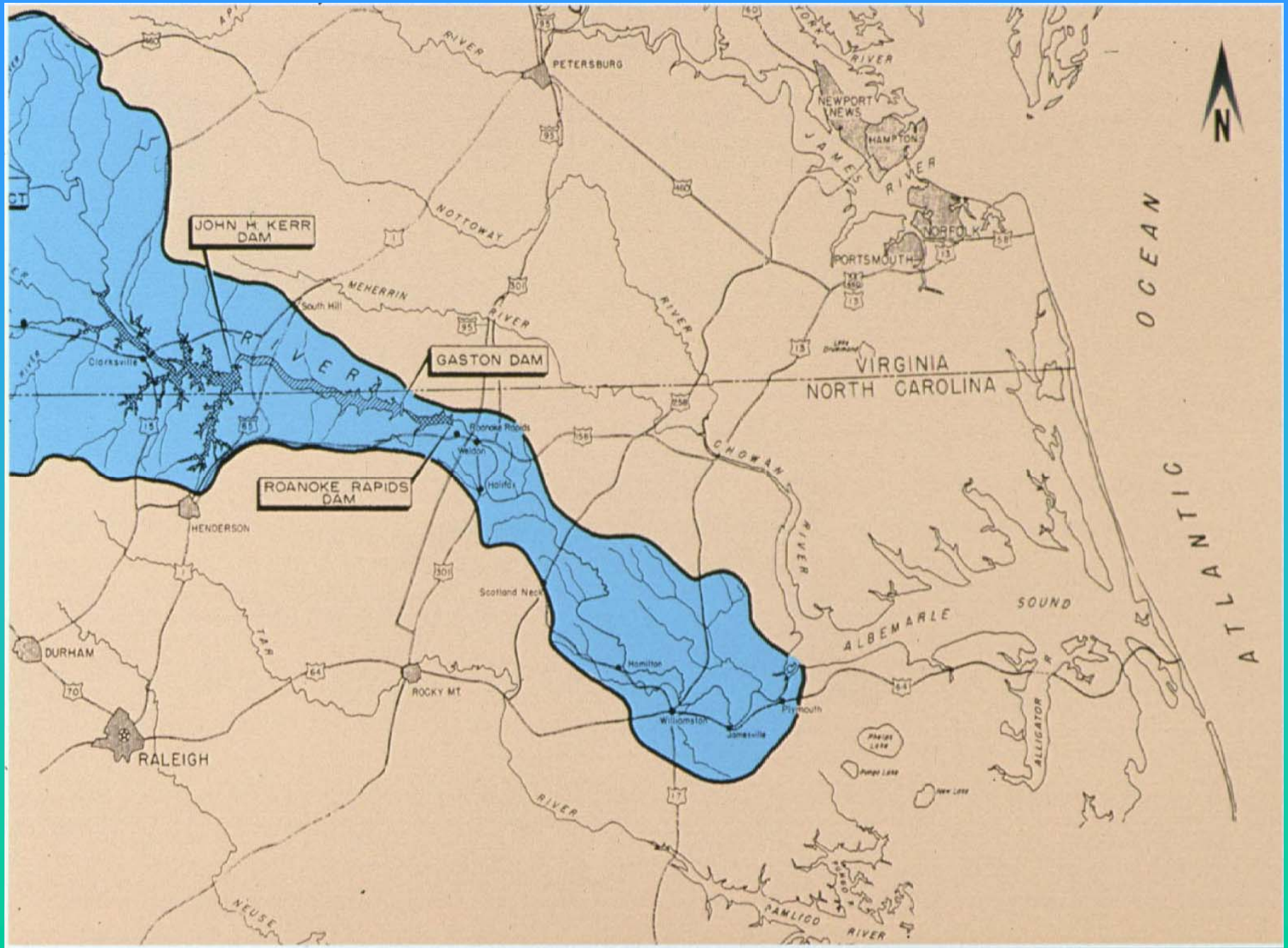


# Roanoke Rapids/Gaston Hydropower Project

- Two facilities on Roanoke River on VA & NC border
- Two dams, two lakes (8K and 20K acres)
- 300 MW combined
- Relicensed in 2004 after 10 year effort
- US Army Corps of Engineers flood control reservoir upstream



Gaston Dam



# Section 18 Fish Passage Requirements - Phased fish passage programs

- American shad
  - Develop Phase I experimental trap & transport program
  - Fry stocking and juvenile outmigration studies
  - Telemetry study of adult movements in reservoirs
  - Develop Phase II passage when negotiated criteria met
- American eel
  - Document movements at base of Roanoke Rapids Dam
  - Design and construct upstream passage facilities
  - Examine dispersal in tributary stream
  - Repeat for Gaston Dam

# American Shad



# American Shad

- Phase I trap & transport – successful using electrofishing, capability of moving 2,000 fish/year
- Stocking efforts – Some juveniles overwinter 1 or 2 years in reservoirs, others move through all 3 dams
- Telemetry studies – some adults find spawning rivers, but many “confused” in large reservoir environment
- Transition to Phase II – criteria include spawning stock reaching 20,000 fish in two years – considerable uncertainty

# American eel



# American Eel

- Studies downstream of dams documented most upstream movements occur March – November, eels attracted to ends of dam, and mostly small 100-150 mm eels moving
- Passage delayed due to concerns with *Anguillicola crassus* - fact finding studies, ASMFC consultation
- 2009 - Experimental passage to lake tributary, construction of upstream passage facilities

# Important Conclusions

- Restoration of American shad to multi-dam system of Roanoke not comparable to more riverine systems (e.g., Susquehanna)
- Benefits of providing passage to historical American shad spawning grounds unknown
- Incidental introduction of *A. crassus* with passage of American eels should be approached cautiously
- Cooperative, flexible restoration approach has been effective in meeting FERC license requirements, and agency objectives