

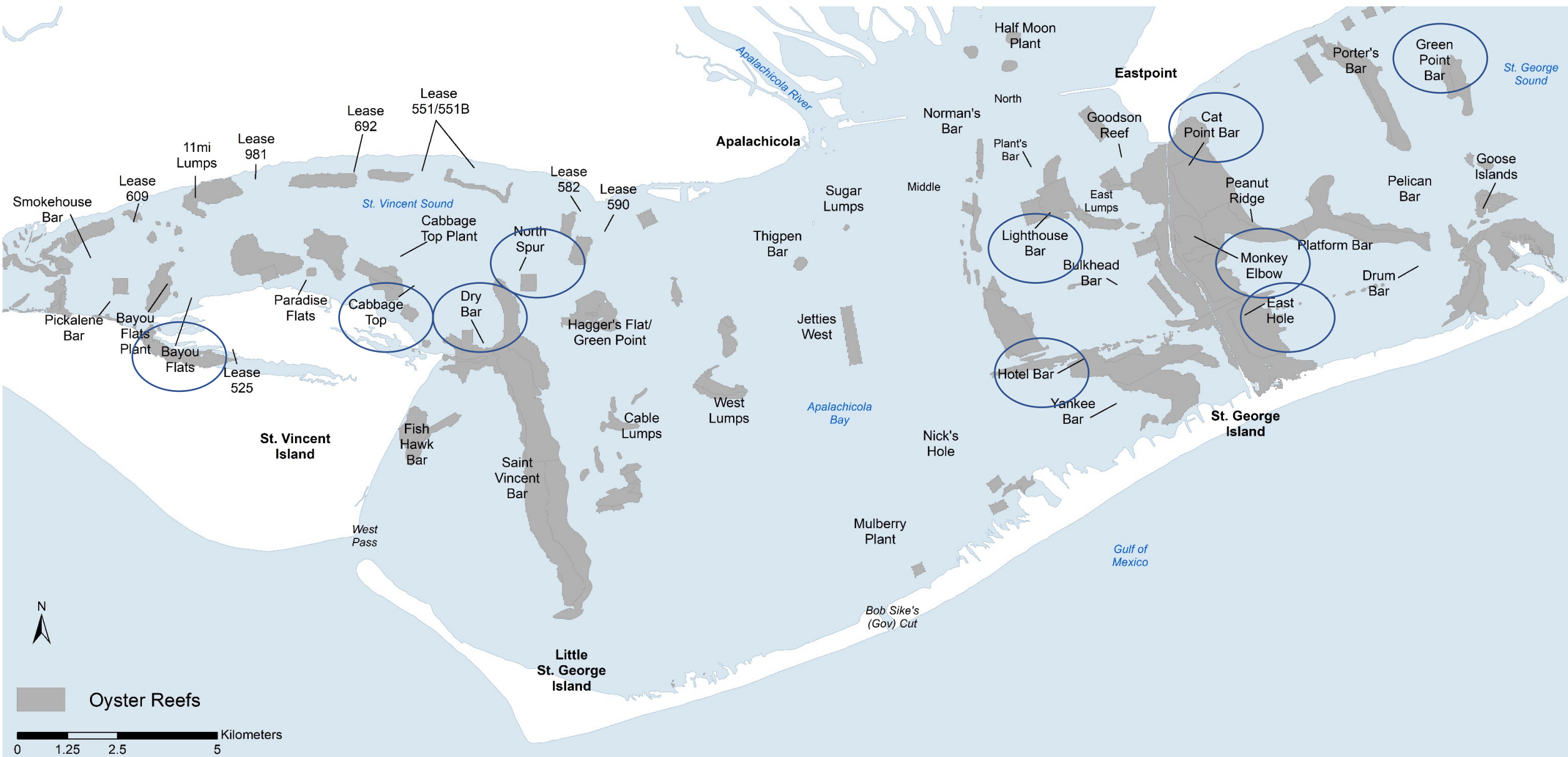
Bill Pine

- **Part of UF/IFAS team in 2012-2015 that assessed oyster population collapse**
- **Other work in Apalachicola River basin on reservoir and river operations, bass and bluegill populations, Gulf sturgeon spawning and abundance**
- **Lone Cabbage oyster reef in Suwannee Sound**
 - **Closely worked with oyster harvesters to restore 3 miles of oyster reef**
 - **16,000 cubic yards dolomite limestone**
 - **Successful restoration (+ 4 years)**
- **Ross Point Oyster Farm 2015-2020**

Results from DEP and FWC led restoration projects

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- 30 different restoration locations
- Restoration material shell or limestone cultch
 - Material placed to provide settlement site for spat
 - Assumption is oyster bars do not have sufficient cultch material
- Projects started at different times
- Most common sites monitored: Bulkhead, Cabbage Top, Cat Point, Dry Bar, East Hole, Hotel Bar, Normans Bar North Spur
- Diver based collections (similar to Mark Berrigan's work since 1980's)
- Time span of monitoring winter 2015 until June 2021



All sites

393, 395, 8 Mile 9 Mile B, Bayou Flats, Bulkhead,

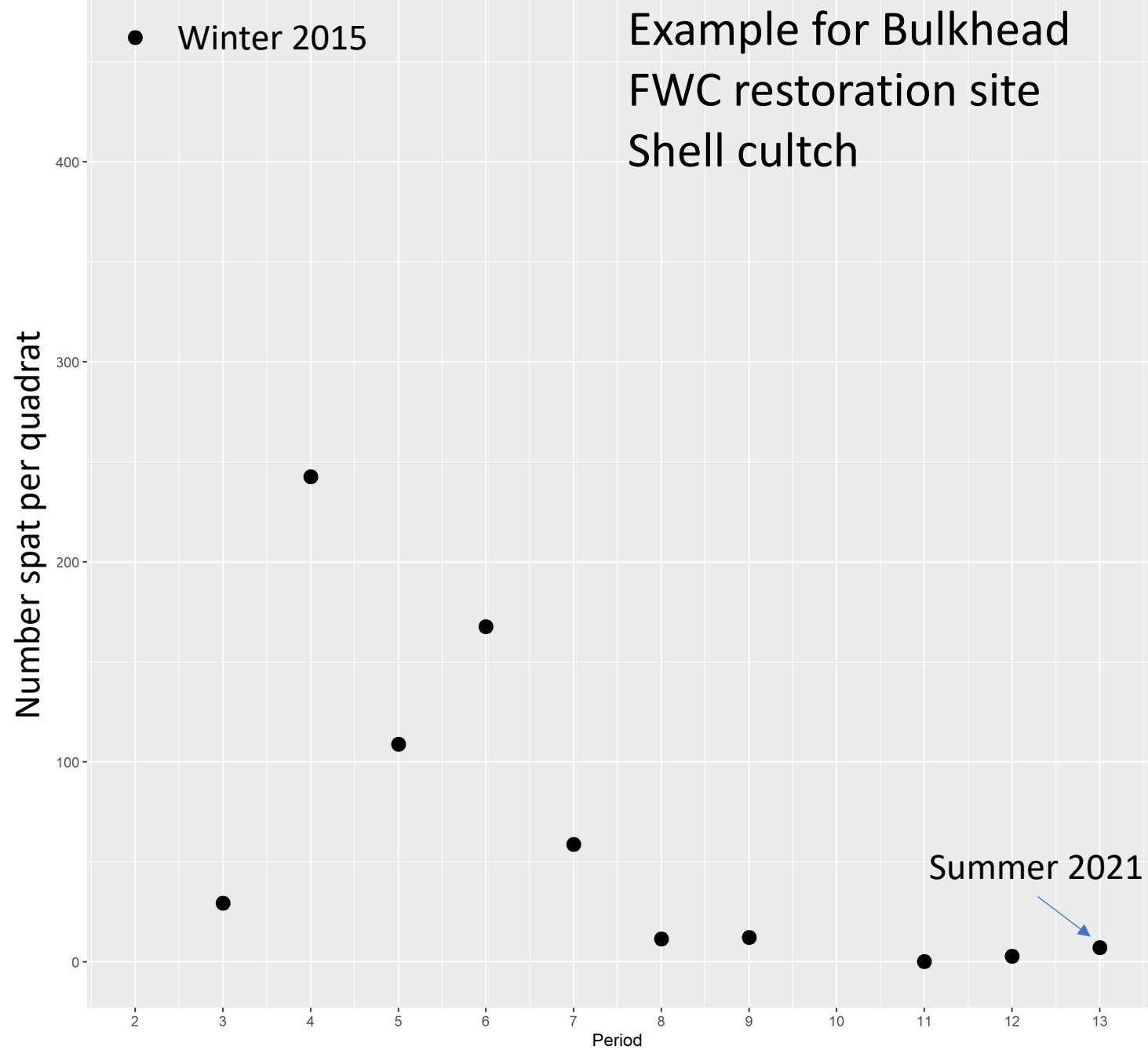
Cabbage Lumps, Cabbage Top, Cat Point, Cat Point Spur, Dry Bar, East Hole,

East Lumps, Eleven Mile, Green Point, Halfmoon, Hotel Bar, King 9 Mile,

Lighthouse, Lighthouse Bar, Little Gully, Monkeys Elbow, Normans, Normans Bar,

North Spur, Paradise Flats, Peanut Ridge, Platform Porters, Redfish Creek

Season and year	Project name	Agency	Material	Total Amount (yds³)	Sites	Average material density (yds³ per acre)
Fall 2016	NRDA 4044	FDEP	Quarried shell	24,840	16	200
Fall 2017	GEBF 5007	FDEP	Limerock aggregate	95,500	14	300
Summer 2015	NFWF-1	FWC	Quarried shell	9,600	3	100,200,300,400
Summer 2021	NFWF-2021	FWC	Limerock aggregate	9,600	3	300

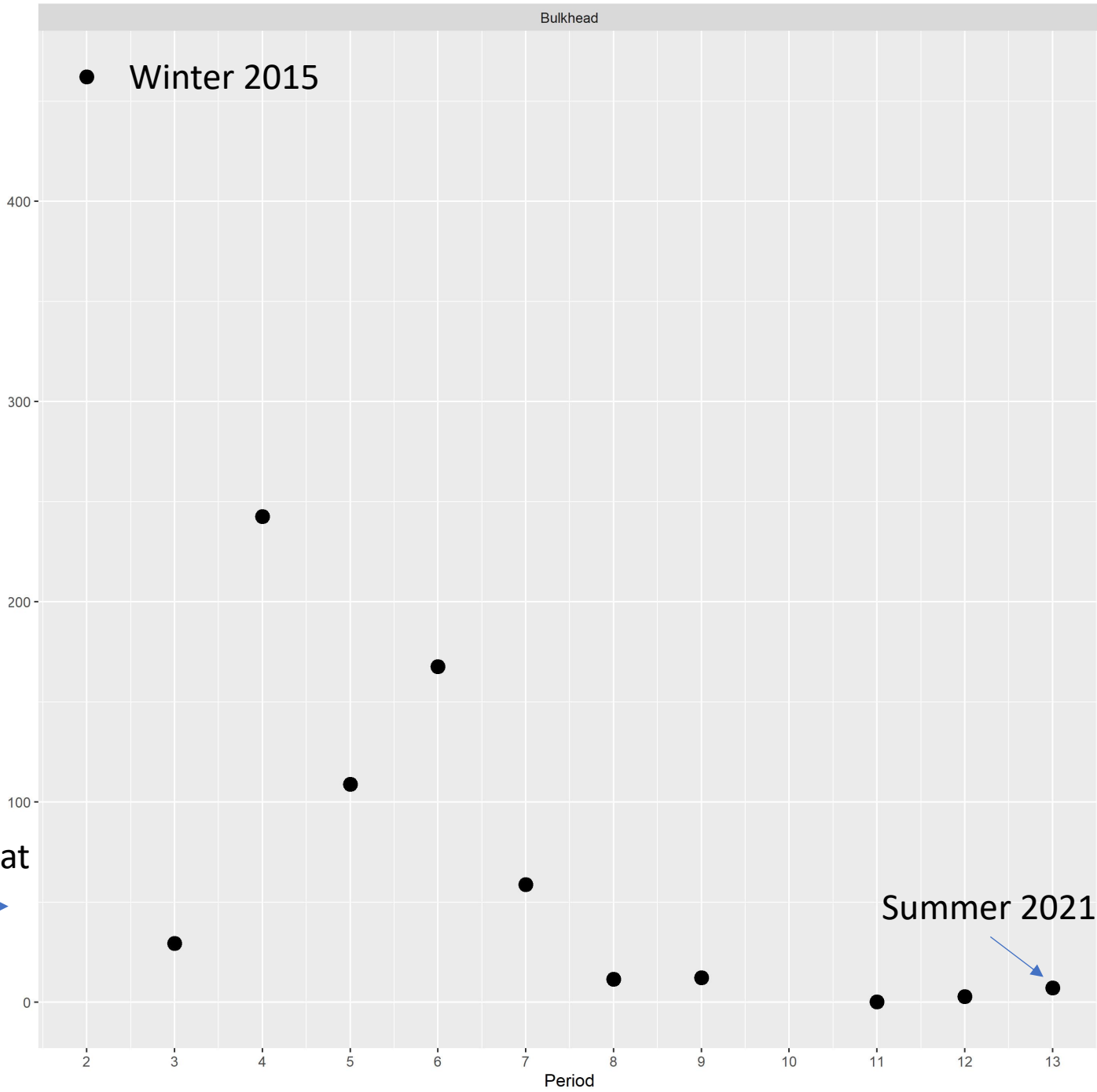


Spat CPUE by Period

Bulkhead

● Winter 2015

Number spat per quadrat



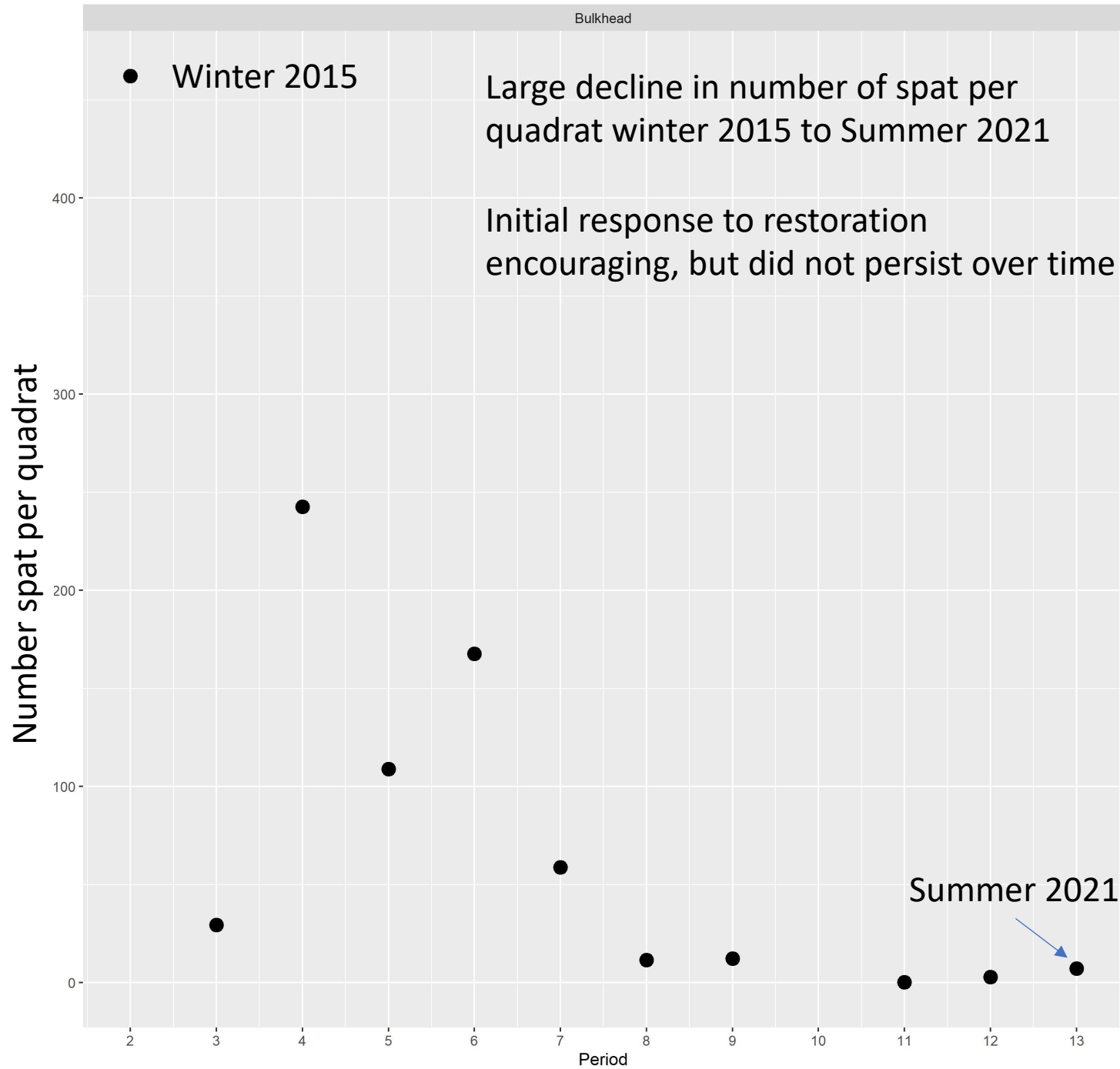
Berrigan average about 50 spat



Summer 2021

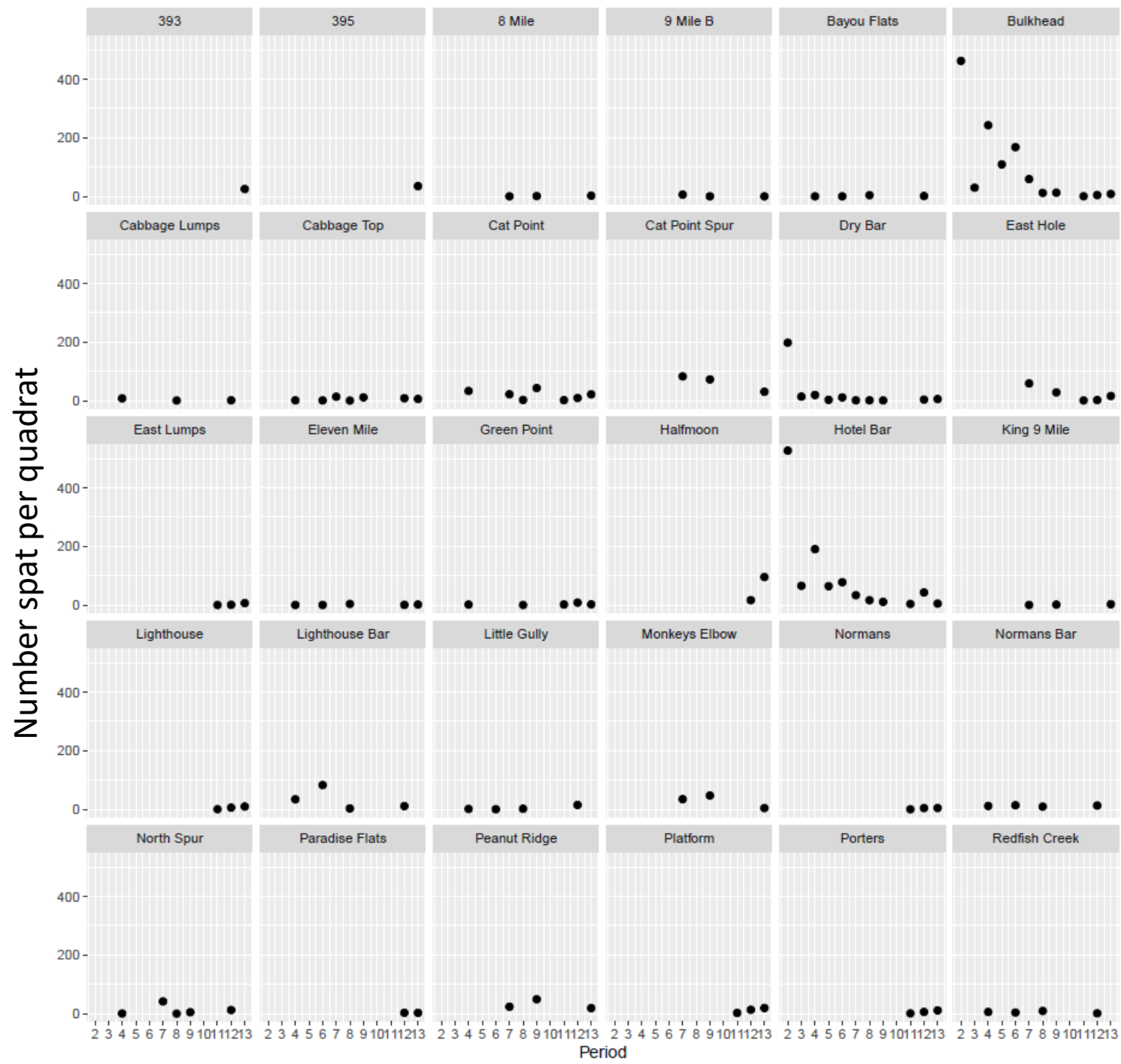


Spat CPUE by Period



Now let's look at all 30 sites for spat (< 1 inch)

Spat CPUE by Period



Trends in spat (< 1 inch)

- **Initial positive response to restoration in some sites**

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- **But most sites did not show increase in counts after restoration**
- **Sites with initial high counts (higher than long-term average) show rapid declines over time**
- **Most recent data suggest very few spat across monitoring sites**

Now let's look at all 30 sites for seed (1-2 inch)

Trends in seed (2-3 inch)

- **Initial positive response to restoration in sites that had high spat**

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- **Initial positive response to restoration in sites that had high spat**
- **But most sites did not show increase in counts after restoration**
- **Rapid declines over time**
- **Most recent data suggest very few seed across monitoring sites**

Now let's look at all 30 sites for legal (3+ inch)

Trends in legal (3+ inch)

- **Very few legal oysters observed**

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- **Some sites that had observed spat had a few legal oysters 1-2 years later**
- **Most recent data suggest very few legal oysters across monitoring sites**

Overall

- **Oyster population response to recent cultching efforts has not had desired effect of increasing numbers of spat**
- **Key uncertainties: Is the lack of response due to type of material, size of material, or design of restoration site (elevation)?**
- **Or is Apalachicola Bay limited in the amount of spat?**

Thank you for the opportunity to speak

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Apalachicola Deviation in Discharge

