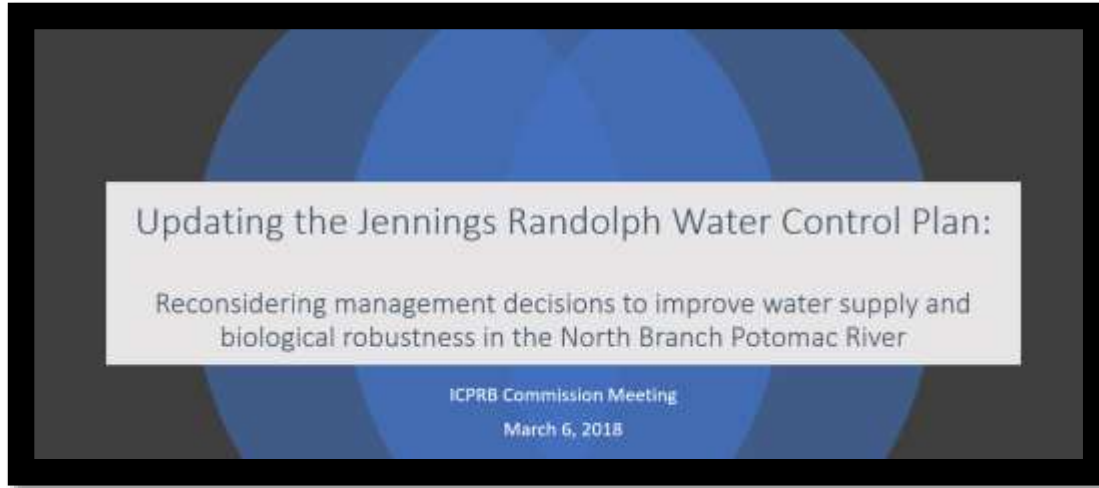


The sequel to...



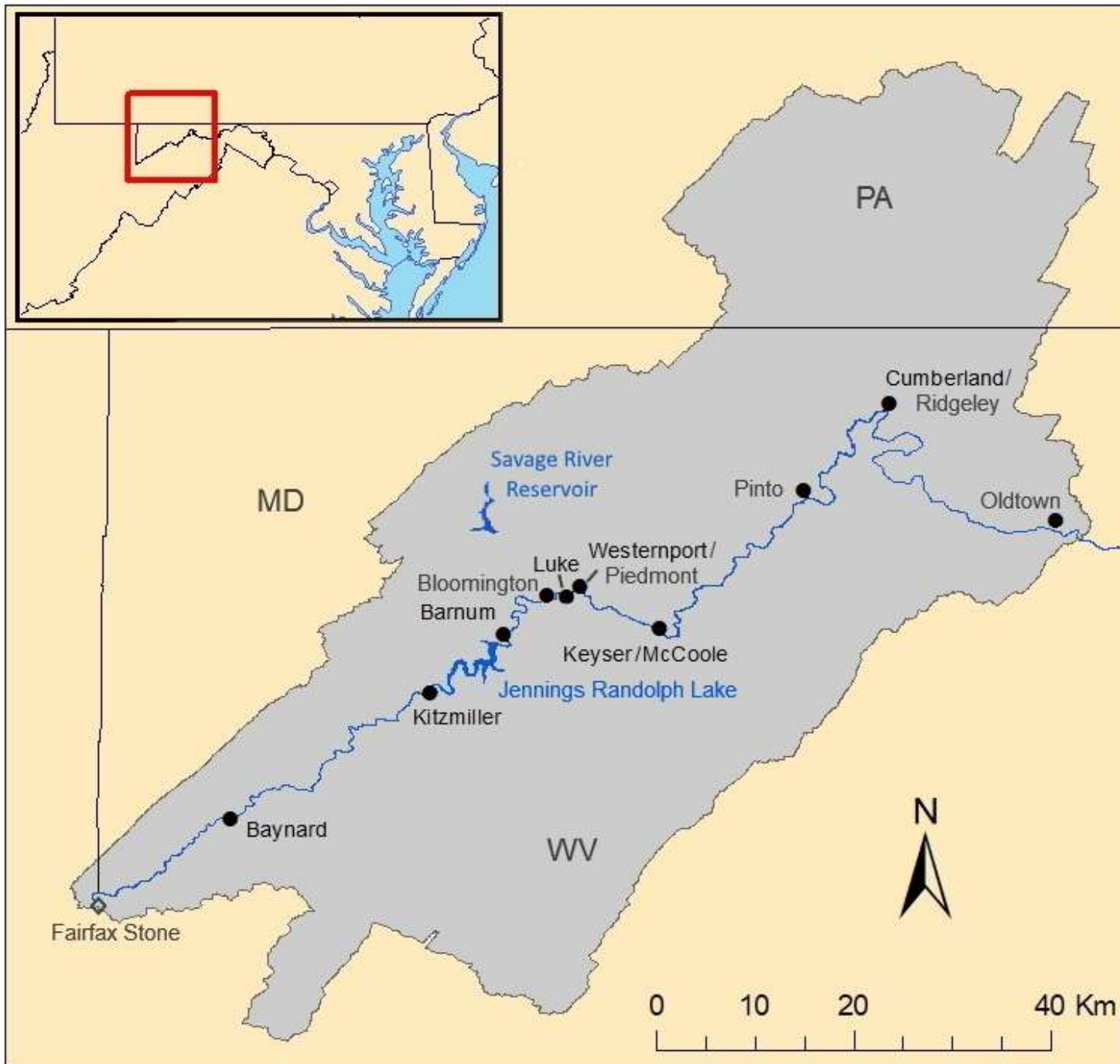
Opportunities to Enhance the North Branch Potomac River

Gordon "Mike" Selckmann

ICPRB Aquatic Ecologist II

DWSPP Meeting

2/5/2019



JRL Scoping Study (ICPRB USACE 2017-2019)

Study period: 2000-2018

1. How effective are dam operations at JRL in controlling flooding, dilute pollution, drinking water, and recreation?
2. Can language in Water Resources Development Act (WRDA 2007) be accommodated?
3. Is a revision to the USACE water control plan needed?



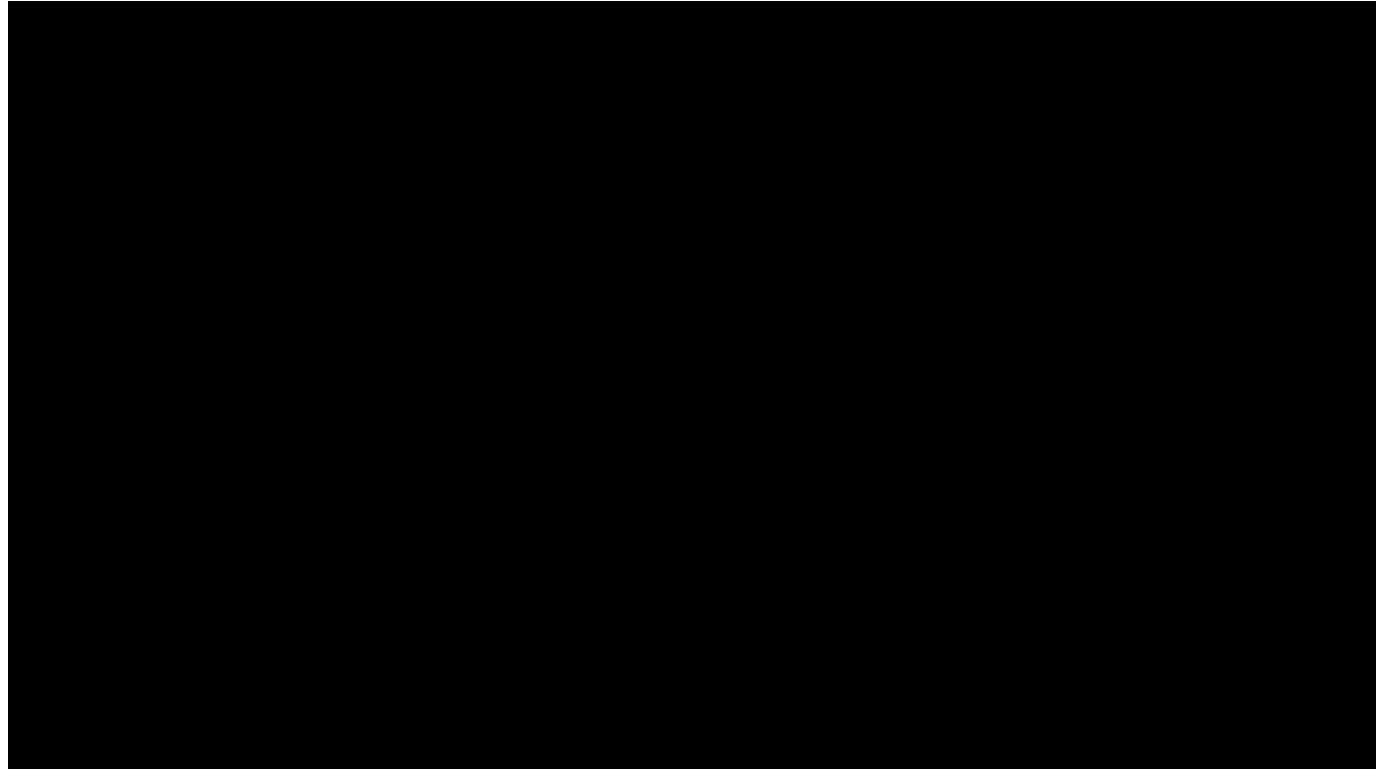
Jennings Randolph
Reservoir (1982)



Savage Reservoir
(1952 / Mod. 1980)



1996



2018

1. Flood Control

- Prevents Mainstem Flooding below the reservoir to Cumberland
 - Tributaries still flood
- Ameliorates Flooding In Cumberland, MD
 - Inputs from Wills Creek and Braddock Run
- Reservoir effectiveness is threshold based

2. Dilute Pollution

Watershed improvements resolved most historical issues

- Improve Water Quality (*Low Flow Augmentation*)

pH, Alkalinity, Conductivity,

Suspended Solids

- Transport Sediment (*AVFs*)

Organic Solids

- Improve Aquatic Habitat (*Blended Withdraw*)

DO, Temperature (Scale)

WATERSHED



3. Drinking Water

- “Water supply storage” is used during drought to benefit Washington metro area (1999, 2002, 2010)
- WRDA 2007 calls for use of water quality storage for water supply purposes during drought emergencies
- Jennings Randolph Scoping Study highlights a need for a Drought Contingency Plan (DCP), to accommodate WRDA 2007

DCP's should be developed...

“on a regional, basin-wide, and project basis as an integral part of water control management activities, giving due consideration to the severity and duration of potential future droughts”,

and

“provide a basic reference for water management decisions and responses to water shortage induced by a climatological drought.” -





4. Recreation

- **Fishing**

Coordinate flow + Spawn, Wadable Flows, Temperature (Scale)

- **White Water Recreation**

Coordinate release dates with stakeholders (Bound by hard dates and flow/duration requirements)

JRL Scoping Study (ICPRB USACE 2017-2019)

1. How effective are dam operations at JRL in controlling flooding, dilute pollution, drinking water, and recreation?

Flood

Pollution

Drinking Water

Recreation

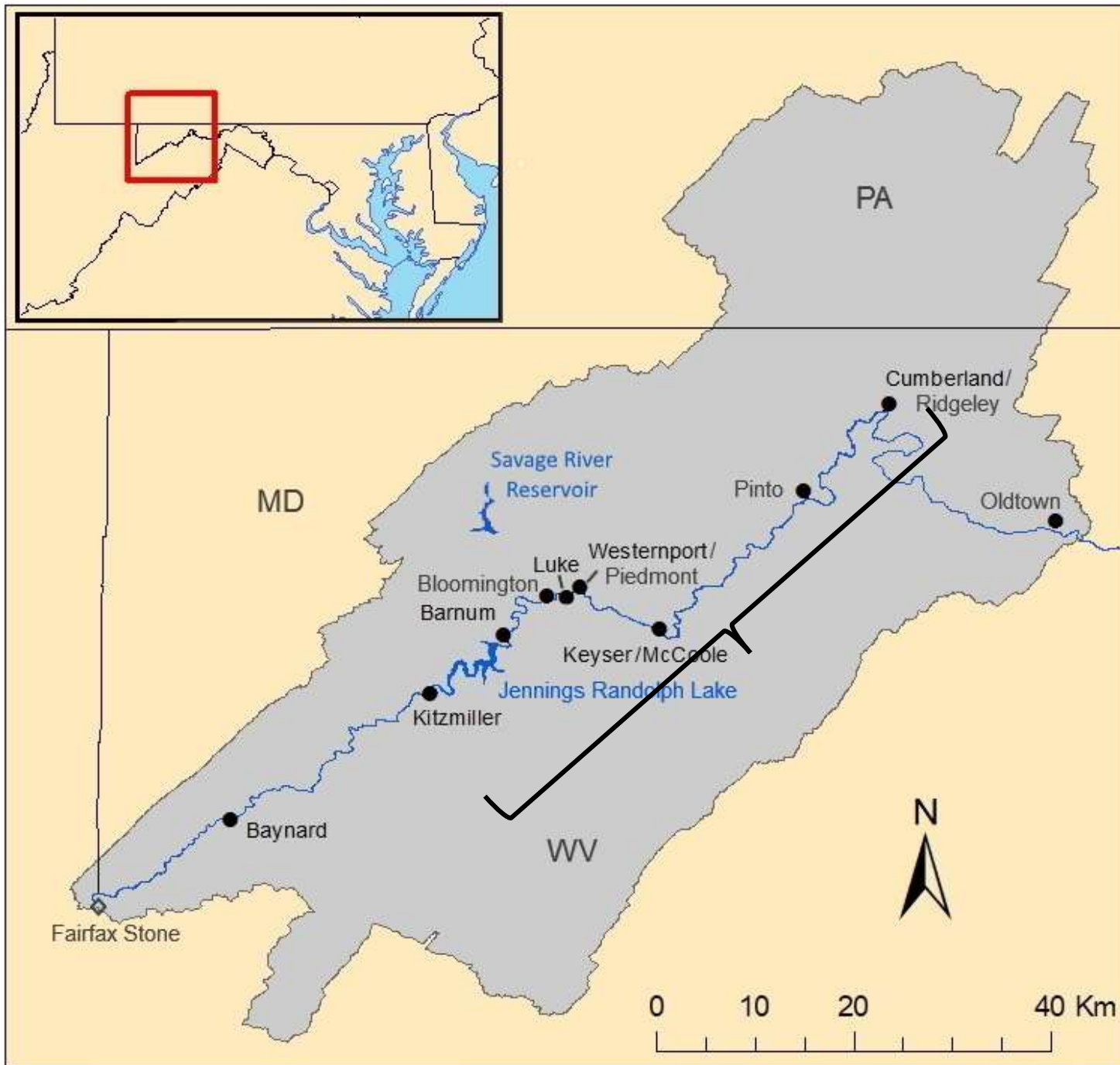
2. Can language in WRDA 2007 be accommodated?

YES

3. Is a revision to the USACE water control plan needed?

YES



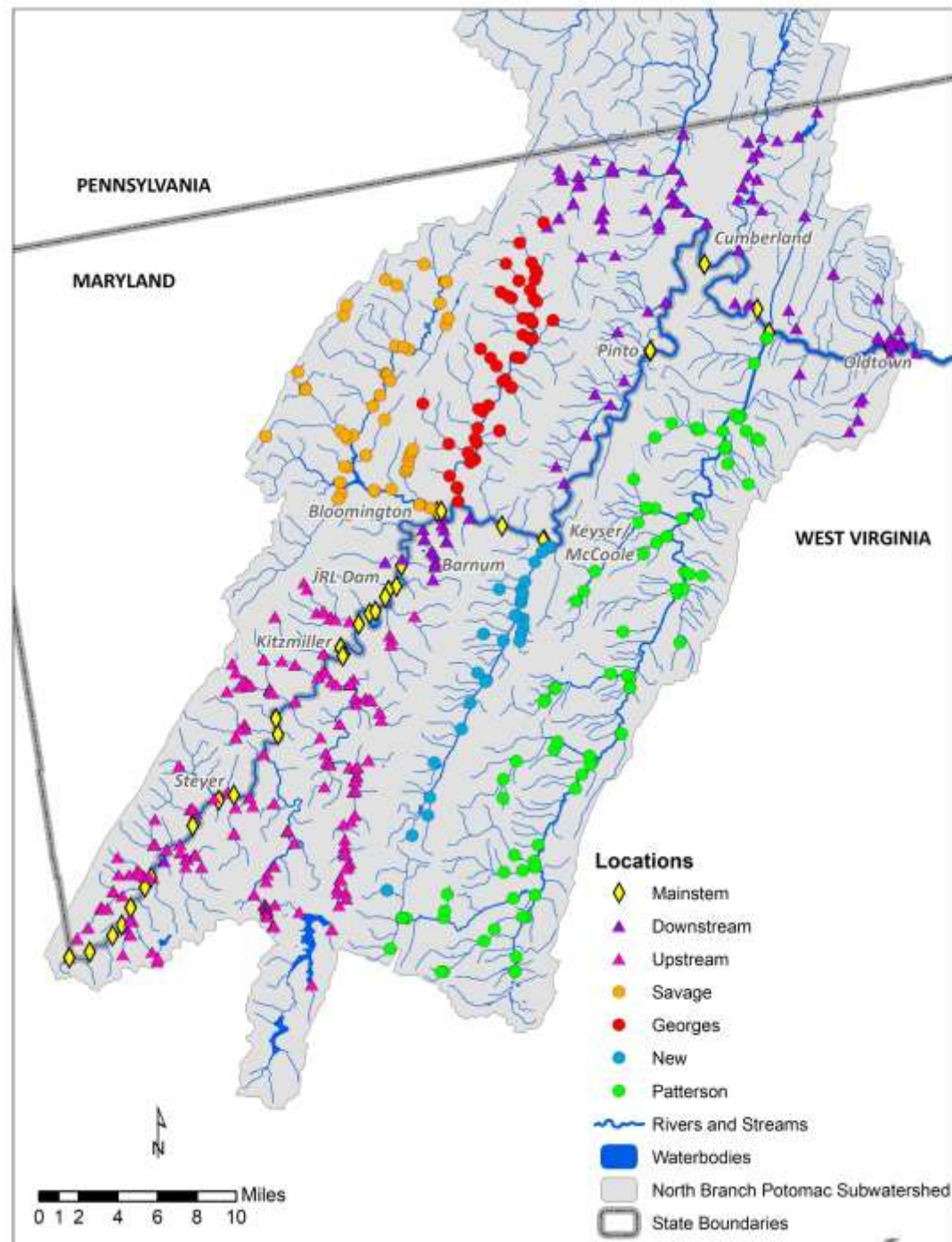


1997 Water Control Plan (WCP) for Jennings Randolph Lake

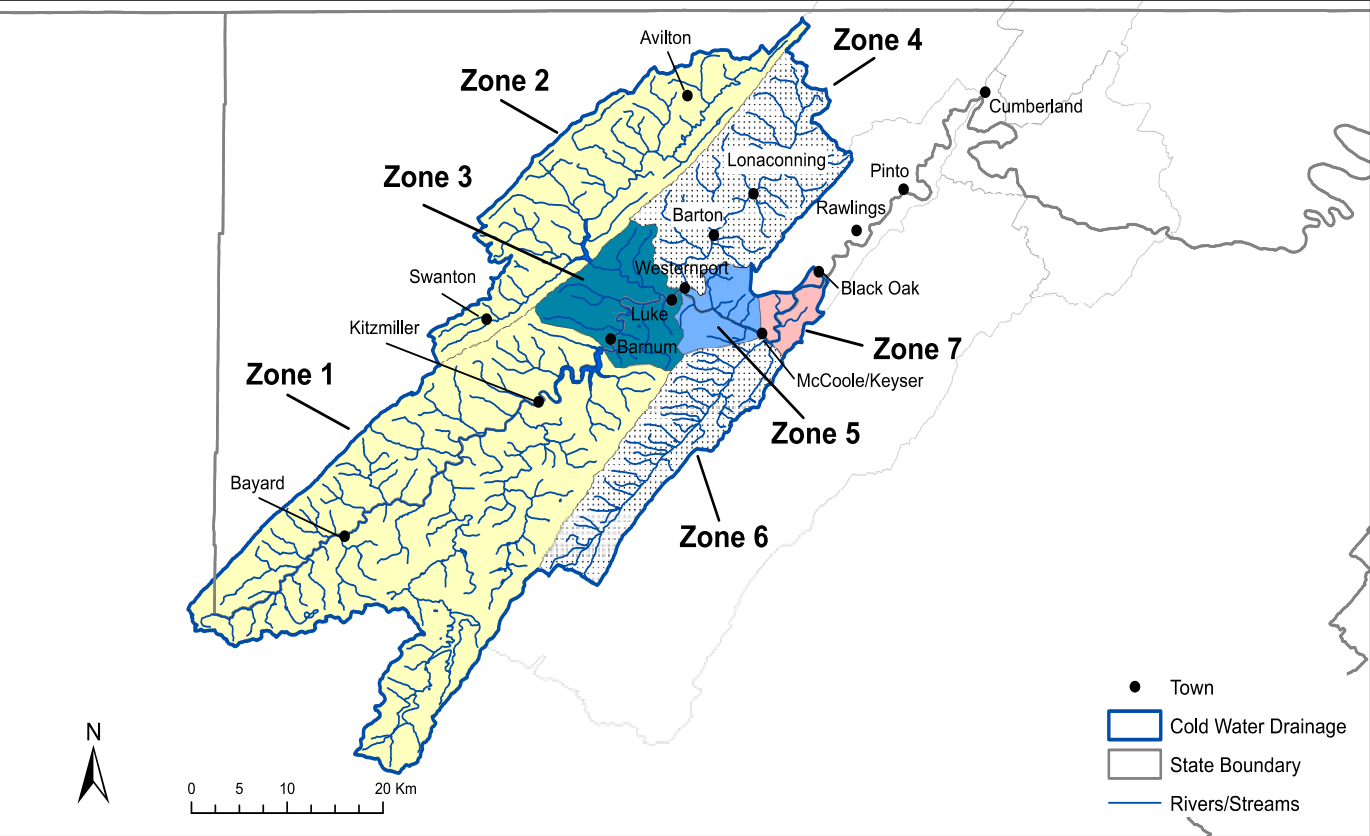
What is the Zone of Influence of USACE operations?

Who is responsible for what?

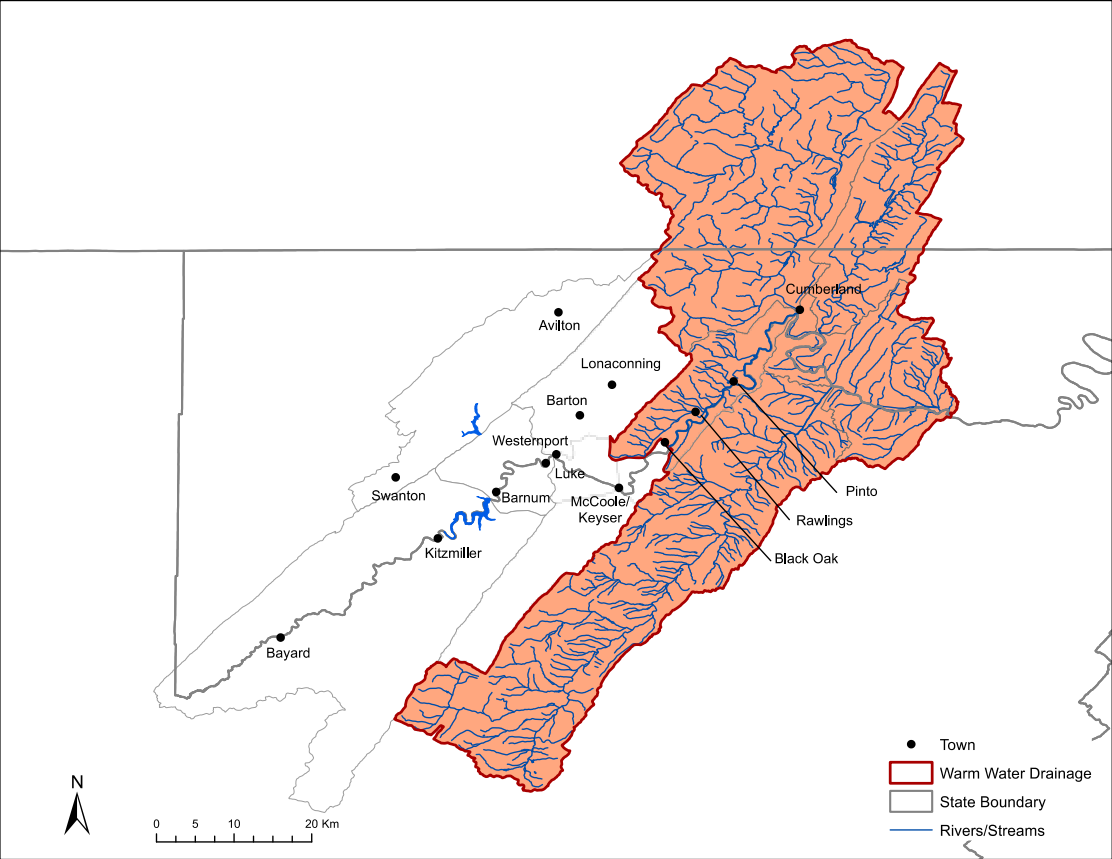
What relationships exist?

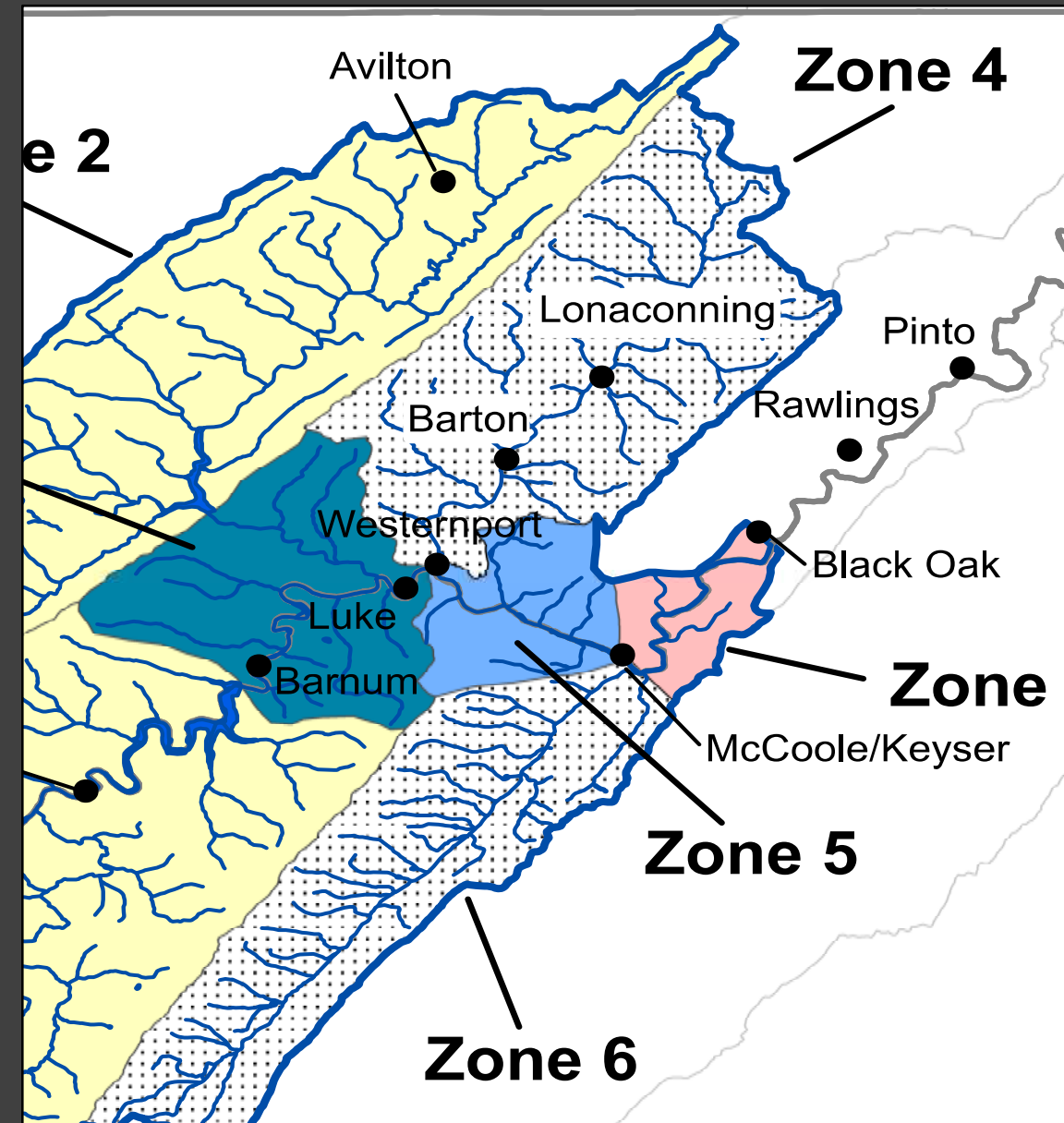


Cold Water



Warm Water

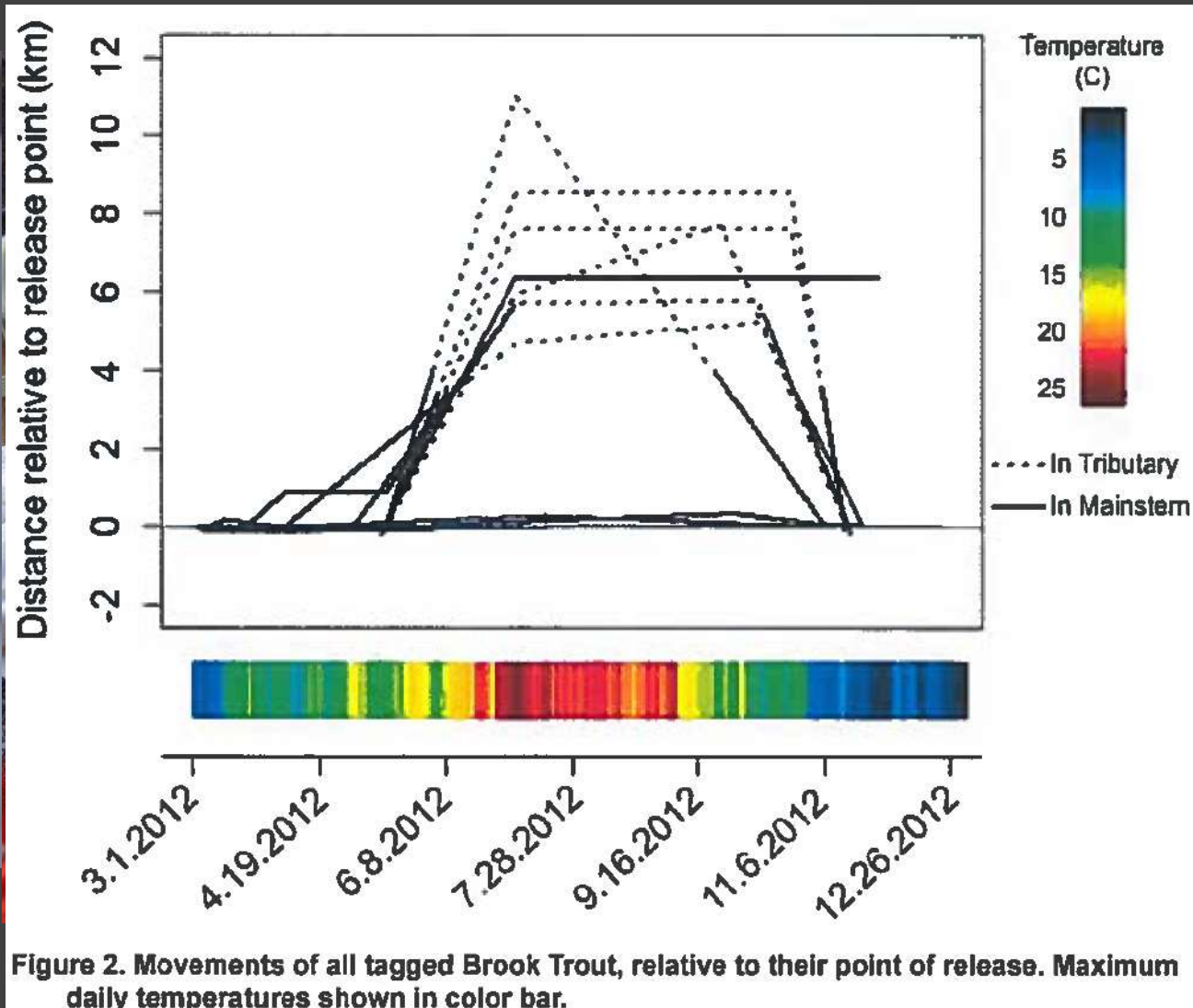




Existing Data Gaps

- Flow and Temp Model
 - Fish Behavior
- Ecological Assessment
 - Future of Tri-cities

Future Projects: Biological Indicators for Management Optimization



Lower North Branch Trout Movement Study

- Low cost Pit-Tag Study to observe movement (2 year)
- Trout Bio + Economic indicator
- Define JRL temperature influence on downstream reach
- Identify critical areas
- Secondary benefits

Future Recommendations for the North Branch Potomac

- **Watershed Management Plan:** Address information gaps and build a multi-agency consensus of North Branch Potomac River management zones, assessment methodologies, management objectives, and a common baseline for mainstem ecological condition. Improve Stakeholder Integration.
 - The available instream data and the management tools used now are insufficient to determine the contemporary role of JRL dam operations in the river's ecosystem.
 - Develop an instream temperature and flow model linking JRL operational decisions to conditions in the river mainstem (incorporate targets into models)
 - Develop a Drought Contingency Plan as a stand-alone document
 - Crisis Response / Spill Plan

**Jointly optimize Biology, Recreation, and
Water Resources**

Example: Delaware River Tailwaters

- **Flexible Flow Management Plan (adopted in 2008)**
 - Upper Delaware River
 - Cannonsville, Neversink and Pepacton Reservoirs
-
- Defines Critical Management Periods and Flows
 - Defines Biologically Critical Spatial/Temporal Zones
 - Ecosystem value explicitly considered
 - Biology and Local Economies
-

