

Bringing Rivers Back to Life in Virginia



2004 (day of removal)



2005



2008 (high tide)



2008 (low tide)

Rappahannock River Transformation Following Embrey Dam Removal (2004)

Jessie Thomas-Blate
Associate Director of River Restoration



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**Partnering to
Restore Rivers
in the
Rappahannock
River Basin**

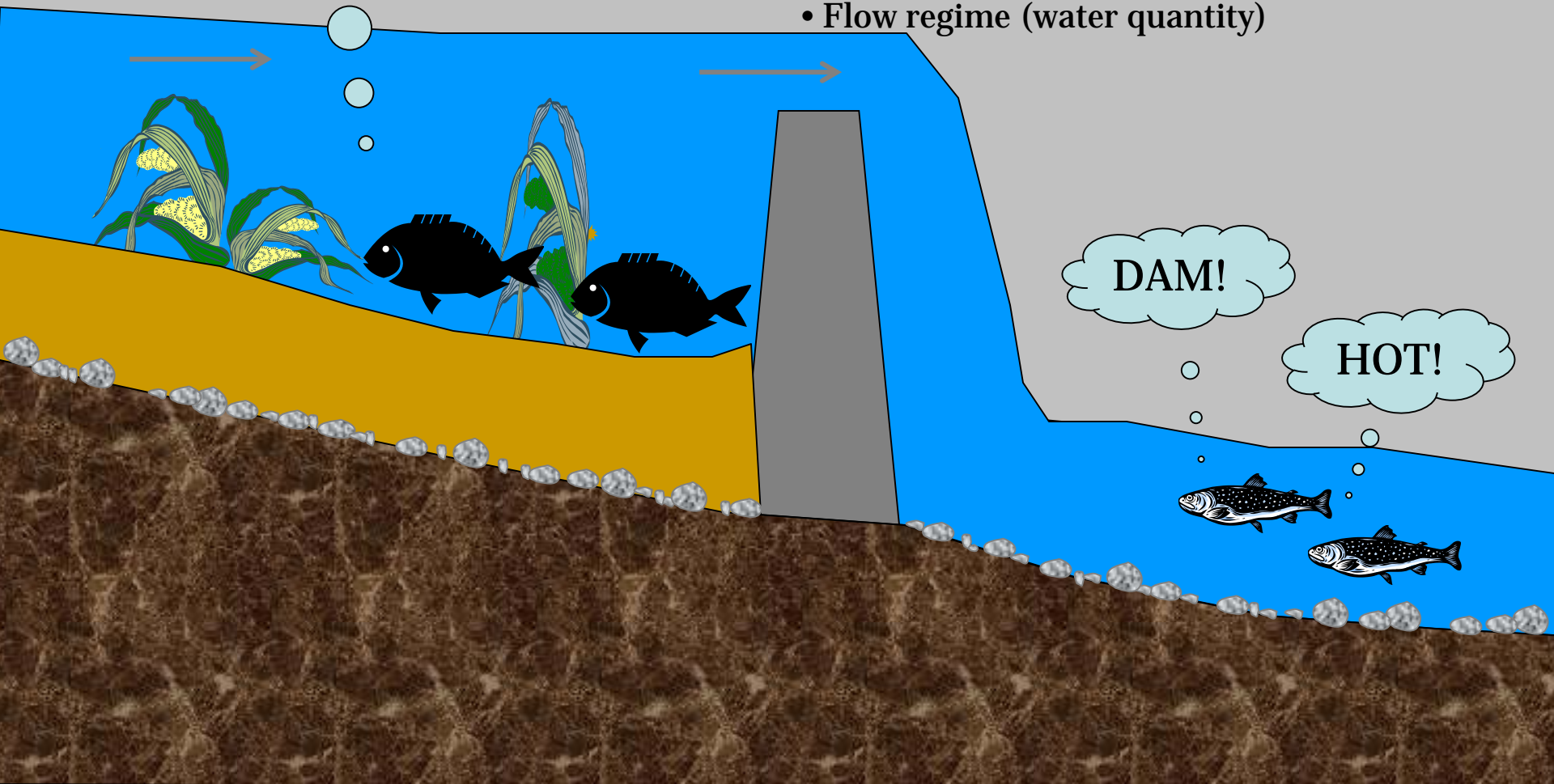


Dams Impact Every Aspect of Healthy Rivers

HOT
DIGGETY
DAM!

(in impoundment and downstream):

- Habitat fragmentation (connectivity)
- Warming (water quality)
- Dissolved oxygen (water quality)
- Inundation of river habitat (complexity)
- Sediment starvation (complexity)
- Nutrients (water quality)
- Flow regime (water quantity)



Result: Fish Populations Have Declined

- Migratory fish like salmon, herring, shad, sturgeon, and smelt have all suffered population declines to levels less than 5% of historic levels and many rivers lost these species completely
- Native, resident species are impeded by fragmented, degraded habitat
- Only 5% of intact brook trout populations remain
- Dams and pollution are the most significant causes of decline of freshwater mussel populations (National Biological Service)

Photo: www.glooskapandthefrog.org

Primary Reason We Remove Dams: Cost of Dam Ownership



+



= Dam Removal

Aging Dams Pose a Risk of Failure



Reasons for Removal: Public Safety

Many Aging Dams No Longer Serve their Original Purpose



Reasons for Removal: Public Safety

Oroville Dam, CA



Reasons for Removal: Public Safety



Ka Loko Dam Failure (2006)

Reasons for Removal: Public Safety

Dams Can Be Attractive Nuisances



A dam's hidden dangers

Two drownings on the Baraboo River underscore the risks lurking near dams.

By Richard W. Jaeger
Regional reporter

How water flows over dams

BARABOO — The drownings of two women in separate accidents at the Glenville Dam south of here over the weekend demonstrate the ever-present dangers of dams, authorities warned Monday.

While law enforcement, fire and conservation officials dragged the Baraboo River for the body of Lisa Hohl, 36, of Baraboo, spokesmen from the state Department of Natural Resources, at a news conference, detailed the hazards.

Hohl was in a boat with her brother Ronald Koffarnus, 41, Sunday evening when it drew too close to the

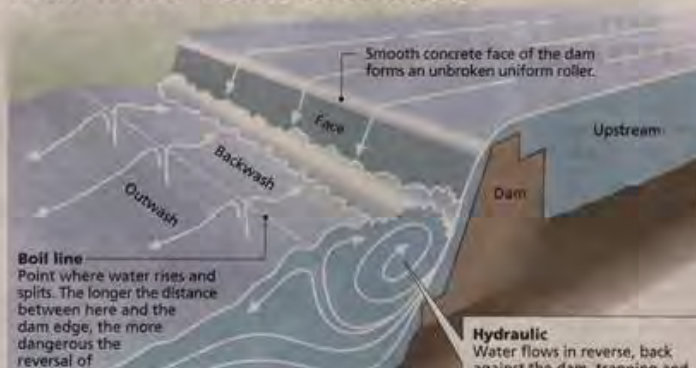


Photo by Mary Chind, Des Moines Register

Reasons for Removal: Public Safety

Removing a Dam Can Cost Less than Repair

Liability

- Failure
- Public safety (attractive nuisance)

Maintenance costs

Inspection costs

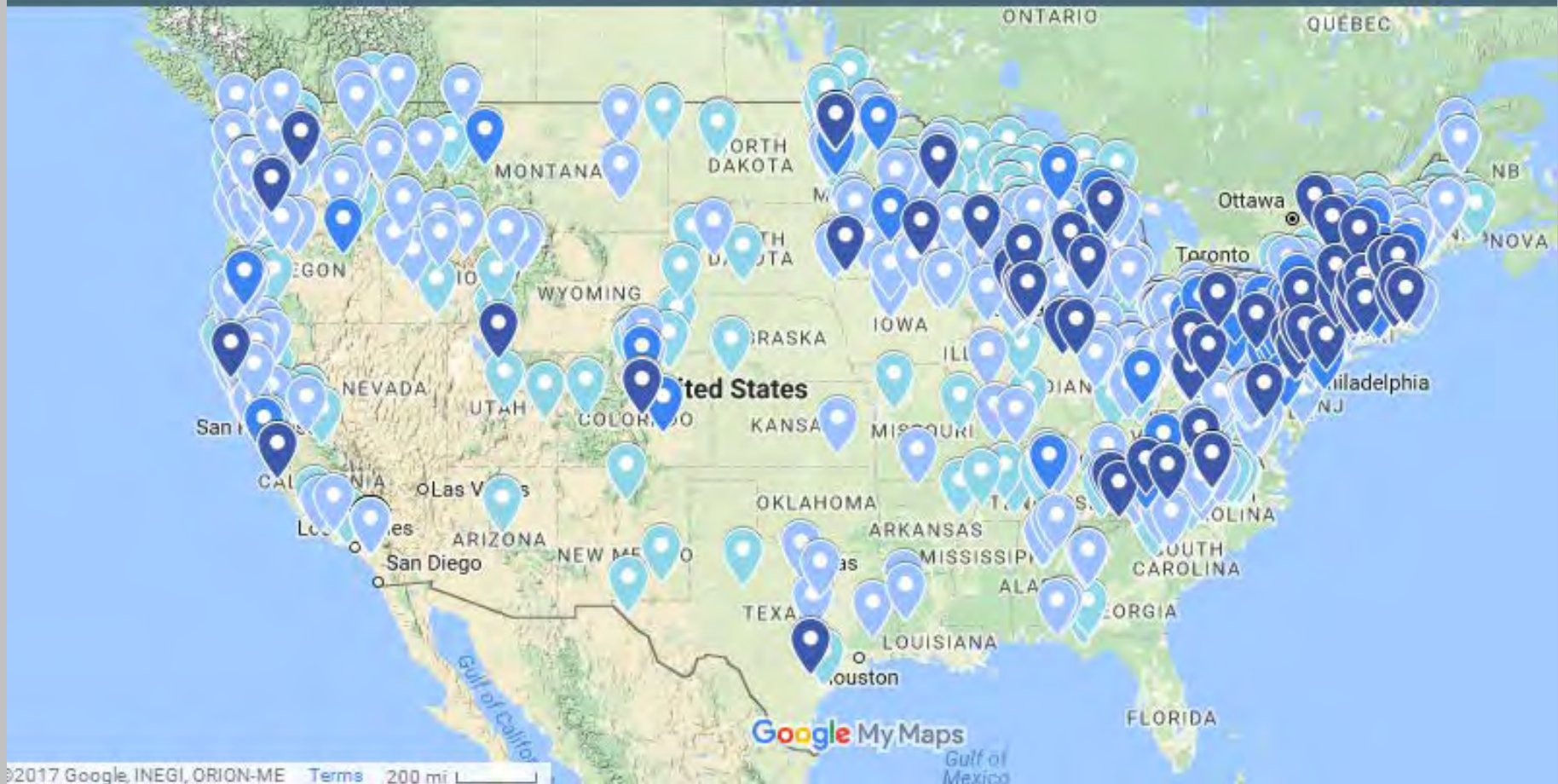
Repair costs

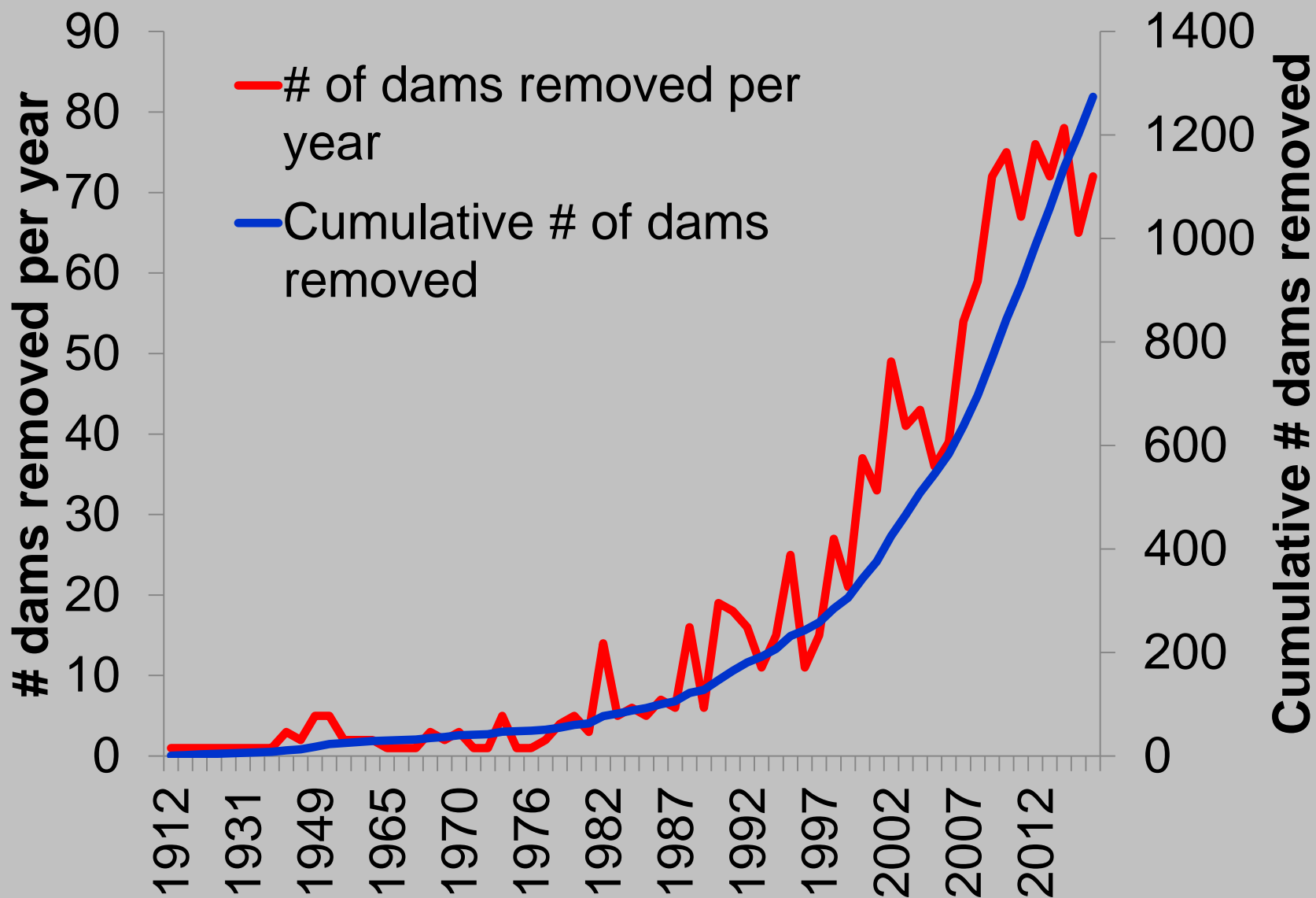
Repeated repairs

**** Removal is a one-time cost ****

www.americanrivers.org/threats-solutions/restoring-damaged-rivers/dam-removal-map/

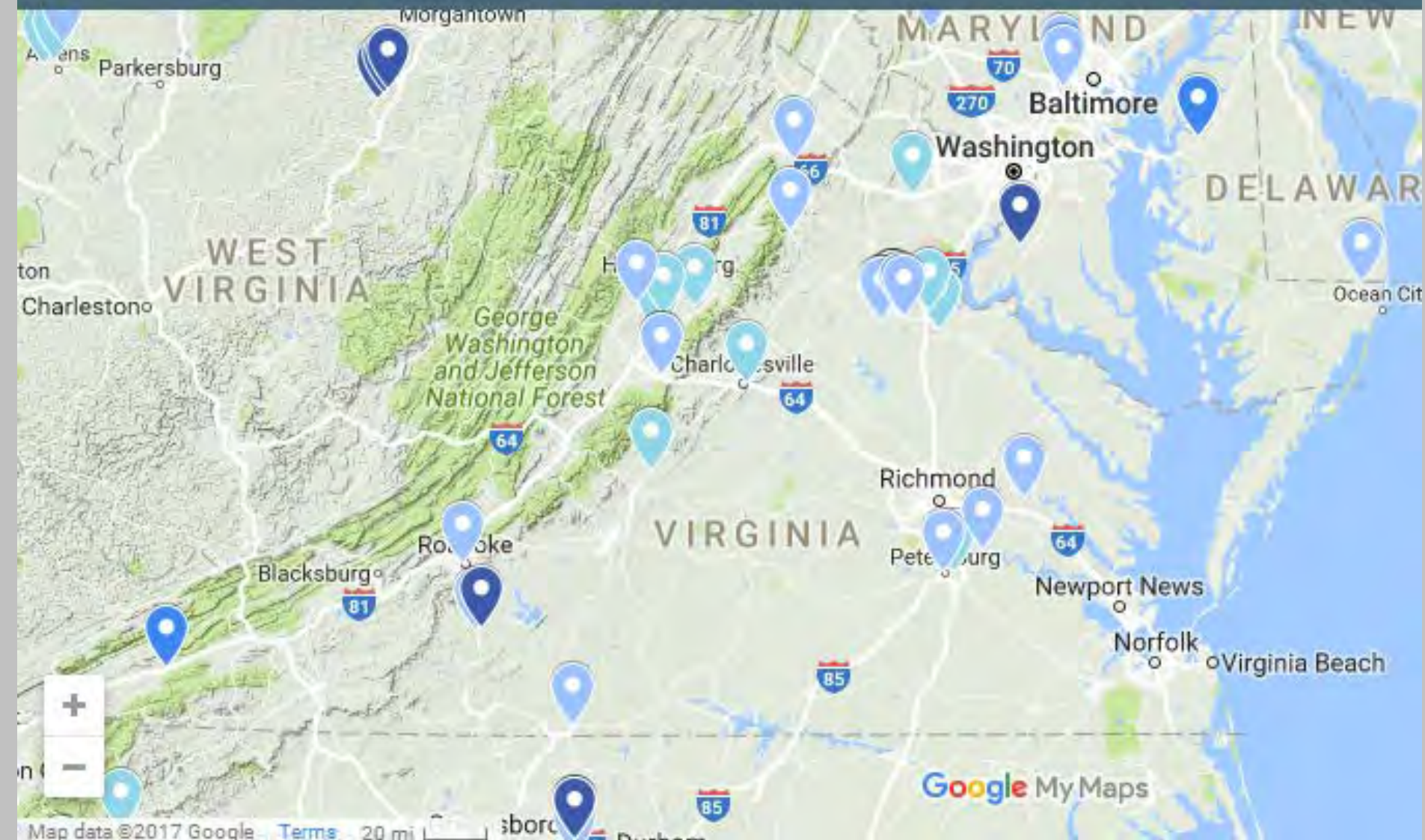
U.S. Dams Removed 1916-2016







U.S. Dams Removed 1916-2016



Embrey Dam Removal

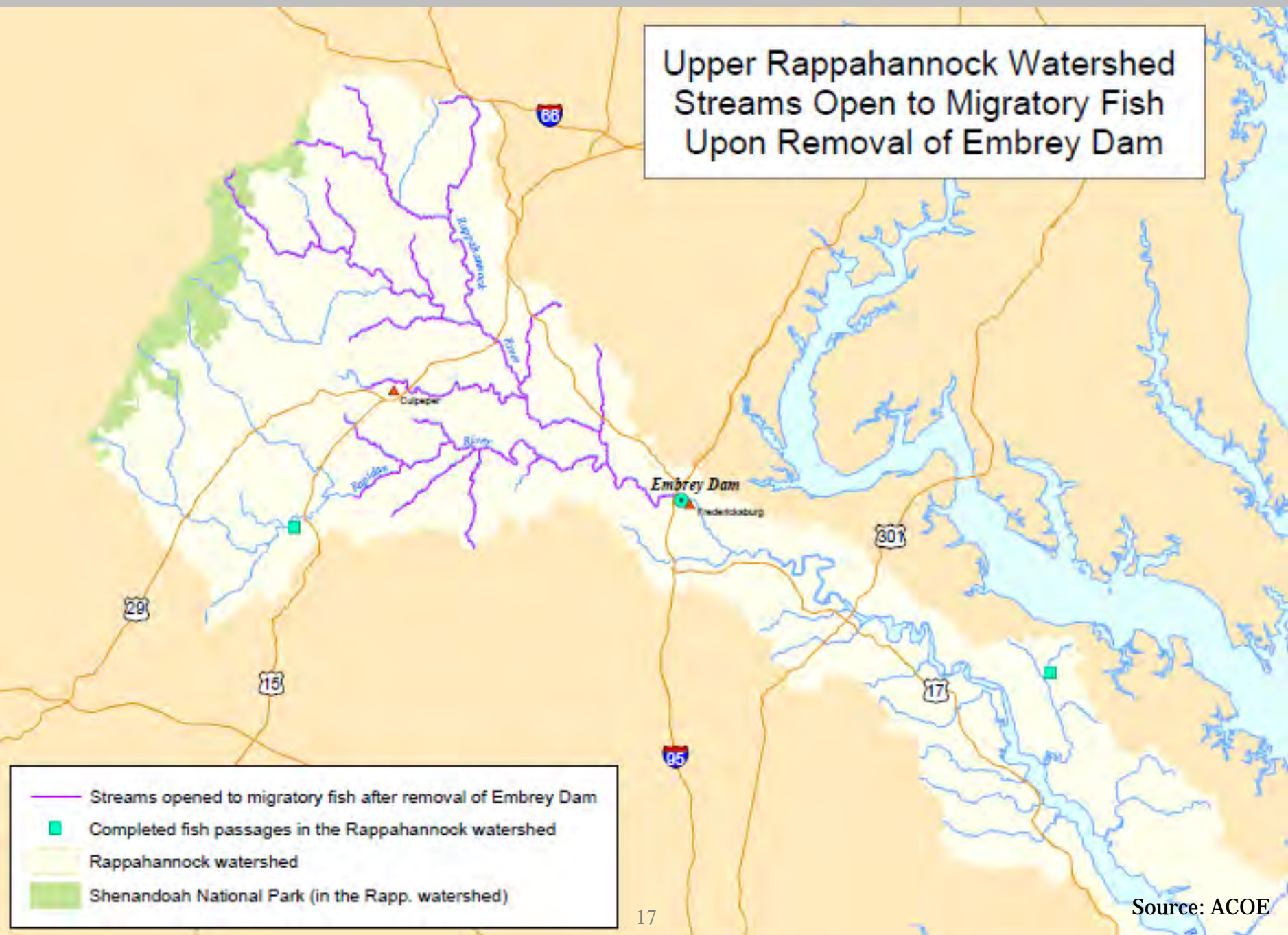


BEFORE



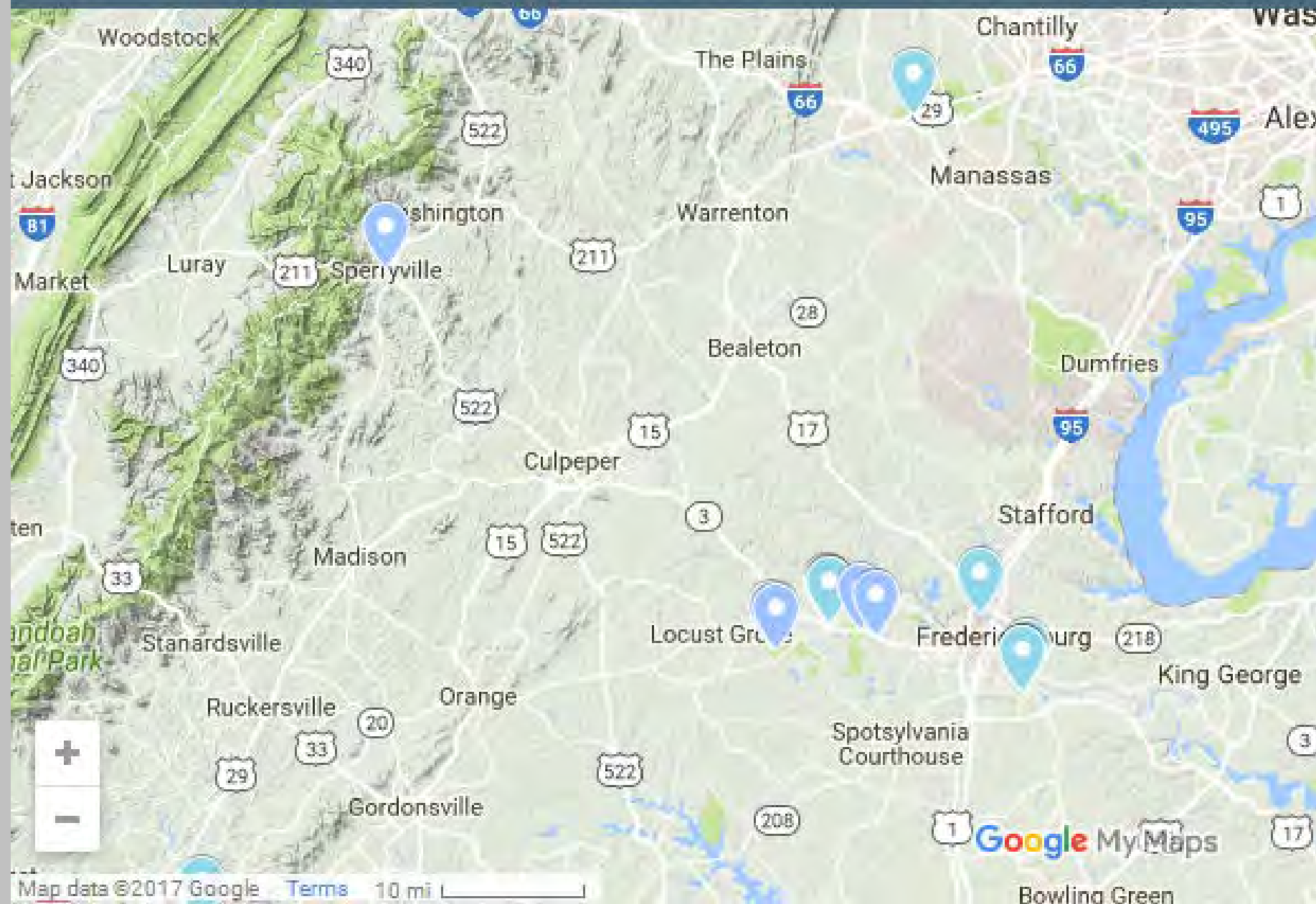
AFTER

Upper Rappahannock Watershed Streams Open to Migratory Fish Upon Removal of Embrey Dam

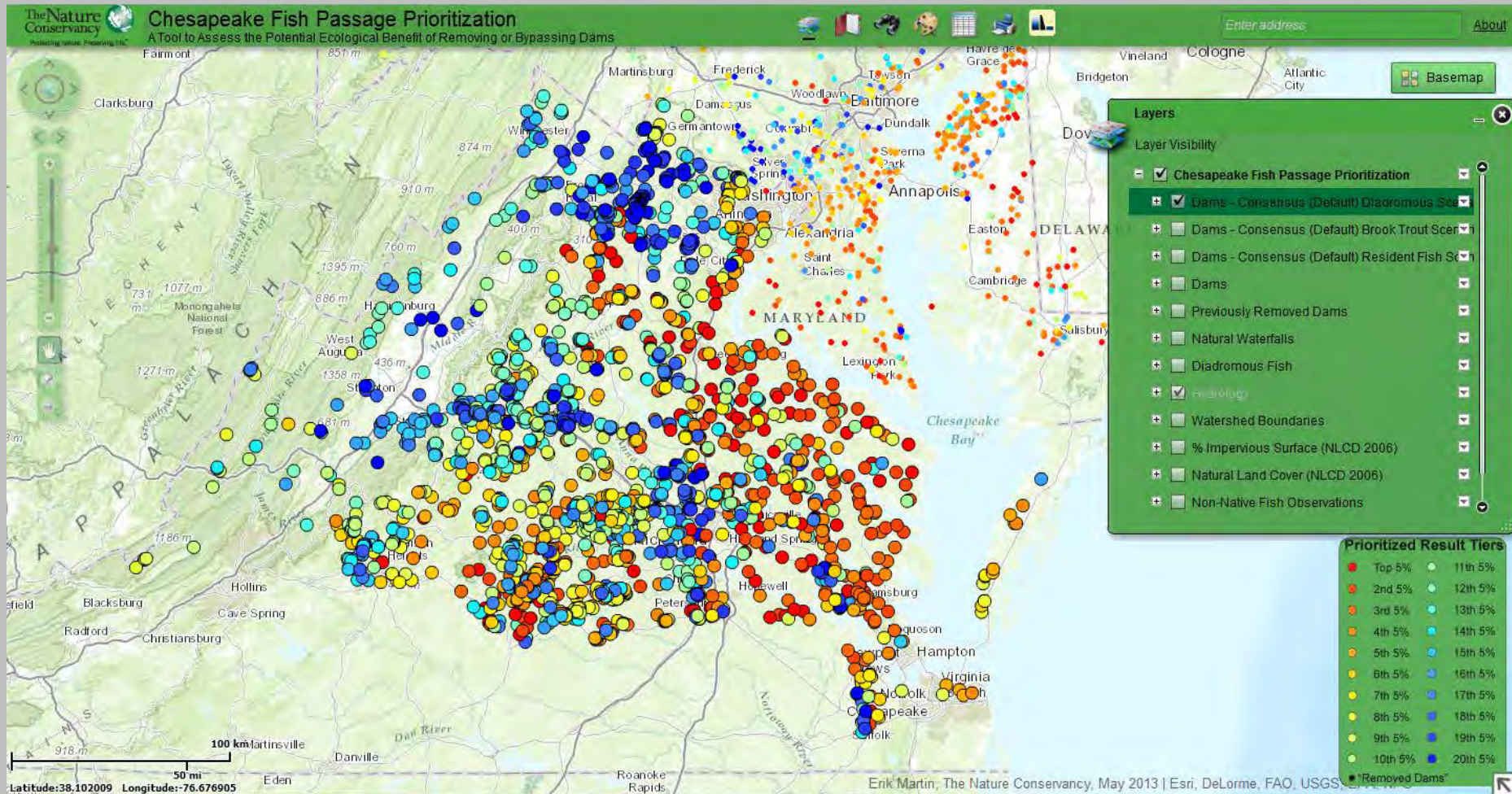




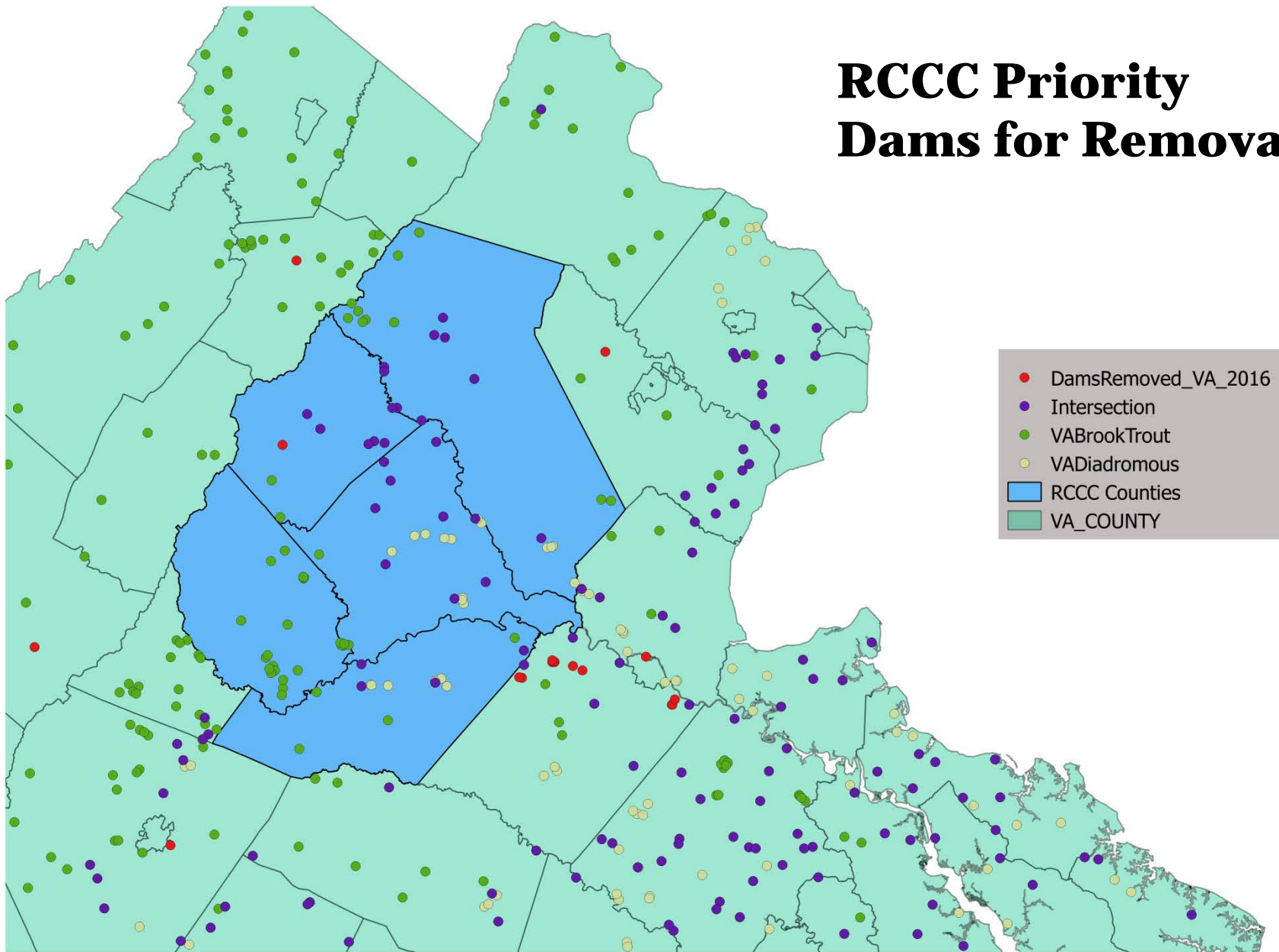
U.S. Dams Removed 1916-2016



Prioritizing Projects in Virginia



RCCC Priority Dams for Removal



How Do We Reach Dam Owners?

- 💧 Letters sent
- 💧 Who do we need to talk to? What community leaders do we need on board?
- 💧 Do you have relationships with any of these people?
- 💧 What community events should we participate in?
- 💧 What messages will resonate with dam owners in this area?

What We Have to Offer

- 💧 Financial assistance
- 💧 Simplified process for owner
- 💧 Technical assistance



Photo credit: CH2M

Example Projects



Harvell Dam Removal



Briggsville Dam

N. Branch Hoosic River, Clarksburg, MA



Briggsville Dam (Removed 2010)



Unnamed Dam

Cedar Run, Camp Hill, PA



Before

Immediately After



Unnamed Dam, Cedar Run (Removed 2007)



Contact Info

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