

Jinks Creek/Tubbs Inlet Study Update February 21 2024

3rd Party Contributors:

- Charter Captain Tim Disano
- Chief Ken Klamar, SBPD drone photography
- Mickey Cochran, OIB Mickey drone photography
- John Wells, Sunset Beach property owner drone photography
- Dr. Mariko Polk, NC Sea Grant consultant

Background:

2023/2024 Timeline of the ERC Climate Subcommittee study of shoaling in Jinks Creek/Tubbs Inlet

- March 9, 2023 - SBPD drone video
- April 18, 2023 - Tim Disano boat tour of Jinks Creek
- May 15, 2023 - Mickey Cochran drone video
- July 3, 2023 - John Wells drone videos/photos
- July 9, 2023 - John Farrell ground videos/photos
- July 14, 2023 - John Wells drone videos/photos
- August 1, 2023 - John Wells drone videos/photos
- September 28, 2023 - John Wells drone videos/photos
- September 30, 2023 - John Wells drone videos/photos
- October 28, 2023 - John Wells drone videos/photos
- October 29, 2023 - John Wells drone videos/photos
- November 29, 2023 - Mickey Cochran drone photos
- November 30, 2023 - John Farrell ground videos/photos
- January 15, 2024 - Mickey Cochran drone photos
- February 9, 2024 - Mickey Cochran drone photos

Reference information:

- Dr. Mariko Polk 2019 LIDAR data analysis elevation maps
- Dr. Mariko Polk Palm Cove shoreline horizontal erosion map
- Aerial photo images from 1938 to 2024
- Drone photo images from 2015, 2021, 2022, 2023 and 2024
- 2023 drone photographs

- 6 days at low tides
- 2 days at high tides
- 17 videos
- 150 photographs
- Palm Cove 2014 permitting information
- Palm Cove April 3 Presentation to Town Council

Observations:

1. Jinks Creek behind Sunset Beach is no longer the dominant flow through Tubbs Inlet. Literature says when the dominant flow is from behind Ocean Isle Beach the Tubbs Inlet channel migrates toward Sunset Beach, which can be observed from aerial and drone photos.
2. Shoaling in the area behind Palm Cove has creating a marsh island where grass is growing and spreading as the island enlarges.
3. Drone photos show that the Palm Cove sand bagged shoreline, which was severely eroded in 2020, has filled in with sand so as to make it too shallow to navigate at low tide.
4. Drone photos show that shoaling has resulted in the Palm Cove docks being filled with sand at low tide.
5. The spit of land at the end of Sunset Beach has been eroding on the Tubbs Inlet channel and Jinks Creek shorelines, as well as in elevation as high tides wash over the spit.
6. Flood tides flowing through Jinks Creek are eroding the shoreline East of the Palm Cove sandbags in such a way as to possibly pose a risk to the Palm Cove properties.
7. The tidal delta (shoaling behind the Sunset Beach island) has grown noticeably in area and elevation in October - December 2023 and January - February 2024.
8. The October 2023 photos show what appears to be an ebb tide breach starting across the spit at the end of the Sunset Beach island from Jinks Creek to the Tubbs Inlet flood channel. A breach at this location could possibly be impactful in Jinks Creek. We are monitoring it for changes.
 - a. In 2023, there will be 7 King Tide events ranging in duration from 2 to 10 days. The longest duration event was from September 25 to October 4.
 - b. There are also 5 additional events with expected higher and lower than normal water levels.
 - c. King Tides occurred November 25-28.

- d. Higher and lower than normal tides are also forecasted for December 13-15.
 - e. There are no 2024 forecasts for King Tides yet; however, NOAA 2024 tide forecasts for January 10-15 and February 7-13 are predicted to have King Tide water levels.
9. The King Tides in September, October, November, and December, and abnormally high tides in January 2024 have washed over the Sunset Beach spit, causing erosion on the surface area and starting a breach channel across the spit.
 10. The breach channel across the Sunset Beach spit appears to have reached its maximum extent at the end of November 2023. Images in February 2024 show the breach channel has diminished.
 11. Storm surges associated with Hurricanes Isaias, Ian and Idalia did not cause major impacts in Jinks Creek and Tubbs Inlet. Changes that are occurring are associated with tidal flows - primarily higher than usual tides such as King Tides.

Going forward:

1. The high water level tides predicted for 2024 will be monitored to study their impacts.
2. NC Sea Grant was engaged to help with this study. They reviewed the issues, provided LIDAR elevation analysis, and recommended that the Town of Sunset Beach hire a coastal engineering firm to further evaluate the changes that are taking place.
3. Sea Grant has also been consulted about living shorelines as an option to replace the sandbags along the Palm Cove shoreline.
4. Tubbs Inlet is classified under CAMA as an Inlet Hazard Area that has unique regulations. Considering the changes that are taking place in Jinks Creek and Tubbs Inlet, this study and observations have been shared with the NC Division of Coastal Management staff.

Questions or comments?

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