



DELAWARE CENTER FOR THE
INLAND BAYS
Research. Educate. Restore.

Good Afternoon! Thank you for joining the meeting! Sit tight, you are muted temporarily and we'll get started shortly.

Introductions



- CIB is a private non-profit dedicated to protecting and restoring Delaware's Inland Bays
- **Chris Bason, Executive Director**
- B.S. in Agriculture from UD, M.S. in Biology from ECU
- 21 years of experience researching and restoring wetlands and estuaries
- Started with CIB in 2004

Meeting flow and etiquette

- Meeting presentation and fact sheet provided by email
- Presentation will appear on your screen for those connecting in zoom
- Participants will be muted during presentation
- Questions can be typed into Zoom chat during the presentation and will be moderated by Lisa
- Discussion will follow presentation
- Participants using the zoom platform should type in Speak! to their chat to be called on during discussion
- If you lose connection on the internet try calling in on the phone number
- Chris will call out the change in slides as he goes for those following from the document

Purpose of the Meeting

- Educate about the water quality, flooding, and habitat loss in Sussex
- Educate about the function and importance of better buffers
- Review the County's process to improve it's code
- Discuss ways that your networks can become involved



TJ Redeker

Sussex is extremely vulnerable to sea level rise and flooding

Coastal Highway 2017





Bethany Beach 2019

Communities are
going underwater

An aerial photograph showing a large area of residential flooding. Numerous houses with various roof colors (white, brown, blue, grey) are partially submerged in deep blue water. The houses are arranged in rows, suggesting a planned community or subdivision. In the background, there are more houses and a dense line of green trees. The water extends to the horizon under a clear blue sky.

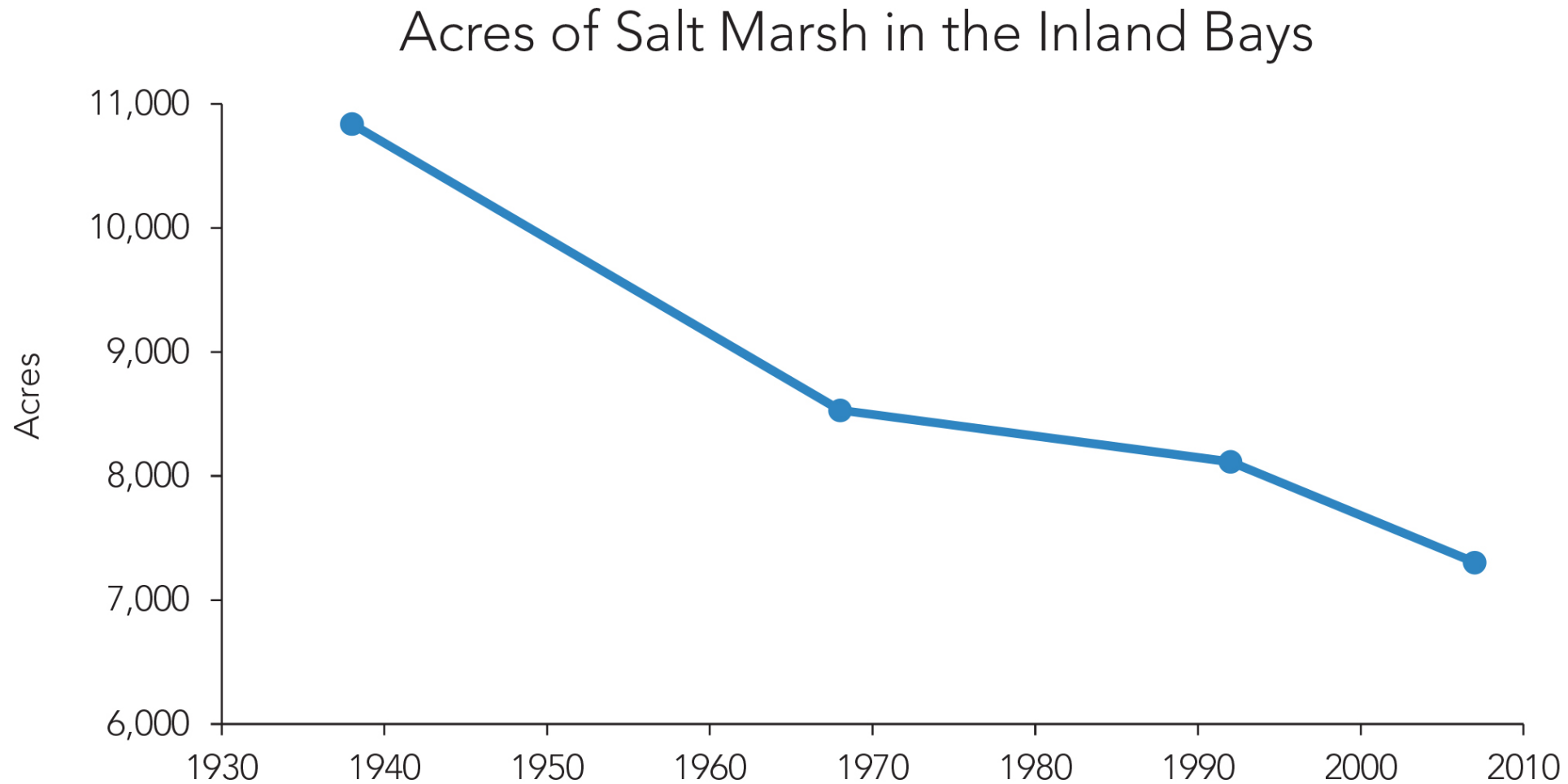
Long Neck, 2019

Credit: Driscoll Drones

Fenwick Island Superstorm Sandy

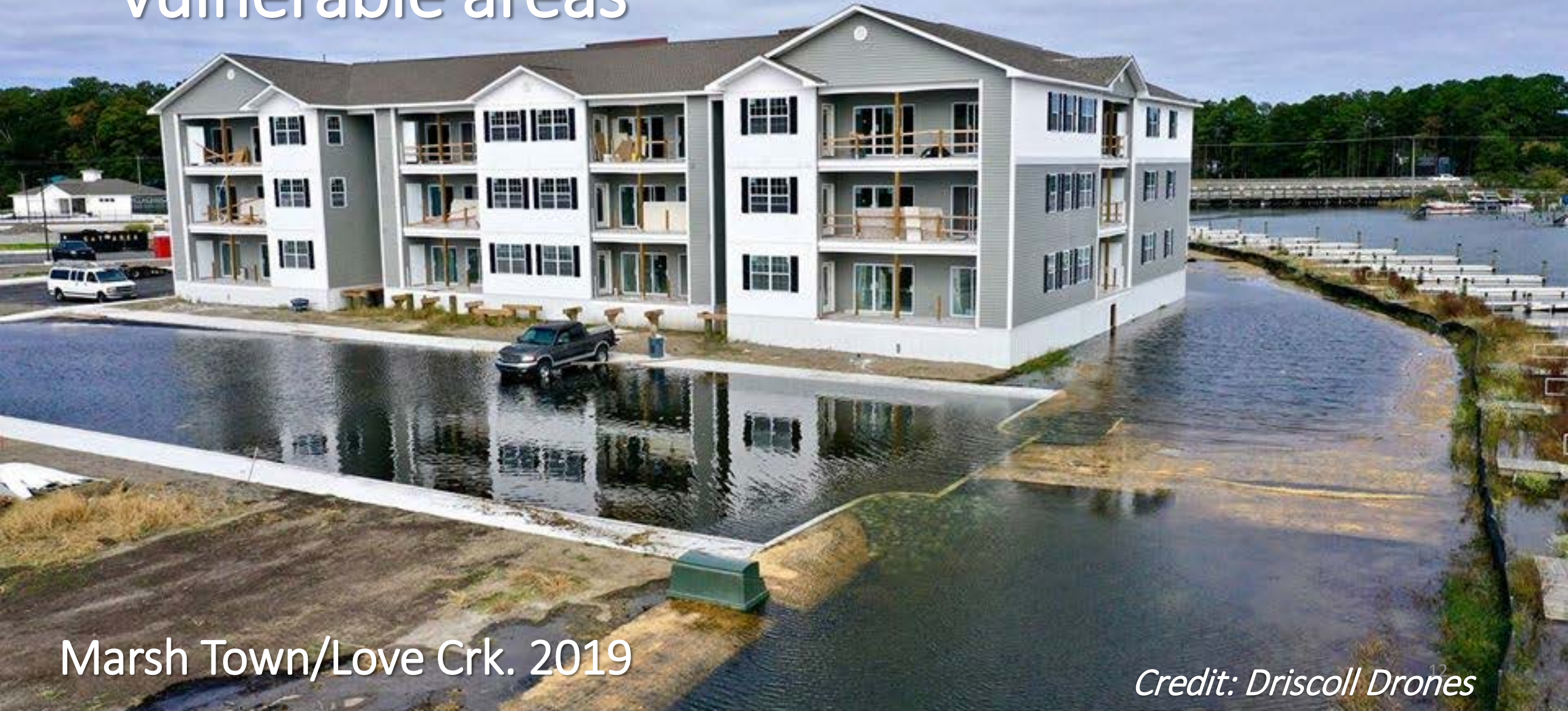


Our natural defenses are disappearing





Rapid growth is occurring in the most vulnerable areas



Marsh Town/Love Crk. 2019

*Credit: Driscoll Drones*¹²

Existing rules for protection are inadequate and irregularly enforced



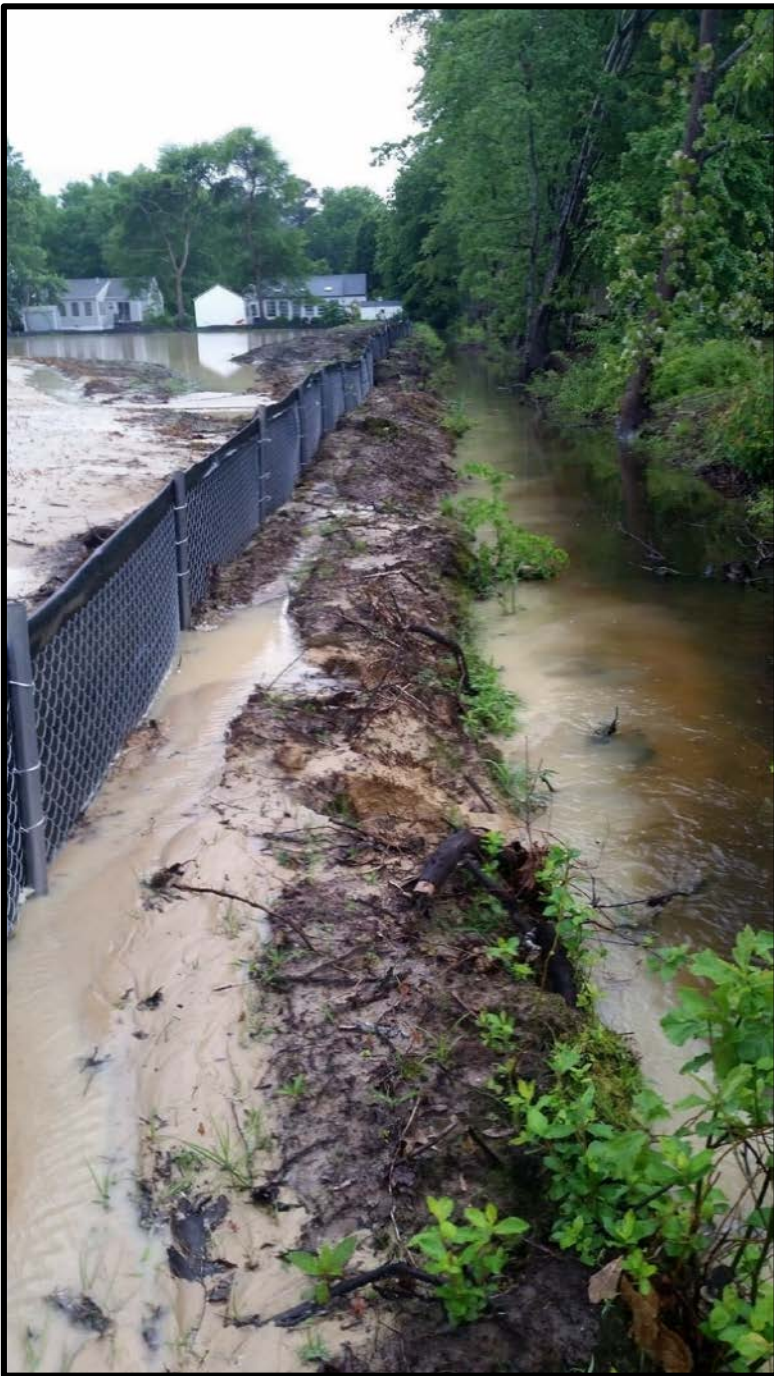




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White Creek watershed pollution





Indian River Algae Bloom

Loss and degradation of wetlands contributes to Sussex County's poor water quality

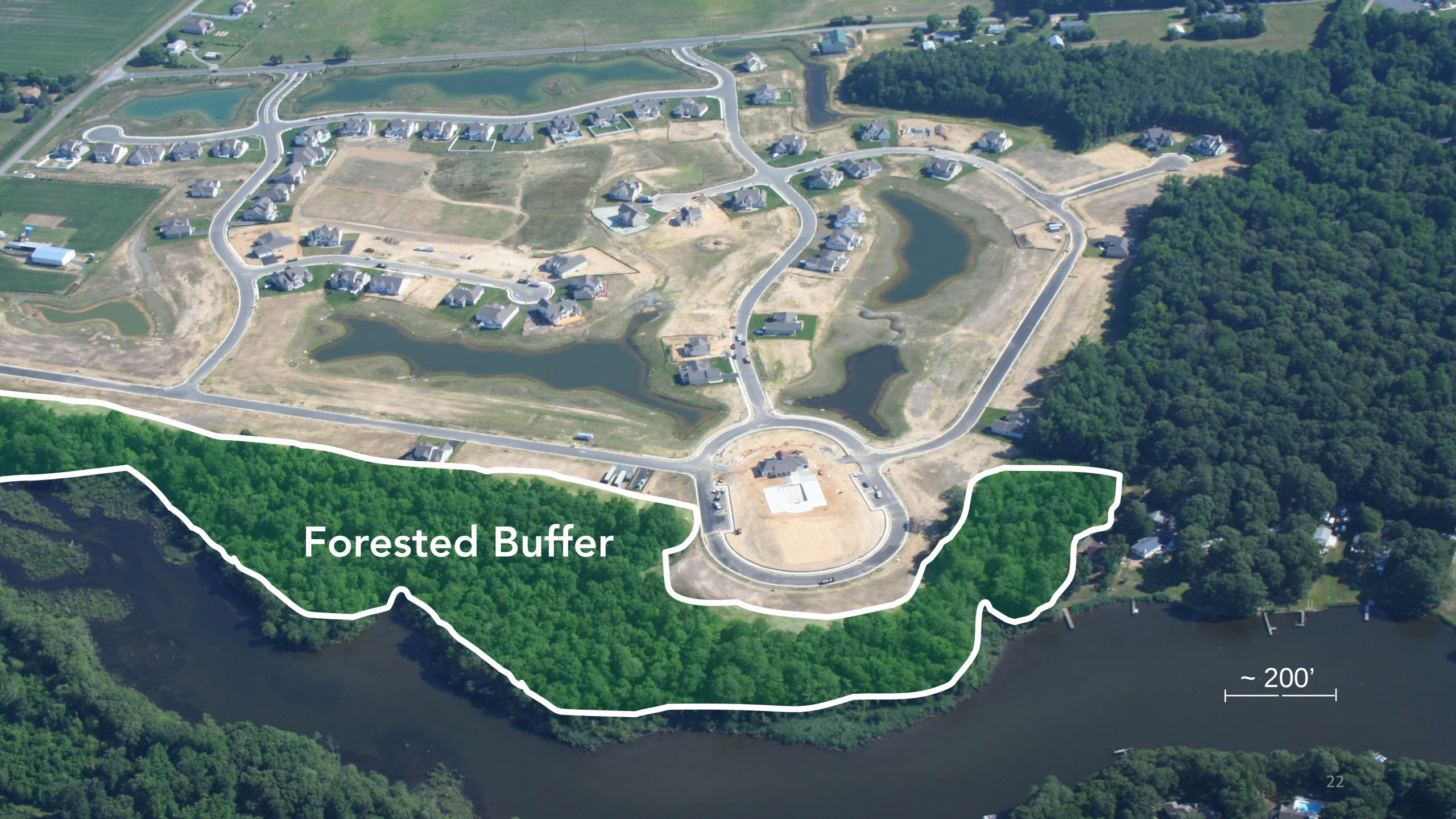
- 87% streams, ponds, and bays polluted due to high bacteria levels, high levels of nutrients or low dissolved oxygen levels.
- Tidal rivers and creeks demonstrate severe pollution, algae blooms, and low dissolved oxygen
- And after decades, we are only 36% to our nitrogen reduction goal for the Inland Bays.



Rep. BU Dorn
Rep. John Schroeder
Rep. Terry Spence
Rep. Roger Ray

VERADO
200

Buffers between new development and wetlands
& waters are an important part of the solution.



Forested Buffer

~ 200'

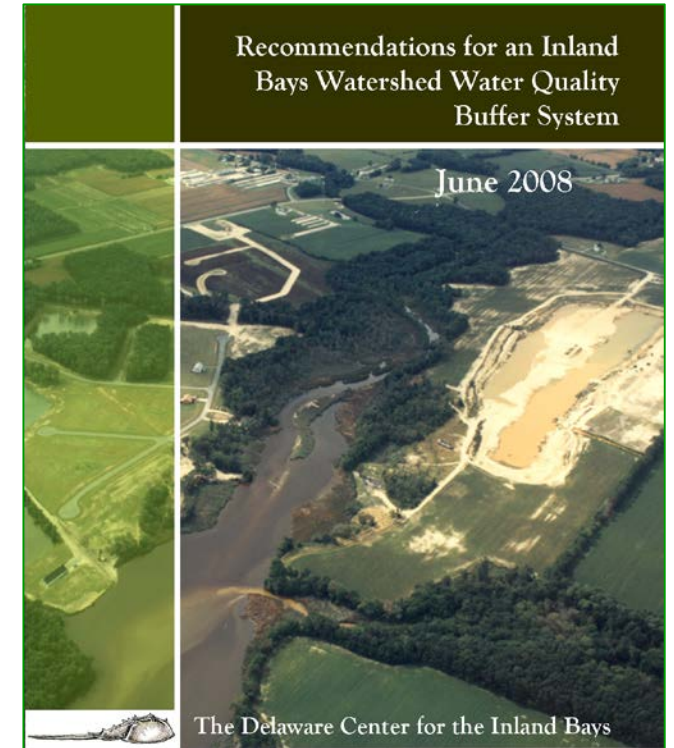
1988 Sussex County Buffer Ordinance

BUFFER ZONE — An existing naturally vegetated area or an area purposely established in vegetation which shall not be cultivated in order to protect aquatic, wetlands, shoreline and upland environments from man-made encroachment and disturbances. The "buffer zone" shall be maintained in natural vegetation...

50 feet [wide] on tidal wetlands, tidal waters, and non-tidal perennial streams

History of Attempts to Improve Sussex's Ordinance

- 1995 – Action to increase buffer/setback included in original Inland Bays CCMP.
- 2005 – DNREC's draft Inland Bays PCS regulation includes 60 to 100 foot buffer zone
- 2008 – DNREC final Inland Bays PCS regulation includes 30 to 100 foot buffer zone
- 2011 – DE Supreme Court strikes PCS buffer regulation
- 2012 – Inland Bays CCMP Update includes CIB recommendations for County
- 2019 – County forms buffer workgroup to improve ordinance



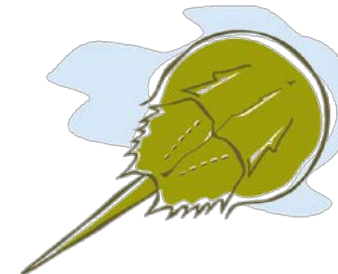
Sussex Wetlands & Water's Buffer Workgroup

Participants

- David Baird, Sussex Cons. Dist.
- Chris Bason, CIB
- Jay Baxter, Farmer
- Rich Borrasso, SARG
- Jeff Clark, Engineer
- Ed Launay, Env. Consultant
- Steve Marsh, Engineer
- Evelyn Maurmeyer, Env. Consultant
- Danielle Swallow, UD Seagrant
- Rob Tunnell, Developer
- Bill Ullman, UD CEOE
- Bob Wheatly, Sussex P&Z
- RC Willin, Farmer
- County Staff
- Jim Eisenhart, RK&K Facilitator Consultant

Goal

Provide code update recommendations to council to improve buffer protection balanced with protection of property rights



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Buffer Functions

A managed area between land uses, natural resources, or other features.

Function	Function Description
General	Protect the resources defined in the ordinance and their associated functions
Water Quality	Reduce and filter sediment, nitrogen, and phosphorous loads; moderate water temperature; promote infiltration, stabilize water's edge/provide erosion reduction
Habitat	Provide nesting and roosting opportunities for wildlife that use protected resources, provide sanctuary/refuge for wildlife during high water events, provide critical water's edge habitat, protect breeding and feeding grounds, protect rare/endangered species associated with these resources and their upland edge.
Flood Mitigation and Drainage	Reduce flood velocities, provide additional storage/conveyance, reduce stormwater discharge energy



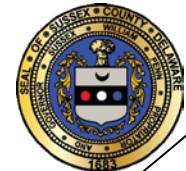
Buffer Widths

Resource Type	Current Buffer Width (ft)	Full Buffer Width (ft)	Zone A (ft)*	Zone B (ft)
Tidal Waters	50	100	50	50
Tidal Wetlands	50	100	50	50
Perennial Nontidal Rivers and Streams[^]	50	50	25	25
Non-tidal Wetlands⁺	0	30	15	15
Intermittent Streams⁺	0	30	15	15

* Zone A is the zone closest to the resource

+ Buffers only apply to resources subject to regulation by the U.S.Army Corps of Engineers

[^]Wetlands presence consideration



RK&K

Other Elements of Proposed Ordinance

- Defines resources buffered
- List of permitted and restricted activities by buffer zone
- Pertains to major subdivisions, cluster subdivisions, residential planned communities, and residential conditional uses
 - Does not cover commercial or small developments
- Defined resources and associated buffers should not be located on any individually subdivided lots
- Buffer management plan carried out by HOA
- Incorporates provisions for access for channel maintenance/drainage
- Selective clearing of vegetation



Vegetation Type

Turf vs. Forest

- Forested buffers remove 36% more nitrogen on average than grassed buffers
- Forested buffers take up 11 – 37 lbs of nitrogen and 2 – 5 lbs of phosphorus per acre per year into wood
- Soil organic matter is over twice as high in forested buffers
- Forested buffers improve instream processing of nutrients
- Forested buffers support wildlife habitat and don't contribute pollution

Why Forested Buffers

“The quality of streamside forests has been cited as the single most important factor altered by humans that affects...the water quality of the streams providing water to coastal bays.” – Dr. Bernard Sweeney, Stroud Water Research Center

- Fish and wildlife habitat doesn't end at the waters edge.
- Forests are essential for ospreys, eagles, herons, migratory song birds
- Amount of forest in an estuary's watershed, particularly near the water, related to abundance of baygrasses, crabs, and marsh birds.
- Forests regulate stream temperature.
- Forests hold streams together and feed them organic material
- Forests have complex vertical structures that prevent runoff
- Can be managed for viewsapes to tidal wetlands and waters.



Tidal Wetland





Wetlands and Waterways Buffer Policy Comparison

Characteristic	Sussex Co. Current	Sussex Co. Proposed	Inland Bays Recommends	Kent Co.	New Castle Co.	State of NJ	State of MD Critical Areas.
Tidal Wetlands & Waters Width	50 ft.	100 ft.	80 - 500 ft.	100 ft.	100 ft.	300 ft.	100 - 200 ft.
Nontidal Wetlands Width	0 ft.	30 ft.	50 - 100 ft.	25 ft.	50 ft.	0 - 150 ft.	25 ft.
Smaller / Intermittent Streams Width	0 ft.	30 ft.	35 - 150 ft.	50 ft.	100 ft.	300 ft.	≥100 ft.
Larger / Perennial Streams Width	0 - 50 ft.*	50 ft.	80 - 150 ft.	100 ft.	100 ft. or 50 ft. from floodplain	300 ft.	≥100 ft.
Variable Width Buffer Allowance	No	Yes**	No	No	No	Yes***	No
Vegetation Type	Natural	Forest or meadow****	Natural/Forest	Natural/Forest	Natural/Forest	Existing Veg. or Natural/Forest	Natural/Forest
Protects Existing Forest	Yes*	Yes and No	Yes	Yes	Yes	Yes	Yes
Replanting of Trees	No	No	Yes	Yes	Yes	Yes	Yes

Note: Some variation may exist within a jurisdiction due to overlapping regulations and site considerations

**Currently interpreted and enforced irregularly*

*** By right, buffer can be reduced to half its width with equal square footage compensation to twice the width of any other buffered feature.*

**** Through a highly conditioned waiver process*

***** Non-native species allowed*

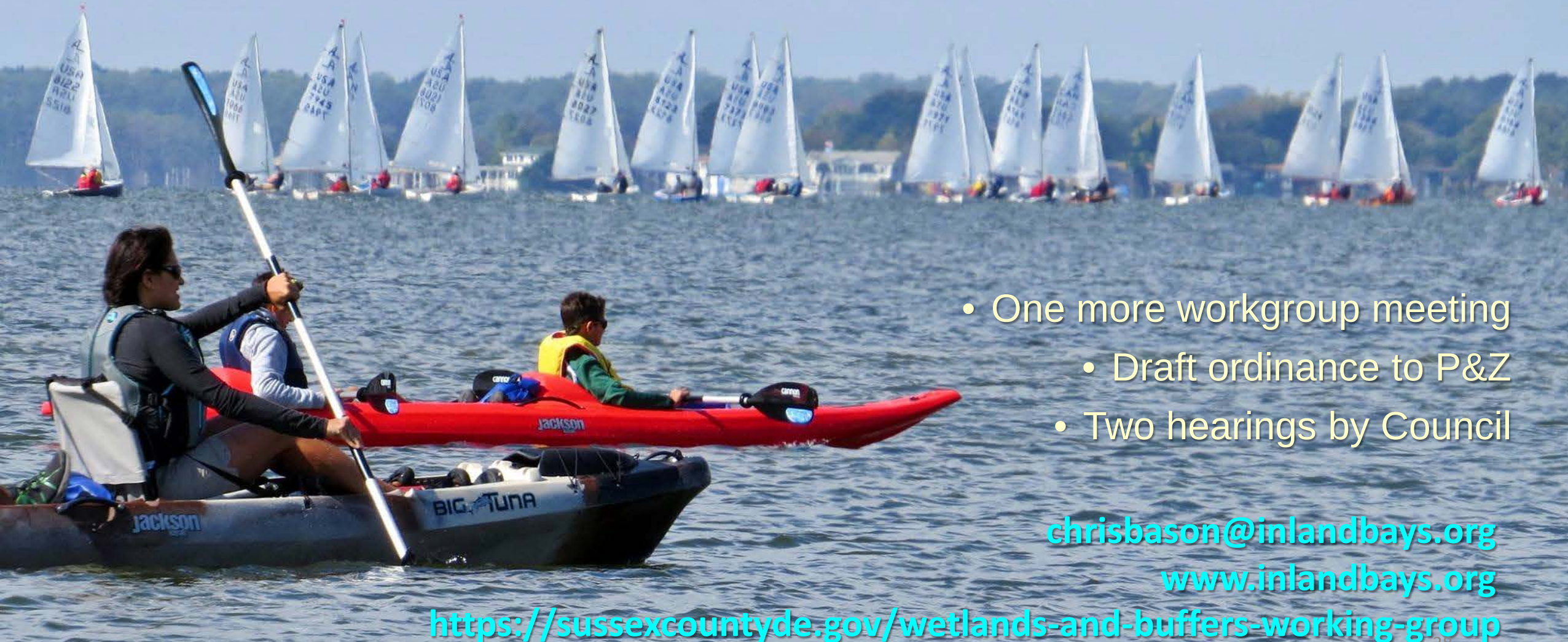
Based on 2/14/20 v. of County draft ordinance

Buffers Protect our Economy and Increase Property Values

- Delaware's wetlands provide \$1 to \$3 billion in annual economic value and support to 25,000 jobs with \$568 million in wages
- Economists estimate buffers in the Delaware River Watershed provide over \$10,000 per acre per year of benefits to the public.
- In Chester County PA, there is an average increase of over \$11,000 in the value of homes that are located up to a half mile from protected open space: buffers are open space.

Questions and Discussion

Buffer Ordinance Next Steps



- One more workgroup meeting
- Draft ordinance to P&Z
- Two hearings by Council

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www.inlandbays.org

<https://sussexcountyde.gov/wetlands-and-buffers-working-group>