US EPA ARCHIVE DOCUMENT

Implementing
Maine's In-stream Flow
and Water Level Rule

38 MRSA Section 470-H (statutory authorization, 2002)

- **Maintain in-stream flows and lake and pond water levels -**
  - **"protective of aquatic life and other uses of the water classification"**
  - **"based on the natural variation of flows and water levels"**
- **Alteration of criteria allowed if use will be "protective of water quality within that classification"**

General principles for developing the rule

- Allow for reasonable use of all waters
- Encourage planning, conservation
- Encourage storage (enable funding, permitting)
- Provide flexibility to establish site-specific flows
- Provide consistent policy among agencies
- Use the existing regulatory process (maintain existing flow/level "permits")
- Keep it simple, make everyone happy

What is NOT in the Rule

- Reference to, or connection with, Clean Water Act
- Direct restrictions on groundwater use (except where it impacts surface waters)
- New regulatory (permitting) process
- New enforcement powers
- Resolution process for competing users
  - Allocation process
- Conferring of any legal water rights

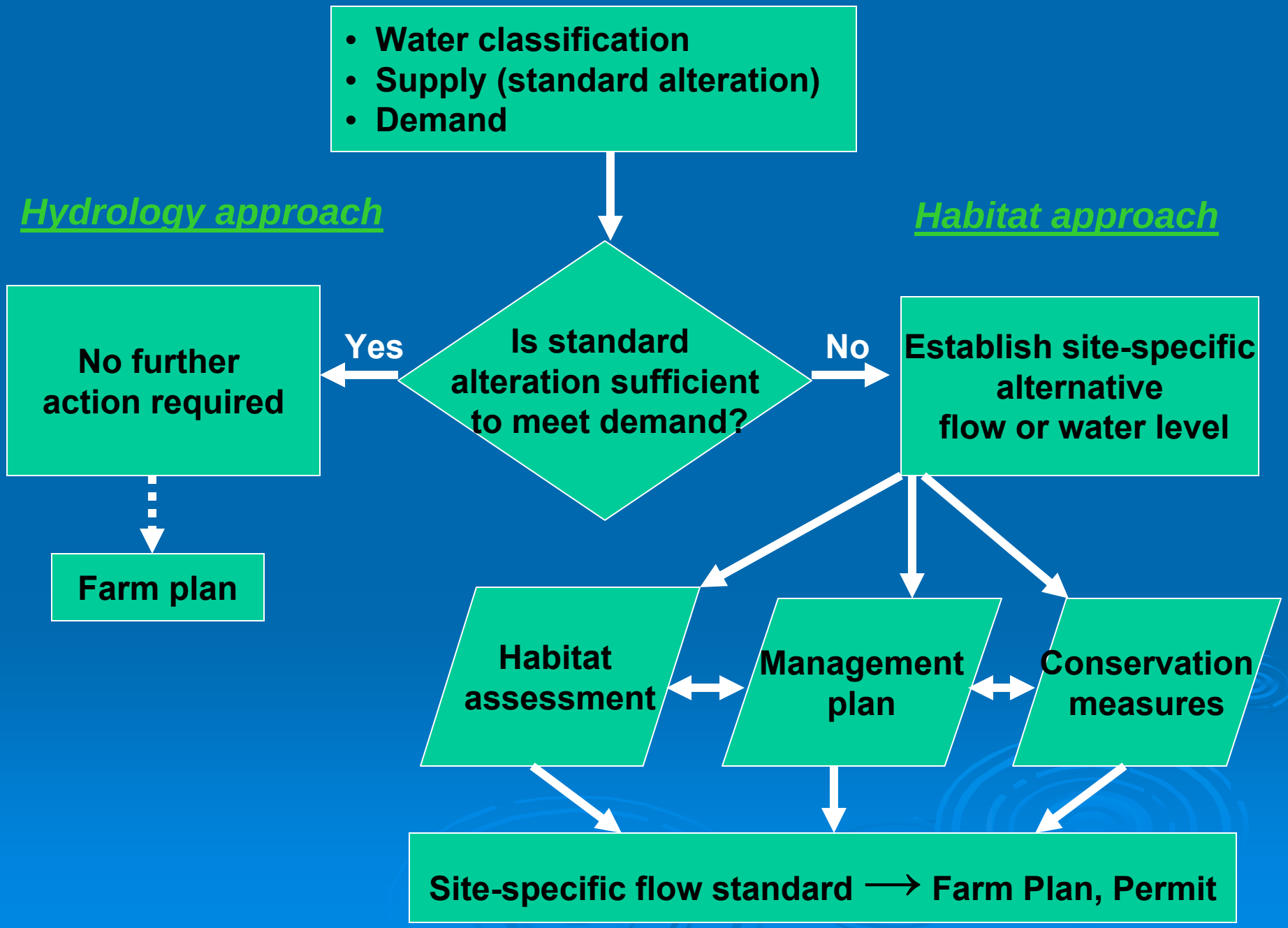
Who's out and who's in?

- **Who's out:**
  - Emergency use (e.g. fire control)
  - Tidal fresh waters
  - *de minimus* withdrawal (return flows)
  - Constructed storage ponds (out-of-stream)
  - Hydropower ! ! !
  - Certain public water supplies
- **Who's in:** Anyone else altering flow or extracting water above the *de minimus* thresholds (agriculture, golf courses, ski areas, industrial uses, and most public/private water supplies)

Rule applies two methods to assign flows and water levels

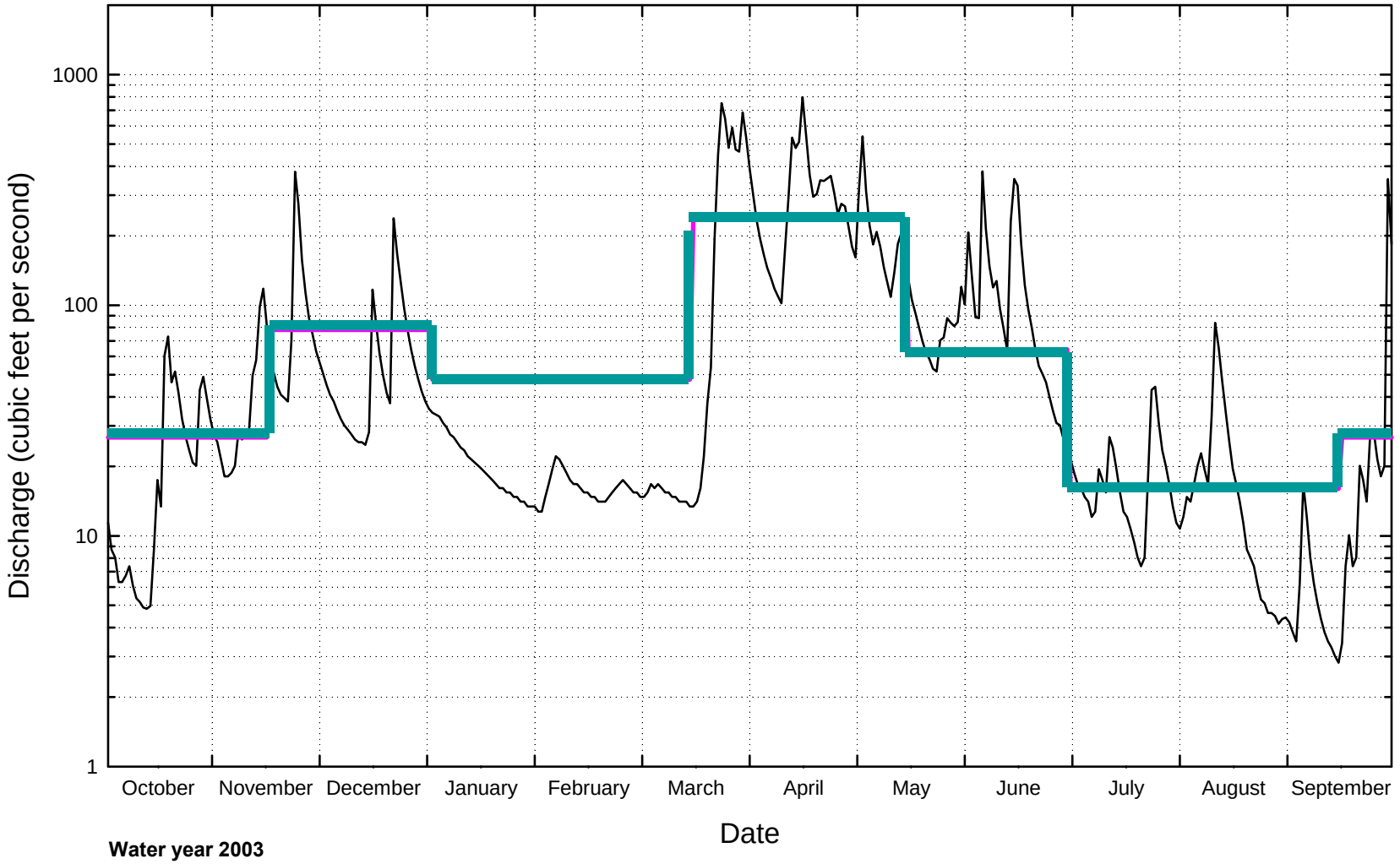
- **Hydrologic approach – based on statistically derived flows for representative seasons ("standard alteration").**

- **Habitat approach (site-specific) – based on providing sufficient habitat to protect aquatic life and other uses ("flow and water level plans", permits).**


• Water classification
• Supply (standard alteration)
• Demand
Hydrology approach
Habitat approach
No further action required
Yes
Is standard alteration sufficient to meet demand?
No
Establish site-specific alternative flow or water level
Farm plan
Habitat assessment
Management plan
Conservation measures
Site-specific flow standard → Farm Plan, Permit

Hydrologic approach

- **Maintain natural pattern of dynamic flow and water level change.**
- **Variation from actual flow can still be protective of aquatic life.**
  - **Maintain some high (flood) water and low (drought) water events – maintain timing, magnitude**
  - **Design based on seasonal median conditions**
  - **Seasonal variation (6 seasons for rivers, 2 for lakes)**
  - **Varies dependent on waterbody classification**
  - **Incremental 2 foot drawdown for lakes and ponds**



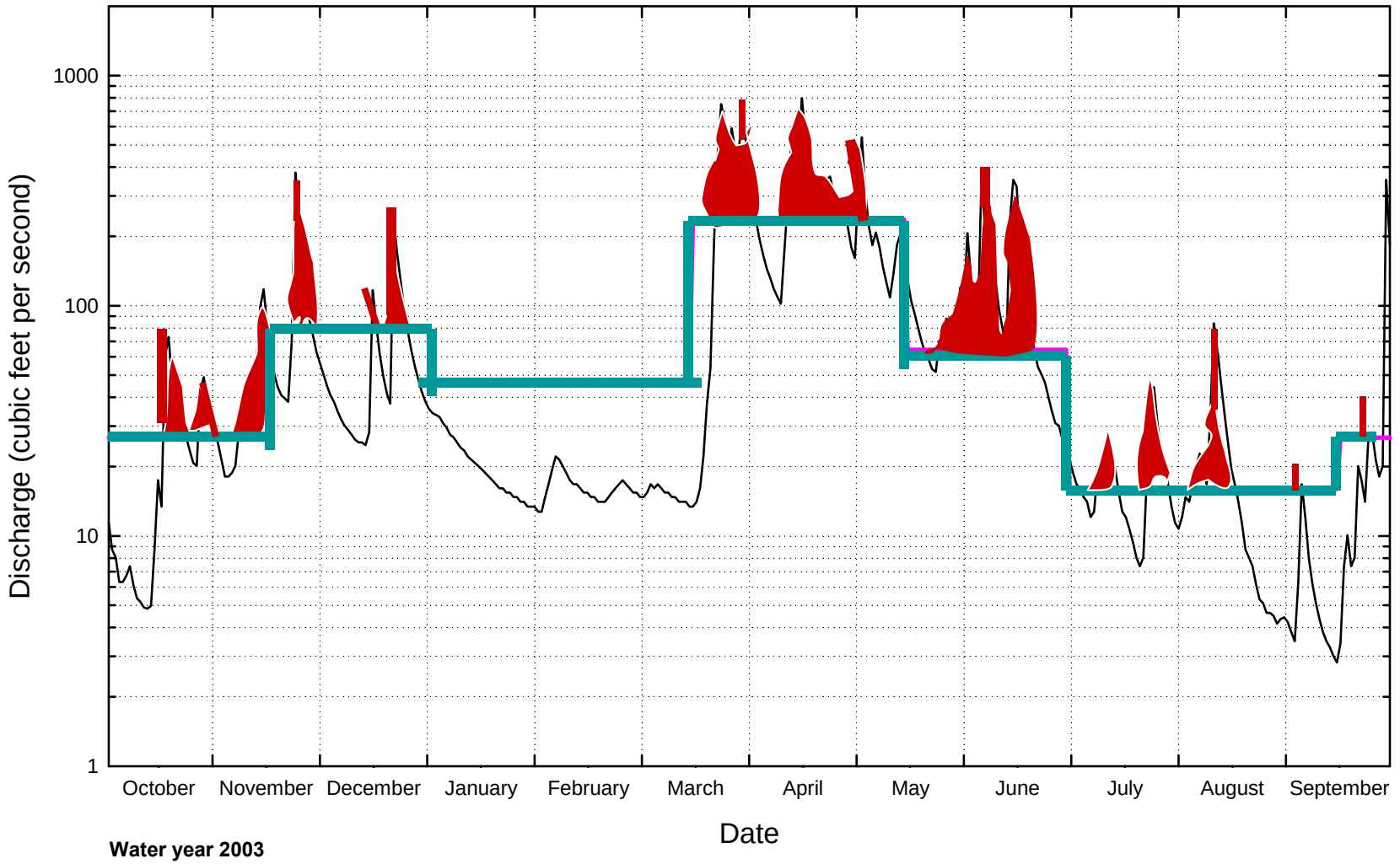
Water year 2003

Drainage area:	**64 sq mi**
Mean annual precipitation:	**42.7 inches**
Fraction aquifer:	**0.0**
Distance from coast:	**86 mi**
Withdrawal thresholds:	**from Dudley (2003)**
Hydrograph:	**Kingsbury Stream near Abbot Village - 94.5 sq mi**

Standard alteration by water class

Aquatic Base Flow (ABF) = median flow by season

- **AA –** Spring and early winter – maintain 90% of flow > ABF
  All other seasons - maintain 90% of flow > 1.1ABF
- **A –** Maintain ABF for up to 2 seasons
  Maintain natural flow in all 4 remaining seasons
- **B –** maintain ABF in any season
- **C -** maintain ABF in any season
- **GPA –** April 1- July 31 lake level maintained 1 foot below NHW
  August 1-March 31 lake level maintained 2 feet below NHW



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Habitat-based approach

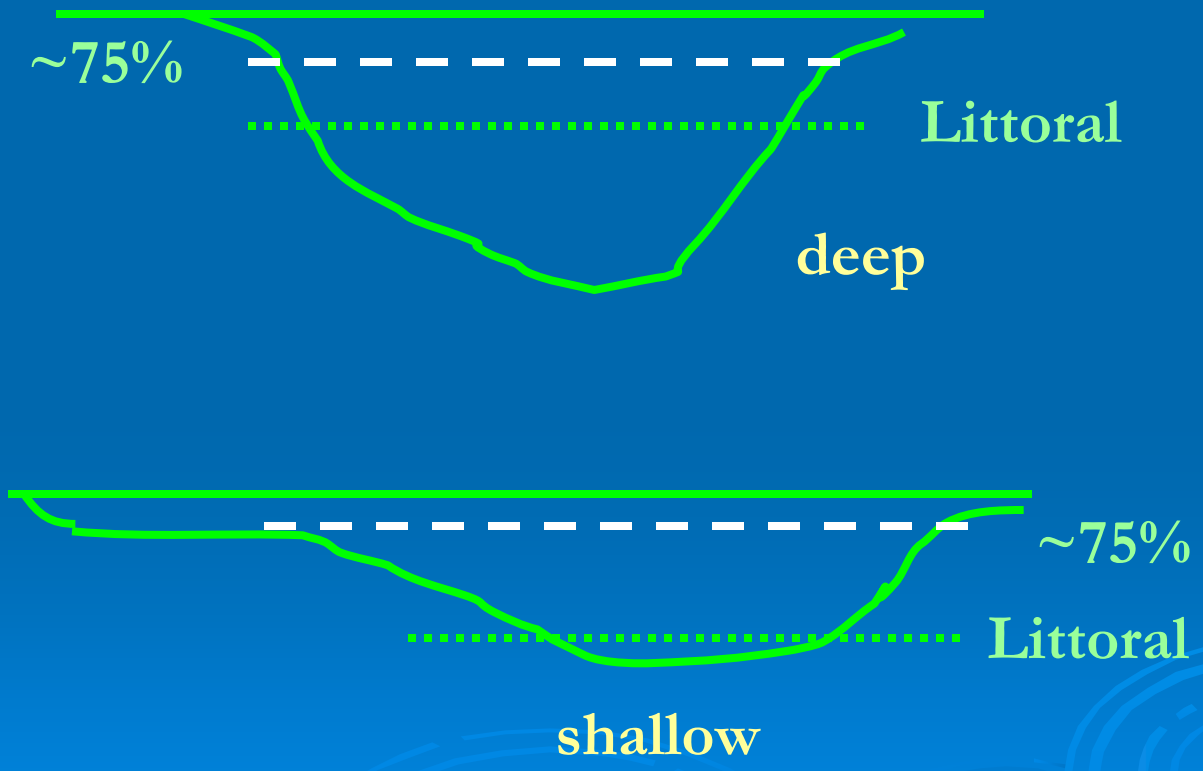
- Modifications (flow or water level plans) usually required for only a portion of the hydrologic period.
- Typical modifications would adjust:
  - Seasons (e.g. modify for latitude)
  - Amount of water extracted
    - Based on protecting minimum available (significant) habitat (~75%)
    - Short term extraction to capture a high flow event (for storage)

Habitat-based approach is based on morphology

Streams (~75% wetted width (surface area), channel (cross-section area), maintain connectivity)

Habitat-based approach is based on morphology

Lakes (~75% littoral zone area, volume)



Habitat-based approach for lakes must account for critical habitat protection

- Species of concern (T & E), significant fisheries
- Spawning and nursery habitat for all species
- Littoral structure - macrophyte beds, CWD, substrate
- Connectivity to tributaries, wetlands, outlet
- Outlet flow
- Habitat enhancement allowed

Public water supplies with excessive existing drawdown

Public Water Supply Withdrawal Certificate

- Where existing public water supply cannot attain the new criteria
- Based on System Design Capacity that defines limits of the existing water supply system.
- Restore water quality to extent of economic and technical feasibility
  - DHHS Drinking Water Program (technical feasibility)
  - Public Advocates Office (economic feasibility)
- Certificate protects facility from enforcement if operating within certificate requirements (8-15 facilities)
  - provides long term path to attainment
  - can specify operating guidance, conservation, etc.
- Variance provided for continued use of water supplies during drought for all public water systems (PDI <-2.0)

Sustainable water use program:
http://www.maine.gov/dep/blwq/docmonitoring/swup/index.htm

Water use rule:
http://www.maine.gov/sos/cec/rules/06/096/096c587.doc

Factual and Policy Basis Statement:
http://www.maine.gov/dep/blwq/topic/flow/materials.htm