Success Story: Mousam Lake

- 3 miles long, 926 Acres
  - 22 sq. mi. watershed
- Sandy shores
- Cold & warm water fisheries
- Shoreline heavily developed, 700 seasonal & year-round homes.
Problem – Mousam Lake

- Gradual conversion of forested land into homes & roads increased erosion, sediment, polluted runoff
- Phosphorus increased algae, decreased dissolved oxygen
- Declining water clarity, steady decline in trophic state
- 1998 TMDL listed “impaired” for supporting aquatic life
Highlights – Mousam Lake

- 1997 Survey documented erosion sites

- 1999 - 8 yrs prompting erosion control BMPs
  - Outreach
  - Cost sharing 45 bigger NPS sites
  - Mousam Lake Youth Conservation Corp - 115 projects
  - Tech assistance BMPs >250 landowners
  - Cost: $270,000 3 - 319 grants (1999 – 2006)
    >$400,000 local match
Highlights – Mousam Lake

Mousam Youth Conservation Corp began 2001 supported for 9 years!

Teens are working hard and loving it

These teens are in the trenches

Save the lakes

Project at Mousam should serve as model for other communities

Foot of lake gets a facelift
Results – Mousam Lake

Trend – Stable / Improved
Water Clarity 3 Feet Deeper in 2006 vs. 1992
Delisted - 2006
Success Story: Cobbossee Lake

- 9 miles long - 5,200 Ac.
  32 sq mi. watershed

- Swimming, boating, coldwater fishery, Premier bass fishing

- 2nd drinking water supply

- Shoreline developed. Watershed - mixed land uses, rural residential, farms
Problem – Cobbossee Lake

- **Point Source**
  Until 1977 town sewage discharged to a lake upstream

- **Continued release of P from lake sediment**

- **NPS - Erosion, runoff from**
  - dairy farms
  - developed lands & roads

- **Nuisance algae blooms impaired recreation, depleted oxygen for fish**
Highlights – Cobbossee Lake

- 1973 - Cobbossee Watershed District formed prompting phosphorus control work >35 years!

- Alum treatments reduced P release from sediments in upstream lakes
  - Annabessacook 1978; Cochnewagon 1986

- 31 dairy farms: manure storage, nutrient mgt, crop rotation, erosion controls

- Developed Lands & Roads
  - erosion control BMPs
  - phosphorus allocation ordinances
Results - Cobbossee Lake

No nuisance algae bloom since 1996
Minimum Secchi Depth > 2.0 meters
Improving water quality
Governor Baldacci recognizes clean-up of Cobbossee Lake - 5/06
Success Story: Madawaska Lake

- 4 mile long, 1600 Acres, 30 sq. mi. watershed
- Valued for boating, fishing & swimming
- Forested watershed, shoreline developed with camp & year round homes
Problem – Madawaska Lake

1980’s - Timber harvested from 22% of watershed
>1/2 of harvests were clear cuts,
Miles of new roads built.
Shore lands developed into house lots

Erosion & sediment increased phosphorus loading

Nuisance algae blooms (1987-92) impaired swimming,
depleted oxygen for fish

1988 TMDL listed “impaired” for aquatic life support &
recreational uses
Highlights – Madawaska Lake

TMDL listing prompted action

- 1989 LURC increased land use regulation in area
  - Survey done, problem harvest sites documented

- LURC, DEP, MFS prompted forestry BMPs

- 1990’s
  - Reduced timber harvest & road building
  - Gradual reforestation of sites harvested in 1980’s

- Erosion control BMPs on camp roads & homes

- Replacement of failing septic systems
Results – Madawaska Lake

- Stable / improving trophic state
- No algae blooms for more than 5 of 10 yrs
  - minimum SDT > 2.0 meters

Water Clarity - Secchi Disk Transparency

[Graph showing water clarity from 1974 to 2007 with data points for each year indicating depth in meters]
NPS Success Stories: Looking Ahead

What “impaired waters” have a relatively high potential to be partially or fully restored within 5 years?

**Key factors:**
- waterbody size, watershed area
- water quality impairment & causes are well understood
- magnitude of impairment
- water quality trend
- land uses in the watershed
- extent of treatable nonpoint sources
- extent of local support