

Regulatory Experience in Defining and Implementing Instream Flow Requirements in the Susquehanna River Basin

WRADRB

*Energy, Water and the
Environment in the
Delaware River Basin*

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Susquehanna River Basin

The Basin

- 27,510-square-mile watershed
- Comprises 43 percent of the Chesapeake Bay watershed
- 4.2 million population
- 60 percent forested
- 32,000+ miles of waterways

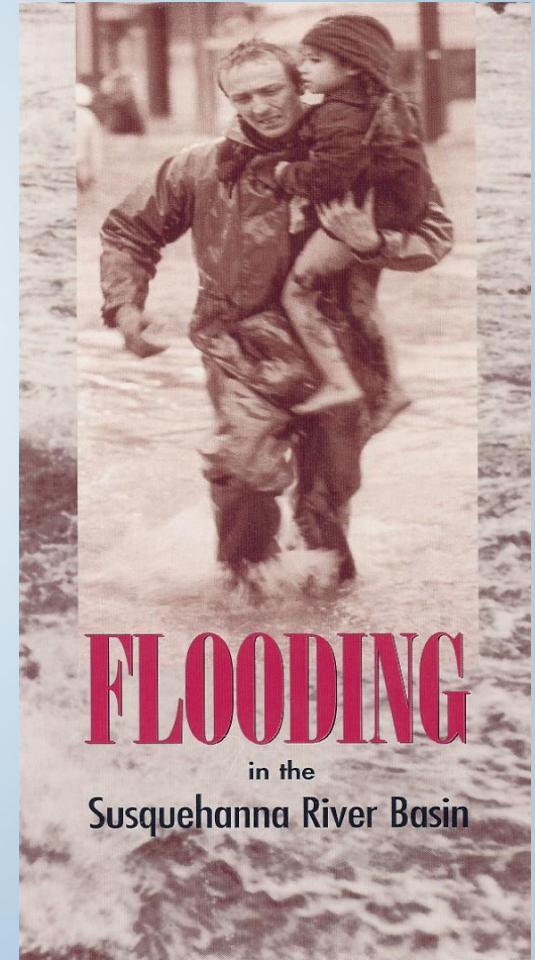


The Susquehanna River

- 444 miles, largest tributary to the Chesapeake Bay
- Supplies 18 million gallons a minute to the Bay
- Supports Public Water Supply and Power Generation

Commission Programs

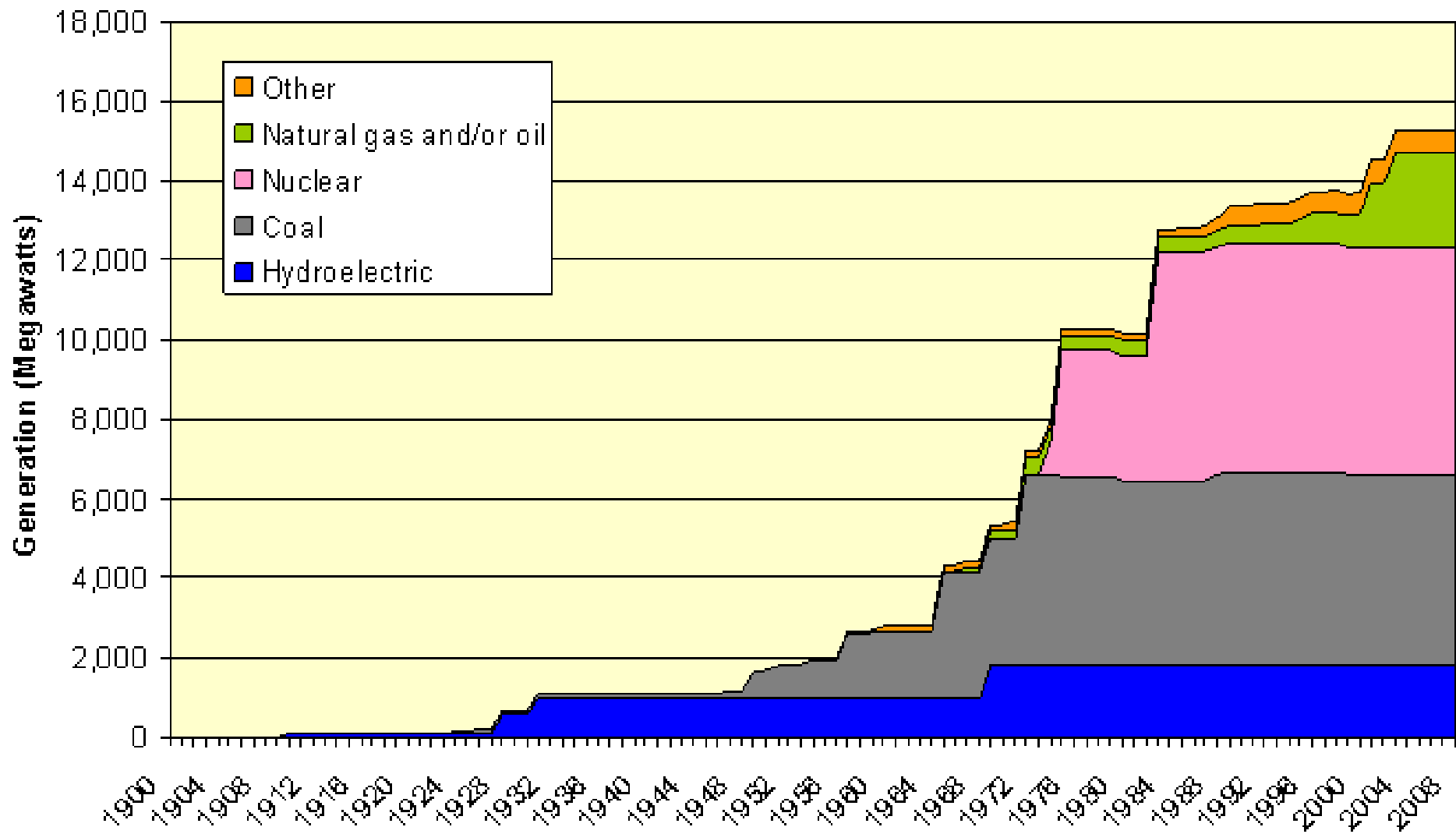
- Flood Forecast and Warning System
- Monitoring and Assessment
- Public Education and Outreach
- Water Resources Planning
- Drought Coordination
- Regulatory Program



Regulatory Authorities

- Groundwater Withdrawals
 - 100,000 gpd (30-day average)
- Surface Water Withdrawals
 - 100,000 gpd (30-day average)
- Consumptive Use
 - 20,000 gpd (30-day average)
 - Public Water Suppliers and Agriculture are exempt
- Diversions
 - Into-Basin: Any Amount
 - Out-of-Basin: 20,000 gpd (30-day average)

History of Power Production in the Susquehanna River Basin





- Marcellus Shale underlies 75% of the basin
- **Challenges**
 - De-centralized nature of industry
 - Timing and location of withdrawals
 - Cumulative impacts

Regulations implemented for Natural Gas water demand



- Withdrawals and Consumptive Use subject to regulation at first gallon
- Approval By Rule to consume water
- Source registration

Low Flow Protection Policy

Develop new policy to replace existing “passby” policy (No. 2003-01) that:

- Reflects current science & standards
- Addresses deficiencies of current policy
- Incorporates TNC ecosystem flow recommendations for the Susquehanna basin
- Provides provisions for protection of headwaters to mainstem rivers

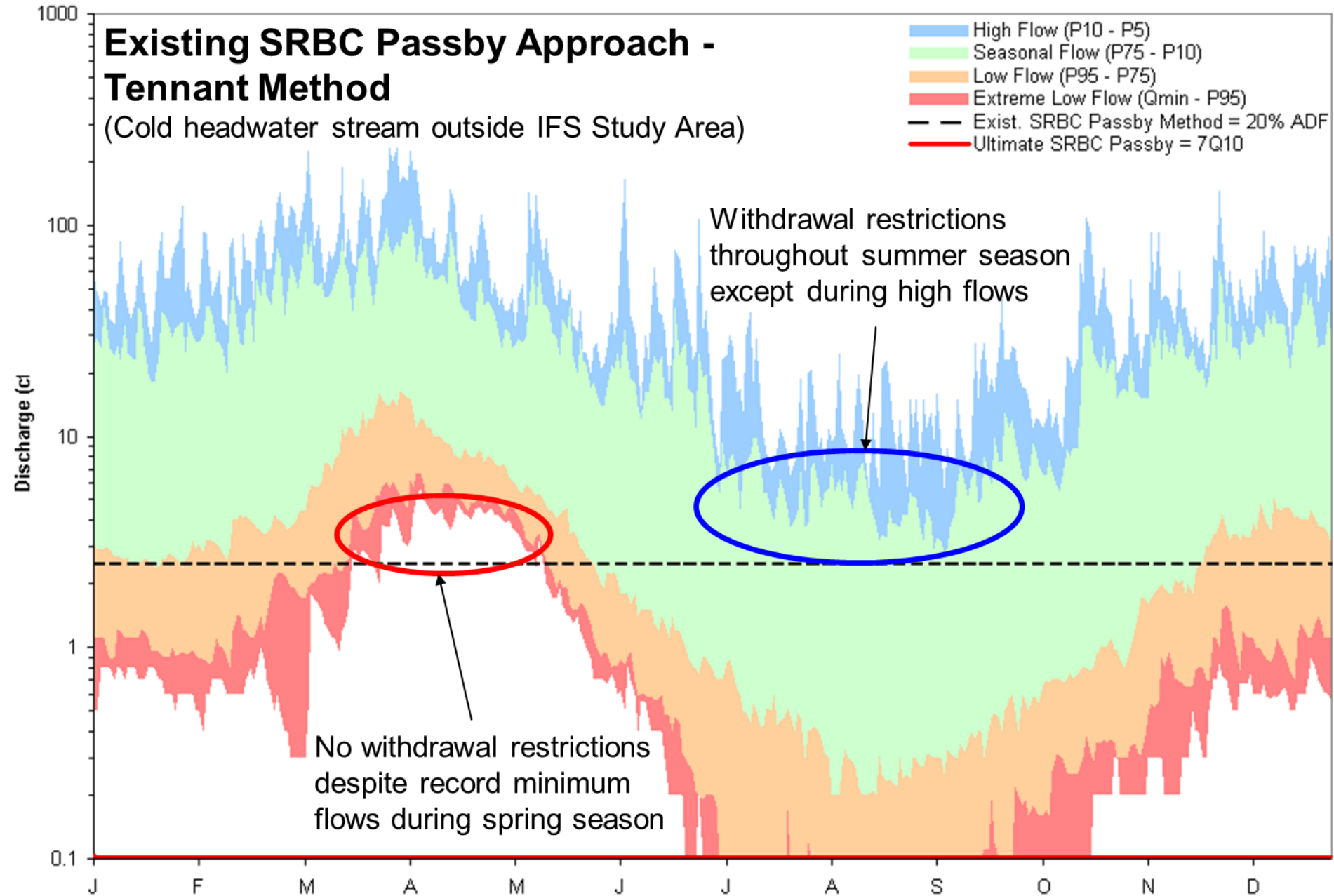
Existing SRBC Passby Approach - Tennant Method

(Cold headwater stream outside IFS Study Area)

- High Flow (P10 - P5)
- Seasonal Flow (P75 - P10)
- Low Flow (P95 - P75)
- Extreme Low Flow (Qmin - P95)
- Exist. SRBC Passby Method = 20% ADF
- Ultimate SRBC Passby = 7Q10

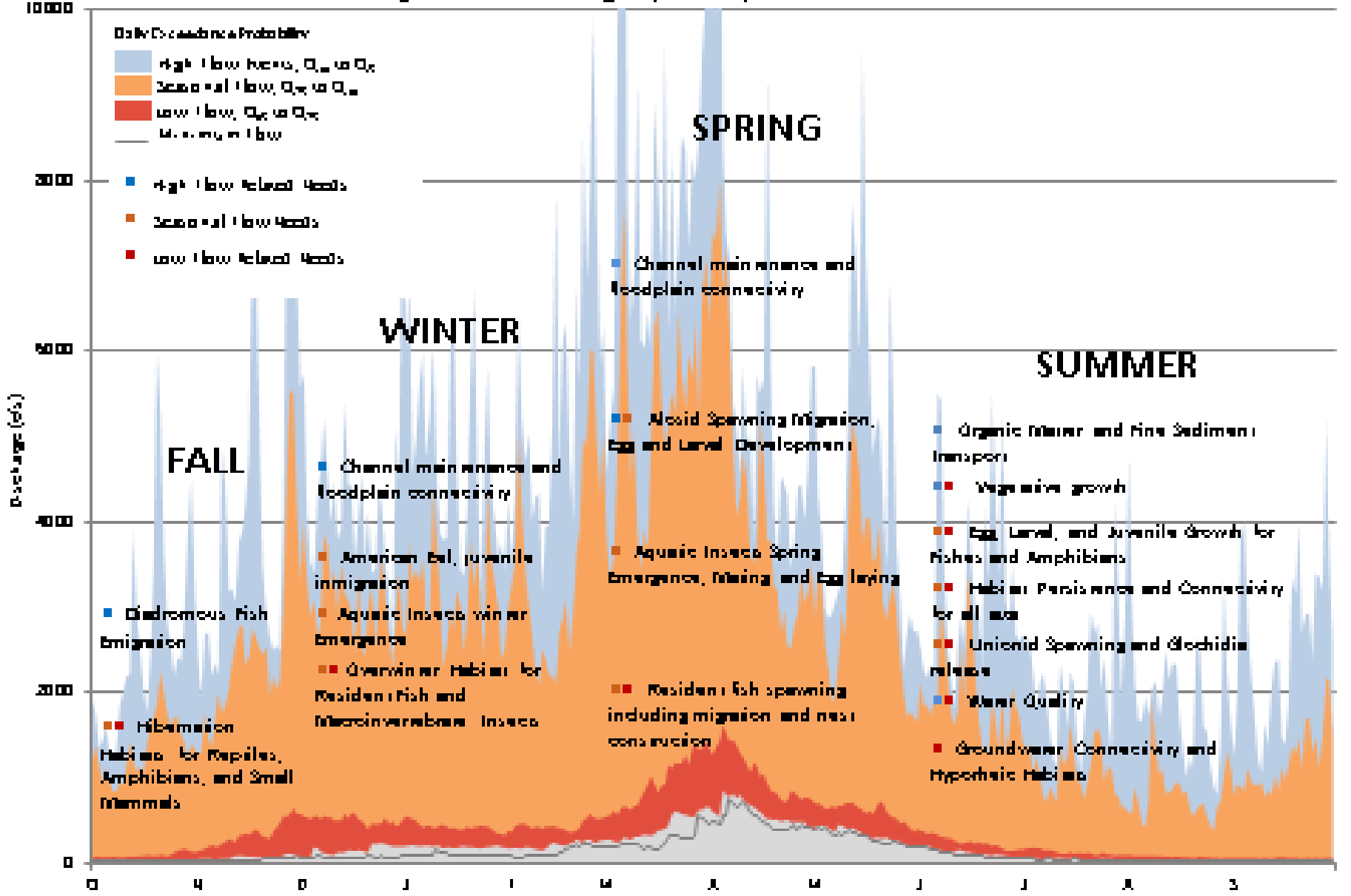
Withdrawal restrictions
throughout summer season
except during high flows

No withdrawal restrictions
despite record minimum
flows during spring season



Flow Components and Needs: Major Tributaries

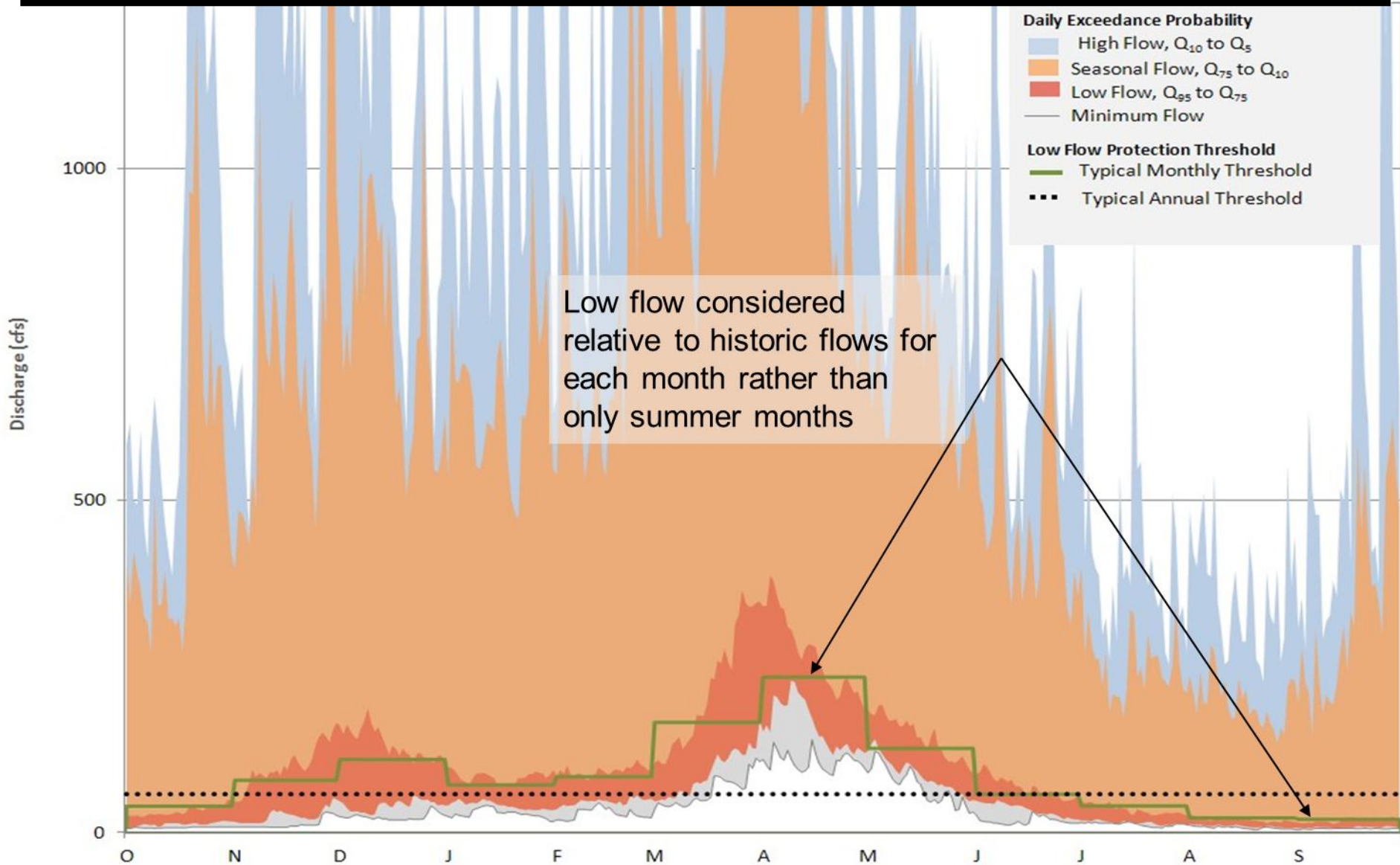
Example: 01345300 3-srnomake-reg Creek at 3-srnomake-reg, PA (803 sq mi)



LFPP – Main Components

- Aquatic Resource Classes
- Seasonal considerations
- Withdrawal limits
- Cumulative Water Use Assessment
- *de minimis* thresholds
- Headwaters Protection
 - Exemption for PWSs, riparian uses and existing uses

Existing Policy 2003-01 vs. Proposed LFPP



Implementation Challenges

- Uninterruptible needs
- Prospective vs retroactive
- Multiple jurisdictions
- Policy vs regulation
- Impairment considerations
- Only addresses low flows



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Quarterly Water Usage for Gas Development

