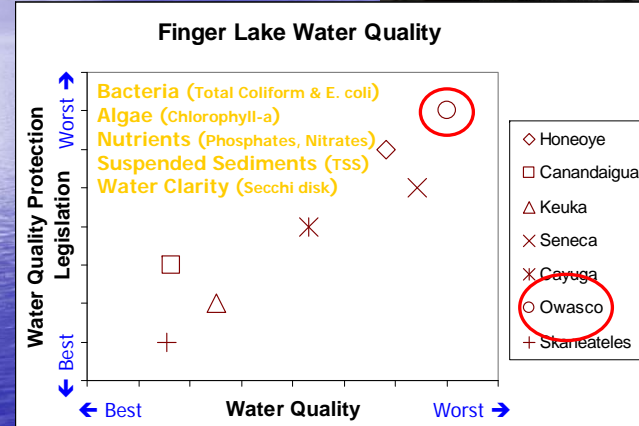


Owasco Lake: The 2010 Update Owasco Lake Day

John D Halfman
Environmental Studies Program
Department of Geoscience
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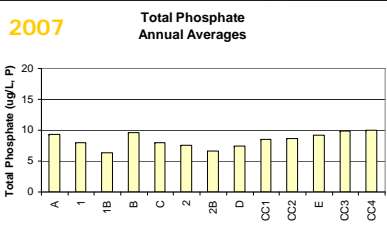
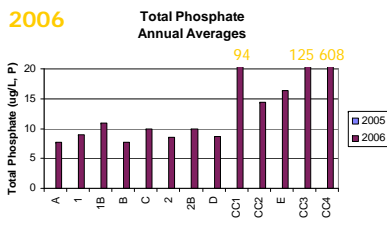
2005 Data Water Quality & Its Protection



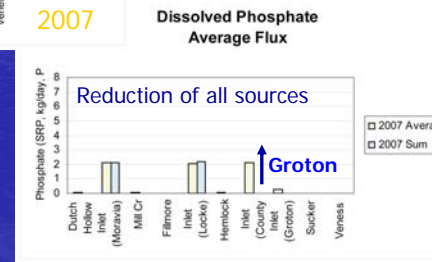
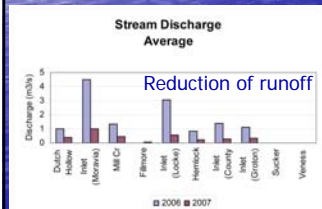
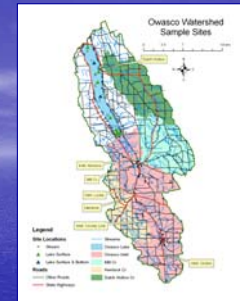
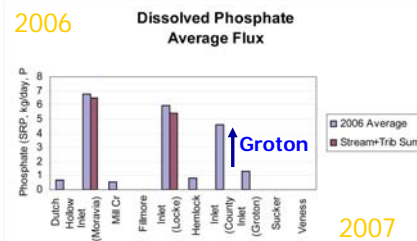
Bush, 2006, Undergraduate Honors Thesis

2006 Emerson Foundation Funds
2007 NYS Funds – Senator Nozzolio

Owasco Lake Phosphates (TP)



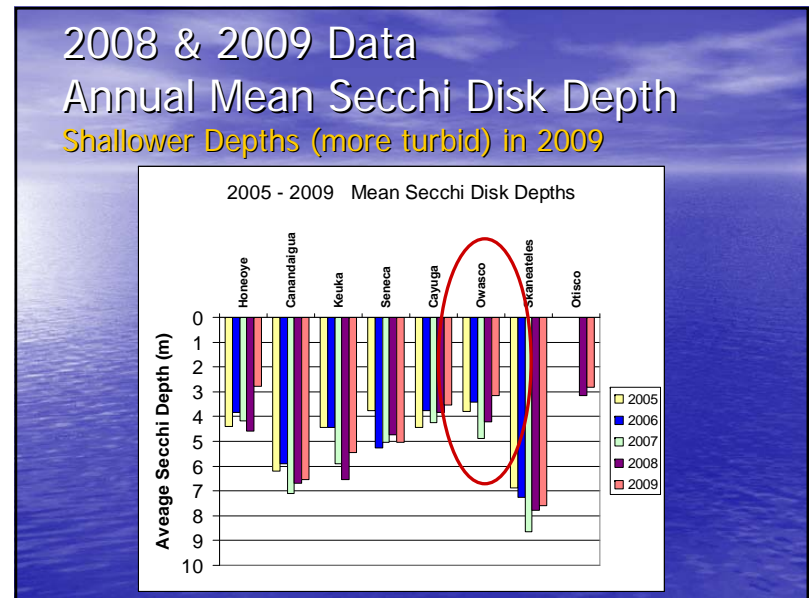
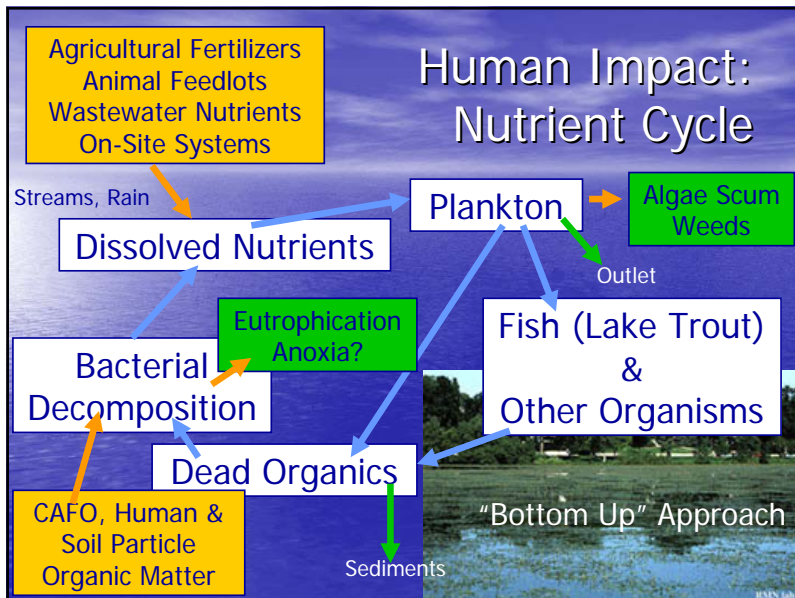
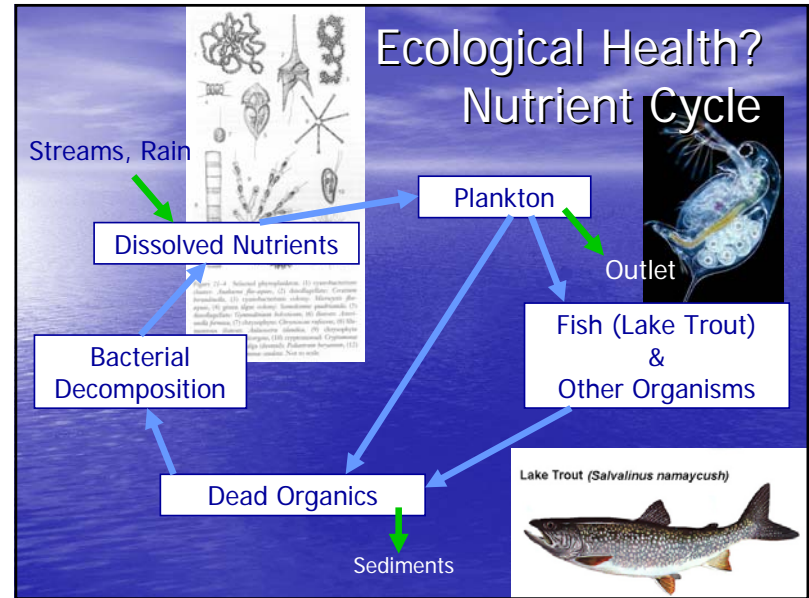
2006 & 2007 Stream Data



Water Quality Concerns

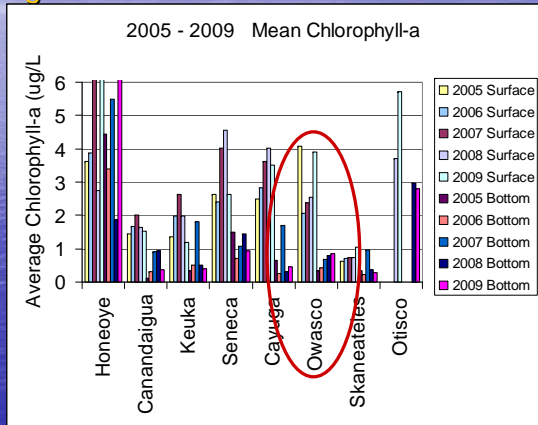
Runoff

- **Human Wastes**
 - Municipal Wastewater
 - On-Site Septic Systems
- **Animal Agriculture "CAFO" Operations**
 - Steroids & Antibiotics
 - Animal Waste
- **Plant Agriculture**
 - Fertilizers, Pesticides
 - Soil Erosion



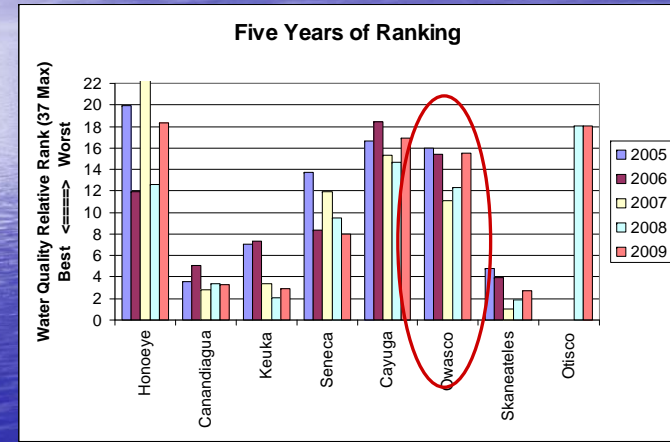
2008 & 2009 Data Annual Mean Chlorophyll Data

More algae in 2009 surface water

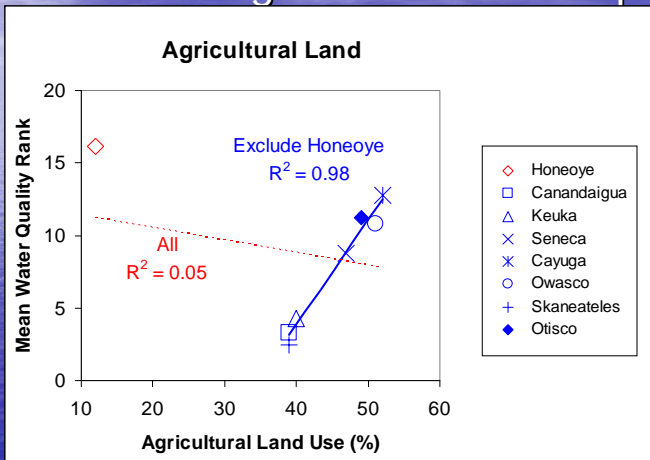


Annual Water Quality Rank

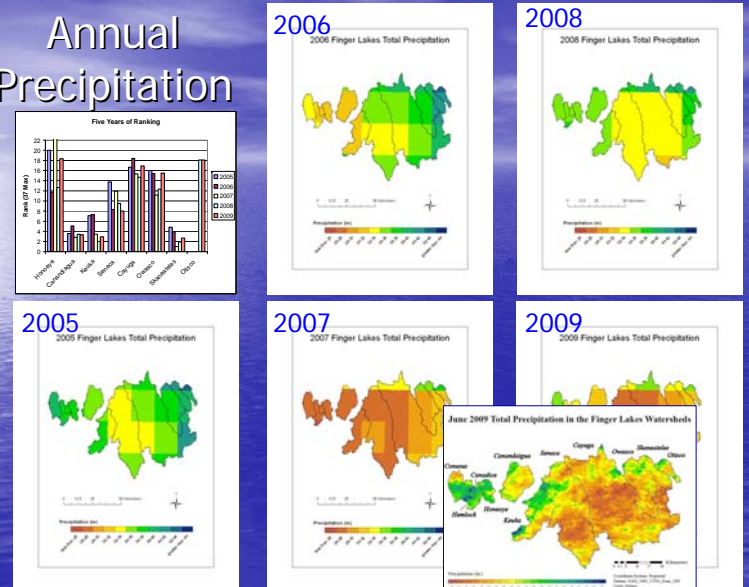
Owasco Rank got WORSE in 2009

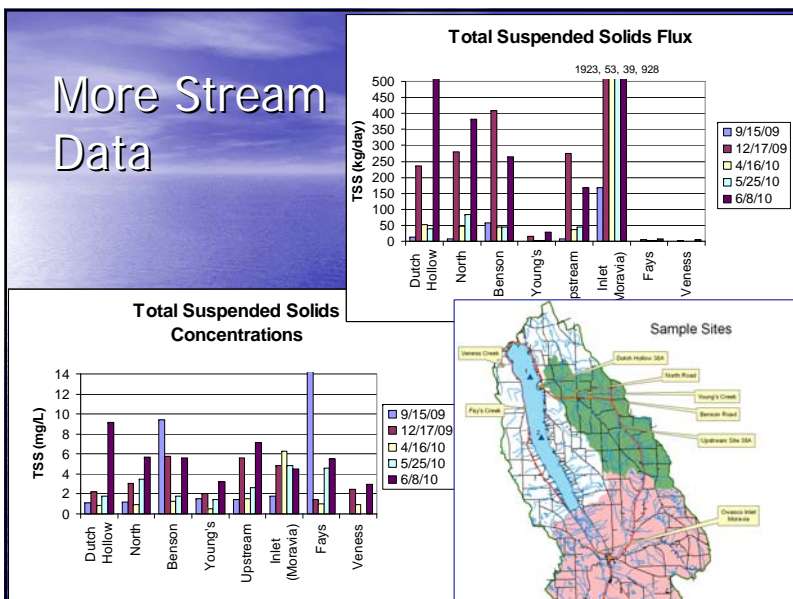
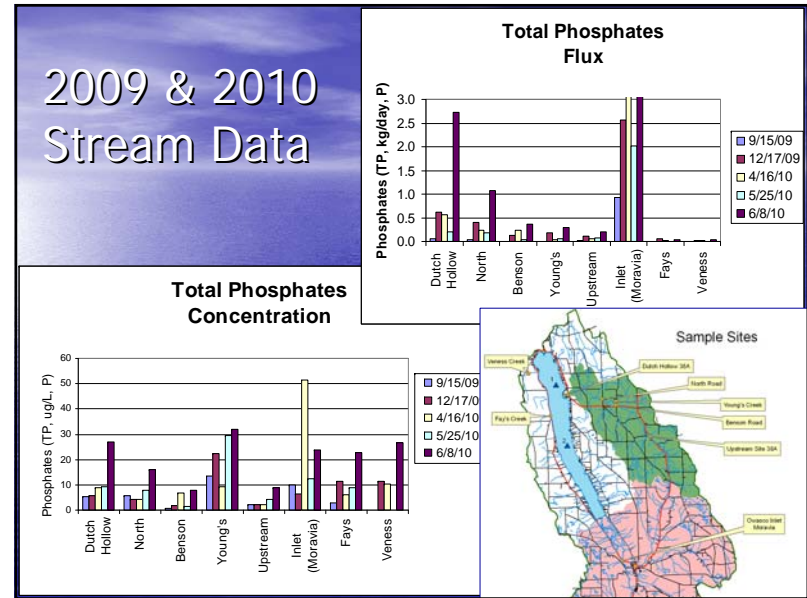
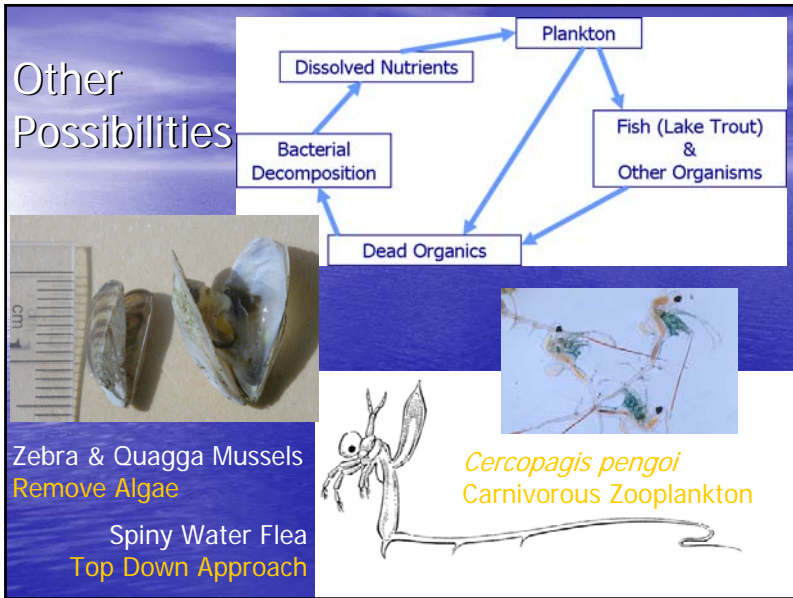


Water Quality Protect Legislation PLUS Runoff Agricultural Landscape



Annual Precipitation





- ### Owasco Recommendations
- Watershed Protection Legislation
 - Owasco Inlet Floodplain
 - Remove Channelization
 - Agricultural BMPs
 - Contour Plowing, Buffer Strips, Minimum Tillage
 - Agricultural Environmental Management
 - Watershed Inspector
 - Inspects Onsite & Municipal Facilities
 - CAFO Manure Storage, Disposal & Spills
 - Information about BMPs
 - Education, esp. K-12
 - Educate People so they Care!
 - Monitoring
 - Water Quality Status
 - Land Use and Nutrient Runoff Connection
 - New Threats – Marcellus Shale Drilling
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