

MY TIME AT THE PASCAGOULA MISSISSIPPI LABORATORY



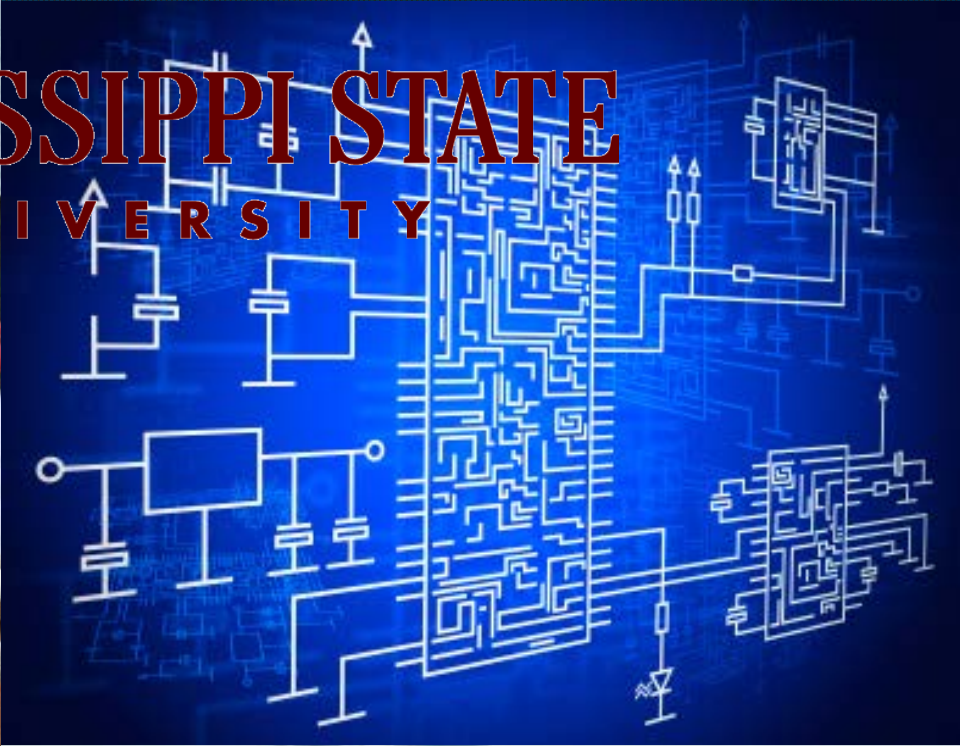
By: Francis Nam Phuong Tran
Mentor: Andre DeBose
Location: Mississippi Laboratory



NGI
Northern Gulf Institute



MISSISSIPPI STATE UNIVERSITY

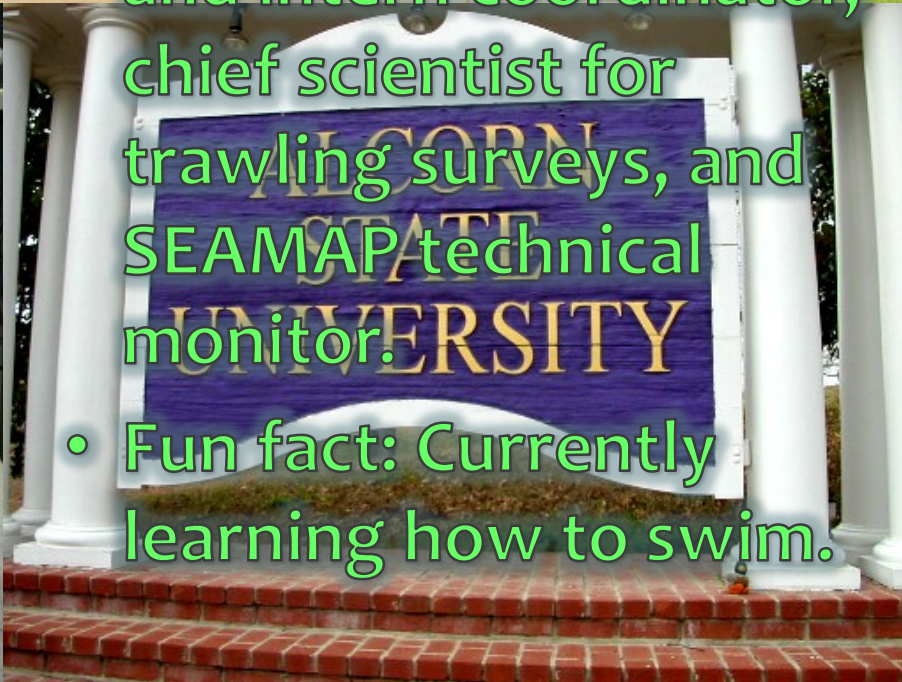


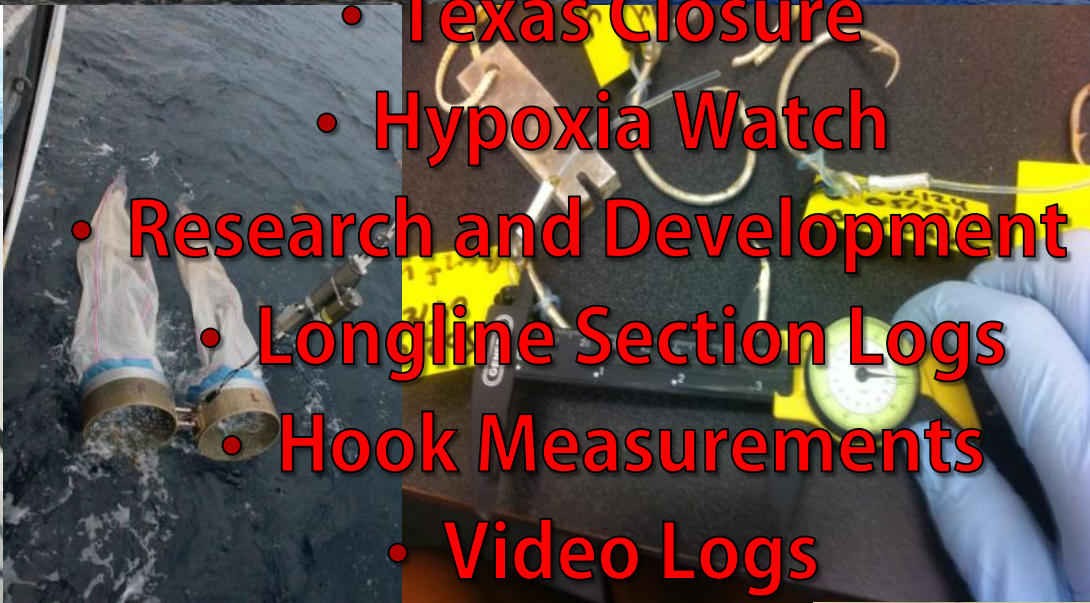
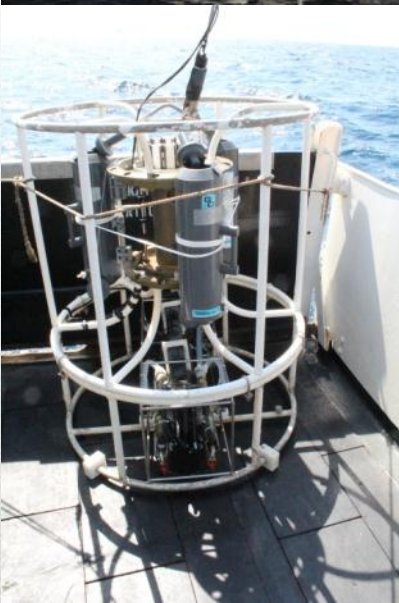
A Little About Me.

- “ Student at Mississippi State University.
- “ Beginning my Junior year in the Fall of 2012.
- “ Majoring in Electrical Engineering.
- “ I love the Gulf Coast and everything it has to offer.

WHO IS
ANDRE
DEBOSE?

- Graduated from Alcorn State University.
- Majored in Biology.
- Fisheries Biologist at Pascagoula Mississippi Laboratory.
- Current duties: outreach and intern coordinator, chief scientist for trawling surveys, and SEAMAP technical monitor.
- Fun fact: Currently learning how to swim.





- Ground Fish Survey
- Texas Closure
- Hypoxia Watch
- Research and Development
- Longline Section Logs
- Hook Measurements
- Video Logs

The Things I Did



Oregon II Ground Fish Survey (First Leg)

- **Neuston Net**
 - Used to skim the surface of the water for plankton and other delicate organisms.
 - Towed for ten minutes at a time unless large amounts of sargassum is present.
- **Bongo Net**
 - A bongo shaped frame that is lowered through the water column to collect plankton and other delicate organisms.
- **Shrimp Trawl**
 - A forty foot shrimp trawl that is towed for thirty minutes at a time to survey the sea life on the sea floor.



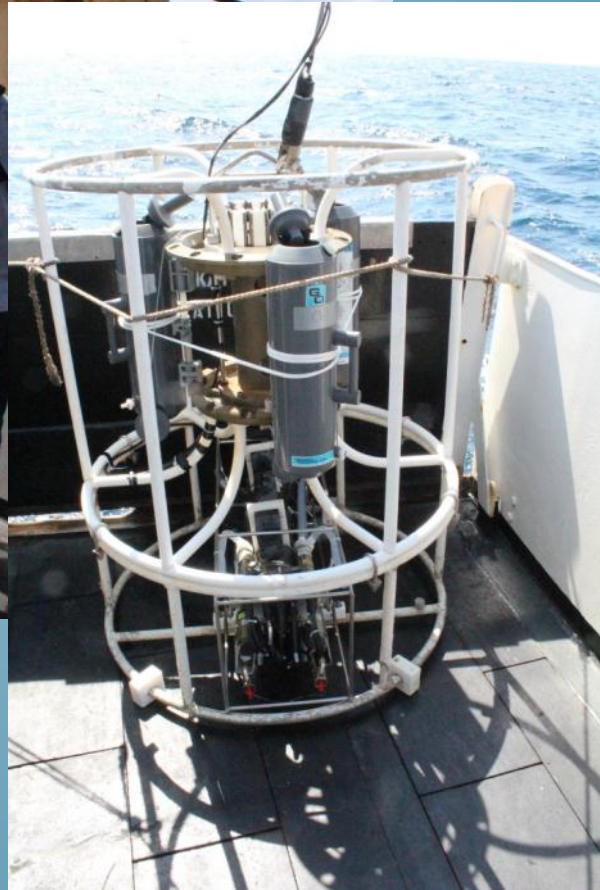
HYPOXIA WATCH

Hypoxia?

- Is where the dissolved oxygen concentration in the water is below 2mg/L.

- Problems?

- Most mobile marine life can not remain in these areas of low oxygen for long.

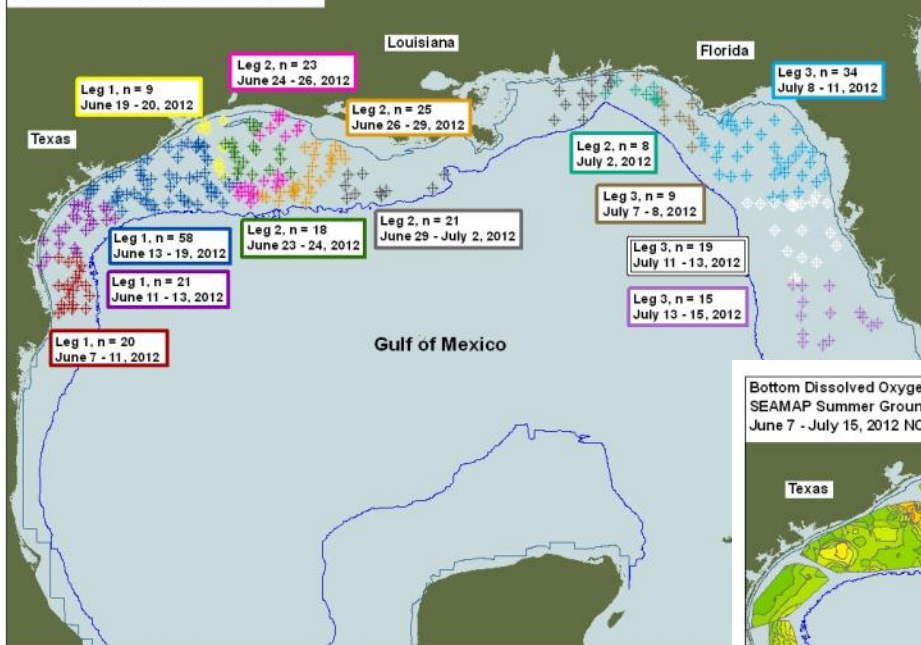


- Causes?

- Decomposition, fecal products, zooplankton feeding on algae.
- Excess nitrogen from the Mississippi River along with hydrologic and climatic factors.

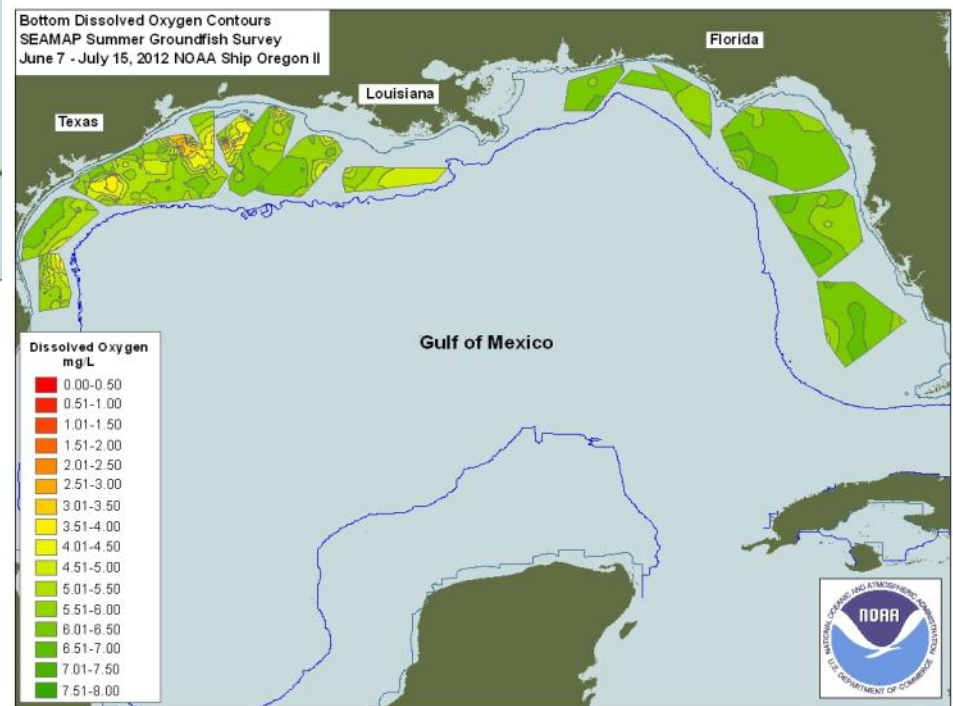
Hypoxia Watch Results

CTD Station Locations
SEAMAP Summer Groundfish Survey
June 7 - July 15, 2012 NOAA Ship Oregon II



To the left is the CTD (conductivity-temperature-depth sensor) locations for the SEAMAP Summer Groundfish Survey.

To the right is the bottom dissolved oxygen contours for the SEAMAP Summer Groundfish Survey.



Bluefin Tuna Weak Hook

Problem?

- Yellowfin Tuna longliners are catching Bluefin Tuna in the Gulf.
- The Bluefin Tuna that are being caught are coming into the Gulf to spawn and during this time the quality of the fish is not its best, therefore, do not want to be taken.

	A	B	C	D	E	F	
315	J02124	13	J159		1.78	YFT	P
316	J02124	13	J160		1.75	BET	P
317	J02124	13			1.8	BUM	Q
318	J02124	13	J162		1.79	YFT	P
319	J02124	13	J163		2.35	BFT	P
320	J02124	13	J164		1.86	YFT	Q
321	S04006	9	564		1.94	YFT	Q
322	S04006	9	567		1.75	YFT	P
323	S04006	9	565		1.86	YFT	Q
324	S04006	9	572		1.83	YFT	Q
325	S04006	9			3.44	UKN	Q
326	S04006	9	573		2	YFT	Q
327	S04006	9	566		1.82	YFT	Q
328	S04006	9	571		1.97	YFT	Q
329	S04006	9	569		1.82	YFT	Q
330	S04006	9	570		1.83	YFT	P
331	S04006	9			1.77	WHM	P
332	S04006	9			1.76	BUM	P
333	S04006	9			1.77	UKN	Q
334	S04006	9			1.83	YFT	Q
335	S04006	9	568		1.83	YFT	Q
336	S04006	8			1.79	BUM	P
337	S04006	8	561		1.75	YFT	P
338	S04006	8	540		1.8	YFT	Q
339	S04006	8	538		1.92	YFT	Q
340	S04006	8			1.8	SAI	Q
341	S04006	8	539		1.79	YFT	P
342	S04006	8			1.83	SAI	Q
343	S04006	8			2.38	UKN	Q
344	S04006	8	563		1.76	YFT	P
345	S04006	8	562		1.78	YFT	Q
346	S04006	8	565		1.71	YFT	Q
347	S04006	8	533		1.93	YFT	Q
348	S04006	4			3.48	UKN	Q
349	S04006	4	BFT01		2.72	BFT	Q
350	S04006	4			1.76	YFT	P
351	S04006	4			1.79	YFT	P
352	S04006	4	531		1.83	YFT	Q
353	S04006	3			1.79	WHM	Q
354	S04006	3	528		1.81	YFT	Q

Solution?

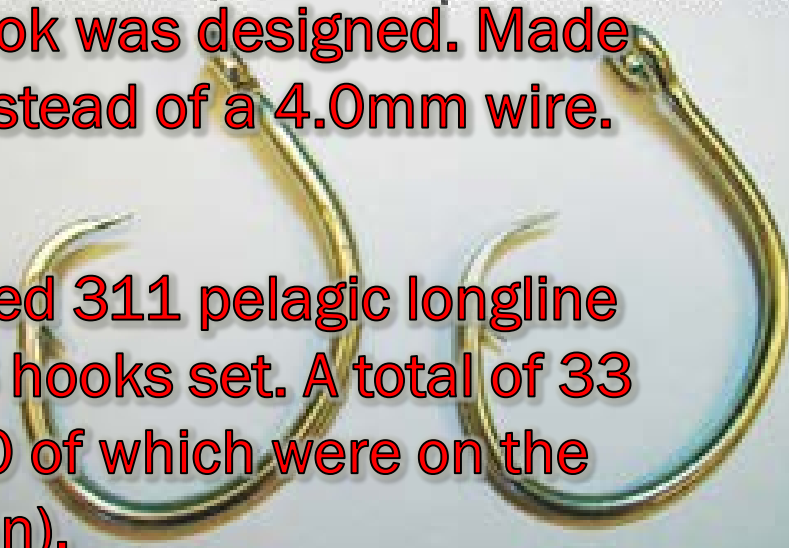
- A new 16/0 “weak” circle hook was designed. Made from a 3.65mm steel wire instead of a 4.0mm wire.

Testing.

- In 2010, six vessels completed 311 pelagic longline sets, with a total of 198,606 hooks set. A total of 33 Bluefin Tuna were caught, 10 of which were on the “weak” hook(56.5% reduction).

Control 16/0

Experimental 16/0



HOOK MEASUREMENT RESULTS(2010)

Scientific Name	Common Name	Control	Exp.	Reduction %	<i>p</i>	Reduction 95% CI
<i>Thunnus albacares</i>	YELLOWFIN TUNA	1049	1016	3.2	0.479	11.2 to -5.6*
<i>Thunnus thynnus</i>	BLUEFIN TUNA	23	10	56.5	0.0351**	8.7 to 79.3



- ✘ All Yellowfin Tuna longlining boats in the Gulf are now required to use the “weak” circle hook(16/0 3.65mm).

Section Log/ Video Log

ID	Trip	Haul	Section	D_in	D_out	T_in	T_out	Te
11219	TO3022		1	3/17/2010	3/17/2010	7:59:00 AM	11:15:00 PM	
11220	TO3022		1	3/17/2010	3/17/2010	8:53:00 AM	10:00:00 PM	
11221	TO3022		1	3/17/2010	3/17/2010	9:42:00 AM	10:56:00 PM	
11222	TO3022		1	3/17/2010	3/17/2010	10:36:00 AM	7:43:00 PM	
11223	TO3022		1	3/17/2010	3/17/2010	10:27:00 AM	10:56:00 PM	
11224	TO3022		1	3/17/2010	3/17/2010	11:47:00 AM	6:02:00 PM	
11225	TO3022		2	3/18/2010	3/19/2010	8:10:00 AM	12:08:00 AM	
11226	TO3022		2	3/18/2010	3/18/2010	9:01:00 AM	10:55:00 PM	
11227	TO3022		2	3/18/2010	3/18/2010	9:53:00 AM	9:40:00 PM	
11228	TO3022		2	3/18/2010	3/18/2010	10:42:00 AM	8:25:00 PM	



2010	11:31:00 AM	7:10:00 PM						
2010	11:53:00 AM	6:27:00 PM						
2010	8:30:00 AM	12:11:00 AM						
2010	10:00:00 AM	11:01:00 PM	0	0 26-44.4	26-43.7	88-48.2	88-51.9	
2010	10:06:00 AM	9:53:00 PM	0	0 26-44.4	26-43.1	88-41.6	88-47.2	
2010	10:52:00 AM	8:50:00 PM	0	0 26-43.5	26-43.3	88-35.0	88-39.7	
2010	10:57:00 AM	7:50:00 PM	0	0 26-43.1	26-43.7	88-28.3	88-32.1	
2010	12:00:00 PM	7:11:00 PM	71	71.2 26-42.8	26-43.0	88-25.1	88-28.6	
2010	7:11:00 AM	8:20:00 PM	69.9	70.1 26-45.4	26-46.4	89-00.5	89-07.6	
2010	8:04:00 AM	7:17:00 PM	0	0 26-49.3	26-47.4	88-54.8	89-00.5	
2010	8:52:00 AM	6:19:00 PM	0	0 26-52.8	26-52.1	88-48.9	88-54.8	
2010	10:00:00 AM	11:00:00 PM	0	0 26-51.1	26-51.1	88-47.2	88-47.2	
2010	10:27:00 AM	4:18:00 PM	0	0 26-59.1	26-58.2	88-36.8	88-40.3	
2010	11:52:00 AM	3:45:00 PM	68.1	68.1 27-00.5	26-59.7	88-34.3	88-37.6	

- Recording longline section logs into a computer data base.
- Watching raw footage and logging key aspects for later or future reference.

section

Trip Haul

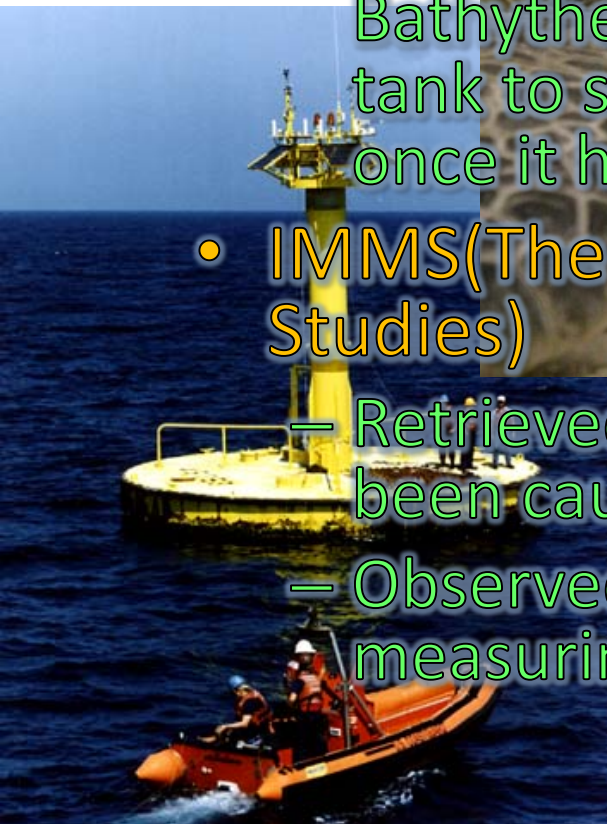
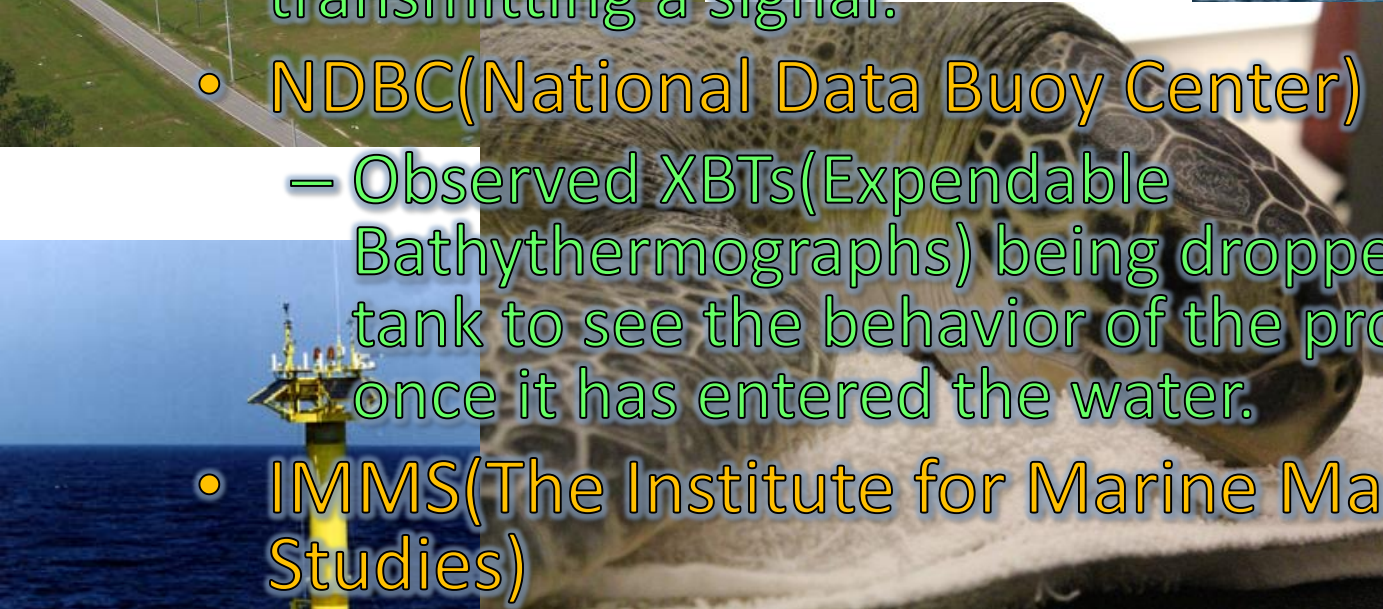
Section Date_in Time_in Temp_in Lat_in Long_in

Date_out Time_out Temp_out Lat_out Long_out

Record: 1 of 666

Other Things I Did

- Responded to a buoy that was no longer transmitting a signal.
- NDBC(National Data Buoy Center)
 - Observed XBTs(Expendable Bathythermographs) being dropped into a tank to see the behavior of the projectile once it has entered the water.
- IMMS(The Institute for Marine Mammal Studies)
 - Retrieved hooks from sea turtles that had been caught on hook and line.
 - Observed the process of tagging and measuring sea turtles.





CONCLUSION

❖ Without the help of NOAA's National Marine Fisheries Service and their efforts with the "management, conservation, and protection of living marine resources", our waters may not be what they are today.

- Loss of livelihoods, resources, and recreation.
- Fishery resources in the Gulf generates about 2.8 billion annually(2010).

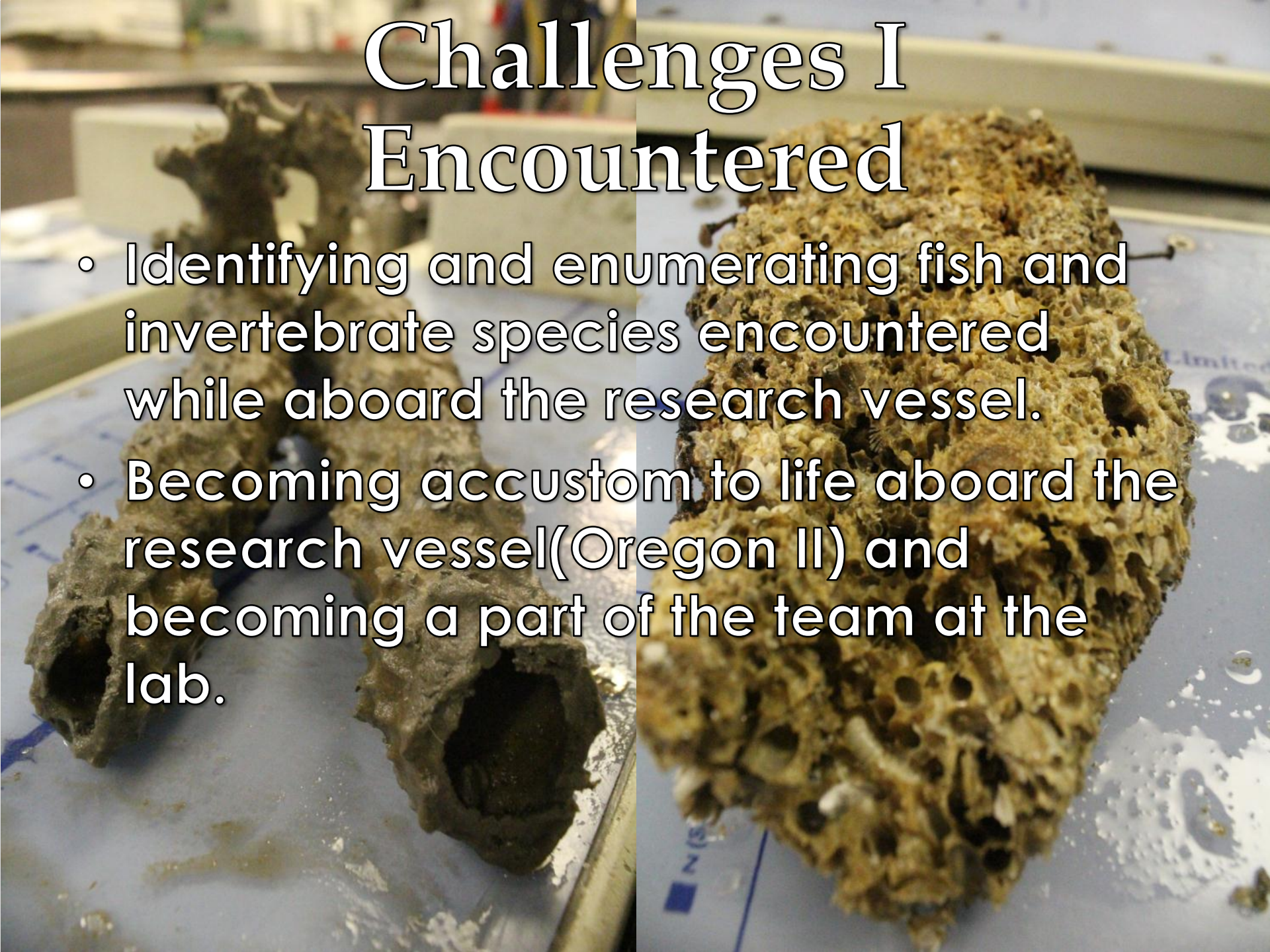


SKILLS I LEARNED

- By better understanding the fishery, we become more responsible.
 - Working with fisherman to use more selective fishing habits. TEDs(turtle excluder devices) and BRDs (by-catch reduction devices)
- Being given a problem and coming up with a solution.
 - Bluefin Tuna Study

Challenges I Encountered

- Identifying and enumerating fish and invertebrate species encountered while aboard the research vessel.
- Becoming accustomed to life aboard the research vessel(Oregon II) and becoming a part of the team at the lab.



A brown pelican stands on the deck of a boat, looking towards the left. The background shows a vast blue ocean under a sky with light, wispy clouds. The pelican has a long, dark beak and is perched on a white object, possibly a piece of equipment or a small structure on the boat.

Thoughts

- *The experience I had these past ten weeks is one that I could not put a value on.*
- *The NOAA-NGI Internship Program has opened my eyes to what is out there.*
- *I am looking forward to the future and what it holds.*
- *NOAA as a career?*



*Special
Thanks*

- I would first like to thank the NOAA-NGI Diversity Internship Program for making my experience this summer possible.
- Secondly, I would like to thank Andre DeBose and John Mitchell for making my stay here a memorable one.
- And lastly, I would like to thank everyone at the lab for being so welcoming and gracious.

References

- 2010 Interim Report Update on Gulf of Mexico Pelagic Longline Bluefin Tuna Mitigation Research. Daniel Foster and Charles Bergmann.
- www.ncddc.noaa.gov/hypoxia/
- www.nmfs.noaa.gov/