



Strategies to Determine Environmental Flows

**A Look at State and Provincial
Fish And Wildlife Agency Efforts**



IFC's Instream Flow Program Initiative (IFPI)



Instream Flow Program Initiative

- Focus was on state and provincial (Canada) Fish & Wildlife agencies (IFC members)
- Funded with Federal Multi-State Grant
- 3-year duration (2006-2008)
- All 50 states (and 6 provinces) participated
- Tied to concepts and policies of IFC's book



Project Goal

... (identify) trends and opportunities that will help state and provincial fishery and wildlife management agencies develop, maintain, or improve the effectiveness of their instream flow/water management activities and programs.



Project Elements

- 2006-2007: Agency surveys*
 - Survey 1: Status of water program
 - Survey 2: Effectiveness of water program
- October, 2007: Post-survey workshop
- 2008: Final reports

* - *Based on self-evaluations*



Survey 1

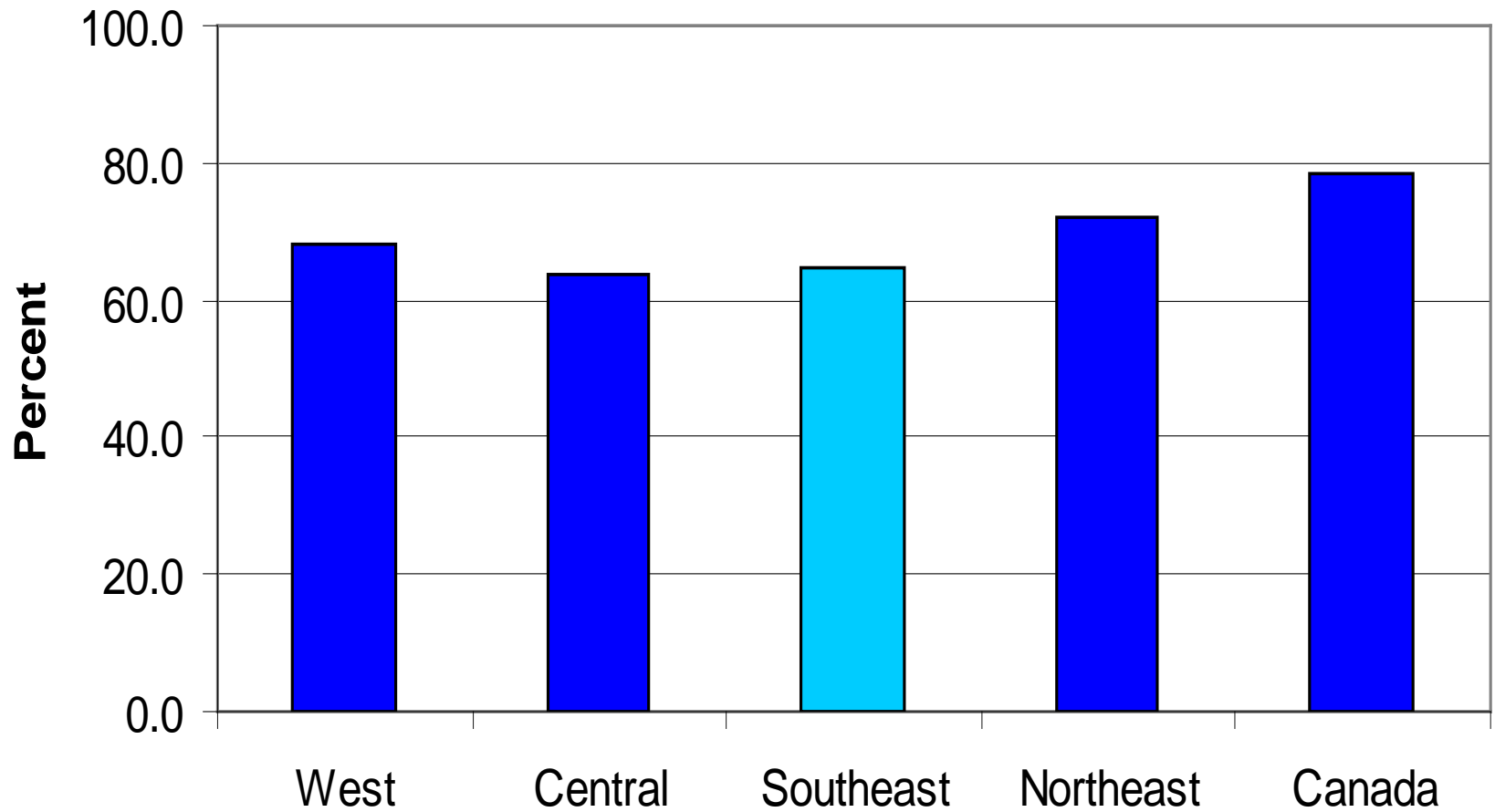
- How consistent is your agency with IFC policies?
- What has been the trend in this area in the past 10 years?
- Provide explanatory comments



How consistent is your agency with IFC policies?

- Not consistent
- Somewhat consistent
- Fully consistent
- Exceeds the standard
- Not applicable

Percent of Consistency With IFC Policies

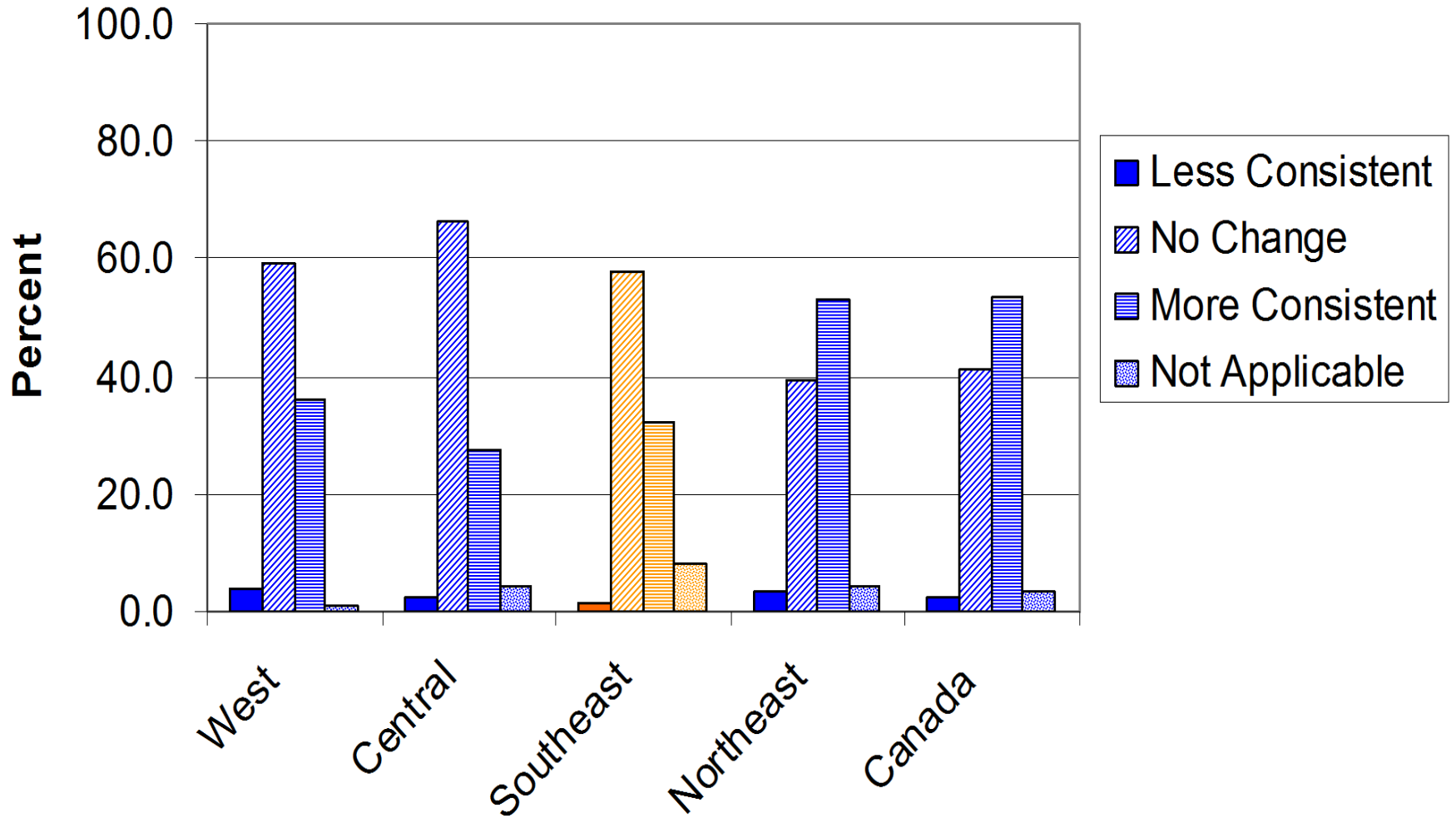




What has been the trend in this area in the past 10 years?

- Less consistent
- More consistent
- Not changed

10-Year Trend in Consistency By Region





Survey 2 – Agency Effectiveness

Logic model

- Inputs (resources you need)
- Activities (what you do)
- Outputs (what things you get done)
- Outcomes (so what)



**Begin With the End in Mind –
Identify Outcomes First**

Example of Logic Model Format

(identify the target, then develop a road map)

Inputs / Resources	Activities	Outputs	Outcomes
Budget	Permit review	Scientifically valid flow/volume recommendations or conditions	Functional environmental flows
Information/Data	Water right filings Conduct field studies	Enforceable water quantity and quality protections	Flow-supportive laws and policies
Staff	Interdisciplinary coordination	Effectiveness partnerships	Knowledgeable and actively involved public



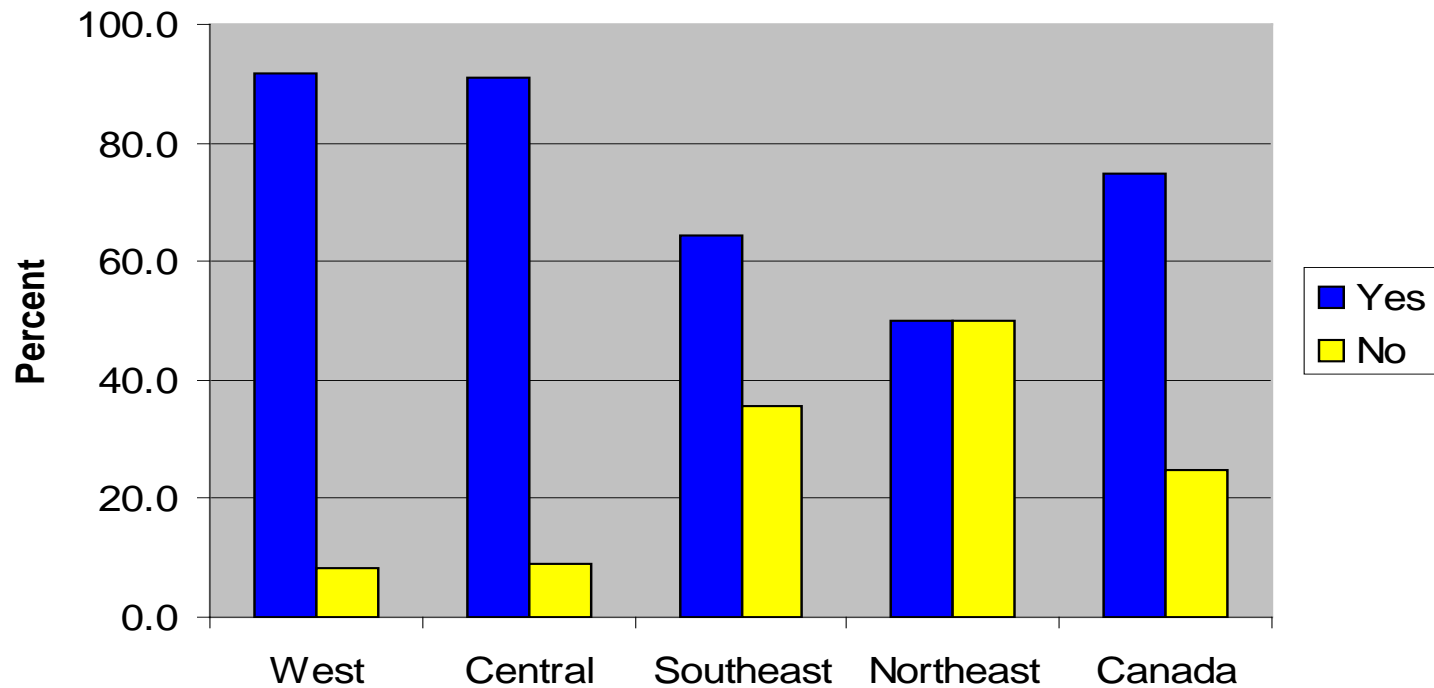
Survey 2 Results

Inputs / Resources

Institutional Framework

Recognizing water in planning documents

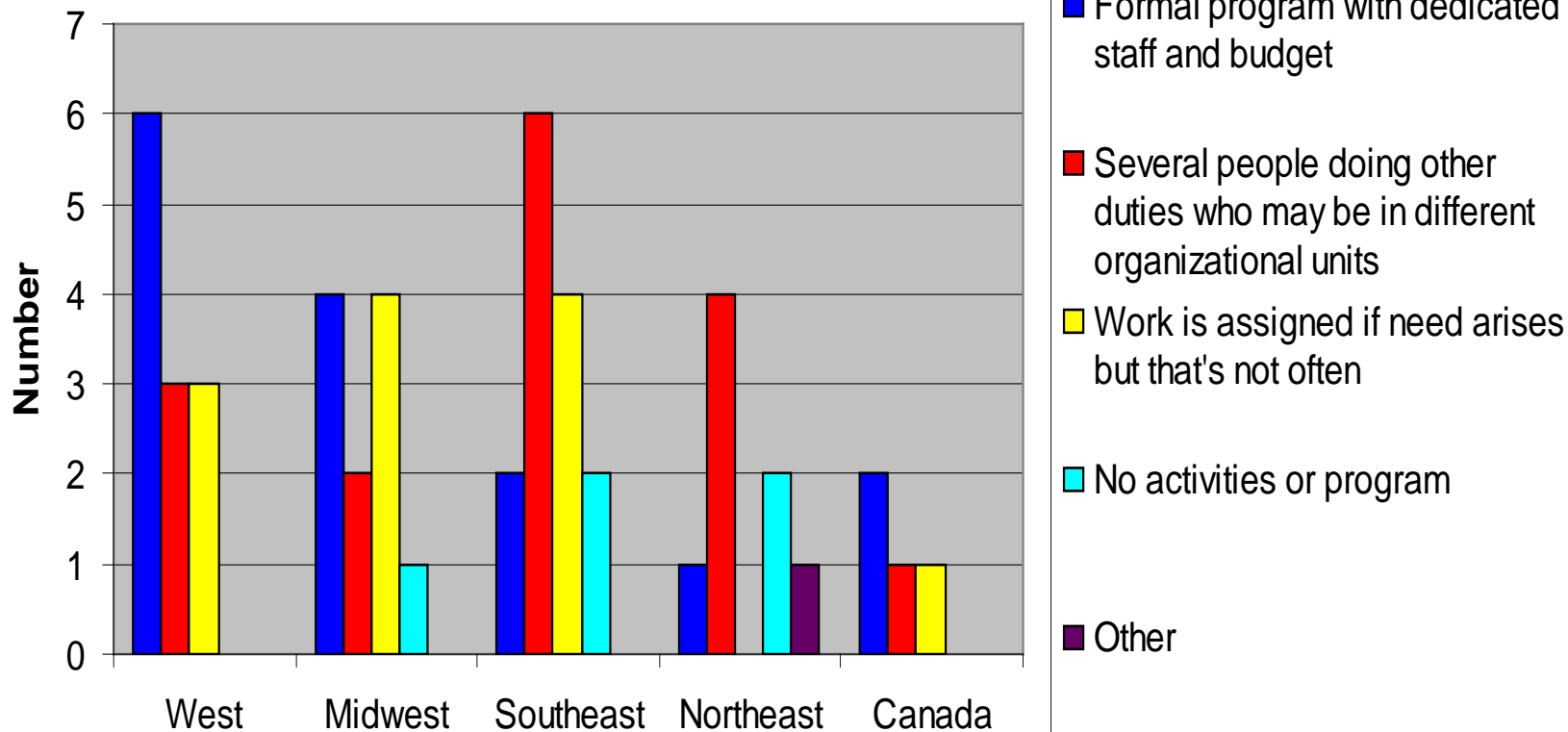
Are instream flow/water management issues recognized in your agency's mission statements or any strategic planning documents?



Institutional Framework

Agency structure

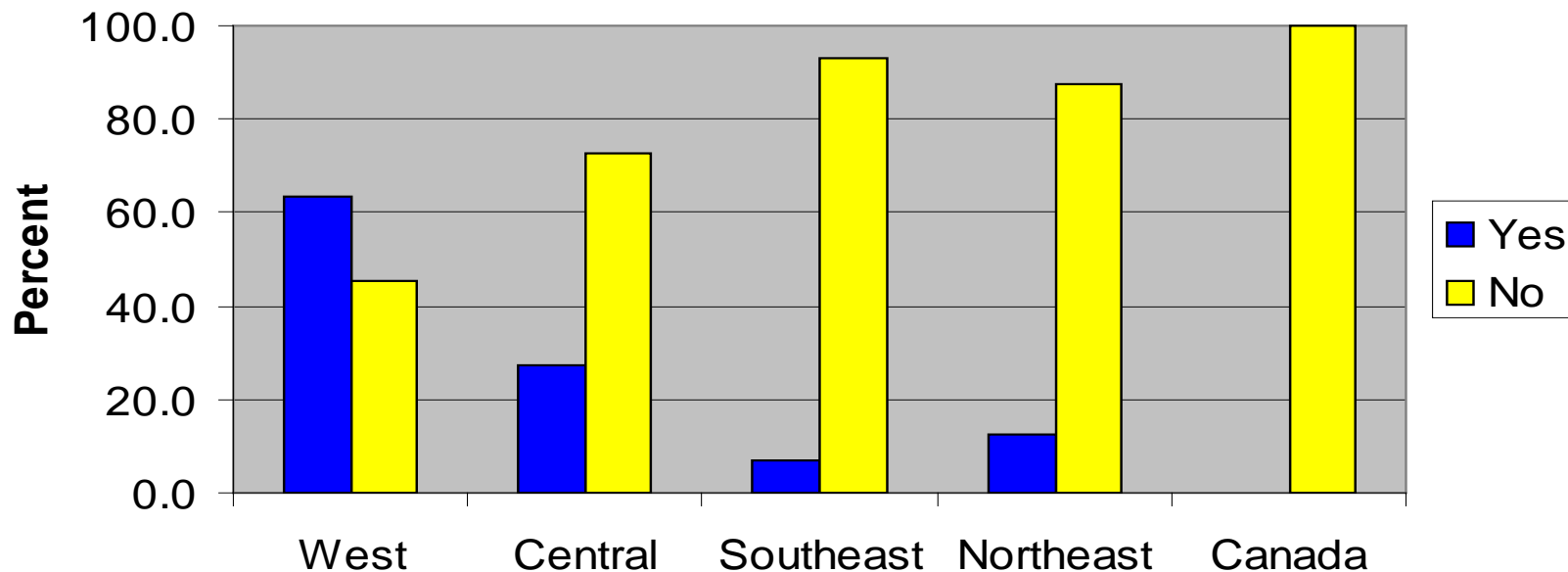
Instream Flow Management



Institutional Framework

The role of water management when setting priorities

Does your agency have some type of water resource assessment tool it uses to prioritize which water bodies require instream flow/water volume protection or restoration?





Top five needed resources

check this out:

- **More staff**
- **More supportive laws**
- **More knowledgeable public**
- **More actively supportive public**
- **More supportive regulations and policies**

Not more or better scientific methods



Top five needed resources in the Southeast:

- **More staff**
- **More supportive laws**
- **More supportive regulations and policies**
- **More actively supportive public**
- **More knowledgeable public**



**What methods do most
state and provincial
agencies use?**

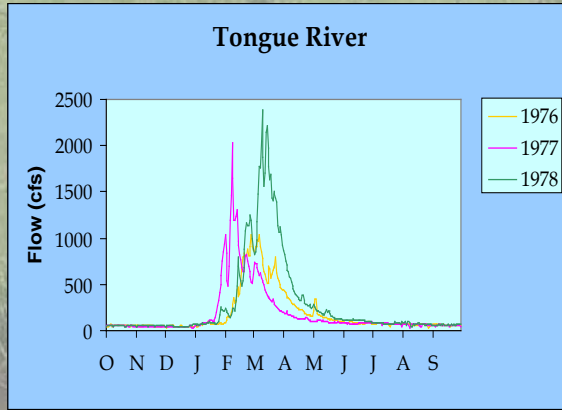
Geomorphology



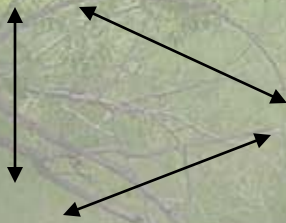
Biology



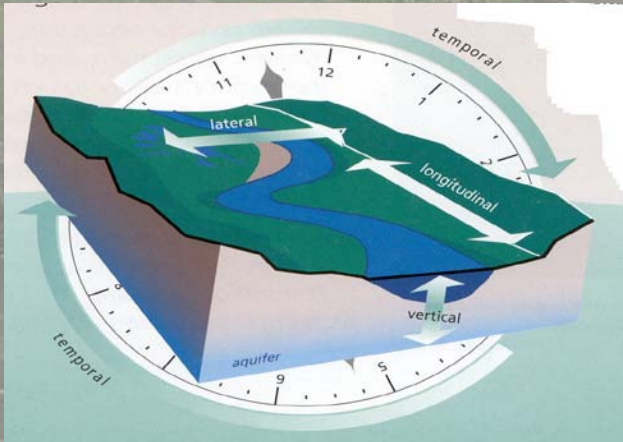
Hydrology



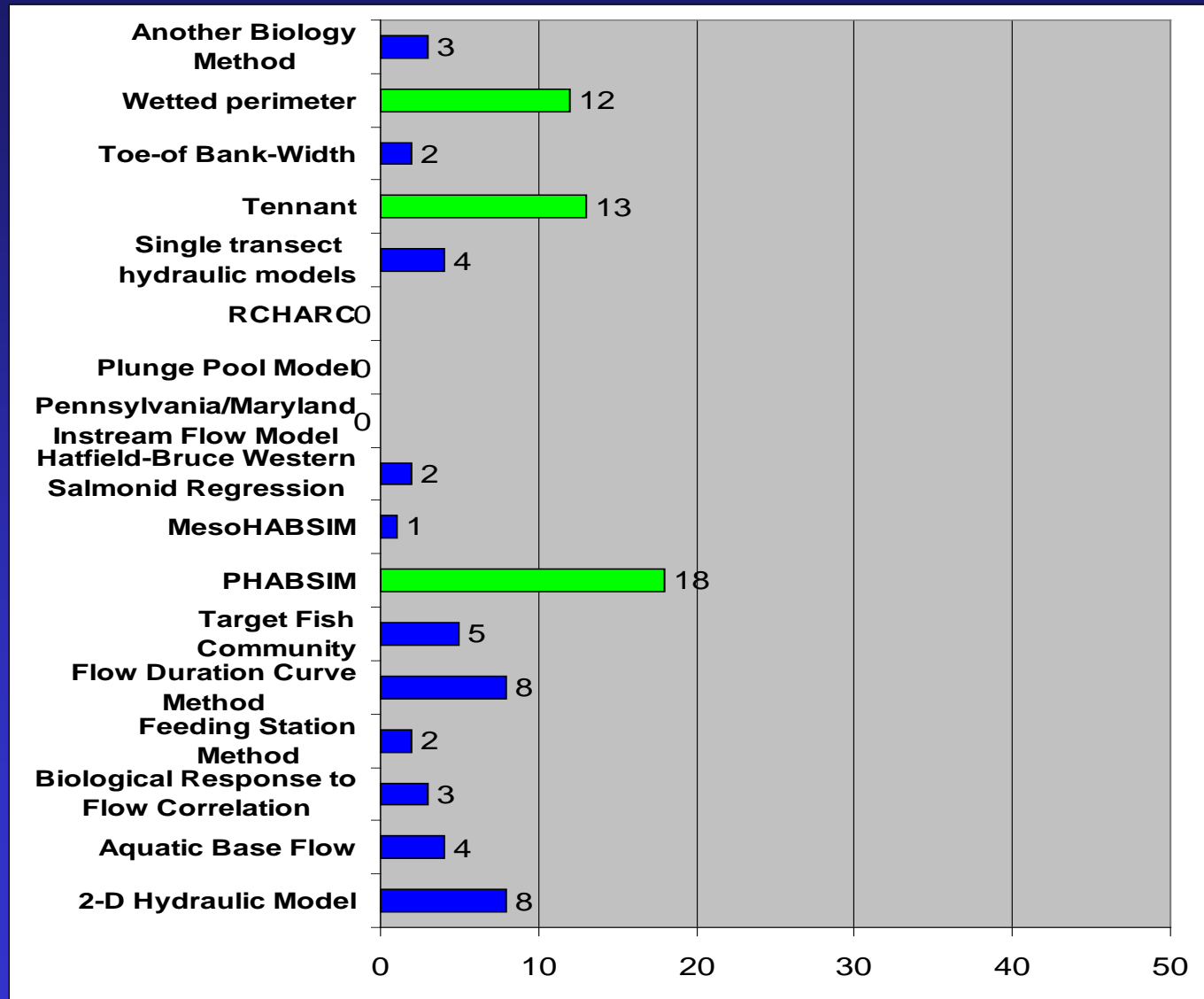
Connectivity



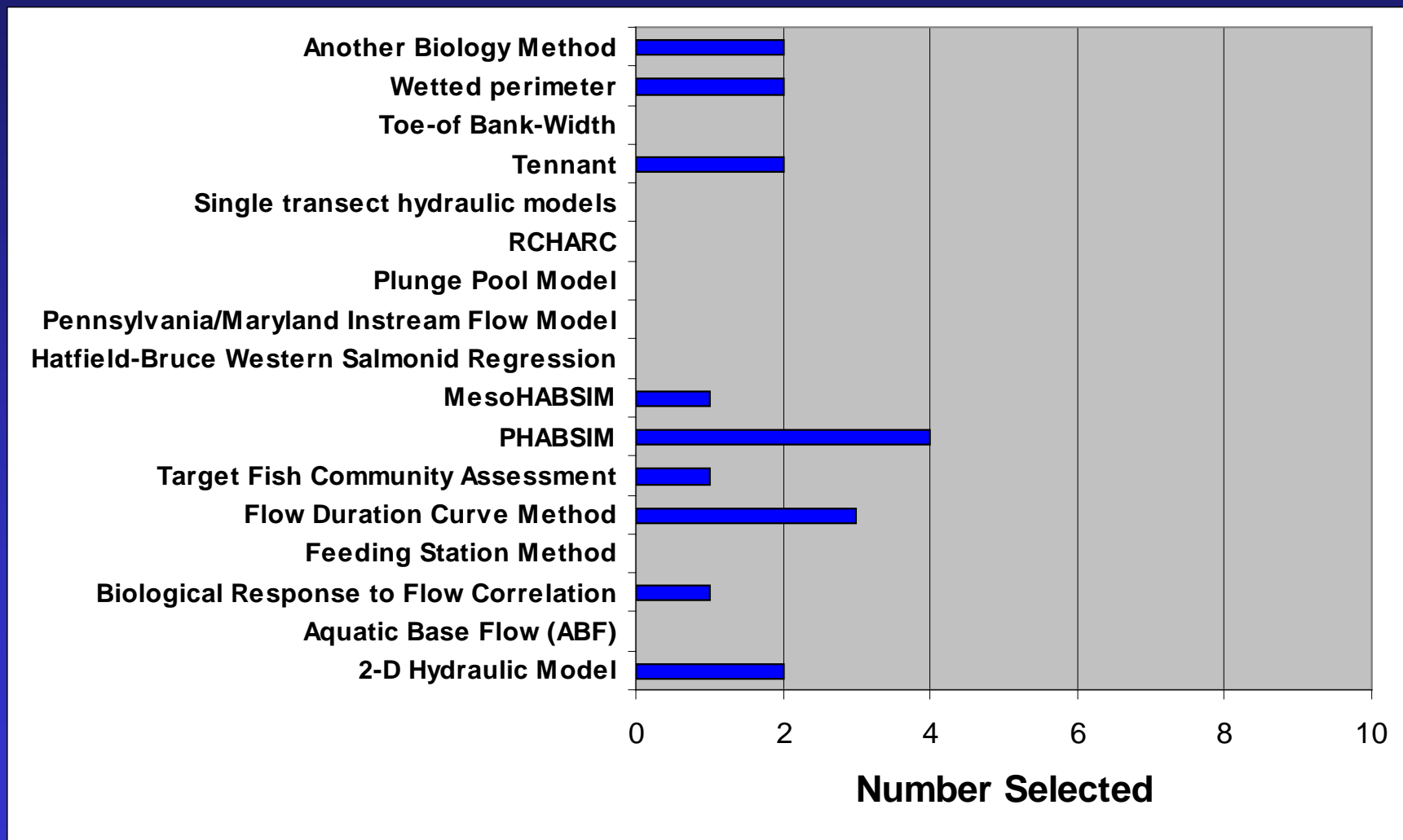
Water Quality



Biology Methods Used



Biology Methods Used in the Southeast





We identified 28 flow-related activities

- **Reservoir management agreements**
- **Endangered Species Act**
- **Wild and scenic rivers**
- **Hydro licensing**
- **Dam removal**



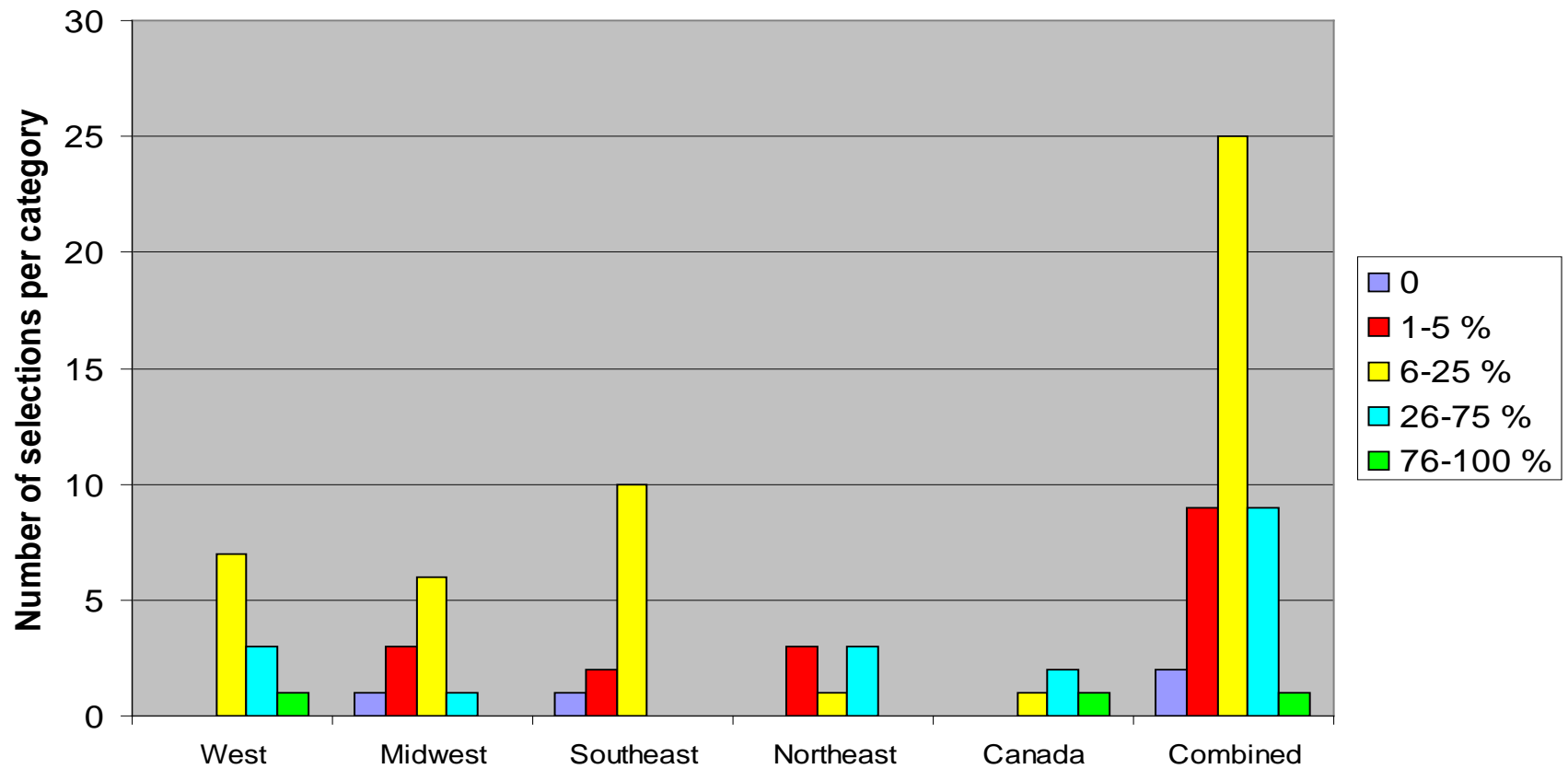
What level of protection is provided?

- All 28 provide at least base flow protection
- Few provide full ecosystem flow protection



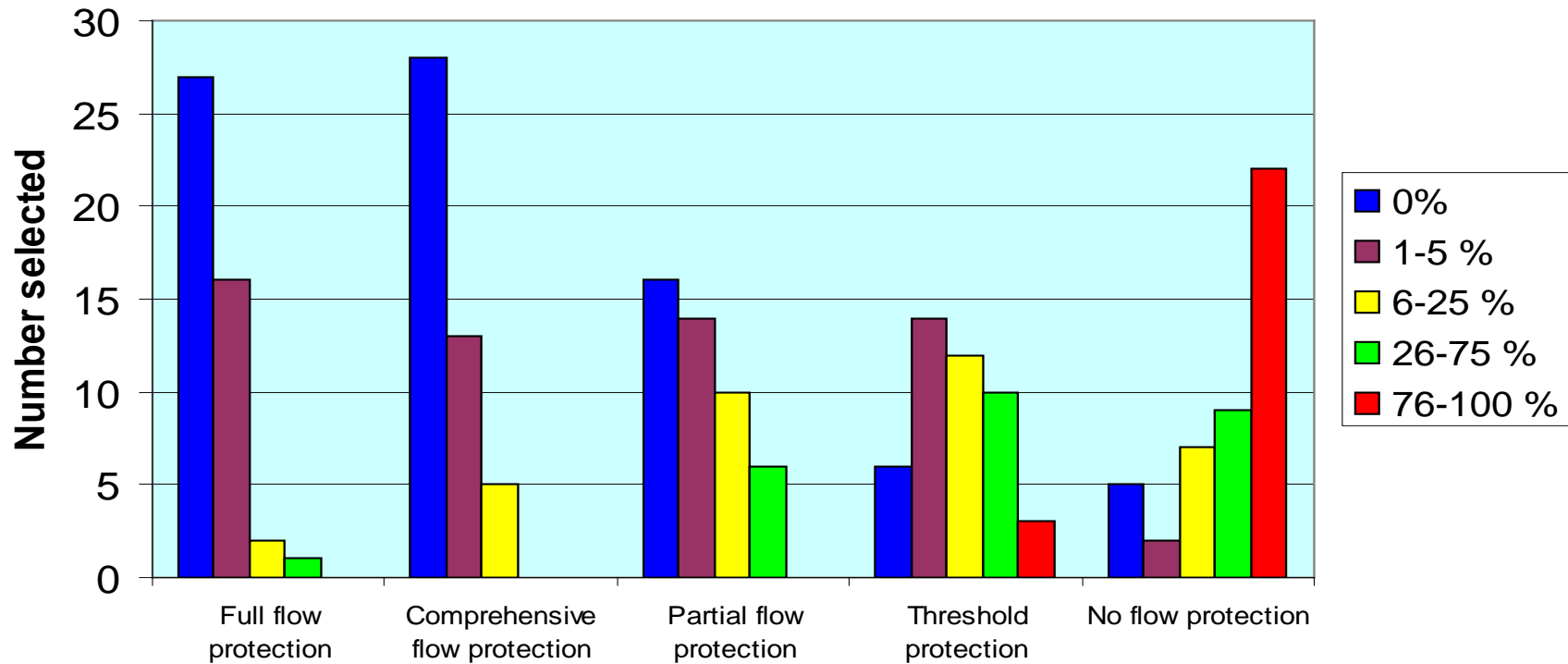
Outputs

Percent of Streams in Unaltered Condition



- Most states reported less than 25% of streams in unaltered condition
- In some states less than 5% of streams are unaltered

Proportion of Stream Miles Protected All Regions Combined



- Over 50% of participants said 0% of streams had Full Protection
- One-third said only 1-5% of streams had Full Protection
- Nearly half of participants said >76% of streams had No Protection



Workshop Summary

Drivers and Strategies for the SE

- **There needs to be a strategic vision and plan for the future instream flow program in each state.**
- **There needs to be policies, laws and rules specifically for instream flow programs**
- **The public isn't fully aware or supportive of instream flow values.**
- **Develop an agency vision that includes instream flow.**
- **Commission a study that defines needed water law changes for each state**
- **Hire a firm to survey existing knowledge and values of the public. Develop a marketing campaign to generate support and involvement for environmental flows.**



Summary

- Identify outcomes – what do you want rivers to look like in the future?
- Ensure you have adequate resources (inputs) like planning documents, staff, budgets, partners.
- Prioritize activities.
- Develop measurable outputs.



Managing environmental flows

- Is not simple or easy
- Is still a challenge for most states
- Is easier if you have a structured plan and formal program

