

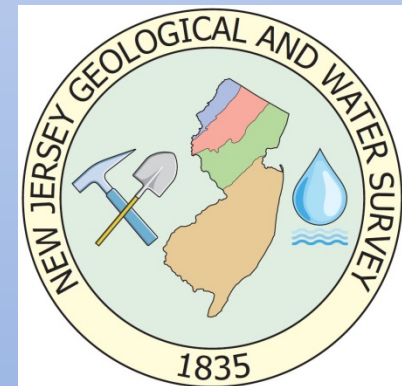
Groundwater Management in Southern New Jersey

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Division of Water Supply and Geosciences
New Jersey Geological and Water Survey



Delaware River Basin Commission
Water Management Advisory Committee
Groundwater Management Workshop
October 22, 2015



NJDEP

Division of Water Supply & Geoscience

**NJ Geological & Water
Survey Element**

**Water System
Operations Element**

**Bureau of Water
Allocation & Well
Permitting**

**Bureau of Water
Resources &
Geosciences**

**Bureau of Safe
Drinking Water**

**Bureau of Water
System
Engineering**

Legal Authority

Water Supply Management Act

N.J.S.A. 58:1A-1

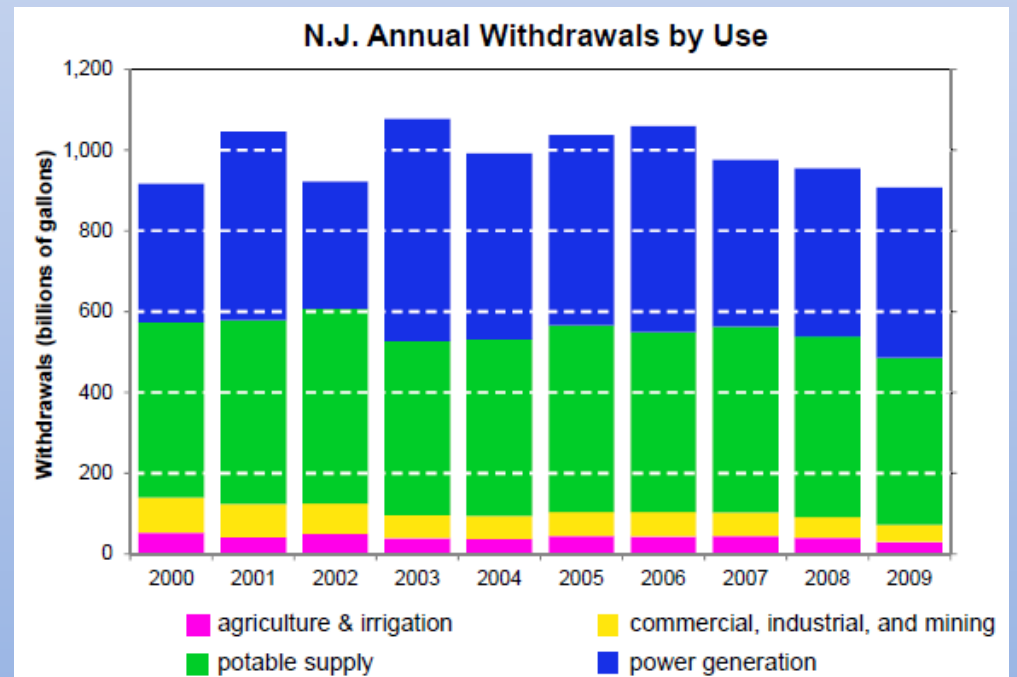
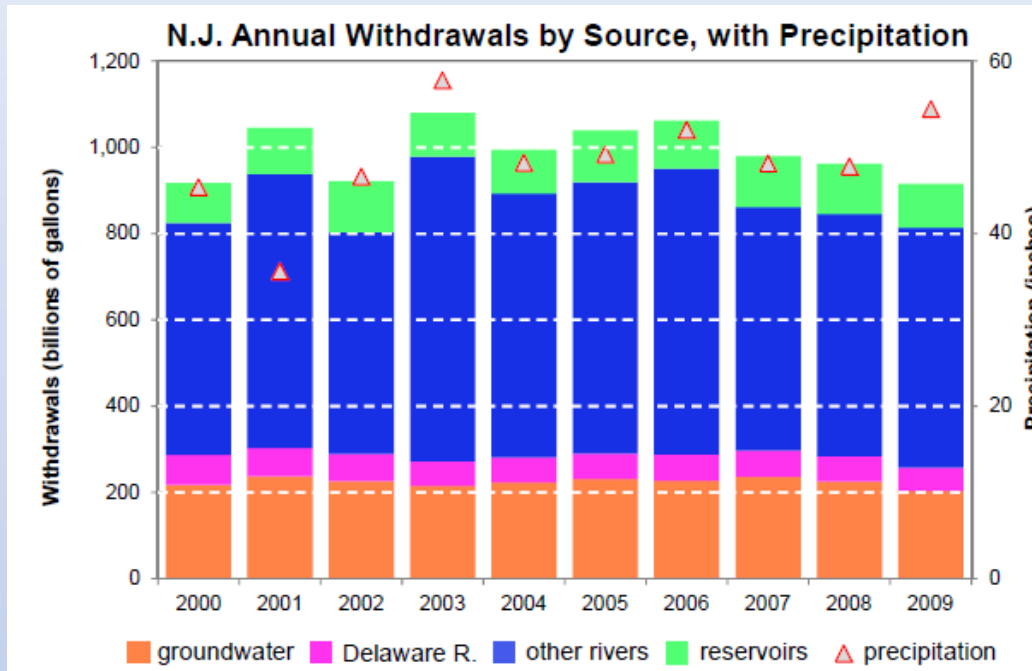
... the water resources of the State are public assets of the State held in trust ...
... ownership of these assets is in the State as trustee...
... water resources ... must be planned for and managed as a common resource ...

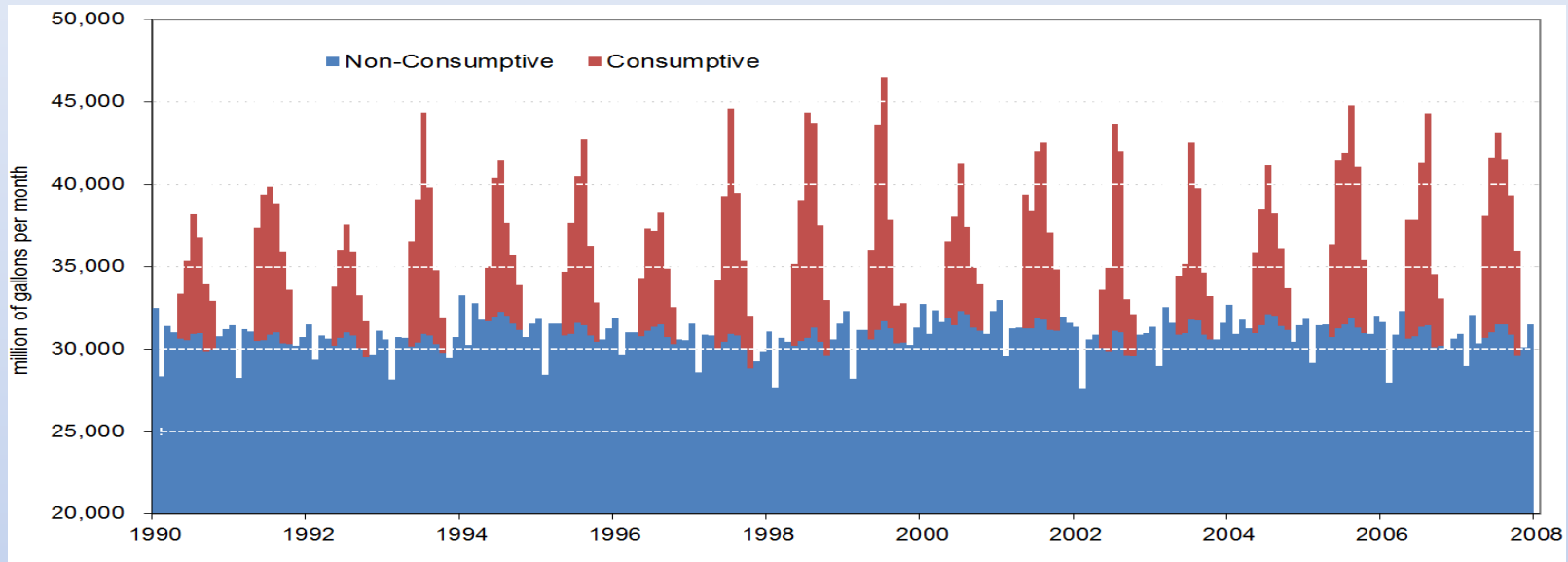
Water Supply Allocation Permits Rules

N.J.A.C. 7:19

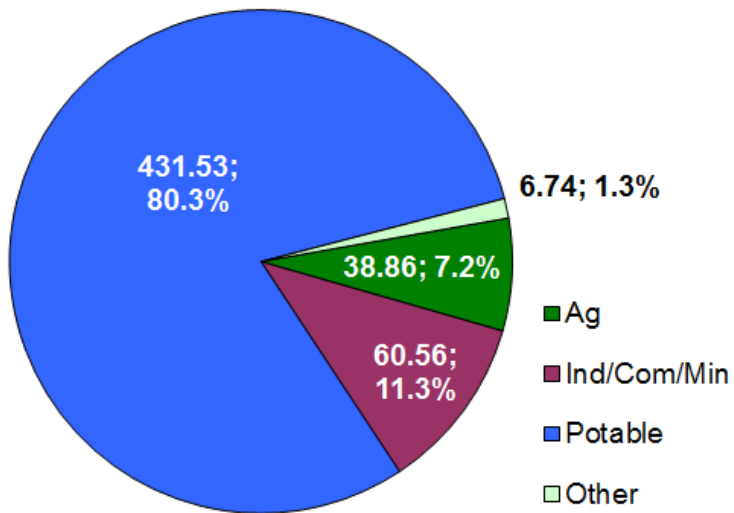
Critical Areas

N.J.A.C. 7:19-8

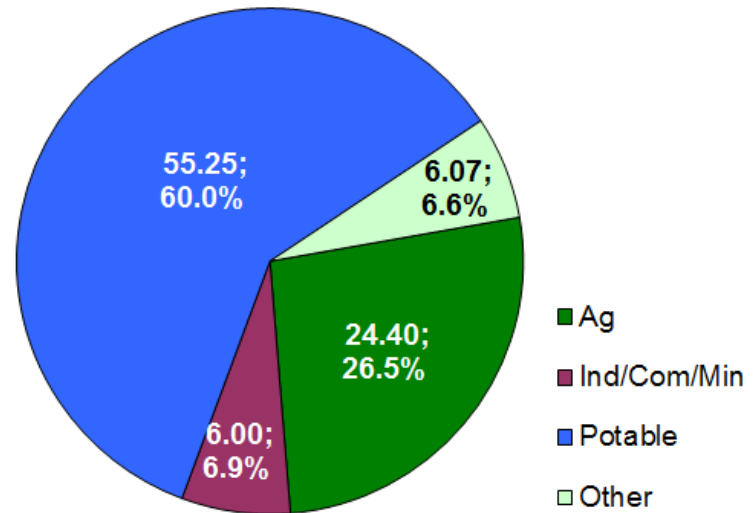




2007 Total Water Use, by Use Sector
billions of gallons and % of total



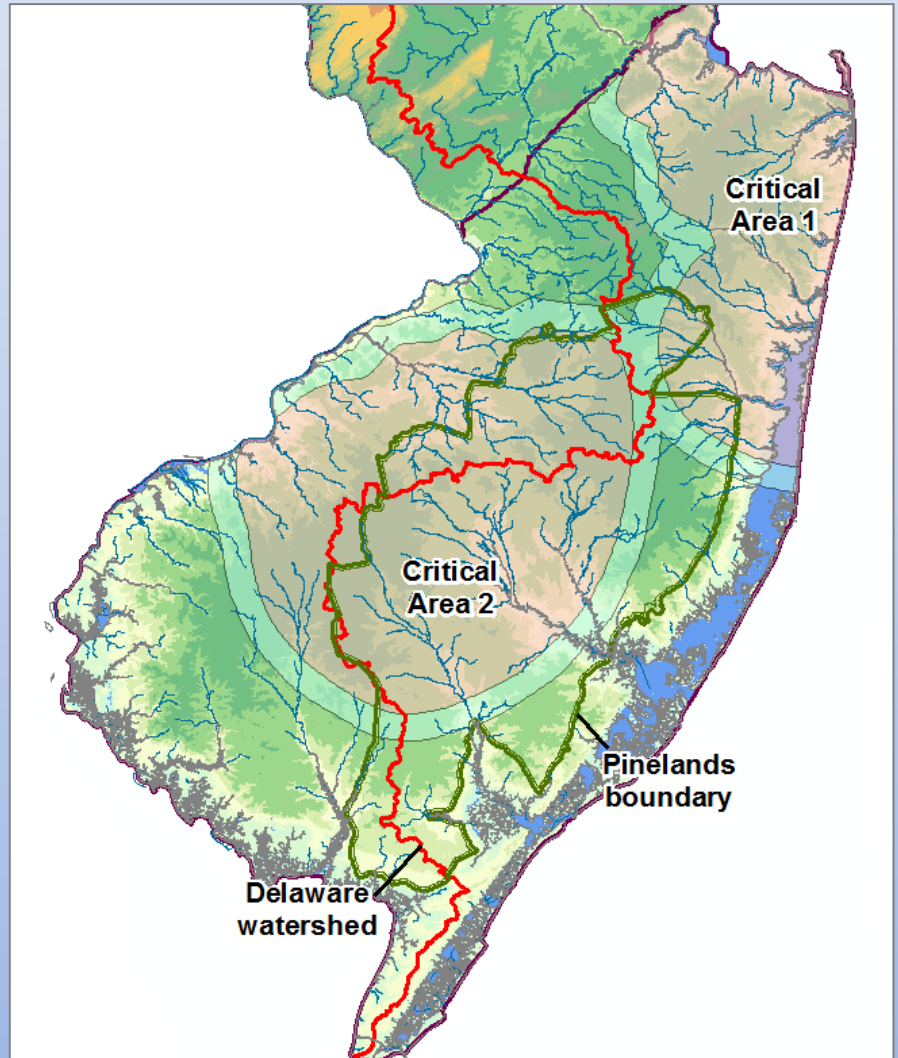
2007 Consumptive Losses, by Use Sector
billions of gallons and % of total



Delaware Basin

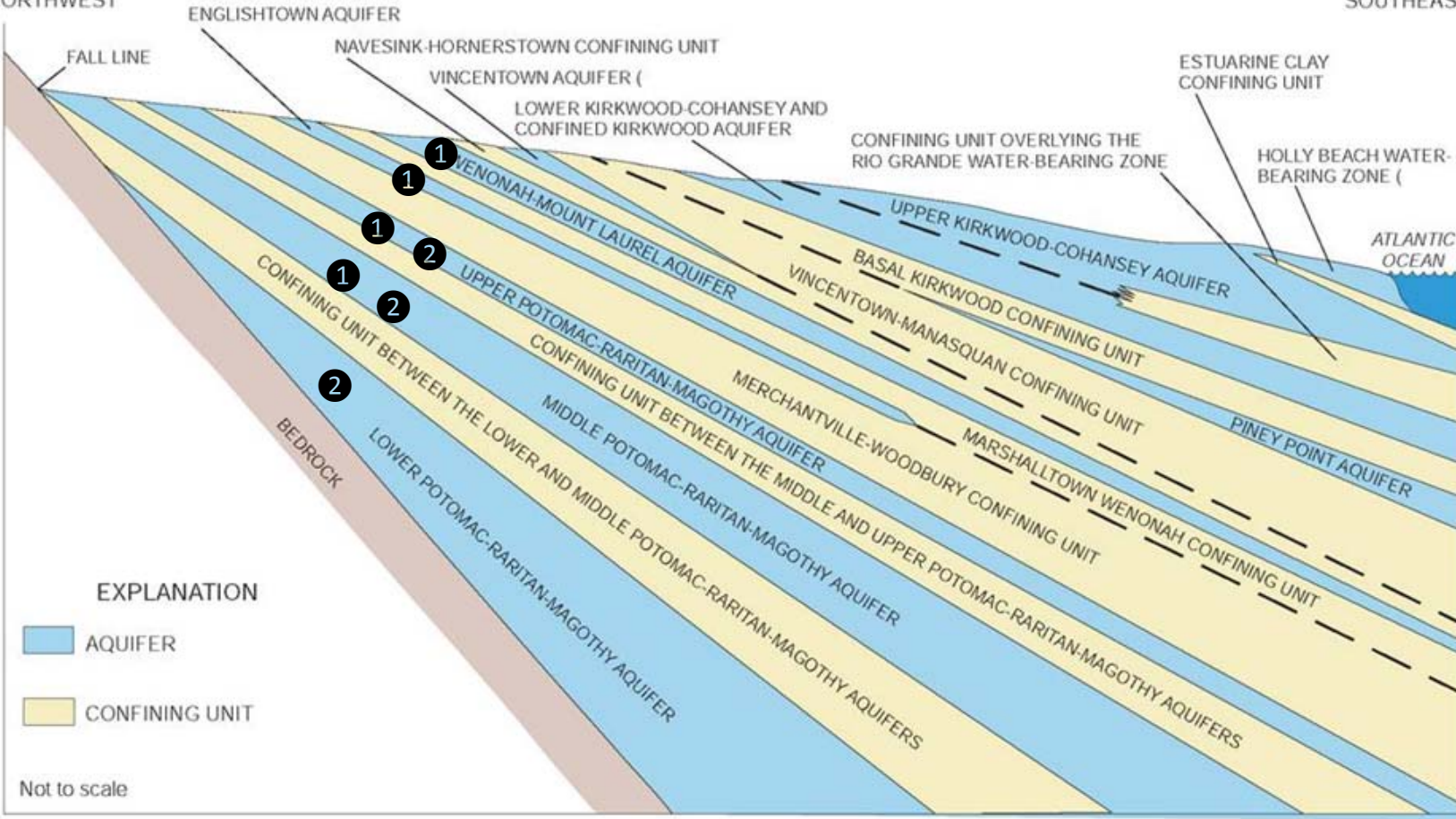


NJ Critical Areas



NORTHWEST

SOUTHEAST



EXPLANATION

- AQUIFER
- CONFINING UNIT

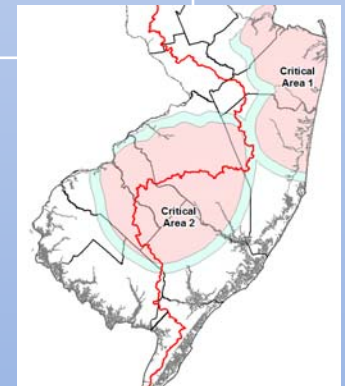
Not to scale

Critical Area Implementation

- Reductions in allocations ordered
 - reduce over pumpage
 - reduce threat of saltwater intrusion
- Reductions phased in as alternate water sources became available
- Depleted zone, threatened margin
- Significant opposition
- Groundwater modeling of reductions needed

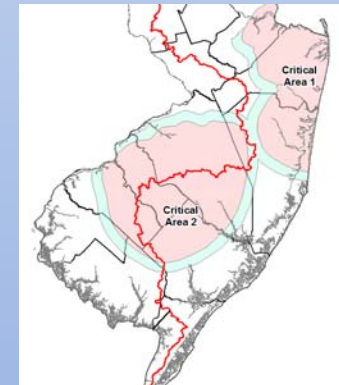
Aquifer-specific Pumpage Reductions in Water Supply Critical Area No. 1.

Aquifer	Pumpage as a percentage of 1983 rates	
	Depleted Zone	Threatened Margin
Wenonah-Mt. Laurel	50%	100%
Englishtown	50%	100%
Old Bridge	60%	100%
Farrington	50%	100%

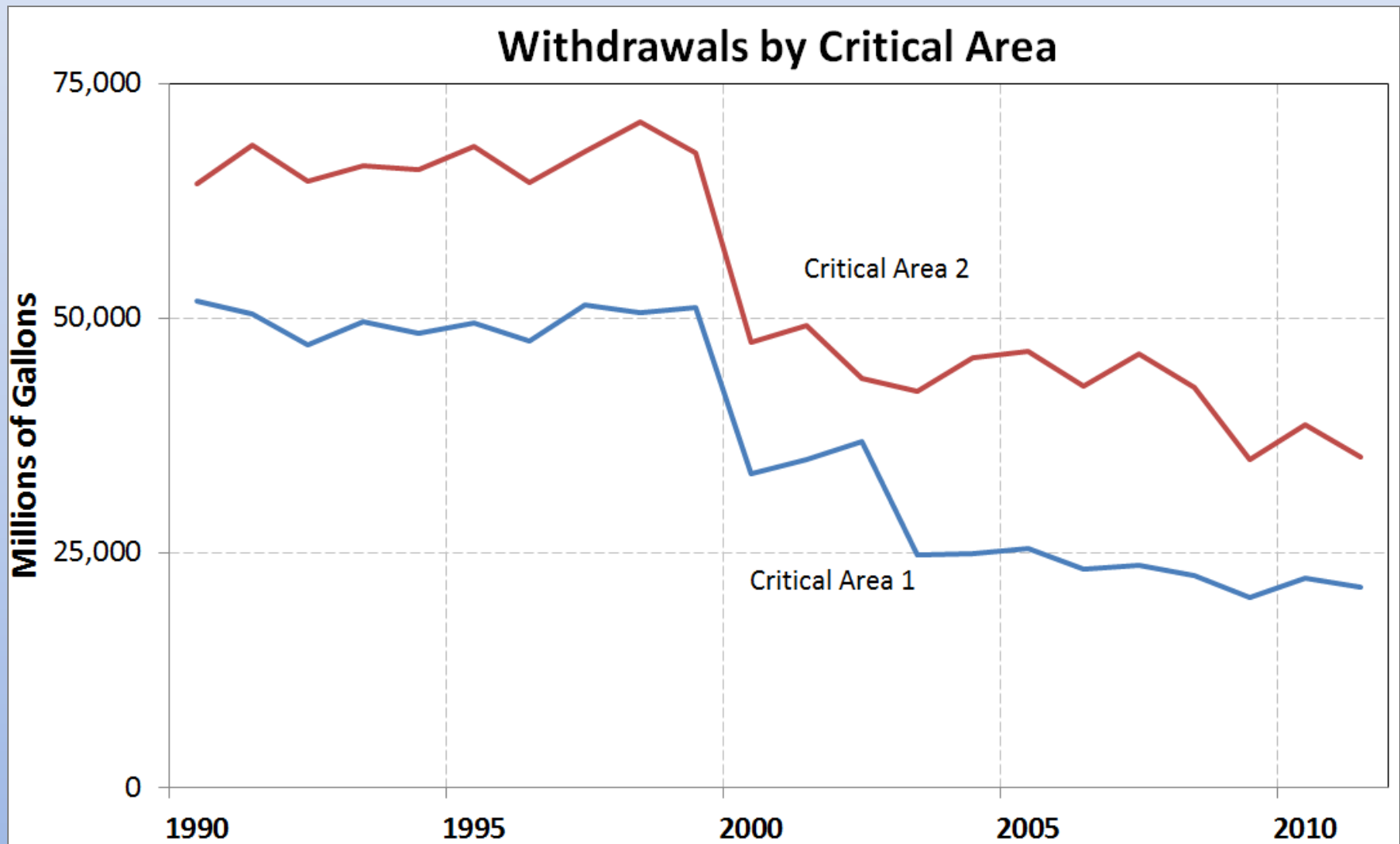


Aquifer-specific Pumpage Reductions in Water Supply Critical Area No. 2.

Aquifer	Pumpage as a percentage of 1983 rates	
	Depleted Zone	Threatened Margin
Upper PRM	65%	100%
Middle PRM	65%	100%
Lower PRM	65%	100%

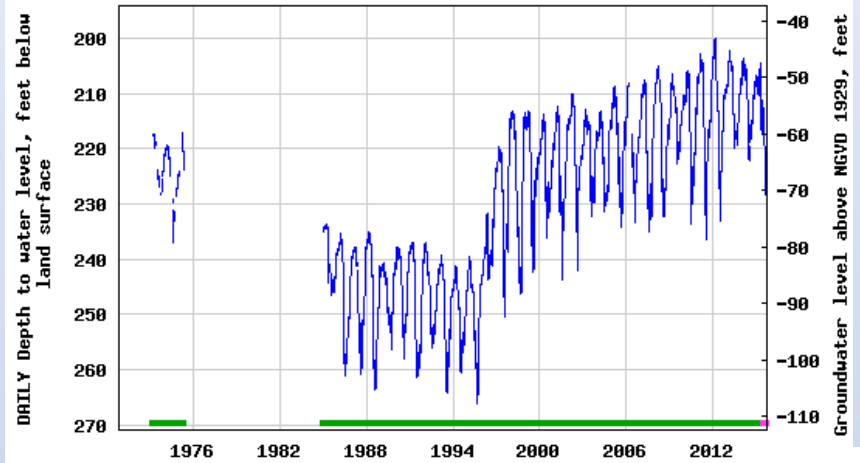


CA2 reductions starting in 1998
Delran Intake and Tri-County pipeline came online

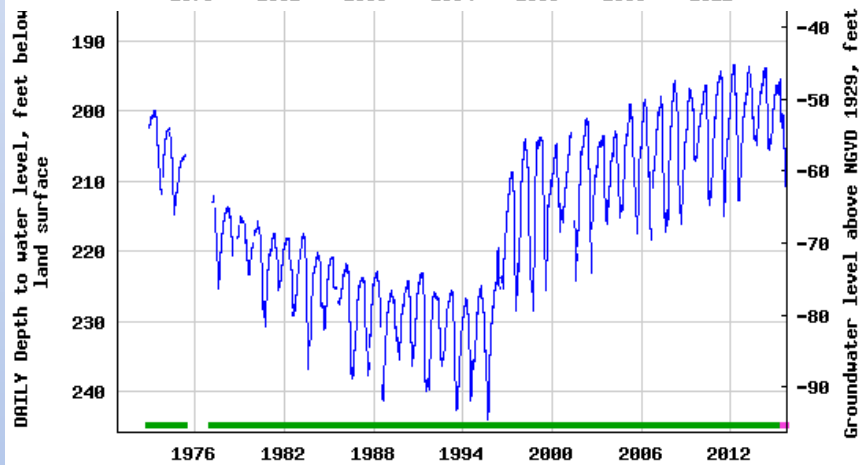


CA2 Groundwater Levels

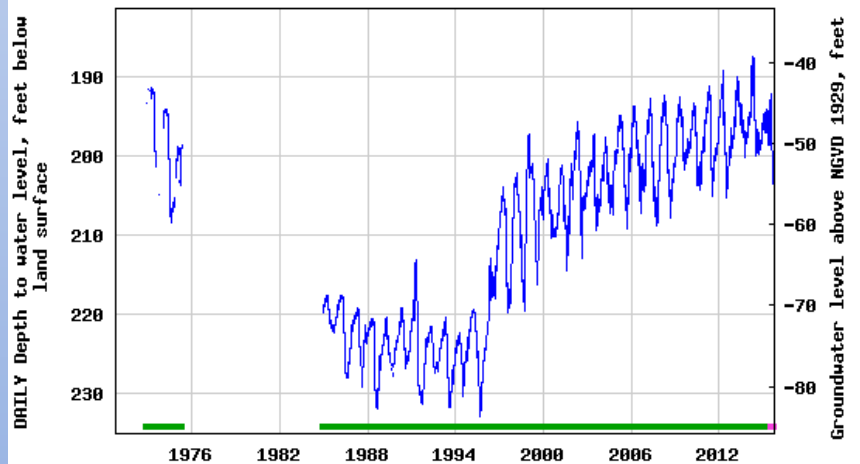
Hutton Hill 1
Camden Co
Upper PRM



Elm Tree 3
Camden Co
Middle PRM



Elm Tree 2
Camden Co
Lower PRM



CA2 Re-evaluation - 2008

- USGS 2008 re-evaluation study
- DEP concluded no change warranted.
- Some major unused groundwater allocations.
- Delran intake/plant could be expanded.
- If different conclusion how to restore reductions?
 - Return allocation to original owner.
 - Entertain applications for new allocations.

What's Next for CA2?

- It's working – water levels recovering.
- DEP encourages new growth to use water from Tri-county pipeline.
- Trying to ensure withdrawals outside don't affect inside.
- Municipalities signed contracts with New Jersey American Water Company.
- Some municipalities unhappy with contracts.

Other Areas With Varying Levels of Restrictions

- Upper Maurice
- Salem-Gloucester
- Rancocas Creek
- Blacks Creek
- Salem River upstream of Salem Canal
- Cape May

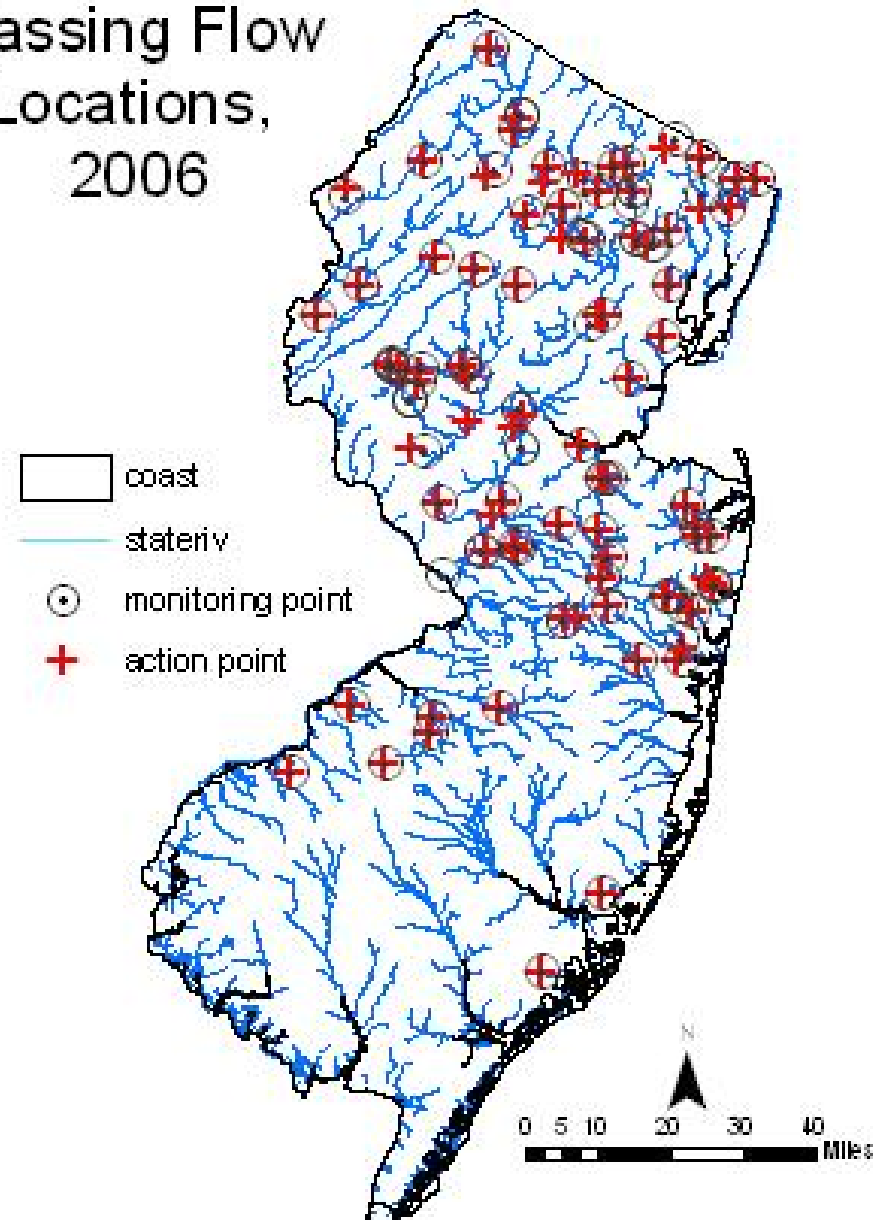
Water Allocation Concerns

- Highlands & Pinelands coordination
- Interference on existing users
- Surface water/groundwater interactions
- Saltwater intrusion
- Drought
- Ecological needs
- Water conservation
- Asset management
- Water for growth

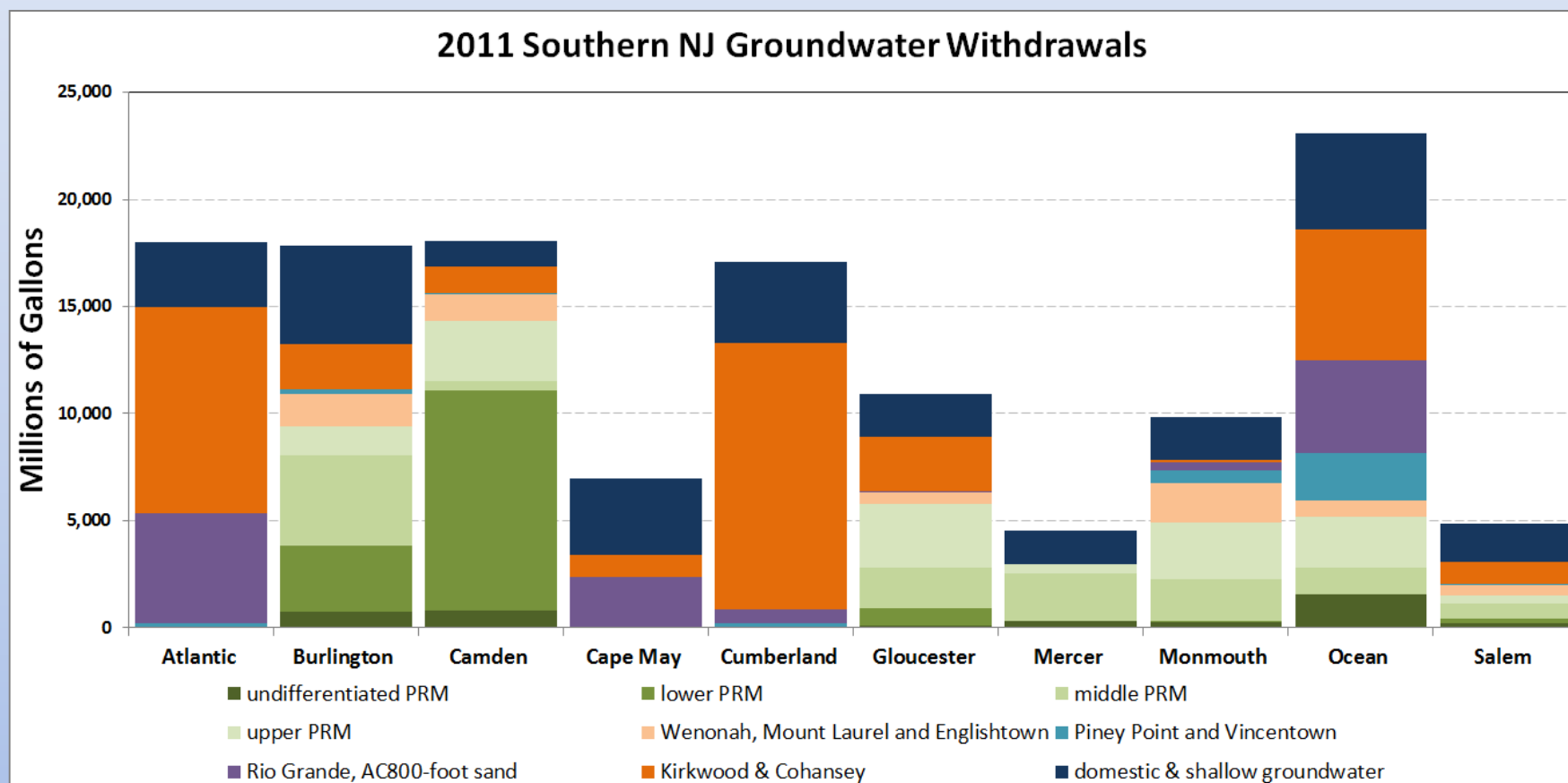
Specific Permit Restrictions

- Limits on instantaneous, monthly and annual withdrawals
- No adverse impacts on other users and environment
- Permits for >100,000 gpd, 50,000 in Highlands
- Less restrictions on ag use
- Public comment on new and major modifications
- Passing flows

Passing Flow Locations, 2006

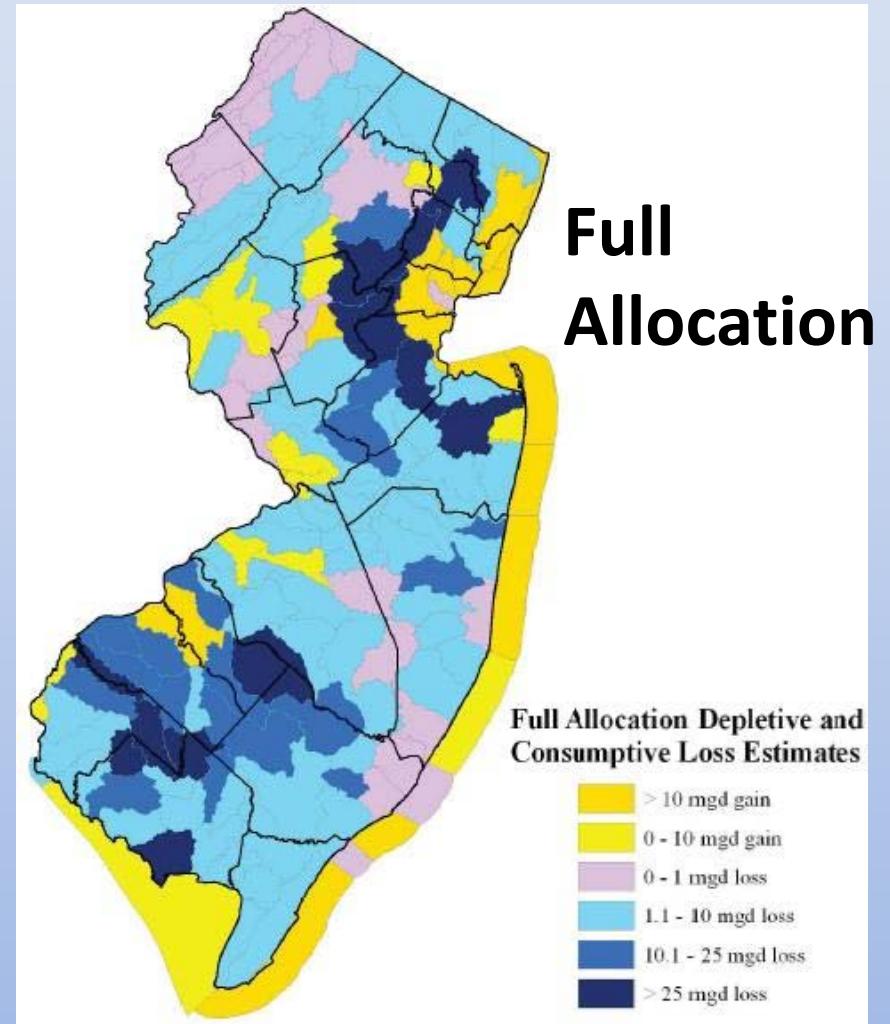
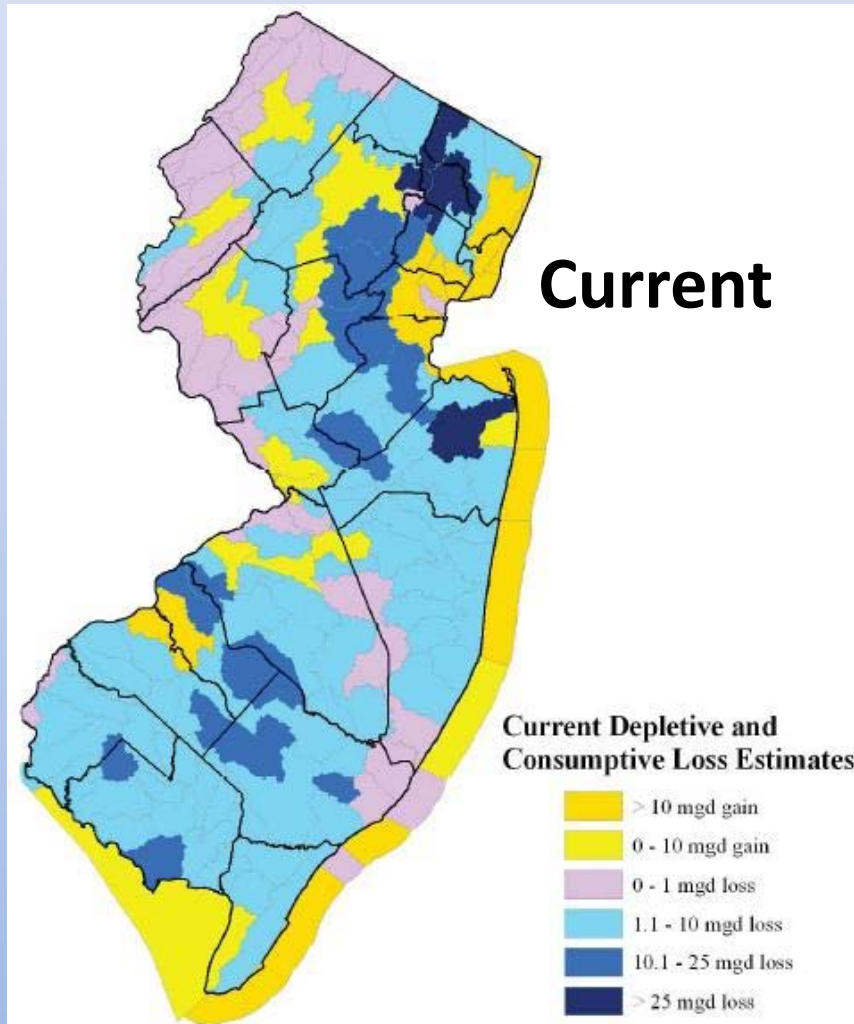


New Jersey Water Tracking (NJWaTr)

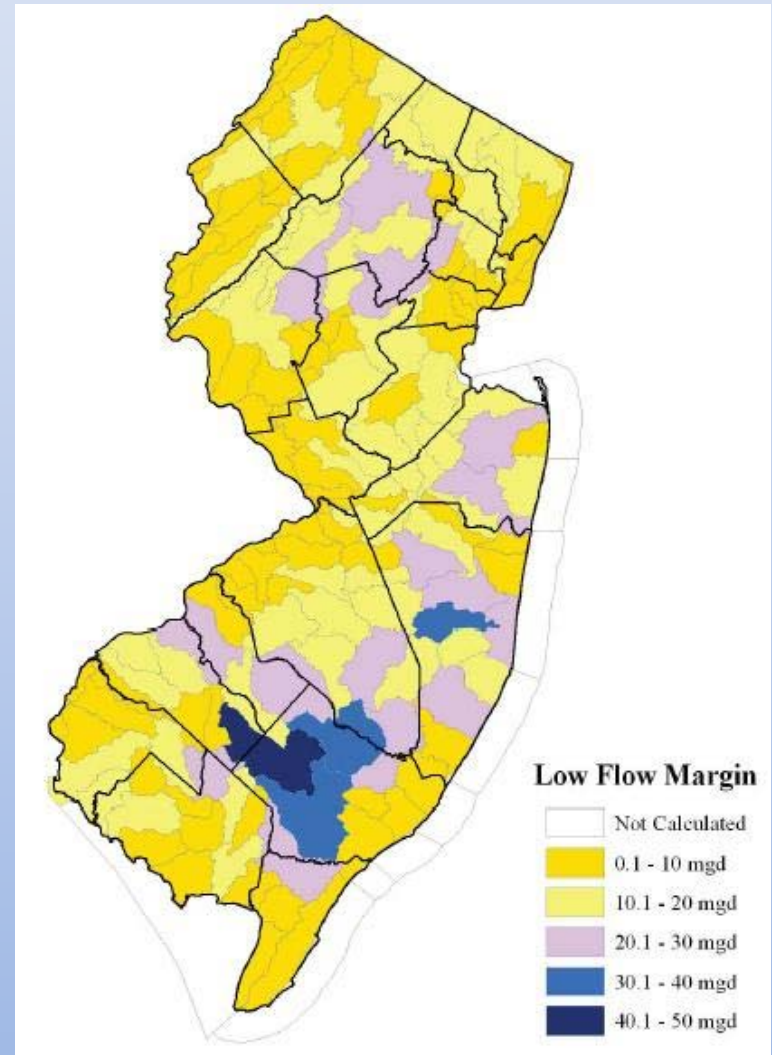
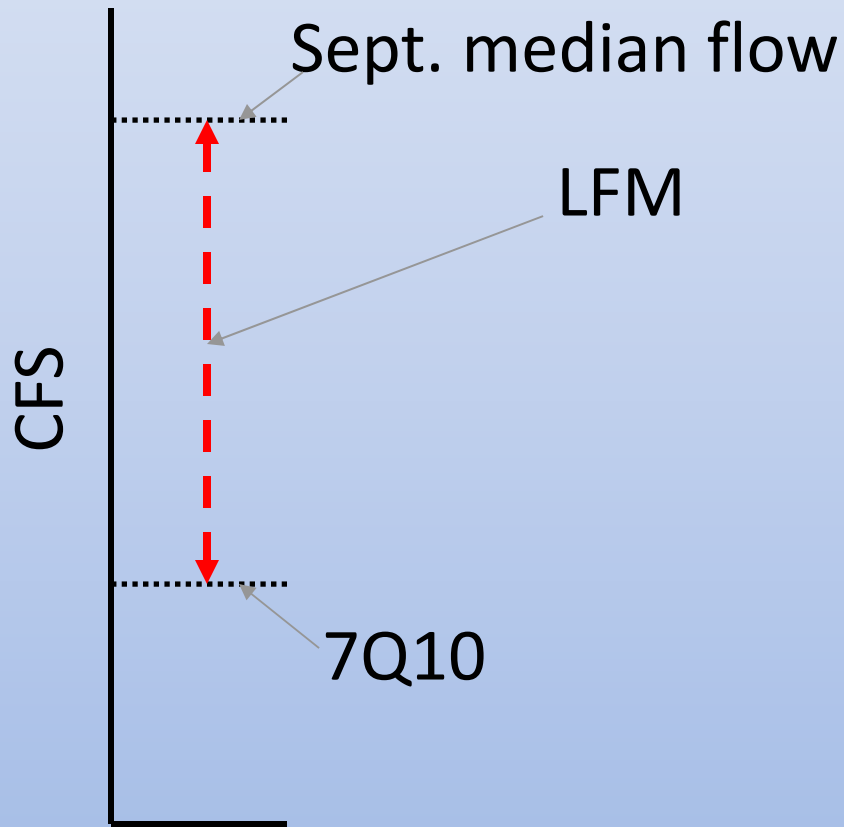


- Database on withdrawal points, use areas, use types, discharge points
- 1990-2011
- Multiple digital reports available at njgeology.org

Water Losses



Low-Flow Margin – Planning



Questions?