# CHPP Workgroup Presentation

CHPP SC meeting, August 3rd

# Background on this workgroup

- North Carolina Coastal Federation and the Pew Charitable Trusts saw value in providing stakeholder input to the 2021 CHPP Update
- Identified an opportunity to convene the group in the summer of 2021
- Short timeline forced a small group of stakeholders (9 total) with backgrounds in environment, engineering, agriculture, development, local government, and legal expertise
- Despite challenges, varied group reached consensus on findings, conclusions, and recommendations

# Workgroup structure and outcomes

- Met 3 times between May and August, 2021
- Scientists presented water quality and extreme weather events
- Coastwise Partners facilitated discussion and consensus on fact-based findings, conclusions, and actionable recommendations

# Workgroup members

- **Paul Cough,** Former Director of the Oceans and Coastal Protection Division of the US EPA
- **Marion Deerhake,** Environmental Management Commission, Water Quality subcommittee chairperson
- **Jonathan Hinkle,** Engineering Professional with LSDI
- **Barrett Jenkins**, Mitigation Professional with Restoration Systems
- **Keith Larick**, Natural Resources Director with NC Farm Bureau
- **Clark Wright**, Lawyer with Davis Hartman Wright, PLLC
- **Eugene Foxworth**, Planning Director with Carteret County
- **Brian Kramer**, Town Manager with Town of Pine Knolls Shores
- **Stevenson Weeks**, Lawyer at Whetley Law Group

# Additional participants

## Science Advisors

- Dr. Hans Paerl, UNC-IMS
- Dr. Nathan Hall, UNC-IMS
- Jud Kenworthy, APNEP

## Facilitators

- Rich Batiuk, Coastwise Partners
- Holly Greening, Coastwise Partners

## Observers

- Larry Baldwin, CRC
- Yvonne Bailey, EMC
- Martin Posey, MFC
- Jimmy Johnson, DEQ
- Anne Deaton, DEQ

## Organizers

- Leda Cunningham, The Pew Charitable Trusts
- Todd Miller, North Carolina Coastal Federation
- Kelly Garvy, North Carolina Coastal Federation

# Consensus: Findings

The group composed and agreed to a set of fact-based findings, which are summarized below:

- Healthy coastal habitat is highly dependent on water quality, and good water quality depends on waters not degraded by excess nutrients sediments and other pollutants
- Submerged aquatic vegetation is vulnerable to water quality degradation and is in decline in North Carolina
- There is an overall decline in water quality in North Carolina, exacerbated by intensive rainfall due to extreme weather and changes to hydrology which have increased volumes and rate of surface runoff
- Nonpoint source pollution is the greatest contributor in North Carolina
- Other estuaries where nutrient, sediment, and pollutant loadings reached a ‘critical pollutant load’ resulted in major declines in healthy habitats such as SAV

# Chesson family dock on Chowan River: Summer 2018


Slide provided by Elizabeth Fensin, NC DEQ

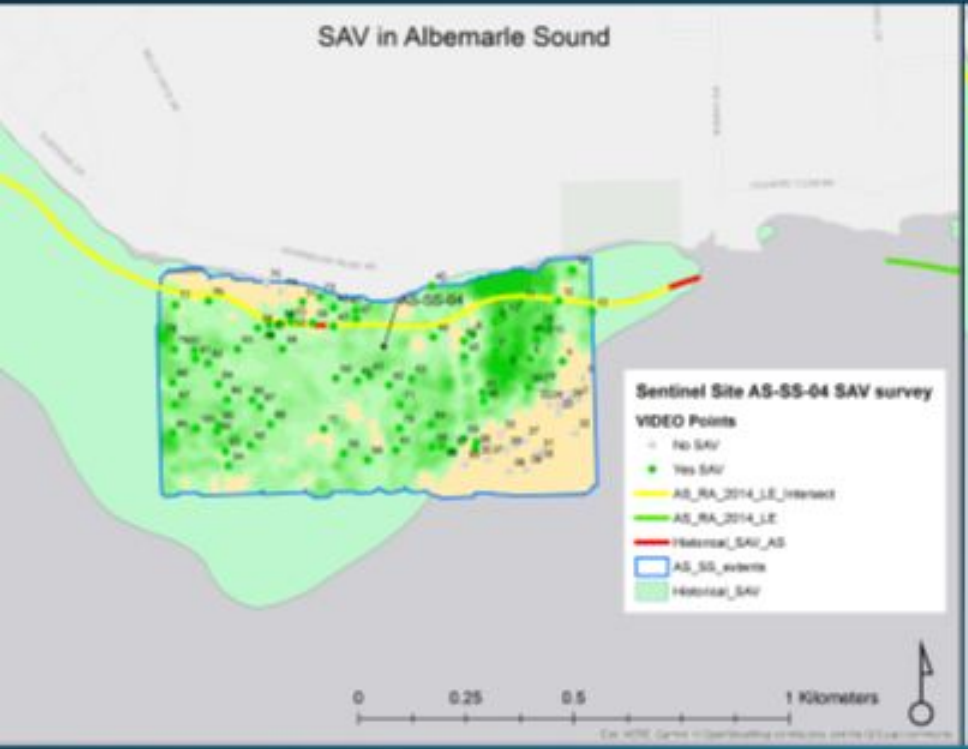
# Consensus: Conclusions

The group composed and agreed to a set of conclusions stemming from the fact-based findings, which are summarized below:

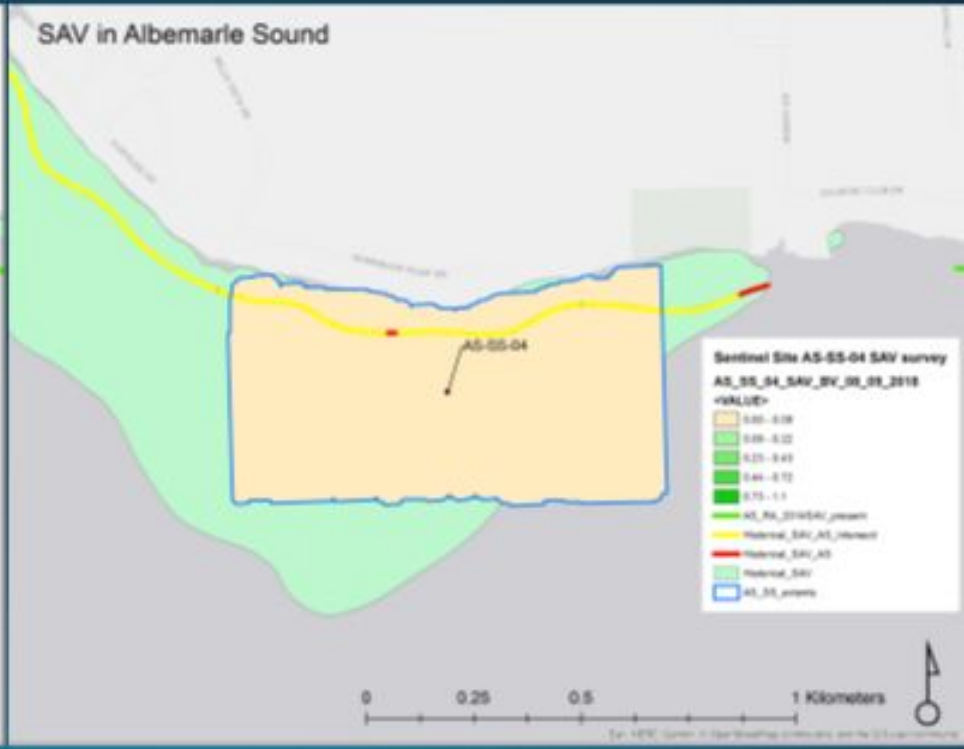
- Scientific and stakeholder agreement: too many pollutants are entering our coastal estuaries
- Time is of the essence: more cost-effective to prevent major declines than to restore
- Nonpoint source pollution is overshadowing point source
- Nature-based strategies can address flooding, reduce pollutants, and make communities more resilient to weather extremes
- Nutrient-management is necessary in sensitive watersheds, and the state should act promptly to address portions of Albemarle Sound that have reached a critical pollutant loading threshold.
- Strategic use of existing public and private enterprise, federal, state and local government programs, financial resources and community stakeholders us key to building momentum
- North Carolina should consider the benefits of developing more protective water quality standards in tandem with nonregulatory actions to decrease sediment, nutrients, pathogens and other pollutants

# Rapid SAV loss in bloom impacted sentinel site near Edenton

(2015 35.6 Ha)

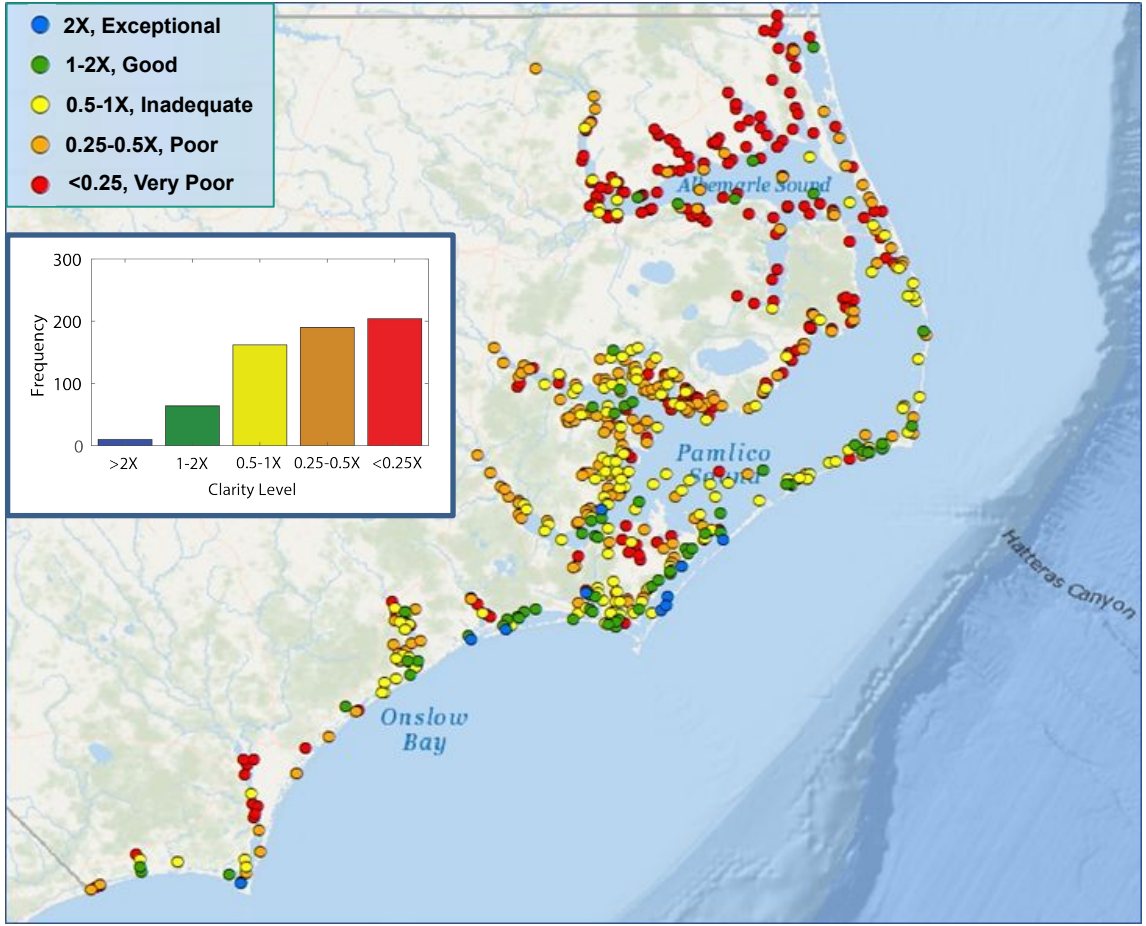



(2019 0.0 Ha)



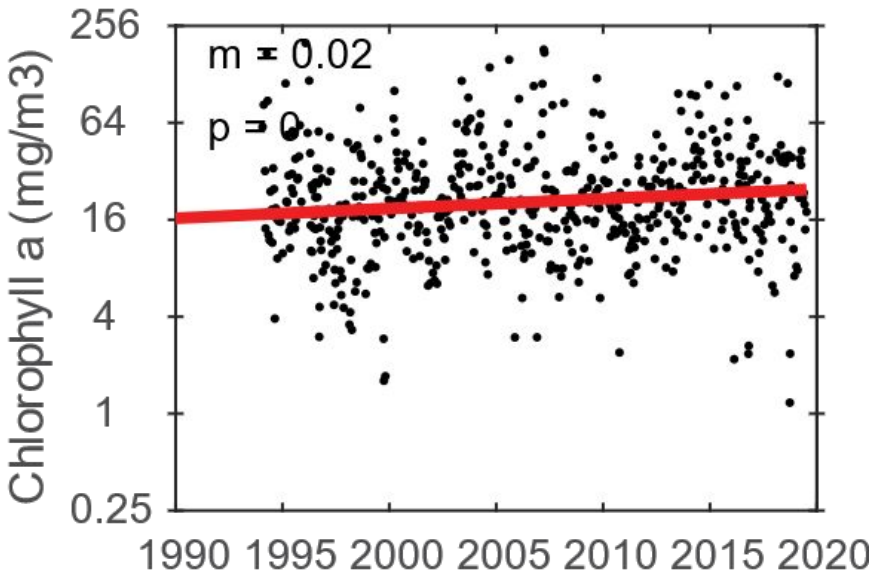
# Light availability as a percent of SAV requirement

**For most NC estuarine waters, SAV are not getting the light they need for long-term survival**

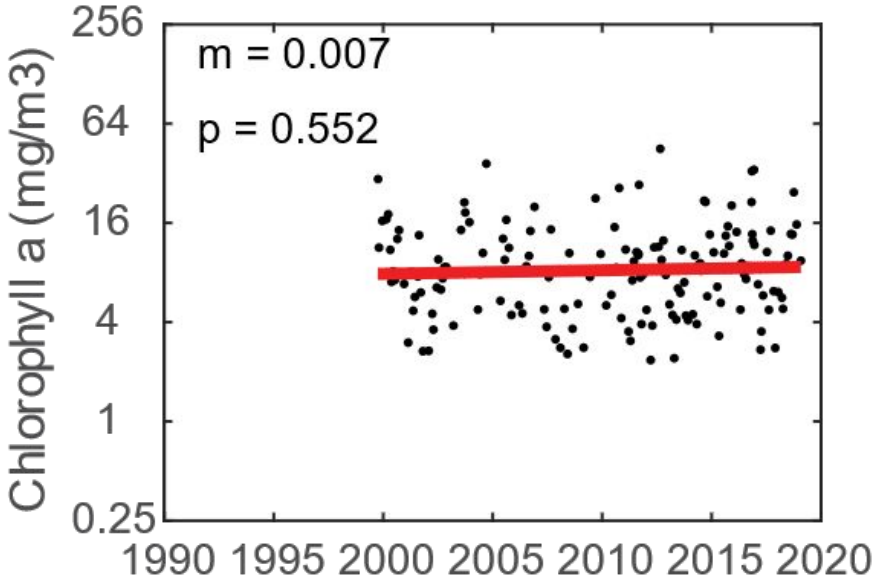


# Trends in most NC waters are going the wrong direction

**Neuse River at Minnesott Beach**

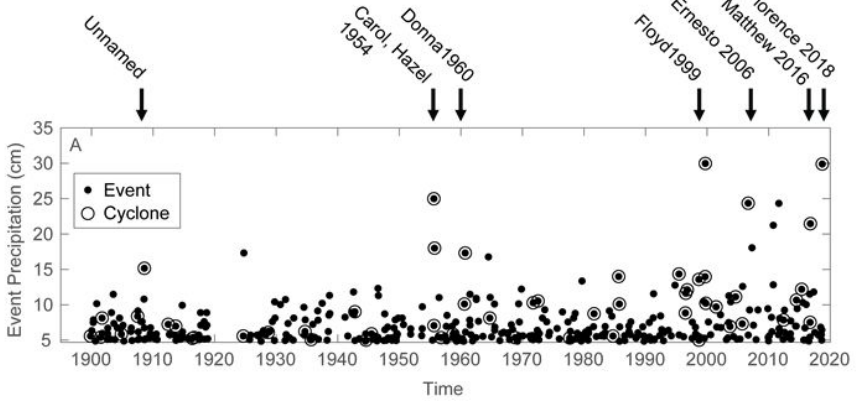



**Pamlico Sound ~10 miles north of Cedar Island ferry terminal**



# Hydrological alterations exacerbate non-point source pollution

**6 out of the 7 wettest storms striking the NC coast occurred in the last 20 years**, leading to more flooding and more sediment and nutrient load to estuarine and coastal waters



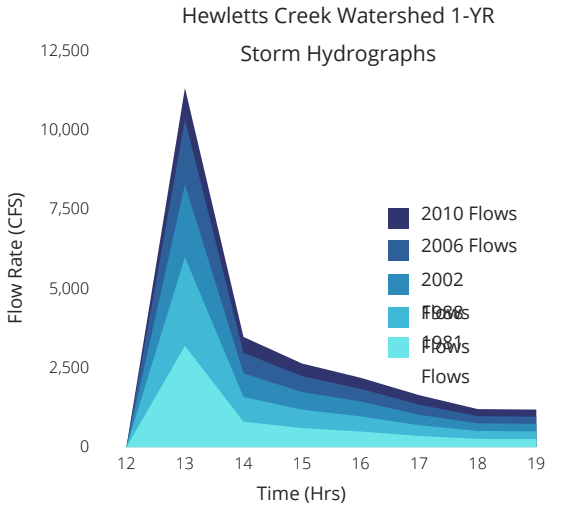

1.Paerl, H. W. *et al*. Recent increase in catastrophic tropical cyclone flooding in coastal North Carolina, USA: Long-term observations suggest a regime shift. *Sci Rep-uk* **9**, 10620 (2019).

# Hydrologic alterations exacerbate non-point source pollution

Modifications to hydrology on the landscape increase the volume and rate of runoff

Aerial view of Hewlett's Creek, 1981

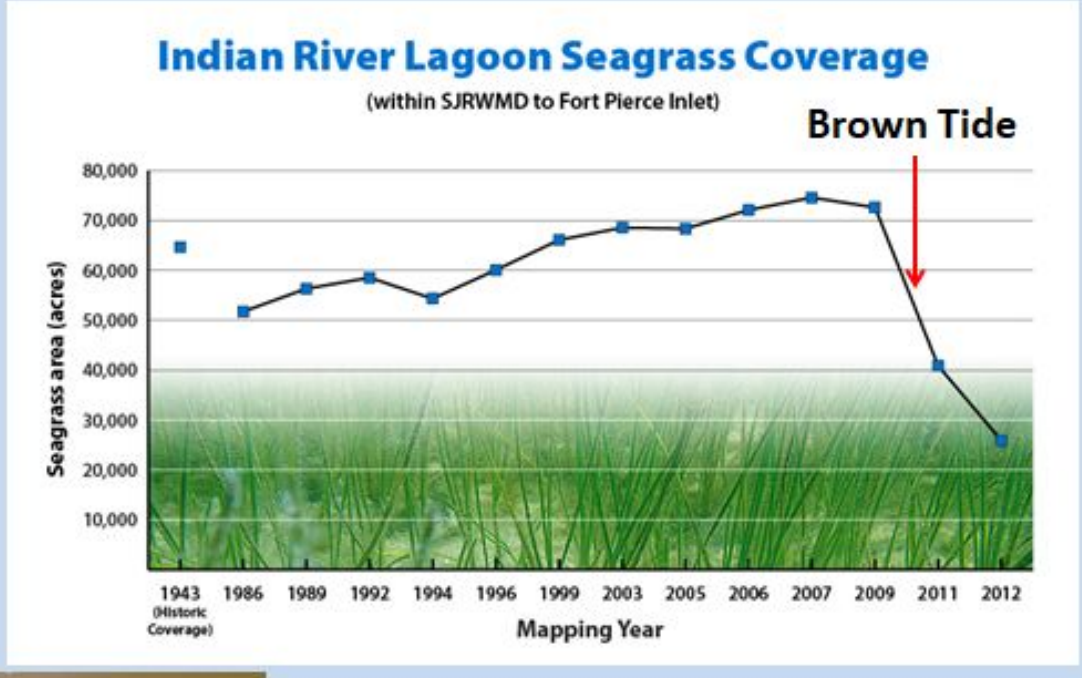
Changes to the landscape are outlined in orange. Landscape unable to absorb as much water as before. 2010




Flow rate has increased over time as hydrology has changed

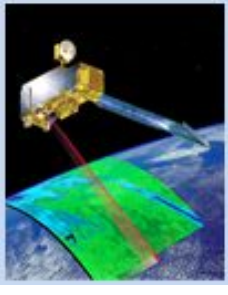
https://www.wilmingtonnc.gov/departments/public-services/stormwater/heal-our-water ways/about

## Indian River Lagoon saw a rapid shift in SAV with declining water quality





Data from the Saint John's River Watershed Management District: http://floridaswater.com/itsyourlagoon



# Consensus: Actionable Recommendations

The workgroup's consensus on cross-cutting water quality recommendations are summarized below:

- Encourage the CHPP steering committee and DEQ to form a public/private partnership working with stakeholders to further refine and implement the below actions (and others as needed):
  - Request EO from Governor directing agencies, stakeholders to work together to implement water quality improvements
  - Expand financial and technical assistance to help communities develop watershed plans; landowners, farmers forestry and industry protect water quality
  - Encourage the use of nature-based strategies with waterfront property owners, DOT, coastal county construction
  - Develop an SAV plan for Bogue Sound
  - Prioritize nutrient management

# Conclusion

*The workgroup strongly supports implementation of these recommendations.*

*Based on follow-up discussion, it is at the recommendation of the facilitators that the CHPP Steering Committee incorporate these findings, conclusions, and recommendations as an additional chapter in the 2021 CHPP to be distributed for public comment to help ensure implementation.*