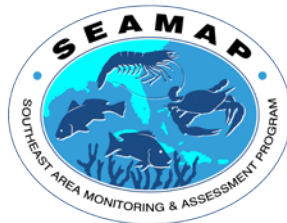


SEAMAP Habitat Mapping Discussion



Presented at March 2019 SEAMAP TCC Meeting

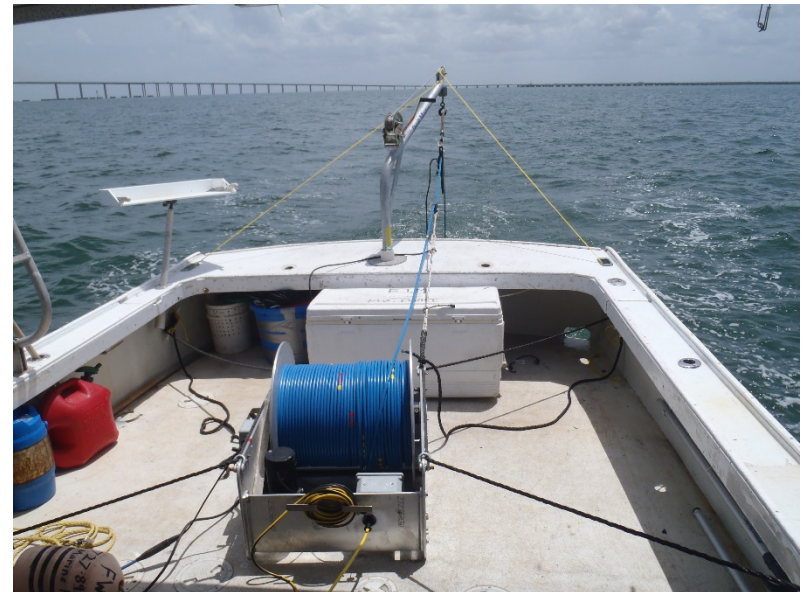


FL Saltwater
Recreational Fishing
Licenses



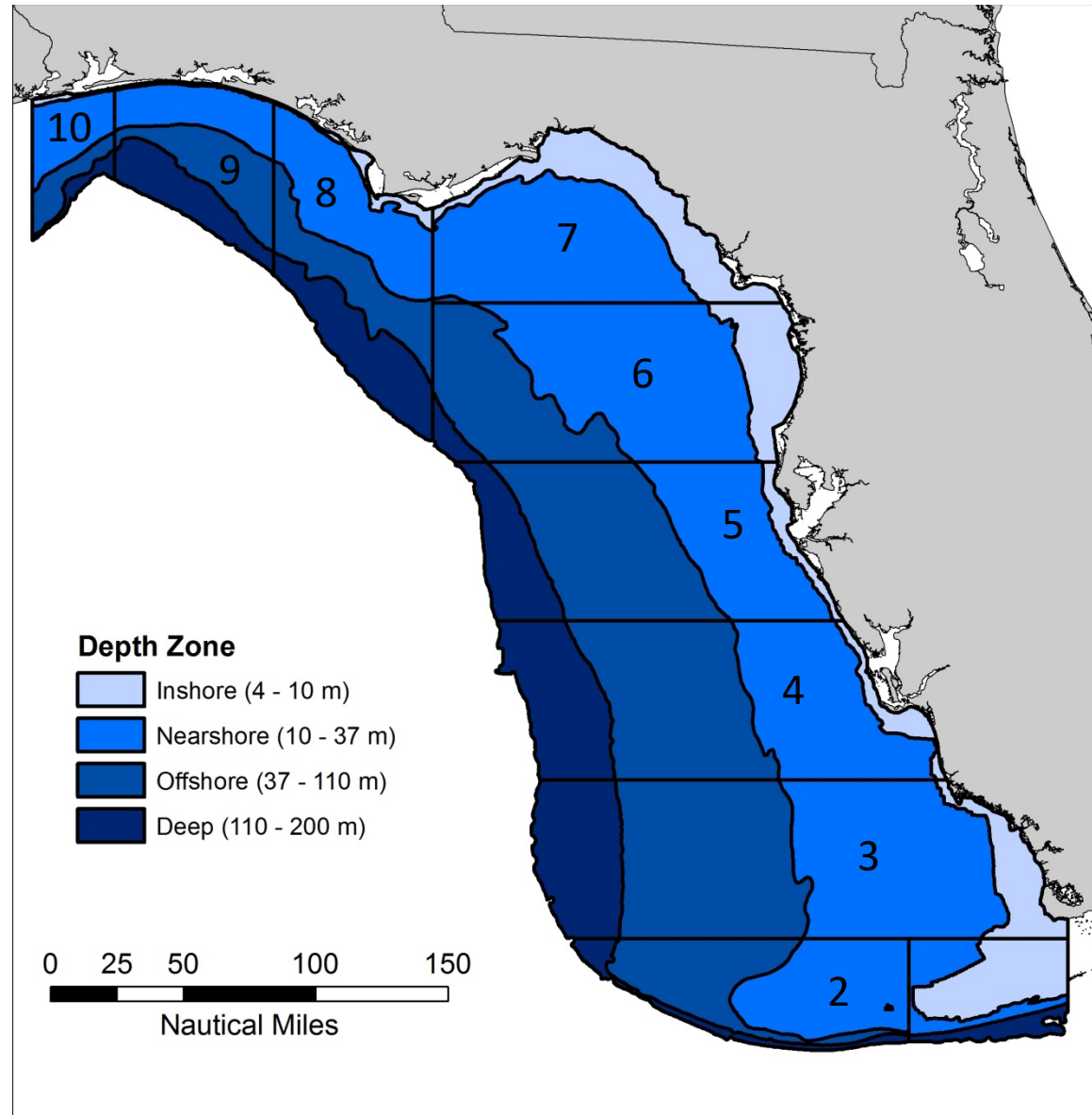
SEAMAP SSS Update

- Purchasing process well underway – should have SSS / winch / software available for greater SEAMAP use by end of May
- Discussions – how SSS will be used?
 - Effort
 - Design
 - Data collection
 - Data processing
 - Data archival



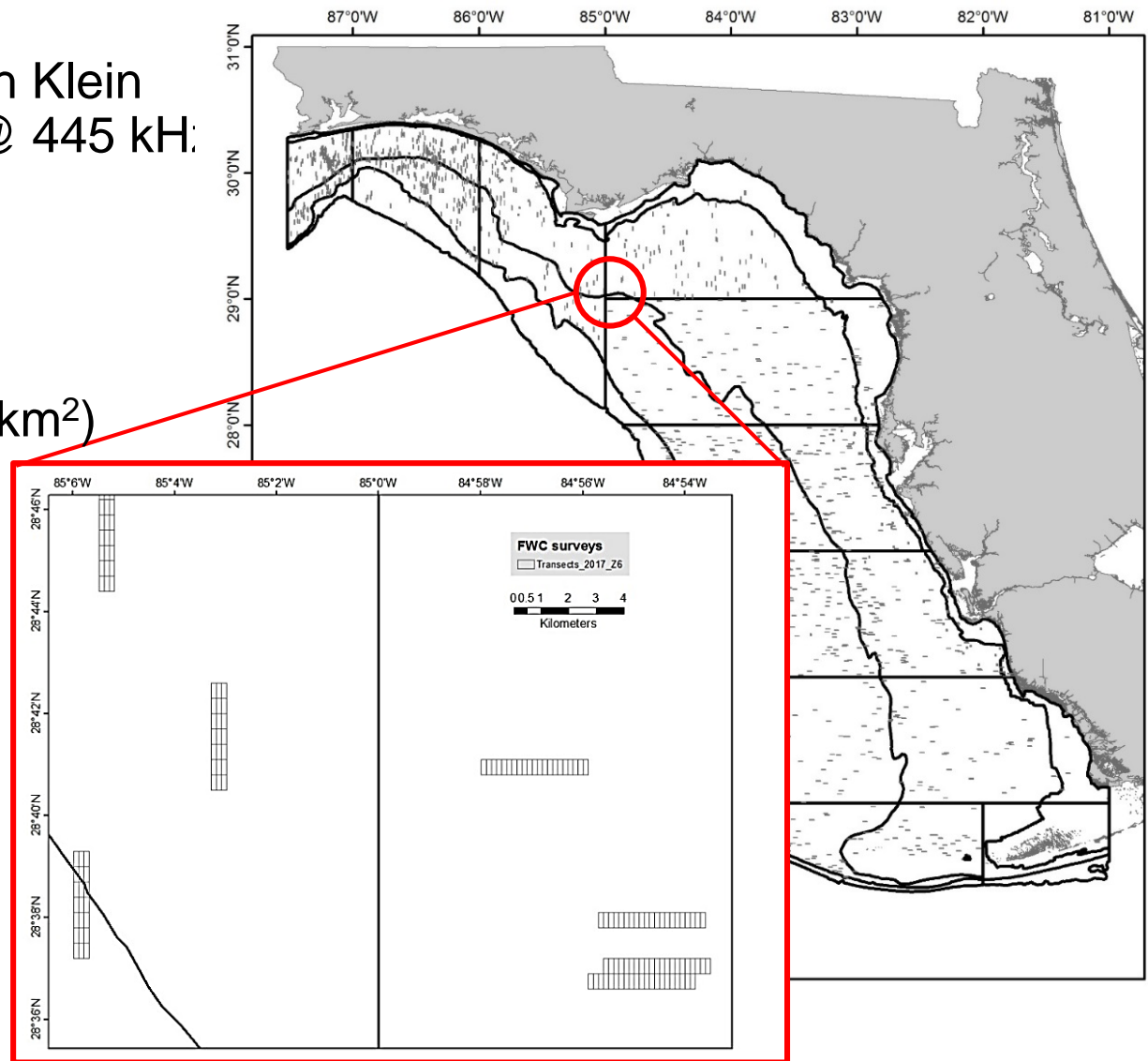
FWRI SSS Mapping Approach

- Primary objective – inform reef fish survey
- Mapping effort allocated spatially
- Standardized mapping blocks (area)
- Randomly-selected areas to map
- Data therefore representative of unmapped regions

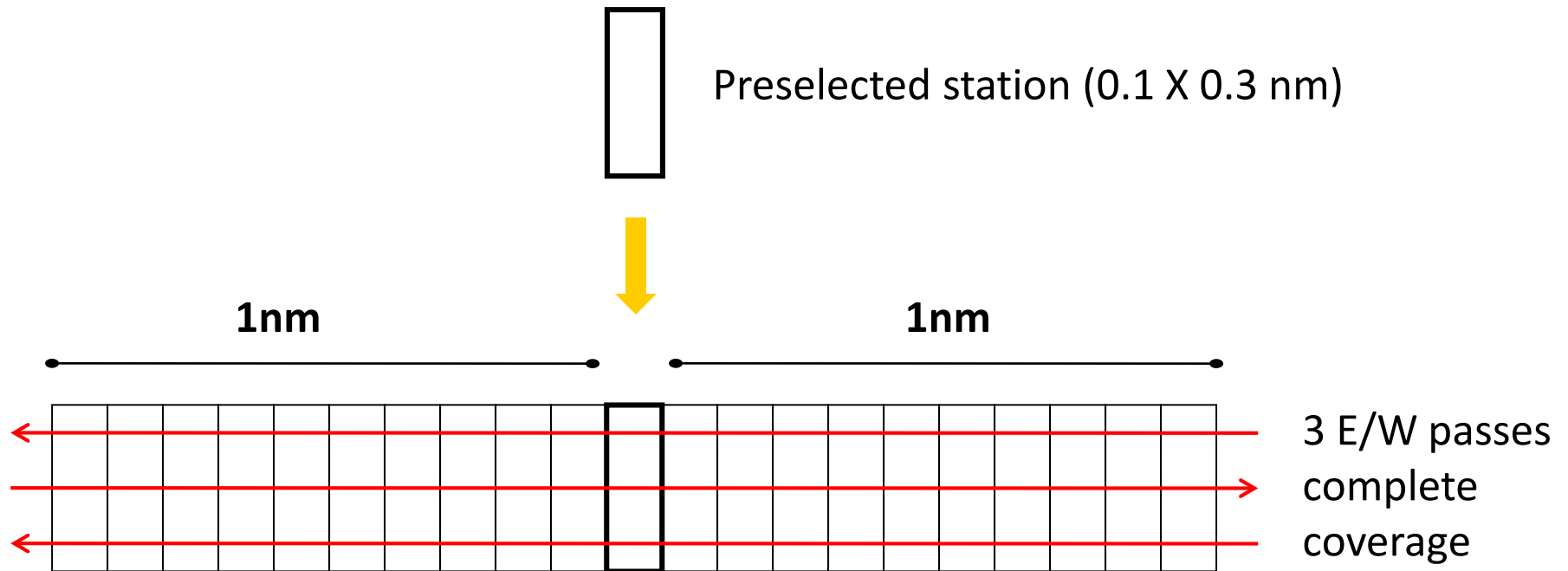


Spatial coverage/Methods

- Mapping conducted with Klein 3900 side scan sonar @ 445 kHz
- Depth: 10m – 180 m
- Standardized surveys
 - 2.1nm X 0.3nm (~2km²)
 - Covers 21 grids (transects)



Natural Reef Surveys

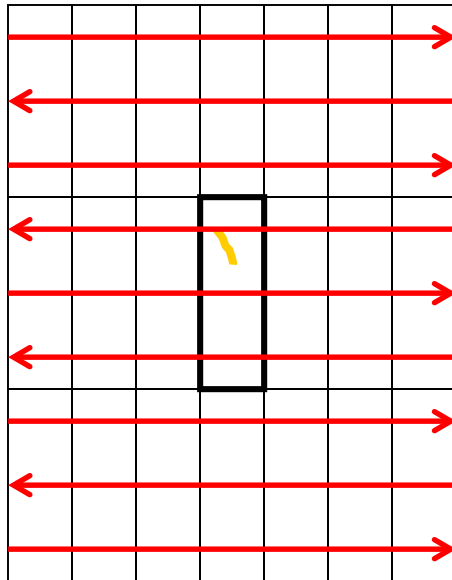


Artificial Reef Surveys

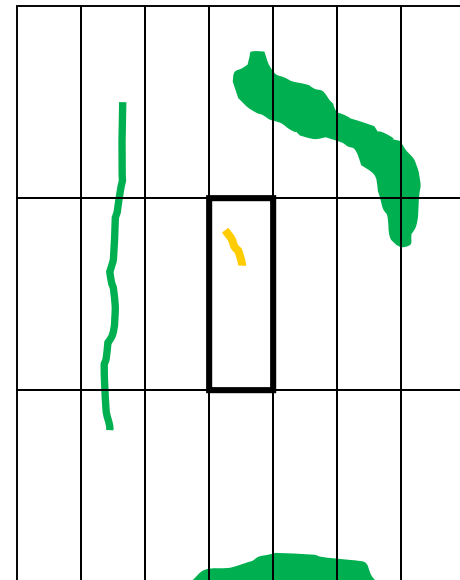
Preselected station
containing artificial
reef habitat
(0.1 X 0.3 nm)



Scan a grid
0.3 nm in all
directions
from
preselected
station for
complete
coverage



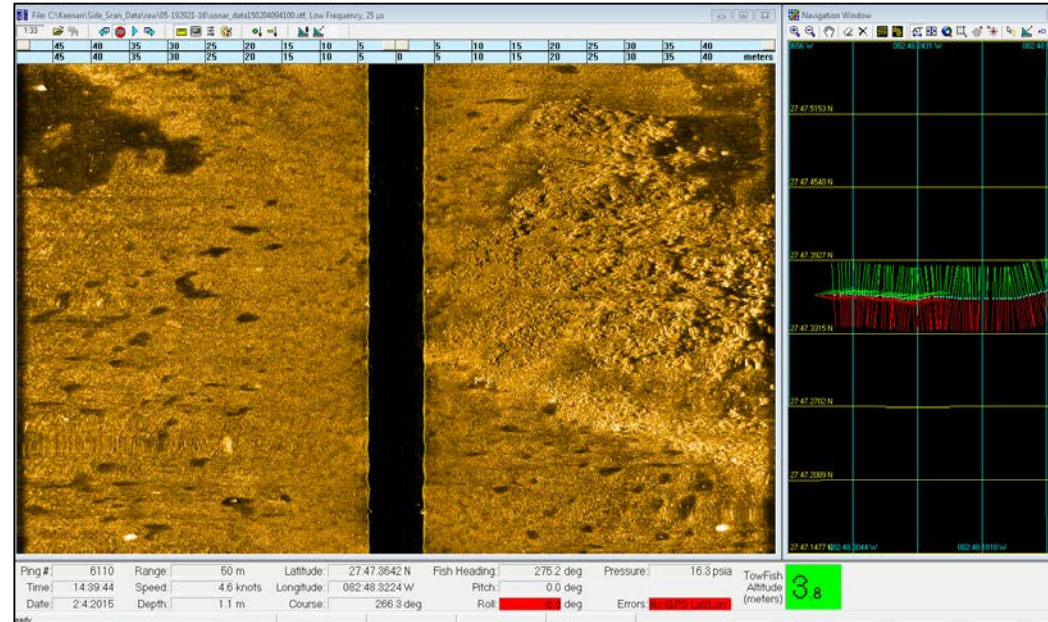
Characterize
distribution of
surrounding natural
reef habitat



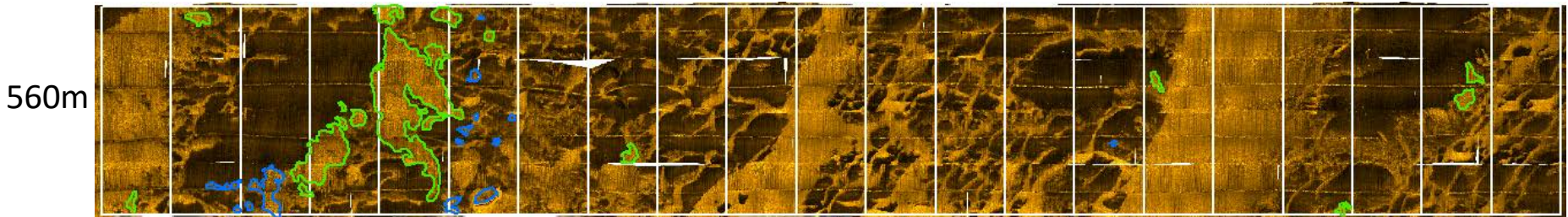
Processing Protocols

- Each survey post-processed and read for habitat via supervised classification

- Raw waterfall image



- Geotiff with polygons



3.88 km

Habitat categories

- Based on Coastal and Marine Ecological Classification Standard (CMECS) terminology with regional guidance (level 1 & 2 geoform and SGC)
- 36 habitat classes
- MMU = 5m on side*

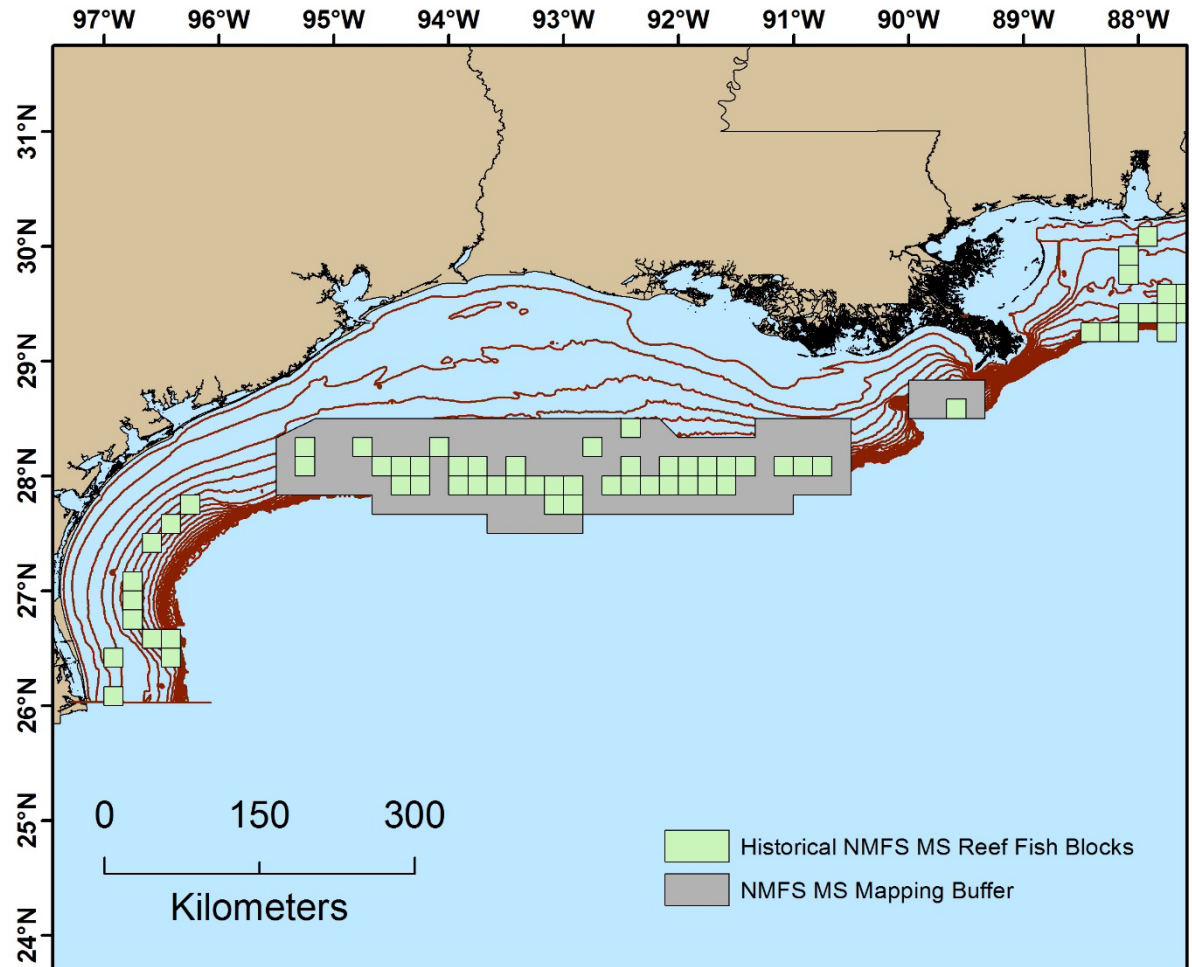
ORIGIN	GEOFORM	CODE
Biogenic	Aggregate Coral Reef	CR
	Aggregation of Patch Reefs	PA
	Individual Patch Reef	PR
	Reef Rubble	RR
	Seagrass	SE
	Spur and Groove	SG

ORIGIN	GEOFORM	CODE
Geologic	Boulder/Boulder Field	BF
	Escarpment	ES
	Fragmented Hard Bottom	FB
	Fracture	FR
	Flat Hard Bottom	HB
	Ledge	LD
	Mixed Hard Bottom	MB
	Potholes *	PH
	Pinnacle	PN
	Pavement	PV
	Rubble Field	RB
	Spring/Sink Hole	SP
Unknown	Unknown Natural	UN

ORIGIN	GEOFORM	CODE
Anthropogenic *	Aircraft	AC
	Cable	CA
	Construction Materials	CM
	Dredged Channel	CN
	Chicken Coop	CP
	Dredge Deposit	DD
	Military Tanks	MT
	Marine Wreckage	MW
	Oil Platform Materials	OP
	Pipeline Area	PL
	Reef Modules	RM
	Rock Piles	RP
	Tires	TI
	Unknown Reef material	UR
	Other Vehicles	VH
	Large vessel/barge	VL
	Small Vessel	VS

Extending Westward

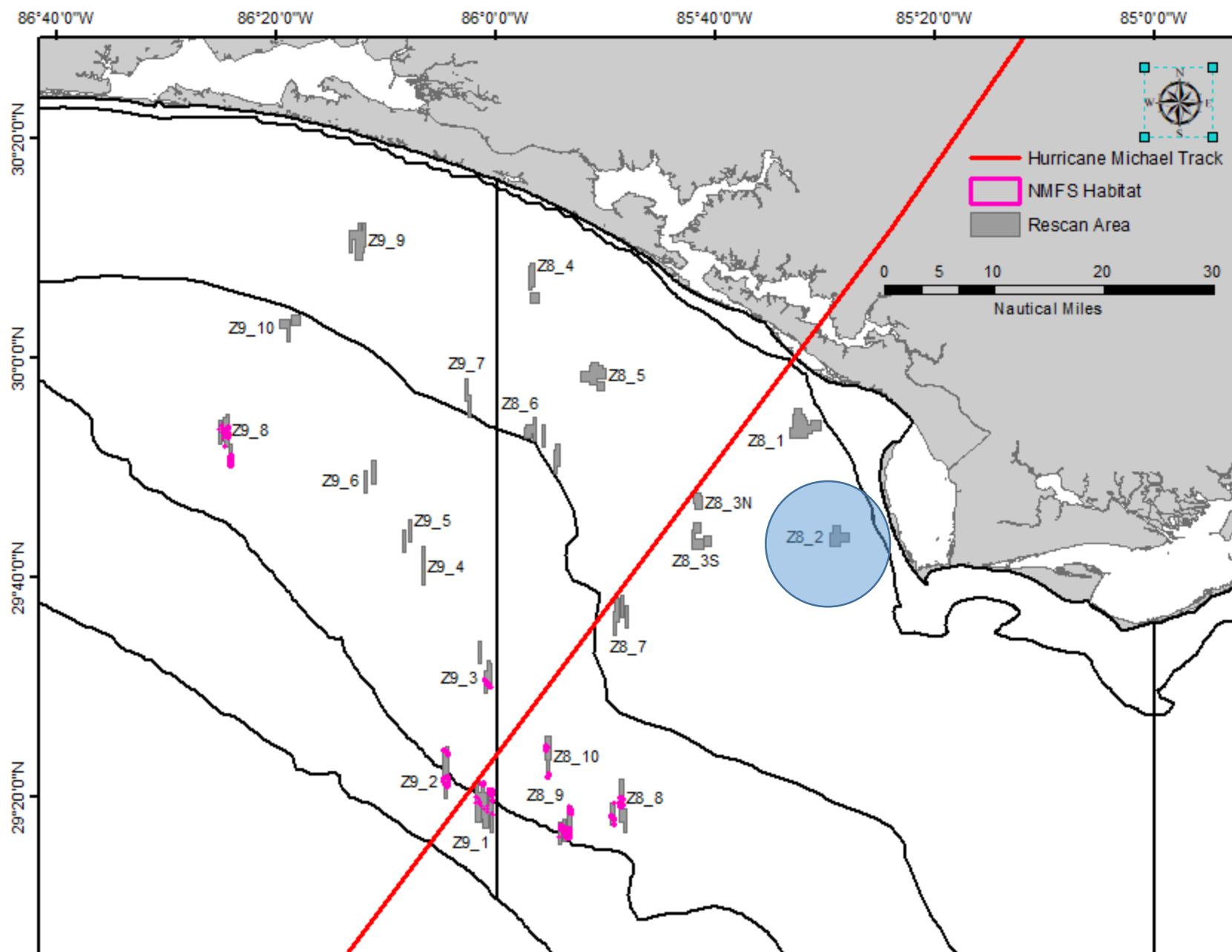
- NMFS MS – mapping opportunistically within close proximity to reef fish sampling blocks
- Need for data shallow ($\sim < 50$ m)



Questions to Consider

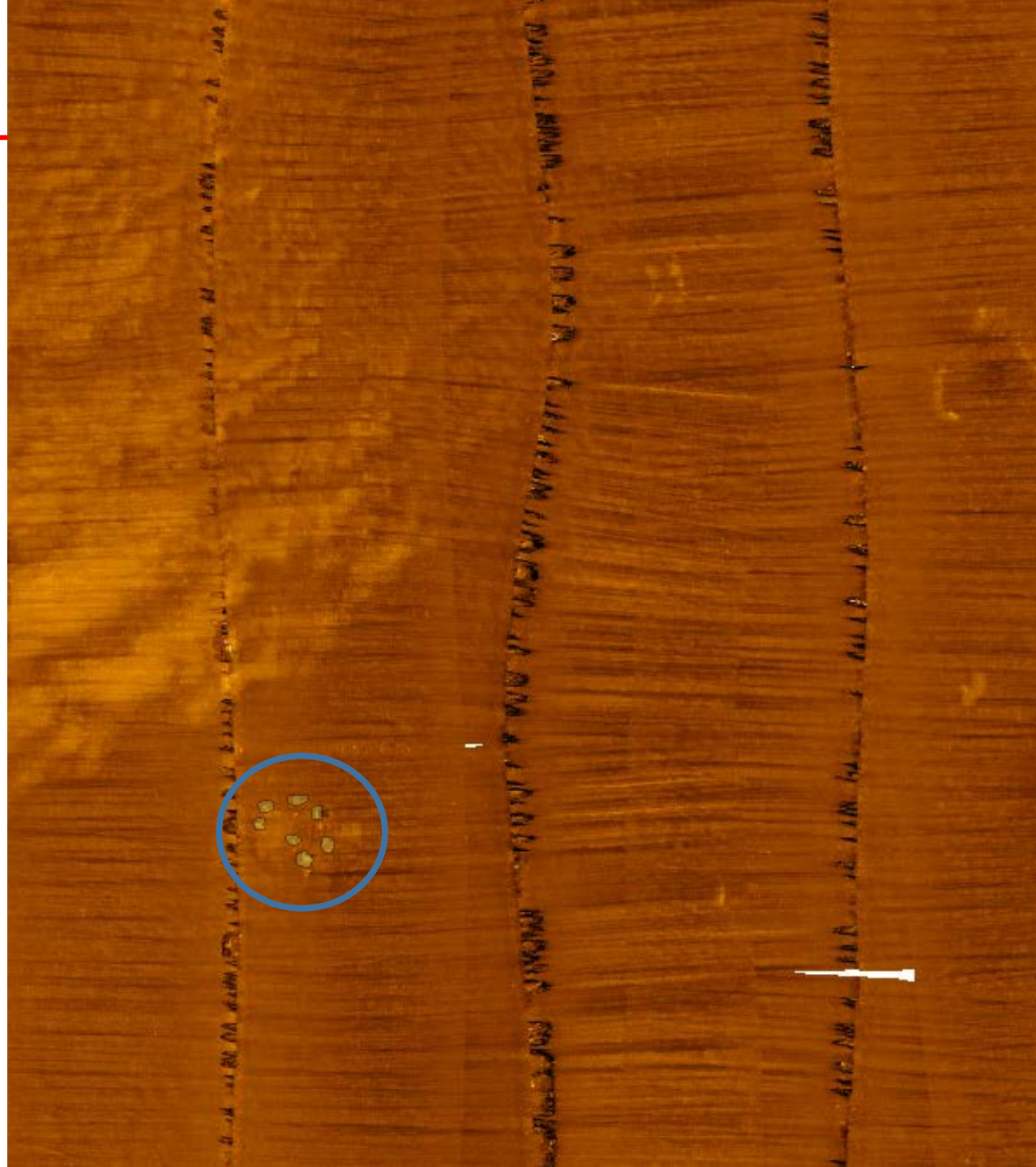
- Mapping effort – routine, opportunistic?
- Mapping approach – random, systematic, targeted?
- Data collection and processing – Who? Training?
- Processing protocols – FWRI? Others?
- Data archival – GSMFC? Just processed polygons?
- New mapping vs. remapping?

Preliminary Summary of Reef Fish Habitat Changes Near Track of Hurricane Michael



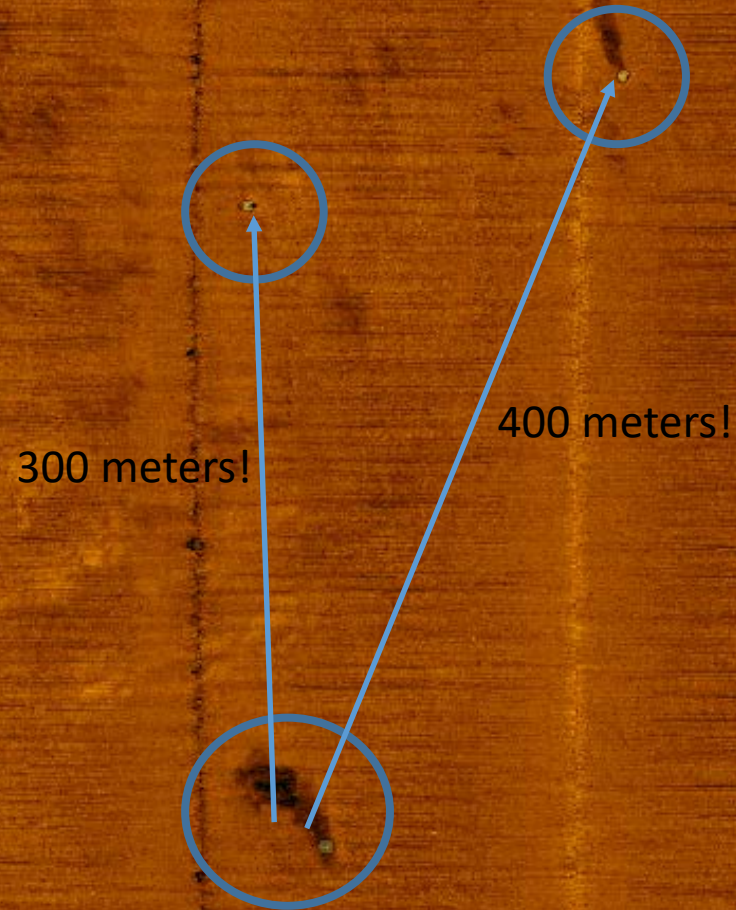
Z8_2

- Reef Modules
 - Past



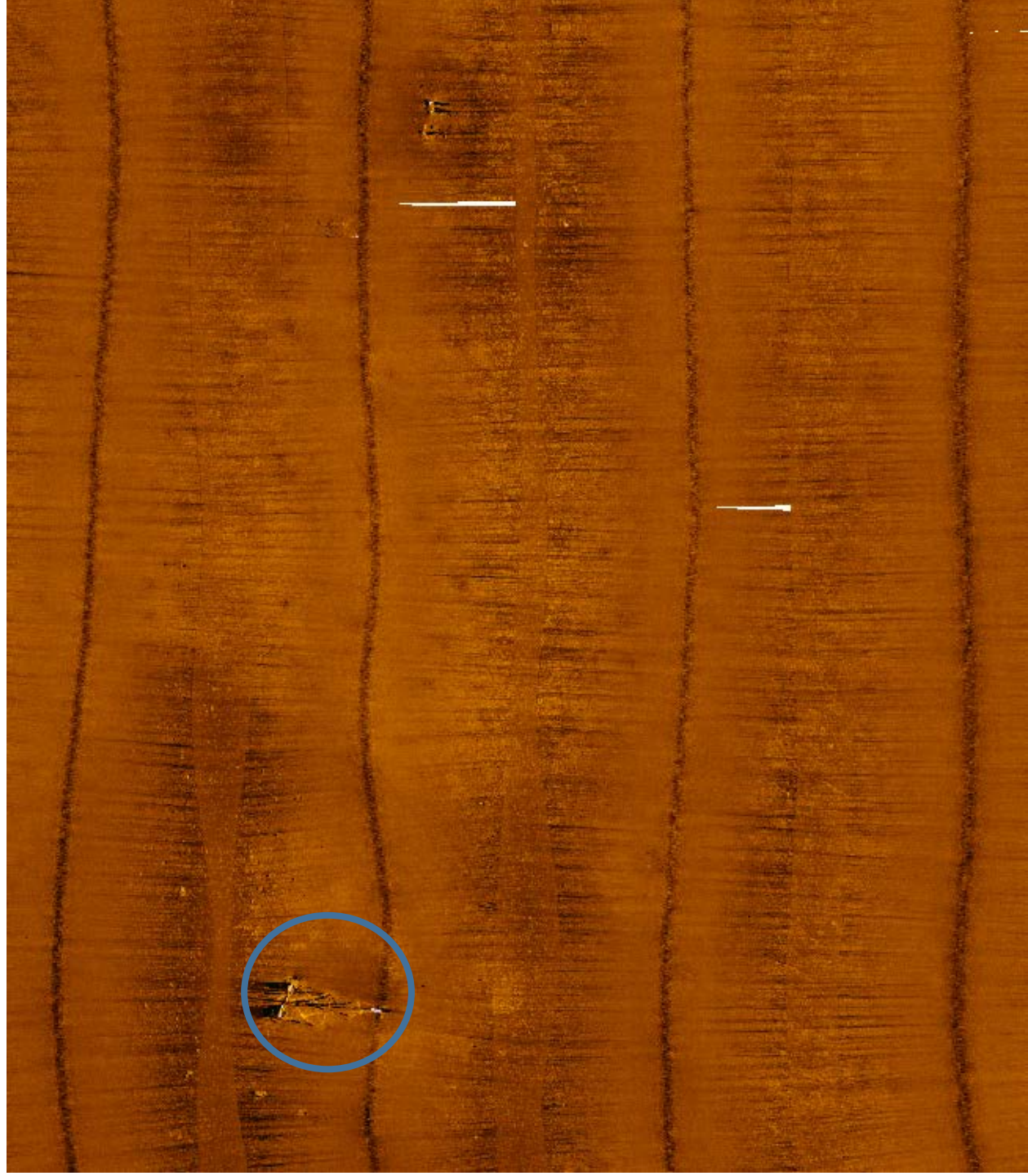
Z8_2

- Reef Modules
 - Present
- Possibly 750 meters!



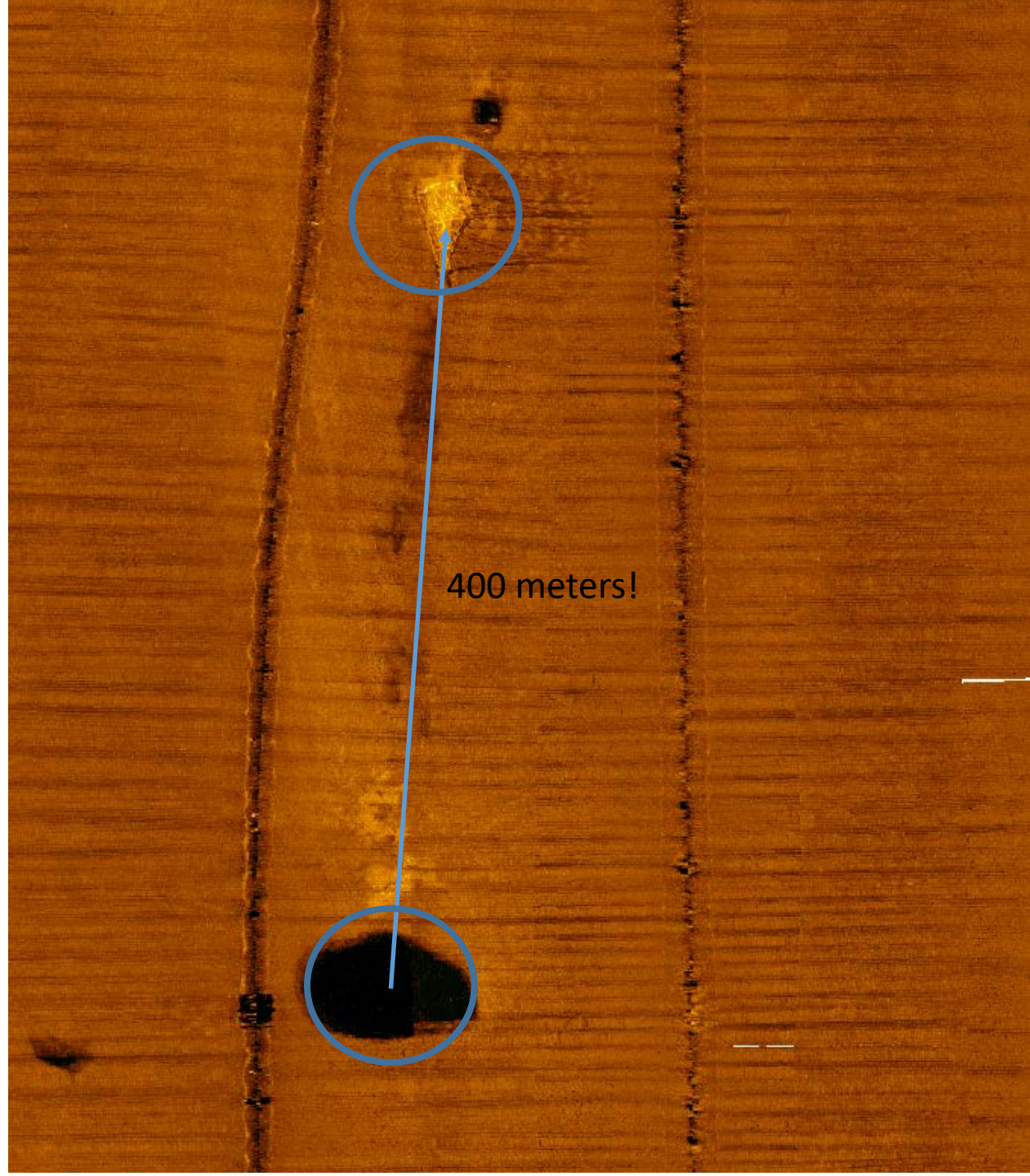
Z8_2

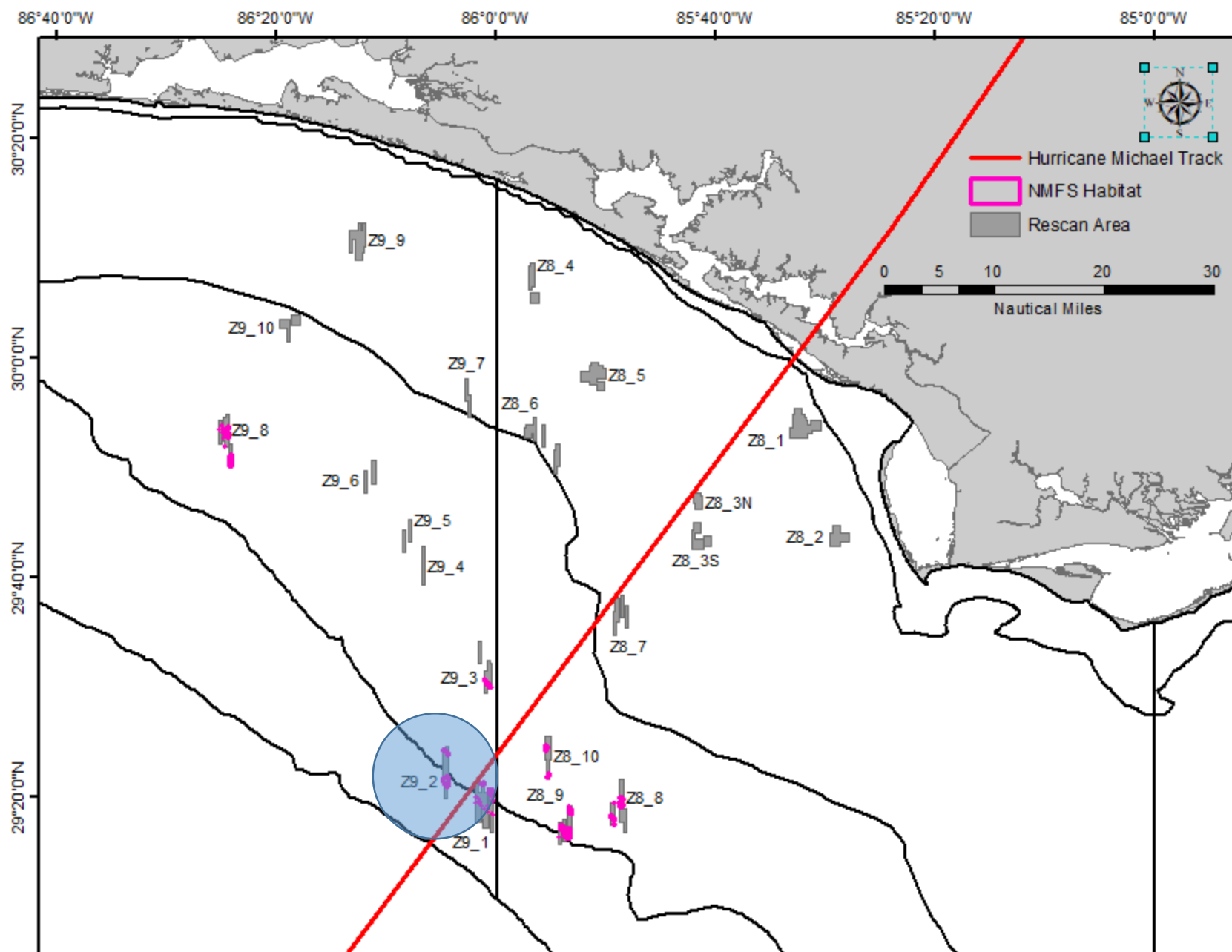
- Radio Tower
 - Past



Z8_2

- Radio Tower
 - Present





Z9_2

- Past

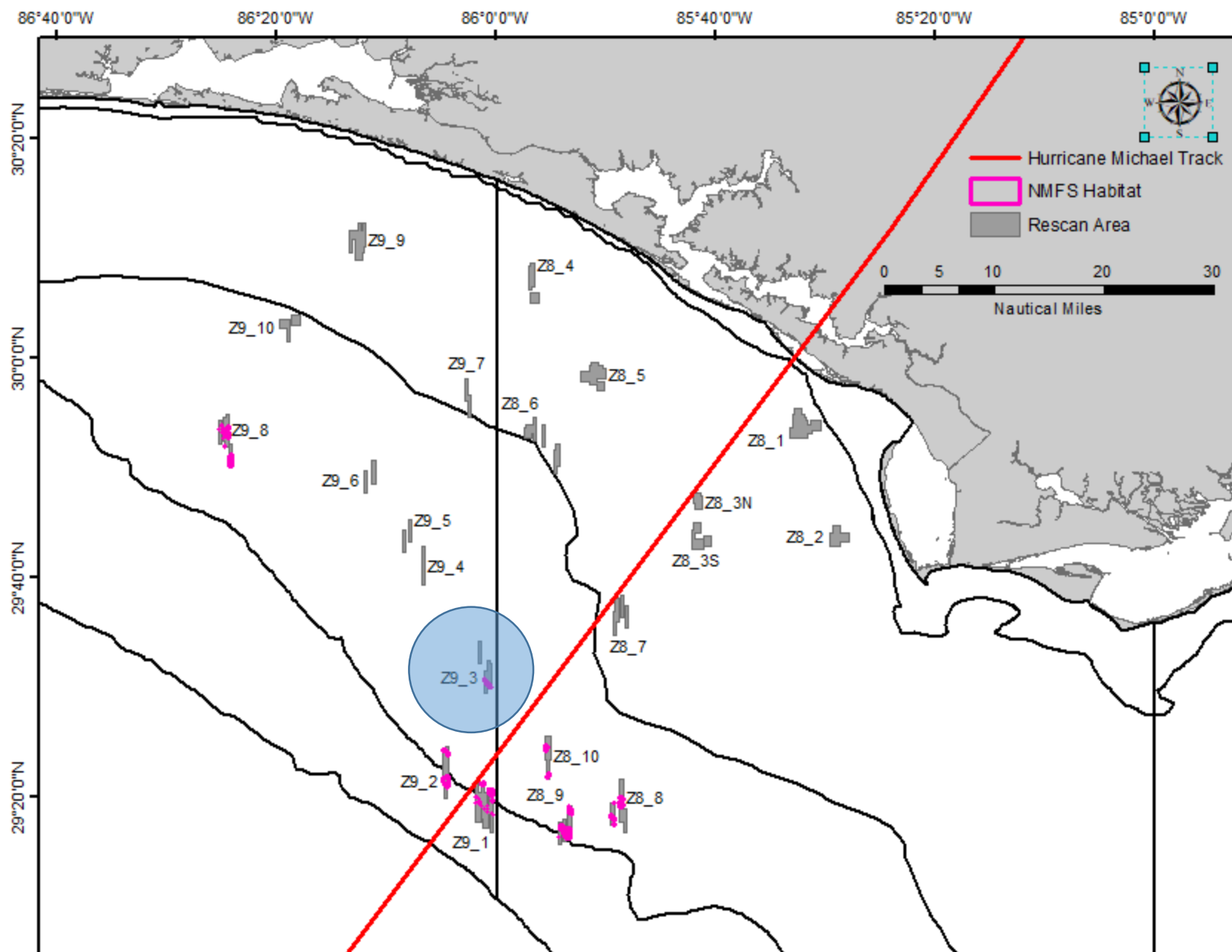
- Flat HB = 41,000m²
- Fragmented = 78,000m²



Z9_2

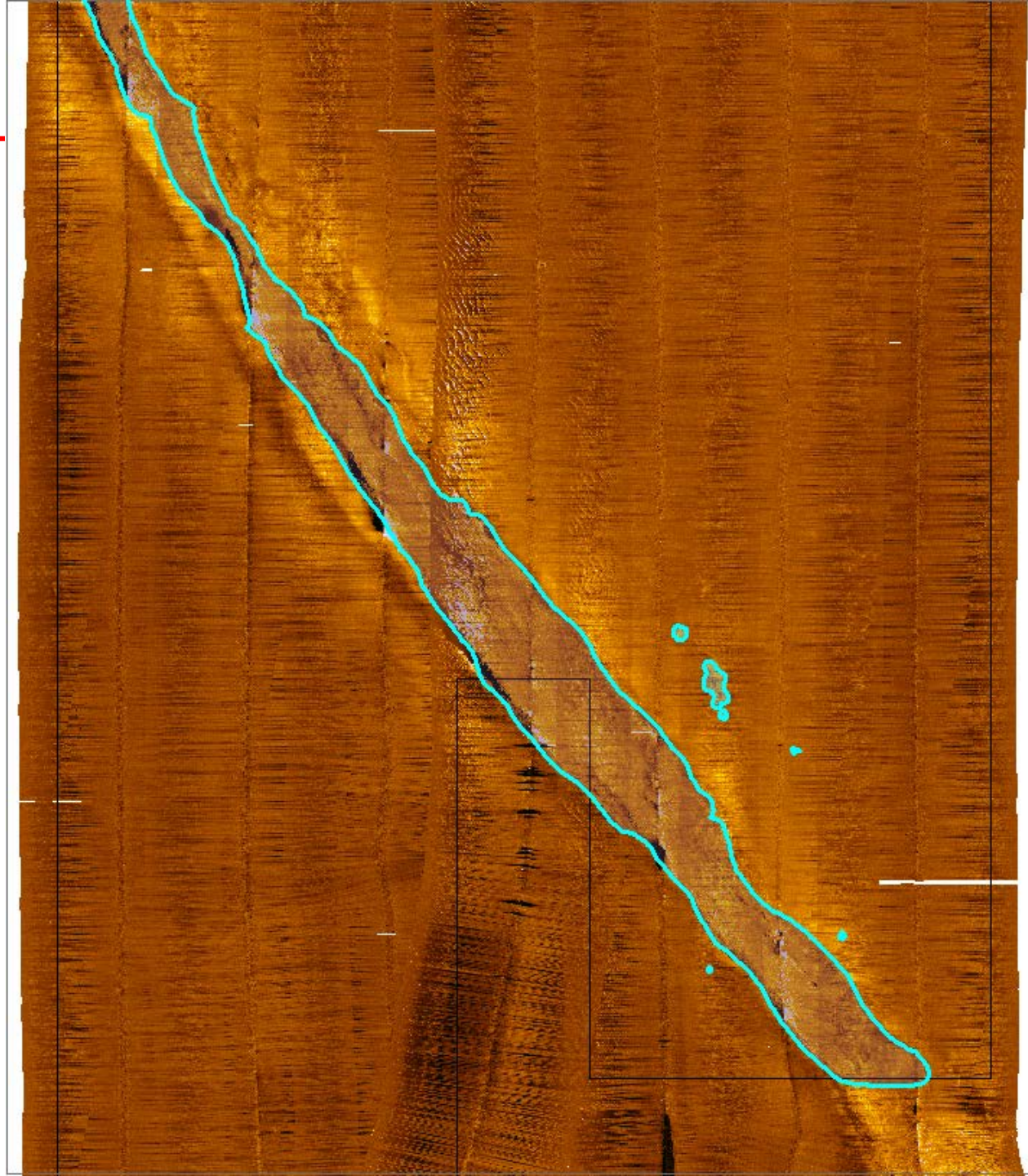
- Present
- Flat HB = 20,000m²
- Fragmented HB = 102,000m²





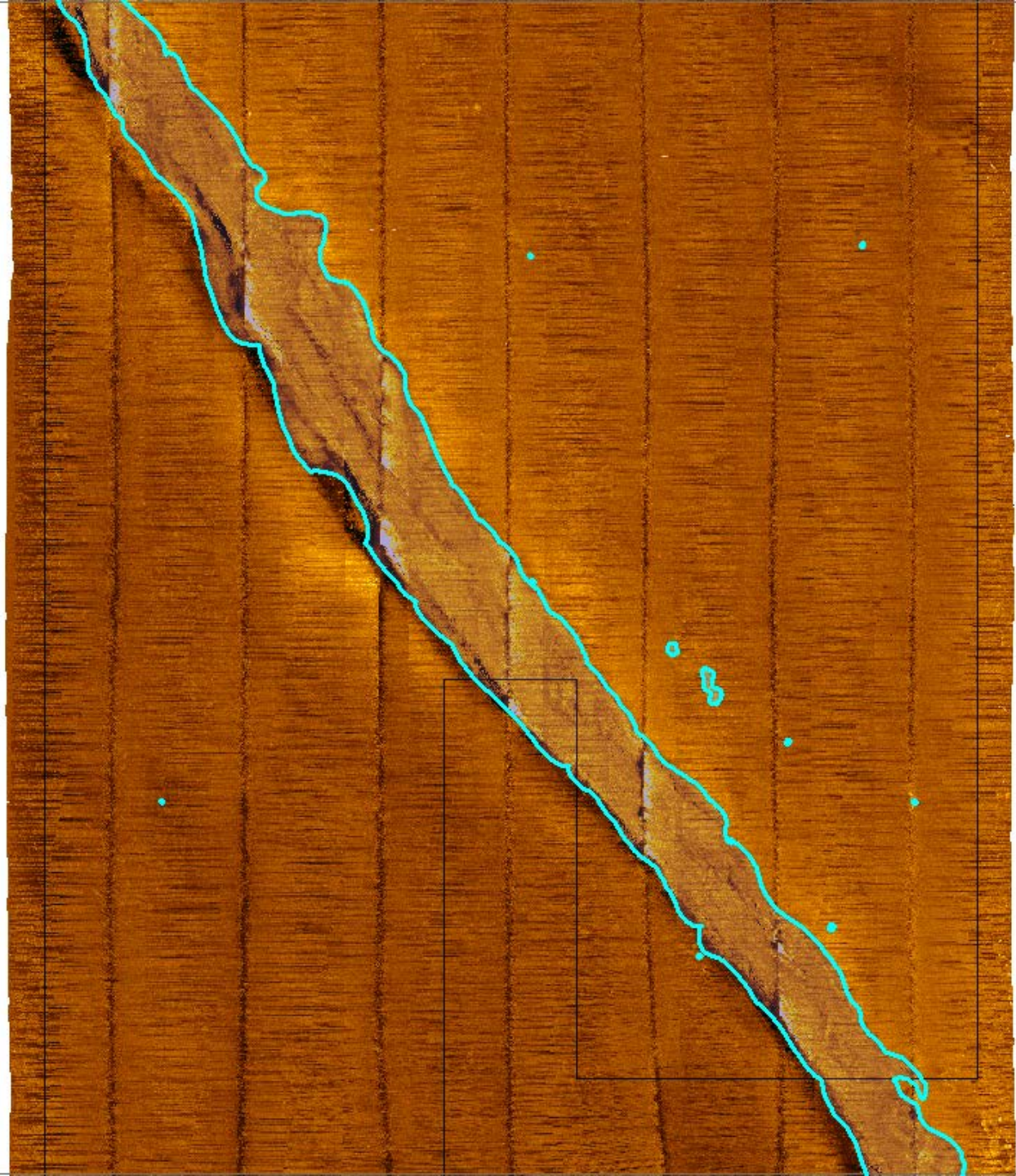
Z9_3

- Past



Z9_3

- Present
- Escarpment increased from 127,000 to 216,000 m²



Questions to Consider

- So, what are the next steps?
- Consider establishing small SEAMAP habitat mapping workgroup?