

OYSTER HABITAT RESTORATION PROGRAM FOR LITTLE SARASOTA BAY

Jay R. Leverone
Mote Marine Laboratory

And

Gary Raulerson
Sarasota Bay Estuary Program

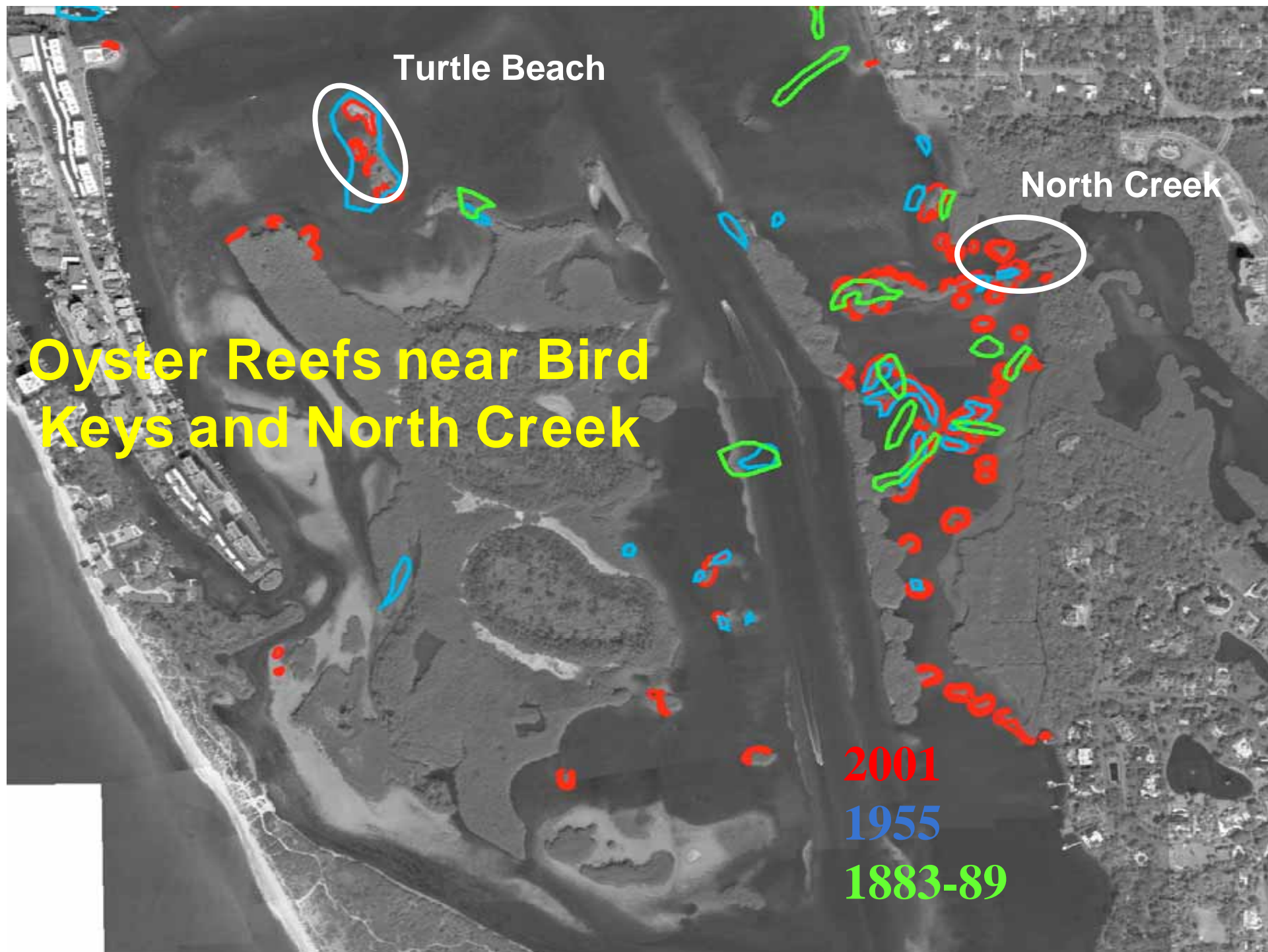


SBEP TAC Oyster Habitat Subcommittee

- **John Stevely (Florida Sea Grant)**
- **Dave Bullock (American Littoral Society)**
- **Dianne Rosenweig (Sheda Ecological Assoc.)**
- **Mike Jones (Sarasota County)**
- **Chris Anastacio (SWFWMD)**

PRELIMINARY ASSESSMENT

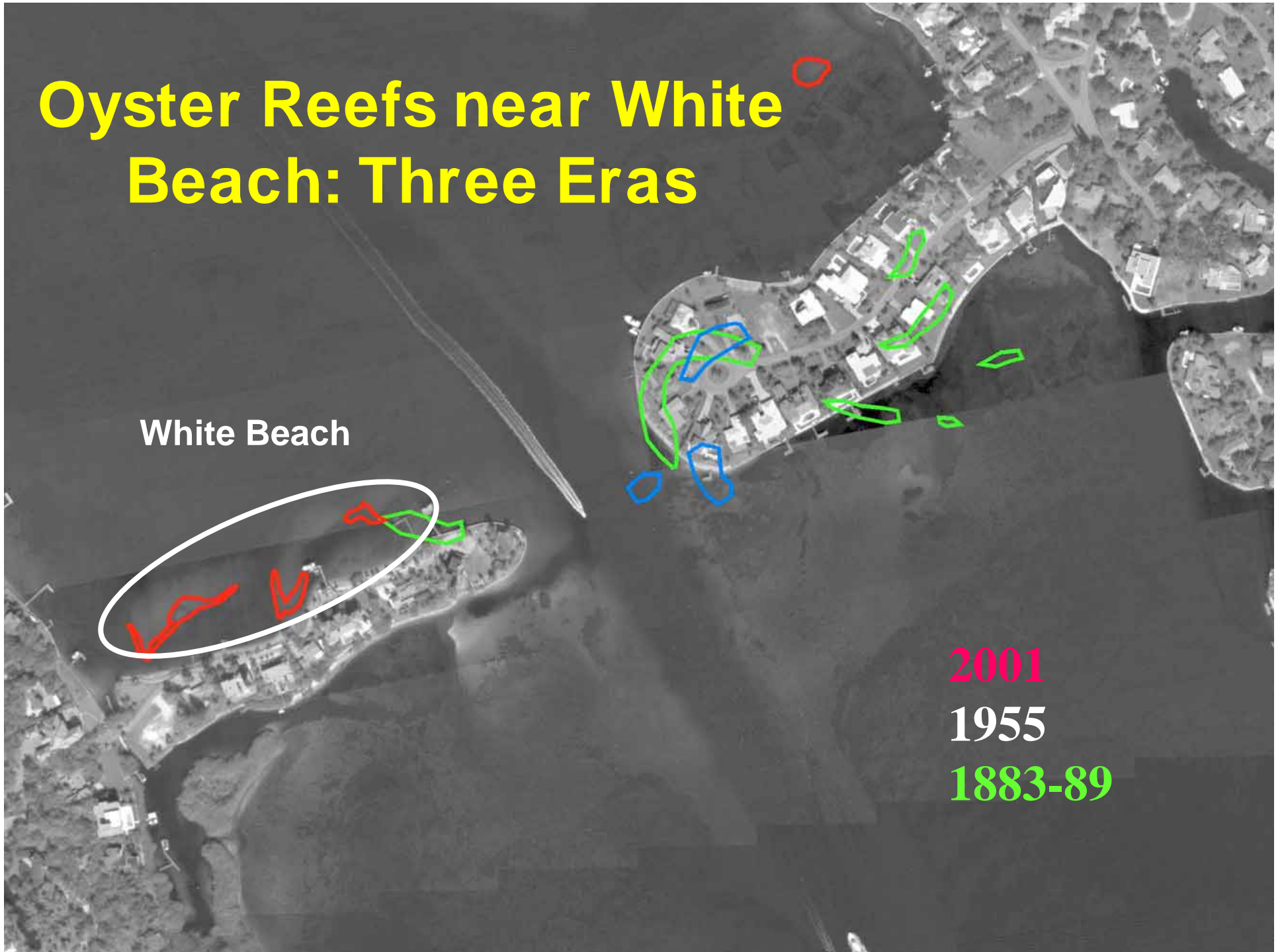
- **Analyze the historical distribution of oysters in Little Sarasota Bay**
- **Survey existing oyster distribution in Little Sarasota Bay**
- **Review water quality data from Little Sarasota Bay for oyster habitat suitability**
- **Assess current health and status of select oyster habitat and evaluate their potential for restoration**



Oyster Reefs near White Beach: Three Eras

White Beach

2001
1955
1883-89



Water Quality Data: Five year monthly means near Midnight Pass in Little Sarasota Bay

January	SAL	TEMP	DO
Mean	30.8	17.8	7.6
Min	26.9	12.8	5.9
Max	34.6	22.5	9.1

February	SAL	TEMP	DO
Mean	30.1	20.1	6.6
Min	15.8	17.1	5.4
Max	36.6	24.6	8.9

March	SAL	TEMP	DO
Mean	31.7	21.1	7.5
Min	23.1	18.0	7.2
Max	35.7	26.8	7.9

April	SAL	TEMP	DO
Mean	32.1	24.6	7.2
Min	24.5	21.4	6.1
Max	35.7	28.5	7.8

May	SAL	TEMP	DO
Mean	34.9	27.0	8.4
Min	28.8	25.1	6.3
Max	38.4	28.8	12.2

June	SAL	TEMP	DO
Mean	36.9	30.3	6.7
Min	33.5	29.6	5.6
Max	38.5	30.8	8.1

July	SAL	TEMP	DO
Mean	28.6	30.4	7.4
Min	21.4	28.3	4.7
Max	32.8	31.9	8.8

August	SAL	TEMP	DO
Mean	27.3	30.0	8.1
Min	21.4	28.3	5.9
Max	31.4	30.6	9.1

September	SAL	TEMP	DO
Mean	22.6	27.8	5.6
Min	14.7	26.3	0.3
Max	28.8	29.4	8.0

October	SAL	TEMP	DO
Mean	28.3	26.7	5.5
Min	25.4	23.2	4.5
Max	31.3	28.6	6.9

November	SAL	TEMP	DO
Mean	30.4	22.7	6.4
Min	27.4	21.0	5.1
Max	34.4	25.9	7.5

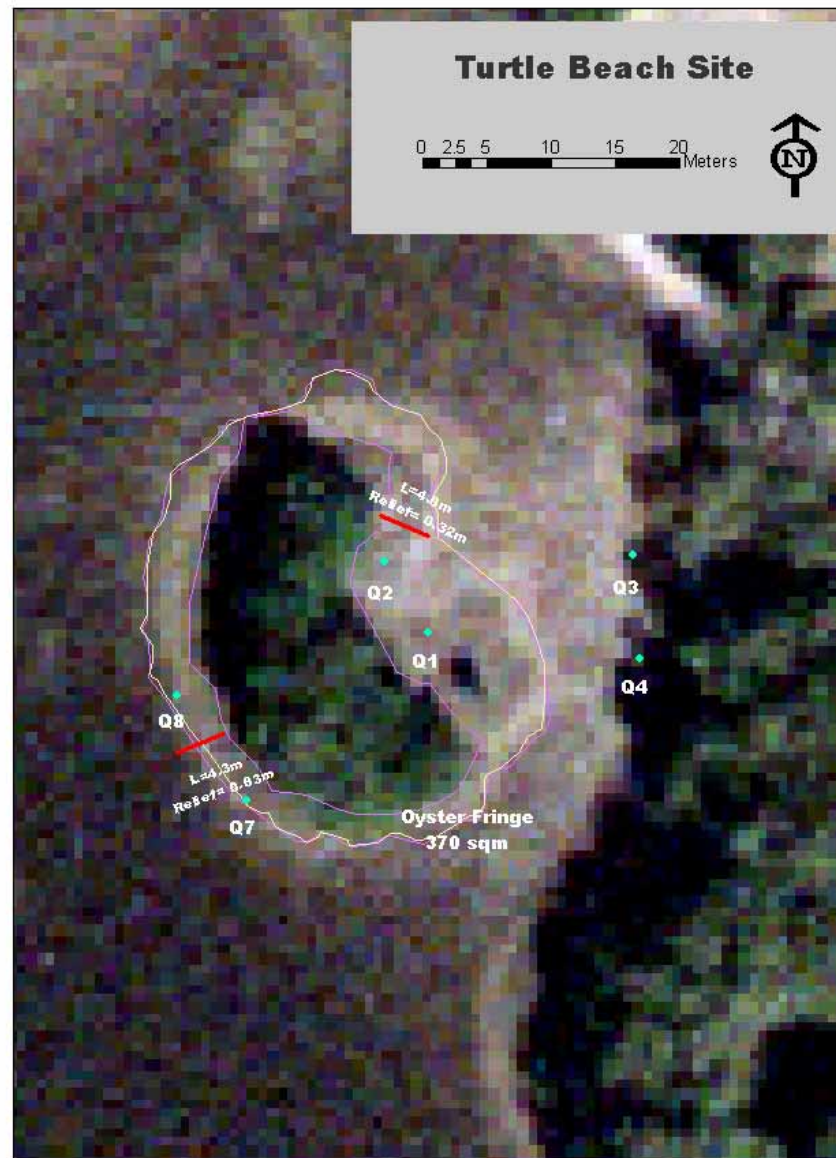
December	SAL	TEMP	DO
Mean	32.2	20.8	5.6
Min	29.4	15.4	4.7
Max	34.2	24.7	6.6

North Creek (Reference Site)



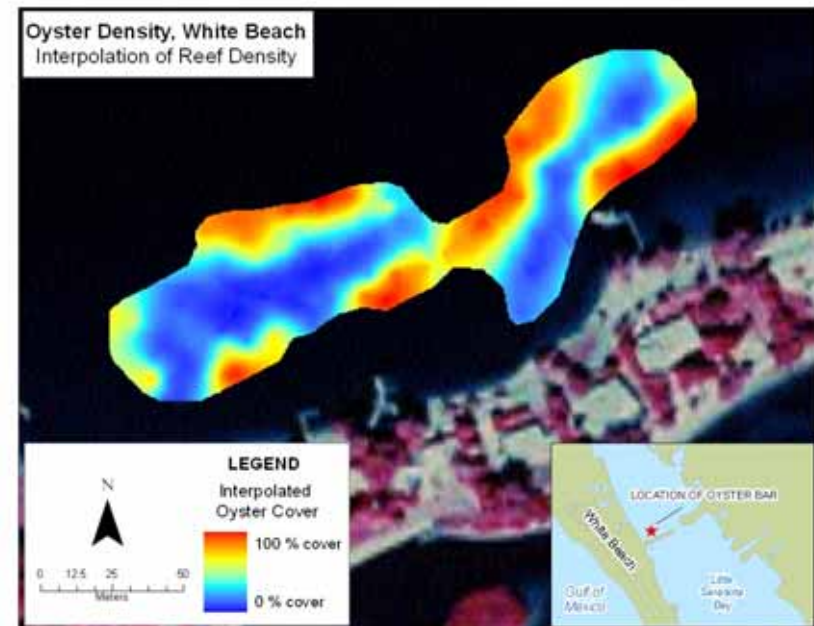
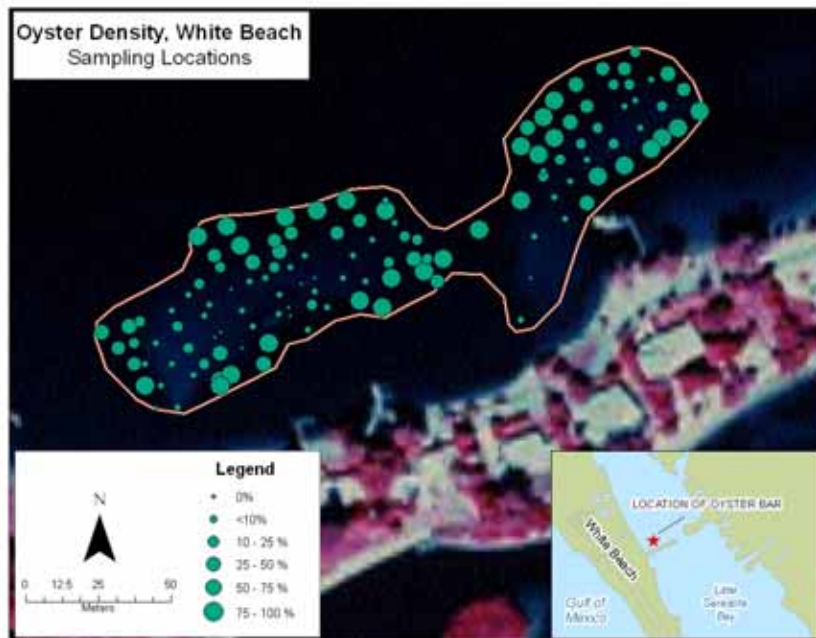
Turtle Beach Restoration Site







White Beach Restoration Site: Preliminary Oyster Survey



Live and dead oyster densities (#/0.25 m²) and ratios in Little Sarasota Bay

		Adults		Spat	
North Creek		Live	Dead	Live	Dead
Mean		25.8	12.2	5.5	1.8
S.D.		11.73	5.77	3.70	2.36
Live/Dead Ratio		0.68		0.76	
Turtle Beach		Live	Dead	Live	Dead
Mean		12.8	5.0	2.7	1.1
S.D.		19.52	6.30	4.86	1.73
Live/Dead Ratio		0.72		0.71	
White Beach		Live	Dead	Live	Dead
Mean		14.8	3.3	8.8	26.8
S.D.		11.99	3.08	6.37	22.64
Live/Dead Ratio		0.82		0.25	

Analysis of *Perkinsus marinus* prevalence in oysters from Little Sarasota Bay (by Bruce Barber)

Site	Temperature (°C)	Salinity (ppt)	Shell Ht. (mm)	Dry Wt. (g)	Condition Index	<i>P. marinus</i> prevalence
White Beach	15.2	30.7	67.22	0.67	6.17	4/25 = 16 %
North Creek	16.5	29.4	69.02	0.54	5.01	1/25 = 4 %
Turtle Beach	15.3	32.6	71.8	0.99	6.82	1/25 = 4 %

Oyster Deployment (August, 2005)

Oyster units constructed at Reef Innovations, Inc.



Oyster Deployment at Turtle Beach



Oyster Deployment at White Beach

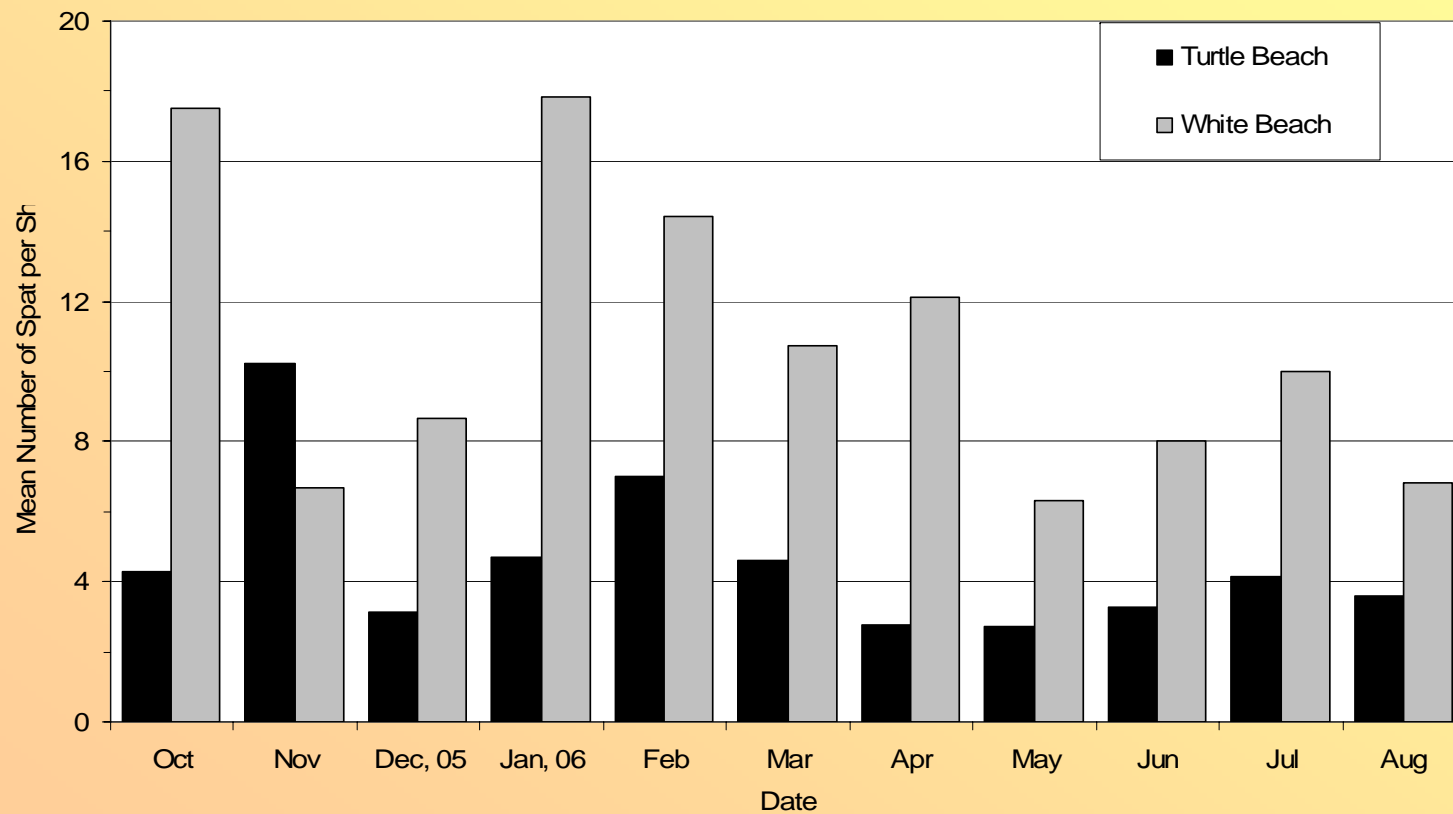


Year One Monitoring Results

A) Recruitment to Shell in Bags

B) Recruitment to Settlement Plates

Spat Settlement on Fossilized Oyster Shell



February, 2006

Settlement Plates

Turtle Beach



White Beach



May, 2006

Colonized Shells

Turtle Beach



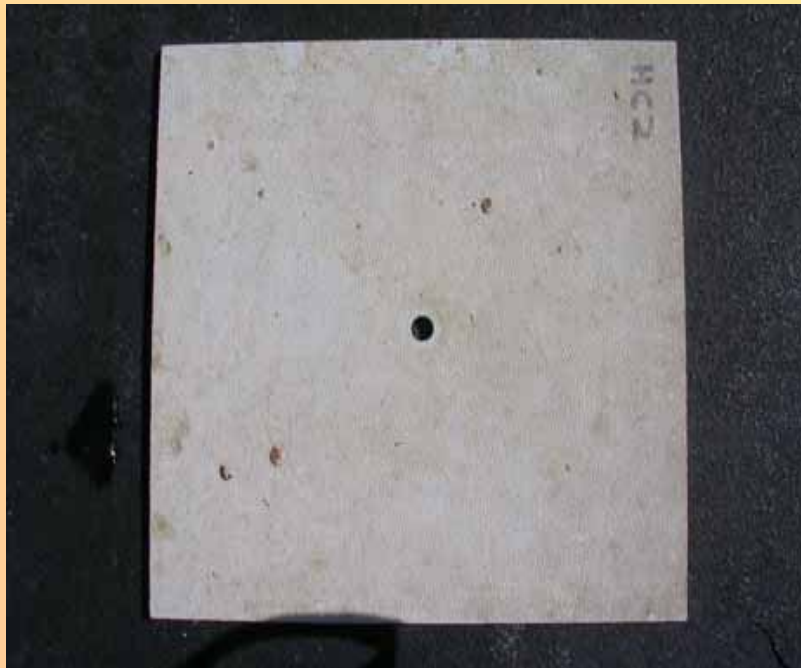
White Beach



May, 2006

Settlement Plates

Turtle Beach



White Beach



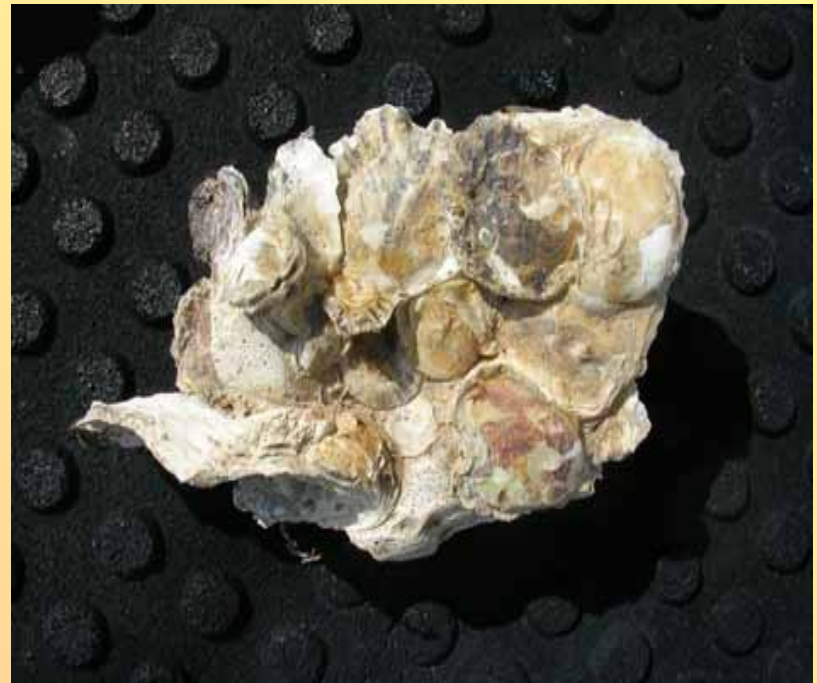
July, 2006

Colonized Shells

Turtle Beach



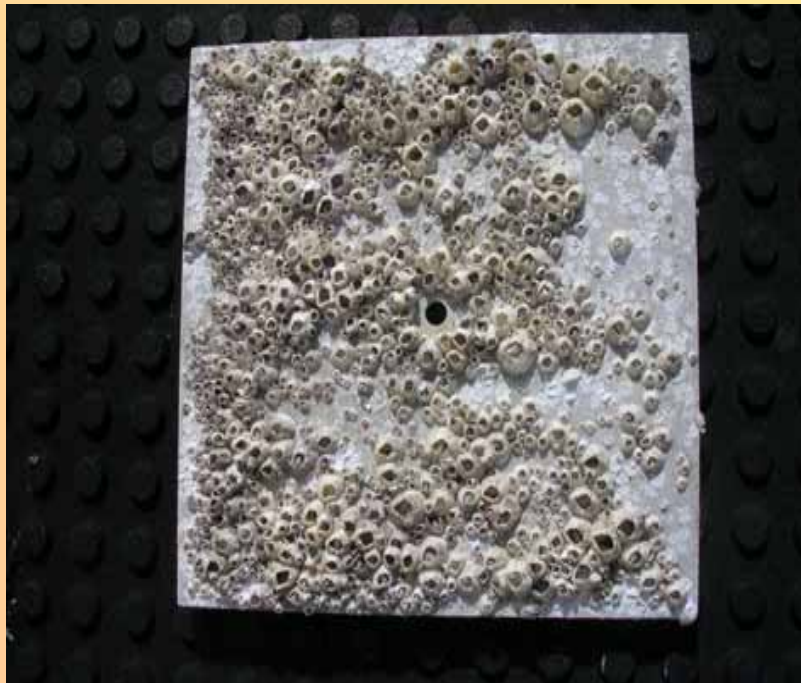
White Beach



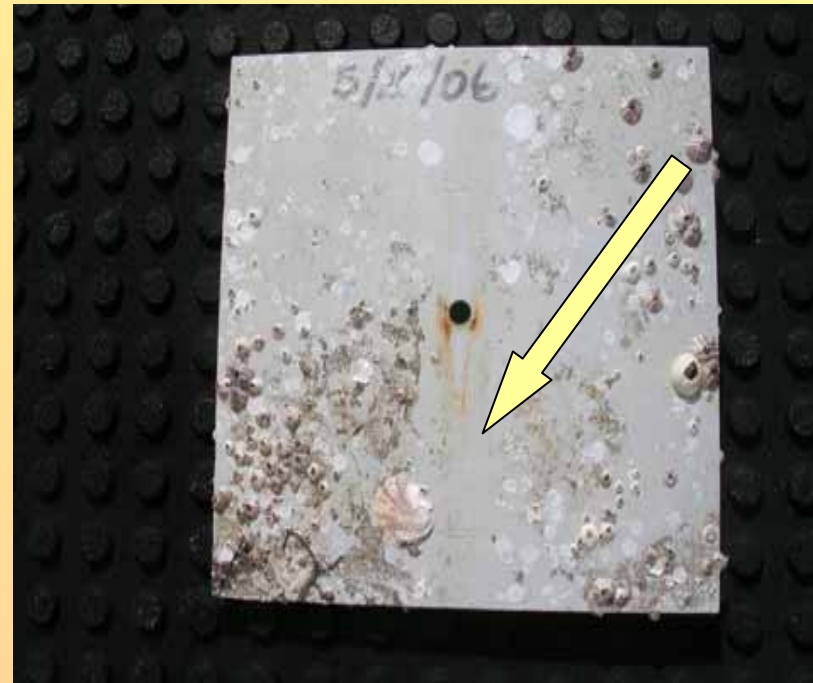
July, 2006

Settlement Plates

Turtle Beach



White Beach

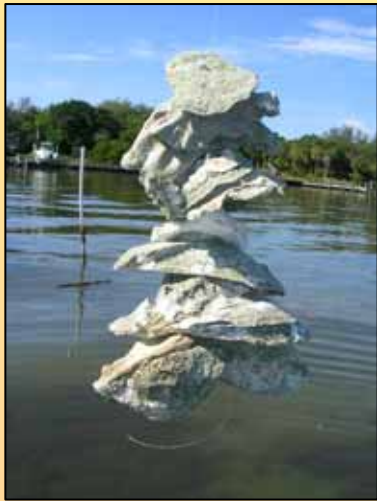


Year Two Monitoring

Turtle Beach (Left) and White Beach (Right) After One Year



Replace Plates with Shell Strings



Future Plans

- **Supplement each habitat with additional material**
- **Continue spat monitoring to determine temporal peaks in recruitment**
- **Initiate habitat utilization studies**
- **Prioritize additional sites throughout the entire SBEP area for oyster habitat creation**

Thank You!

