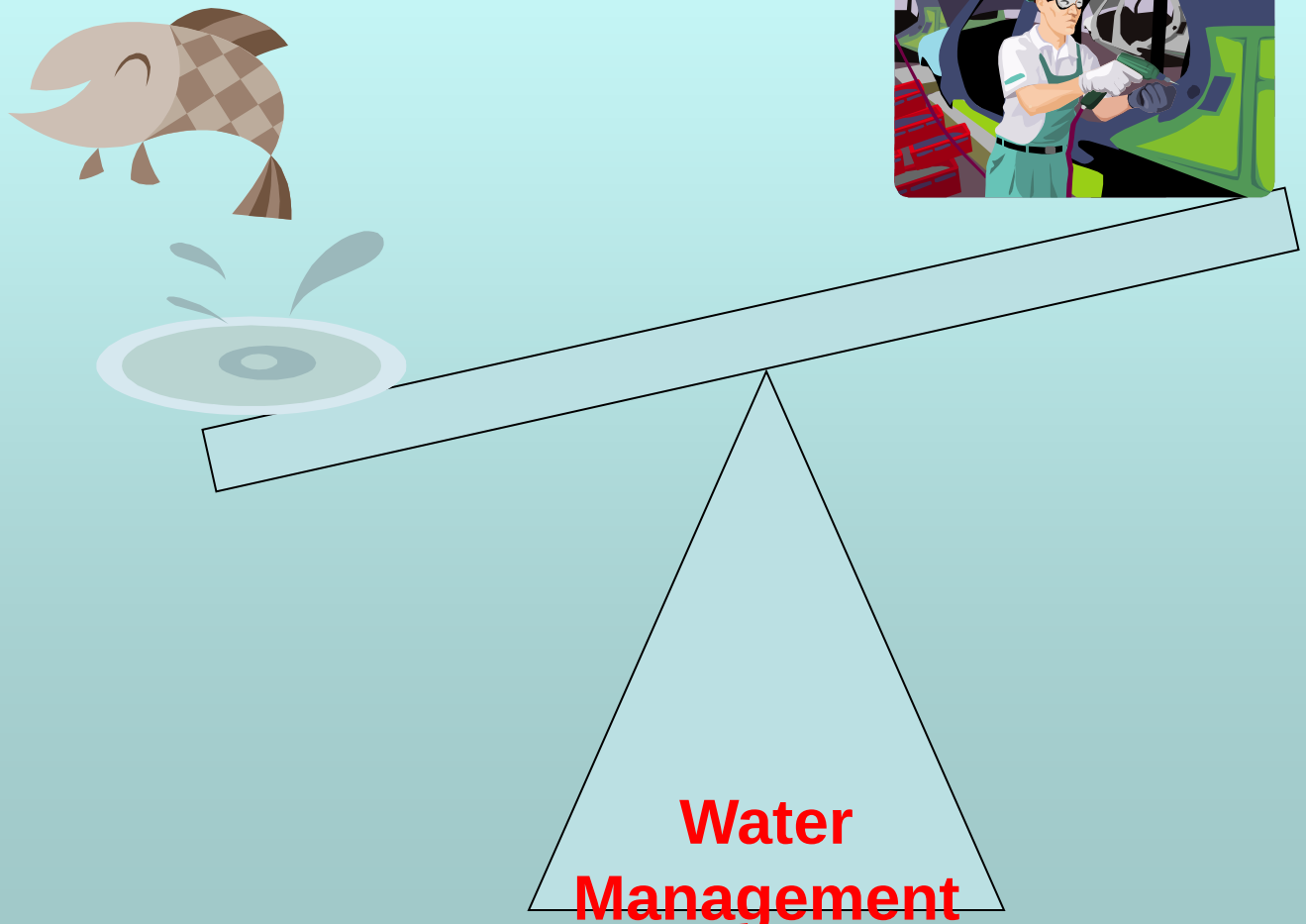
SARP

Southern Instream Flow Network



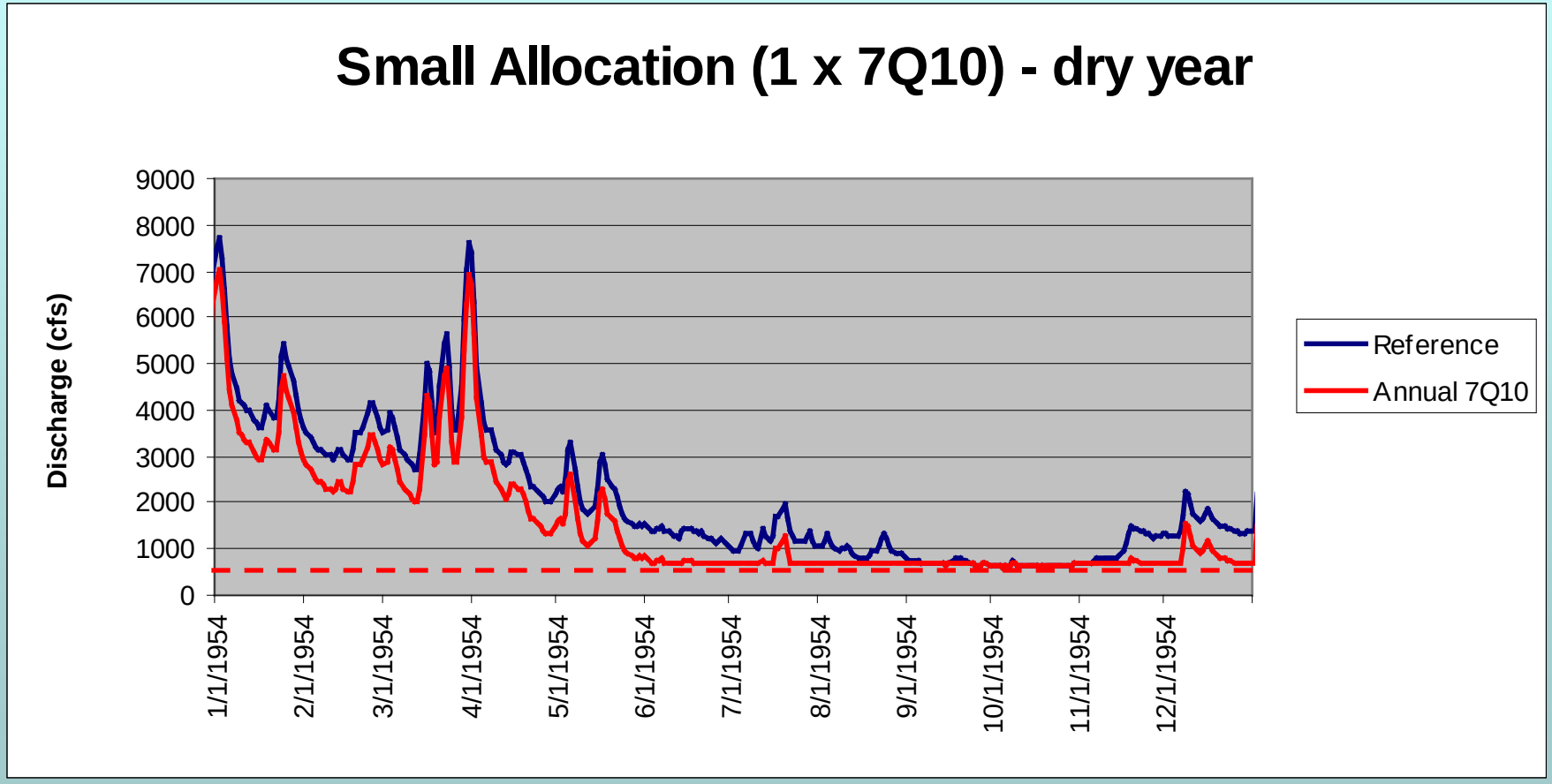
Purpose - **To implement protective instream flow policies in 15 southern states by providing science-based resources and opening lines of communication.**

Who decides how much water needs to stay in the rivers?



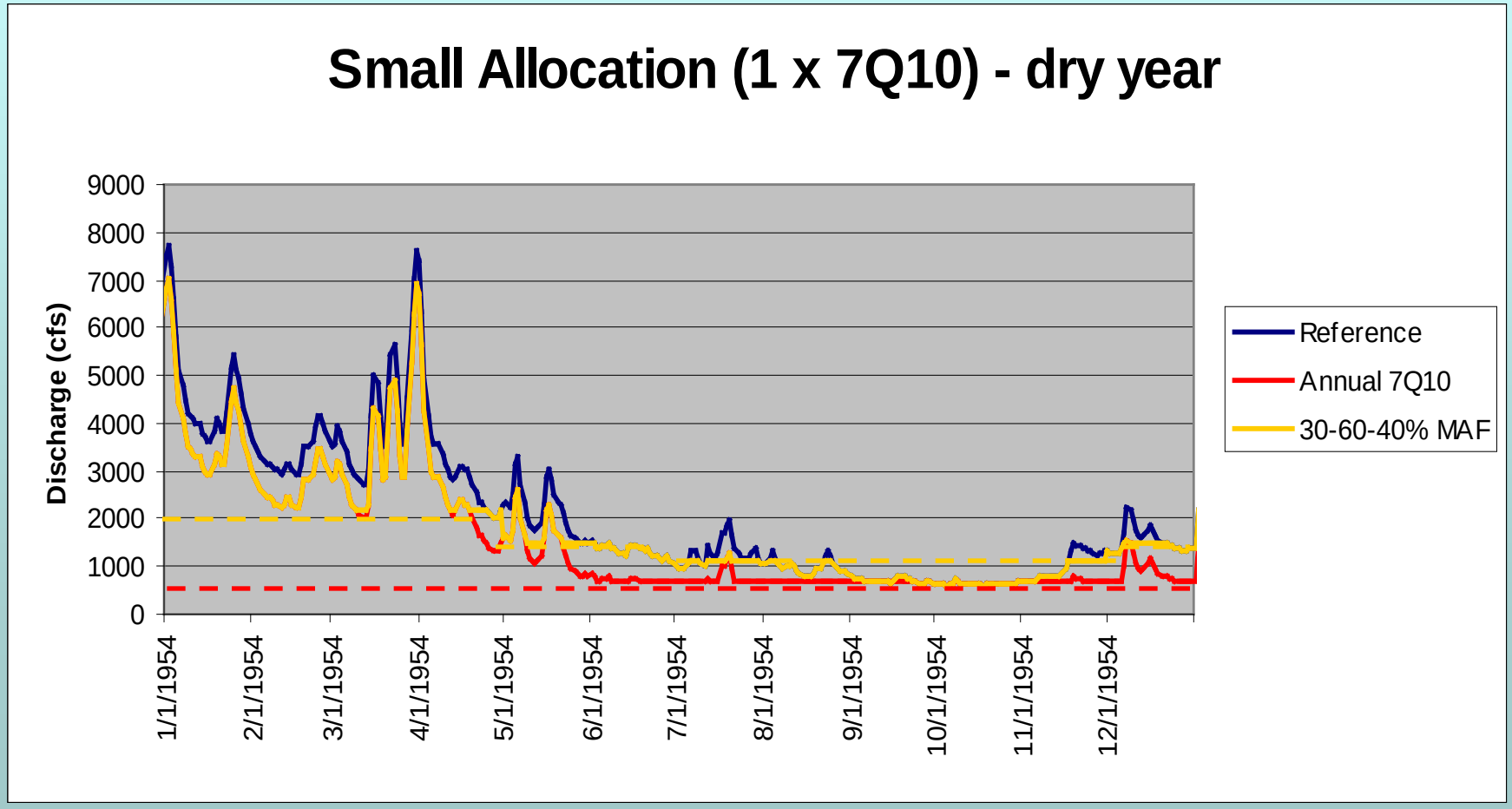
Development of Instream Flow Criteria

Annual 7Q10 **is a single threshold set for assimilative capacity and does not protect the frequency nor duration of low flows.**



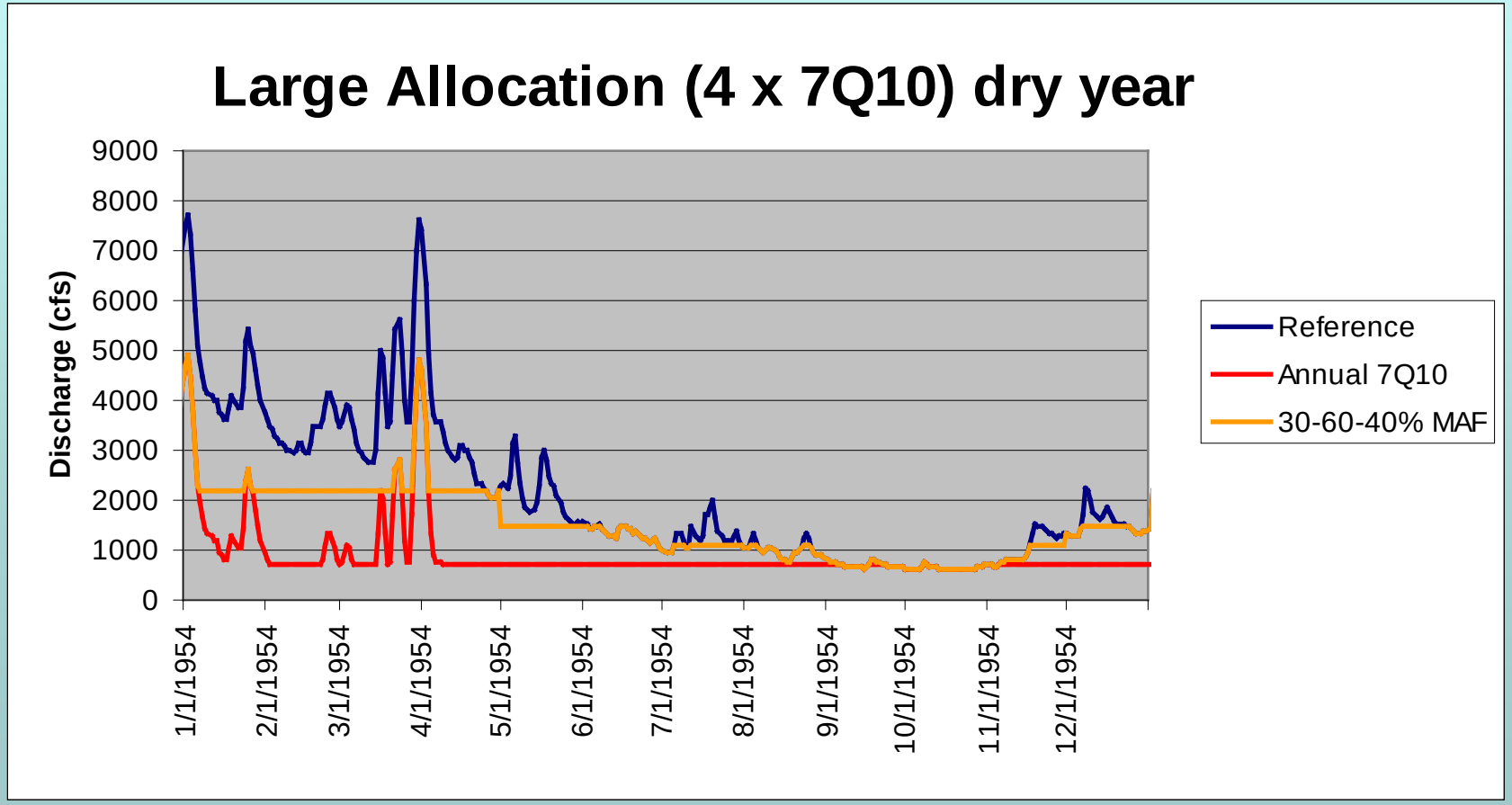
Development of Instream Flow Criteria

Seasonal thresholds **are based on the Tennant Method which is more protective of flows under low water demand pressure.**



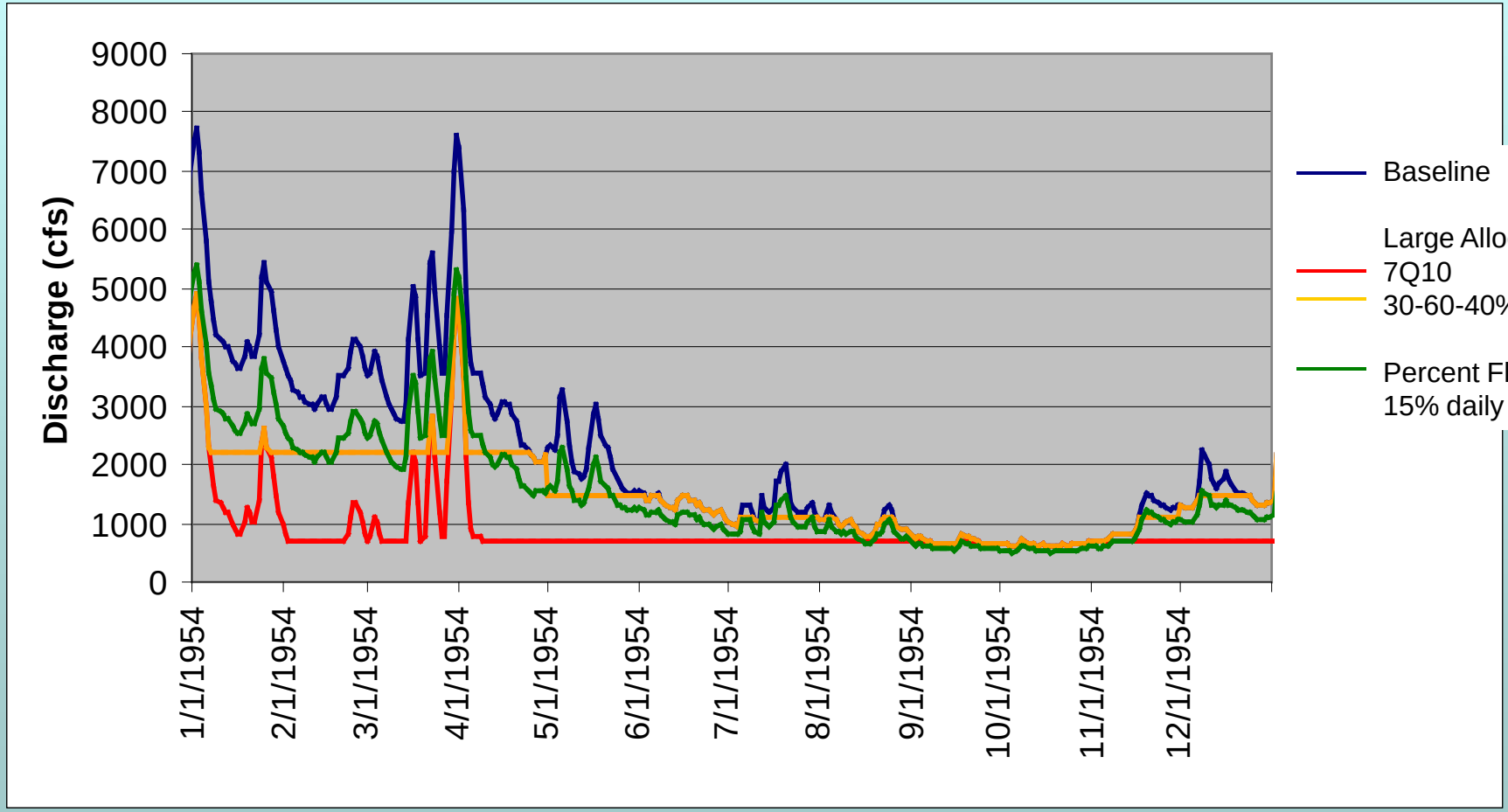
Development of Instream Flow Criteria

Under any threshold method, large allocations of water cause the hydrograph to "flat line" and a loss of function.

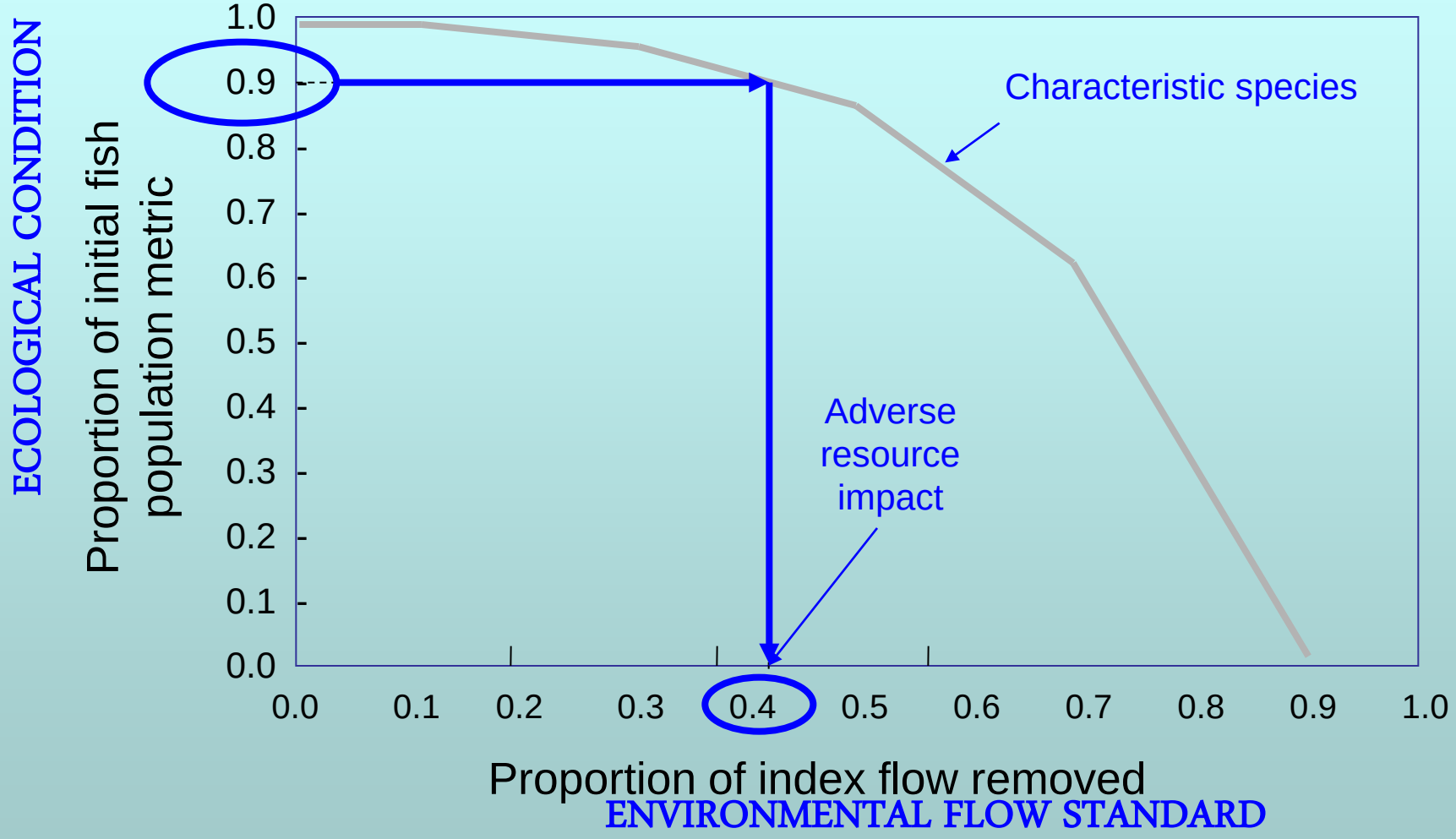


Development of Instream Flow Criteria

Most recently, several states are limiting water allocations to a *percentage of flow* and protecting the variability of the hydrograph.



Michigan's Screening Tool for Ground-Water Withdrawals



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SIFN Instream Flow Research
Proposed Agenda

Objectives: To guide research to provide state-of-the-science assessments of riverine ecology-flow relationships on which to base recommendations for protective instream flow criteria.

- **What do we already know from existing studies to guide development of protective instream flow criteria?**

- What are the information gaps that need further research to better support recommendations for instream flow protection criteria and policy?

- What standards for study and monitoring methods can be recommended to improve efficiencies and comparability of results from different efforts?

INSTREAM FLOW RESEARCH PARTNERSHIPS

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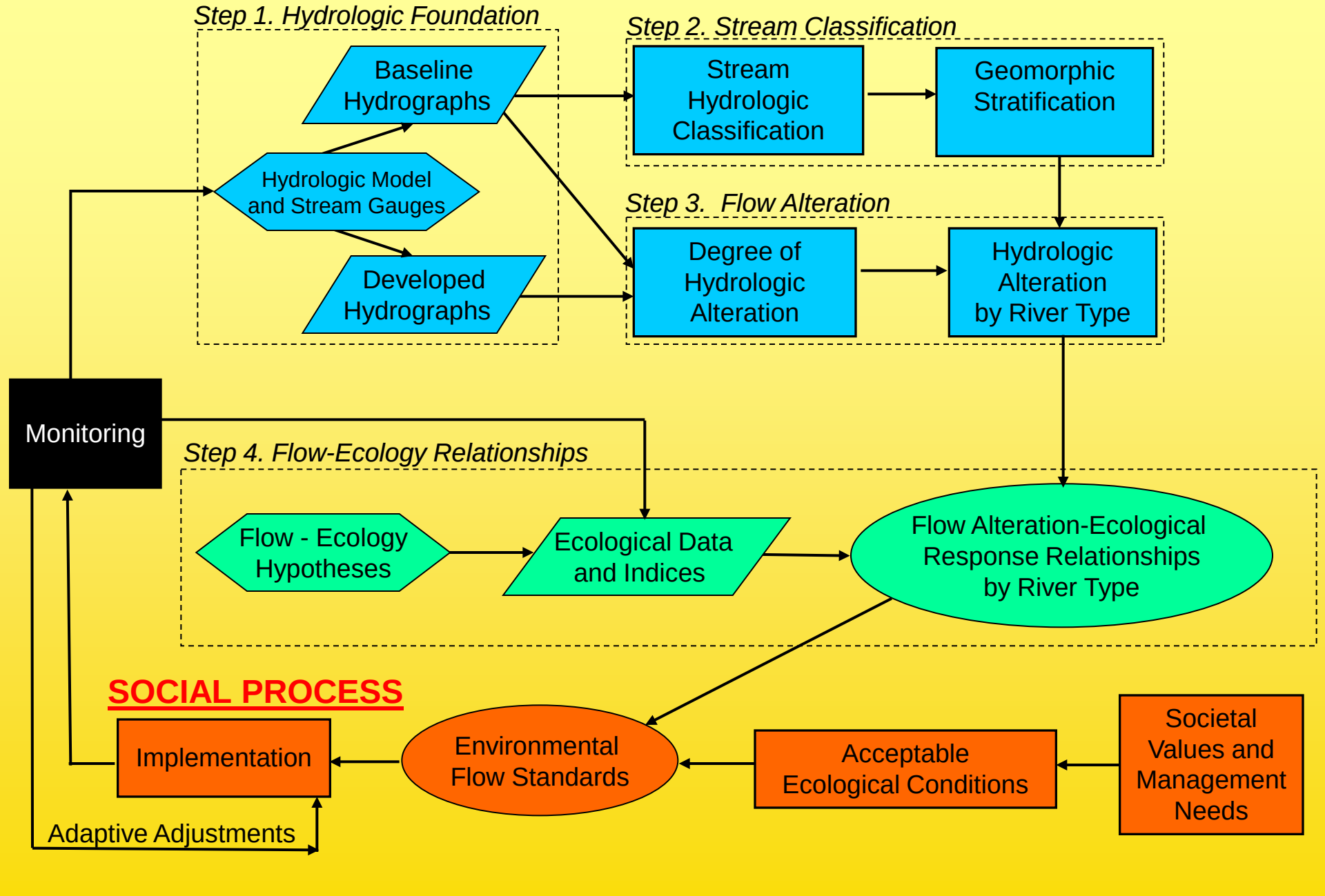
SCIENTIFIC PROCESS



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What do we know already?

Study Approach

- Gather existing instream flow studies
- Compile methods and results
- Assess emerging findings
  - Hydrologic – data, assessments, classification
  - Ecological – data, relationships, applicability
  - Thresholds – parameters, acceptable impacts
  - Criteria – approach, area of application

Substantiating Instream Flow Criteria Thresholds: Instream Flow Research Case Study

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Minimum Flows and Levels
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CALL FOR INSTREAM FLOW STUDIES

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What information can you contribute?

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What resources can you contribute?

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What information is most useful to you?

Study Approach

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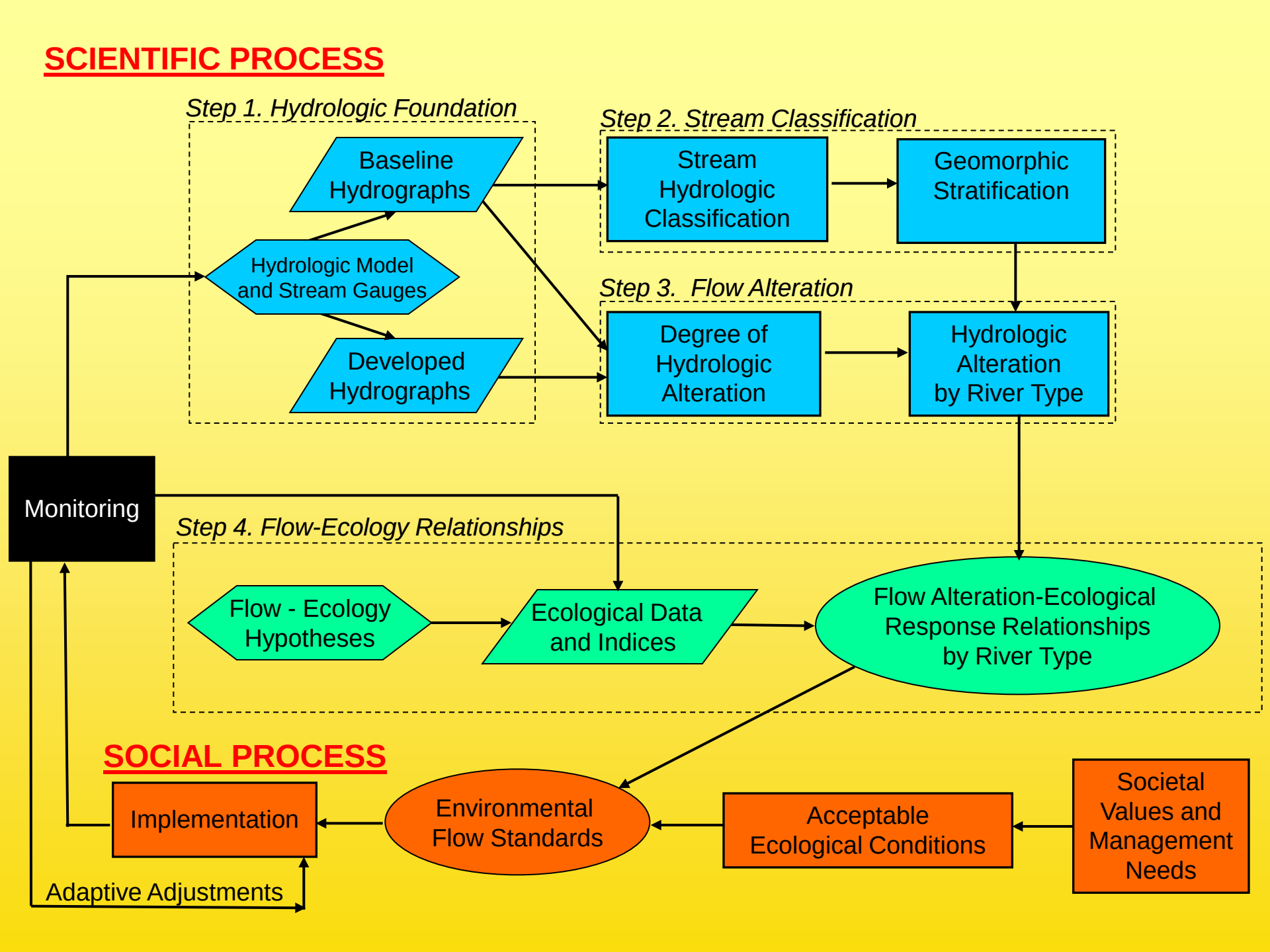
SCIENTIFIC PROCESS
Step 1. Hydrologic Foundation
Baseline Hydrographs
Hydrologic Model and Stream Gauges
Developed Hydrographs
Step 2. Stream Classification
Stream Hydrologic Classification
Geomorphic Stratification
Step 3. Flow Alteration
Degree of Hydrologic Alteration
Hydrologic Alteration by River Type
Monitoring
Step 4. Flow-Ecology Relationships
Flow - Ecology Hypotheses
Ecological Data and Indices
Flow Alteration-Ecological Response Relationships by River Type
SOCIAL PROCESS
Implementation
Environmental Flow Standards
Acceptable Ecological Conditions
Societal Values and Management Needs
Adaptive Adjustments

Next Steps for Research**

- Contribute instream flow studies
- Identify resources to help compile results
- Form Instream Flow Research Committee
- Continue Monthly WebEx's through Fall ’09
- Annual SIFN Workshop – December 1-3 or 8-10

** **Work continues on Education and Outreach and SIFN Team activities**

What is the future for Instream Flow Protection in the South?

- Improved scientific support for protective instream flow recommendations
- Informed stakeholders about the value of aquatic resources
- Comprehensive water management planning
- Regulatory limits on withdrawals and dam operations
- Sustainable growth with healthy aquatic ecosystems