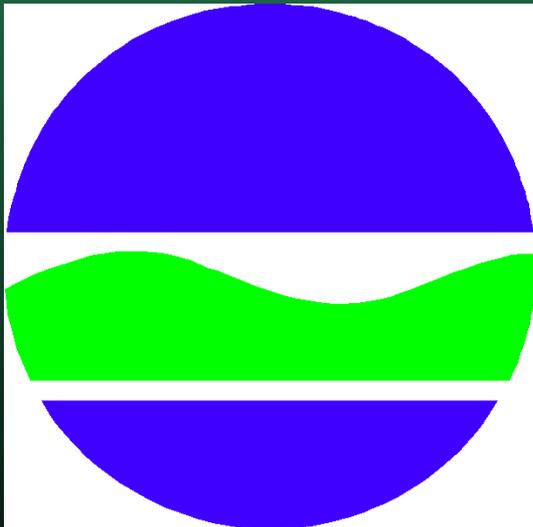


# Hudson Estuary Fish Passage Coordination Meeting



Alon Dominitz, P.E.  
Chief

Dam Safety Section

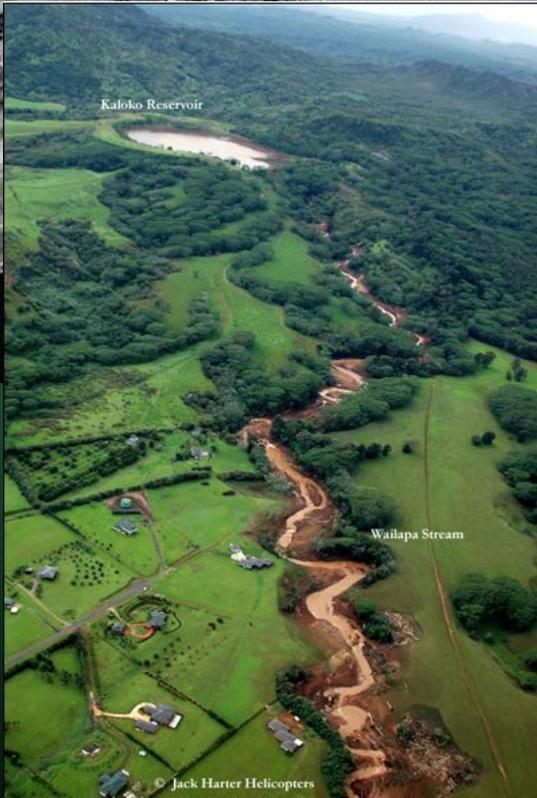
518-402-8185

<http://www.dec.ny.gov/lands/4991.html>

# Dams Sometimes Fail



South Fork	1889	2,209
Teton	1976	11
Ka Loko	2006	7
Hadlock	2005	0
Delhi	2010	0

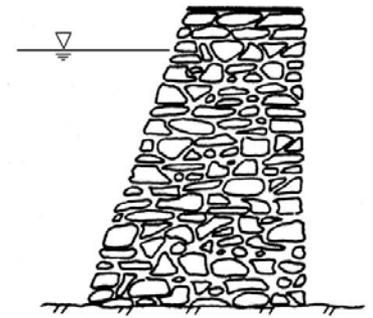
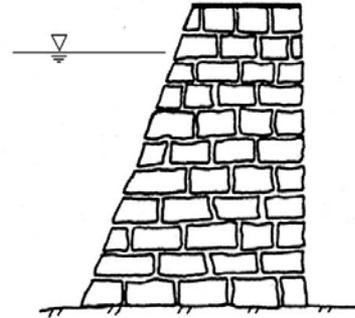
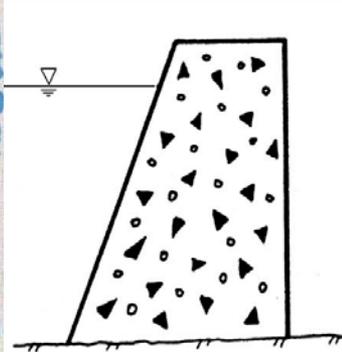
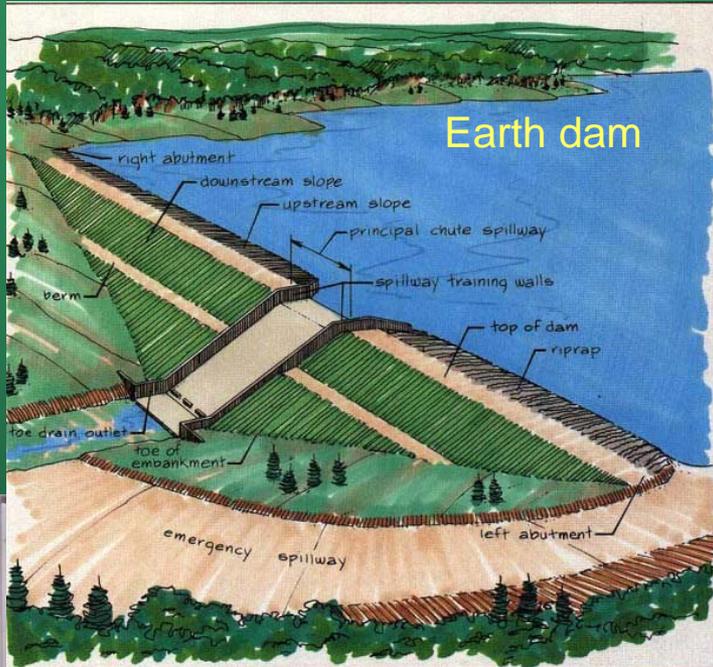


# What is a dam?

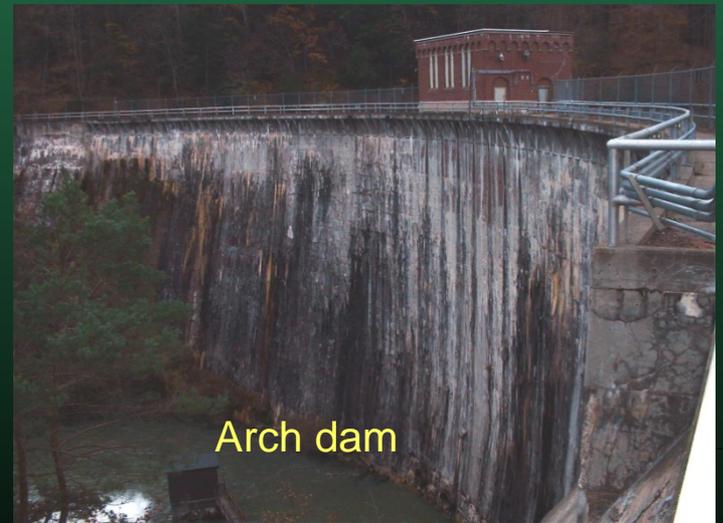
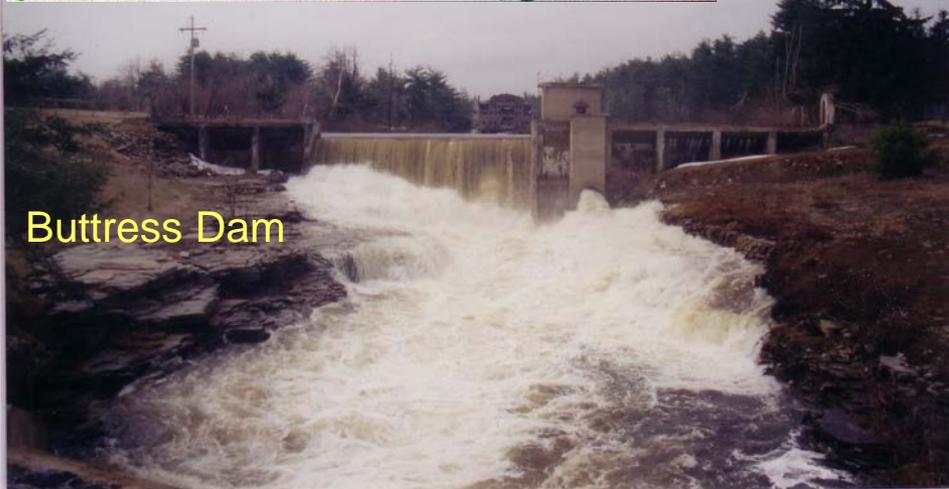


- An artificial barrier that impounds or may impound waters (Part 673)
- “An Owner must at all times operate and maintain said structure and all appurtenant structures in a safe condition” (ECL 15-0507)
- Does not include wastewater (ex: CAFO lagoons)
- Does not include road culverts or beaver dams

# Types of dams

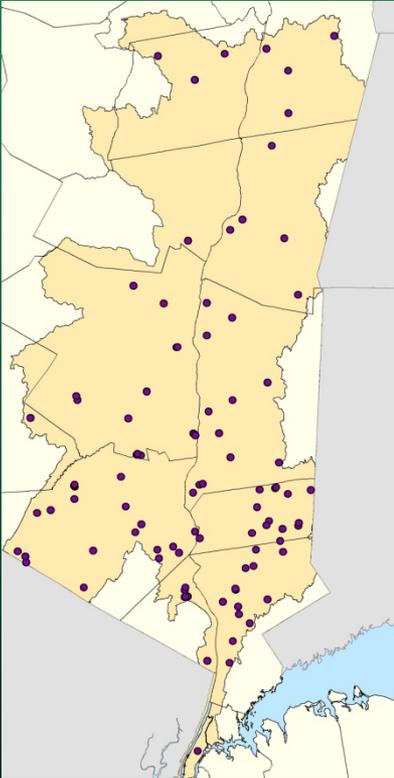


## Gravity dam

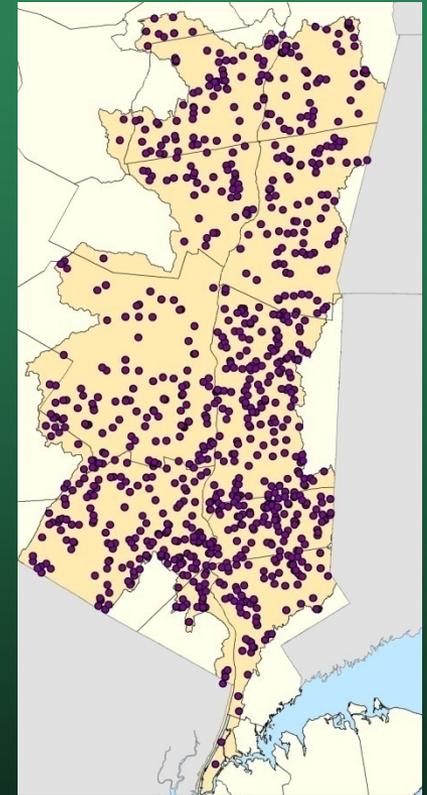


Only DEC inventory shown

1900



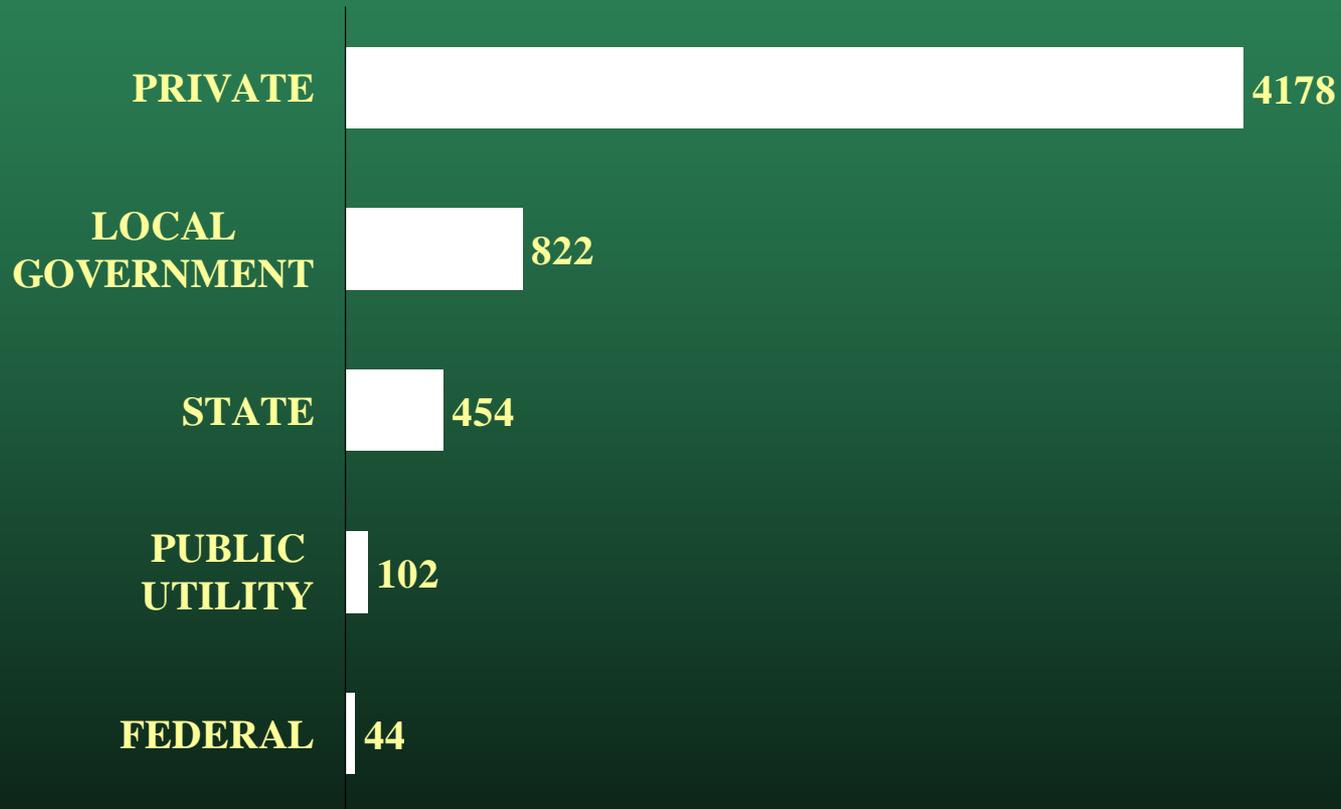
2000



- “Golden Age of Dam Building” 1950-1970

# ALL DAMS BY OWNER TYPE

(State Dam Inventory)



# NYS Dam Safety Program



- Regulatory inspection by DEC engineers
- Technical review
- Monitoring of Owner Dam Safety Programs
- Repair or removal of dams by owners
- Enforcement
- Emergency planning assistance
- Repair or removal of dams when the owner fails to follow an Order



# With Increasing Hazard Classification A→C

- Dam Owner responsibilities increase
- Design standards increase
- Regulatory requirements increase
- Time, money and effort increase



# Spillway Capacity Requirements

(DEC Guidelines for Design of Dams)

Hazard Class	Spillway Capacity*
A – Low	100-year
B – Intermediate	150% of 100-year
C – High	½ Probable Maximum Flood

\* Existing dams

Spillway capacity is the ability of the dam's spillway system to pass inflow after routing through the reservoir. It is therefore affected the watershed, spillway hydraulics, and available storage in the reservoir.



# Dams Provide Benefits Critical to Modern Society

- Scenic and recreation
- Water supply
- Flood attenuation
- Hydroelectric
- Some natural resource benefit depending on your perspective (different habitat)
- But, we must remember - they aren't "natural" or permanent



# Dams Affect Streams in Many ways

Fundamental change from natural waterbody to an artificial pond or lake



The presence of a dam can significantly alter both upstream and downstream

# Other “People” Impacts

- Danger to canoeists and kayakers
- Upstream and downstream flooding risk
- Greenhouse gas?



# Dam Removal / Breach

## Benefits and Challenges

- Removal/ reduction of flood hazard from dam failure
- Relief from regulatory and civil liability of dam ownership
- Possible reduction of upstream flood hazard
- Restoration of natural stream conditions/ fish passage
- Beauty/ recreational opportunities/ habitat in stream and on formerly flooded land
  
- Construction project – stream disturbance, sediment management, construction stormwater, flood plain development, dam safety, etc.
- Possible increase of downstream flood hazard from loss of flood attenuation
- Loss/ reduction of lake – recreation, water supply, habitat, hydro

Every project has a unique history, setting, concerns, and challenges.

Generally, the size and complexity of the breach/ removal project is similar in magnitude to the size of the original dam construction project.



# CLOMR/ LOMR

## Flood Map Revisions

- Physical Change to Floodplain such as Fill or Stream Changes; or
- Changes to Map and/or Study due to Updated Technical Data
- CLOMR: Conditional Letter of Map Revision for a Proposed Project – need FEMA review of proposed revised map
- LOMR: Letter of Map Revision.
- Official Revision of FIRM (and FIS) to show changes in floodplains, floodways, or flood elevations
- Up to 12 forms – MT-2
- Community Acknowledgment Always Required



