Using "Smart" Devices as Data Collection Tools for the Private Recreational Fishing Sector

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Background

- 20% buffer on Red Snapper harvest due to consistent overharvest of quota
- Season has been drastically reduced
 Only 3 days in 2017*!
- MRIP/ TPWD creel surveys not designed to get harvest estimates from abbreviated season
- **Opportunity to use new data reporting techniques**



The Progression

In 2011, piloted "app" with 16 for-hire vessels throughout Gulf
Stop-by-stop catch and effort



- In 2015, restructured the app for private anglers
 - Catch, effort, and socioeconomic data collected
 - "hot-spot" selective sampling (2015 & 2016)
- In 2017, changed sampling technique to address high error
 - Followed TPWD stratified proportional random sampling



Steps to Enter Catch

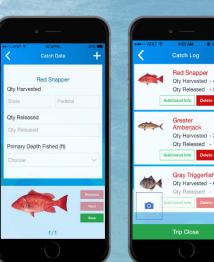
Step 1: New Trip

Step 2: Catch Data

Step 3: End Trip



	•		
CODO AT&T ♥	12:51 PM New Trip	• \$ 93%	
Trip Start		Mark as Demo Trip	
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d Snapper Harvested - 4 Released - 5 al Info Delete	>		
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AT&T 😤	1:00 РМ Trip Close	• + D2 H
General Fist	ning Location	
Latitude		
Longitude		0
Trip duration	n (Hrs)	
0.5		
Primary Dep	oth Fished (ft)	
Choose		
Notes/Com	ments	
Notes/Com	nents	

Gulf Access Sampling

Houston

San Antonio

San Luis Pass

Alamo Mound

San Luis Pass

Matagorda Harbor River Bend Public Ramp

Froggie's Bait & Tackle Fishing Center Ramp Clark's Seafood Ramp

Cove Harbor North Matagorda Island Ransom Channel Port A Rample Fisherman's Wharf Corpus Christi Packery Channel Ramp, Clem's Marina Billing's Marina

Statson Bank

udder Basin

Claypile Bank

 2015 & 2016 focused on validation sampling

Broadway Public Ramp

• 2017 randomized creels

Google

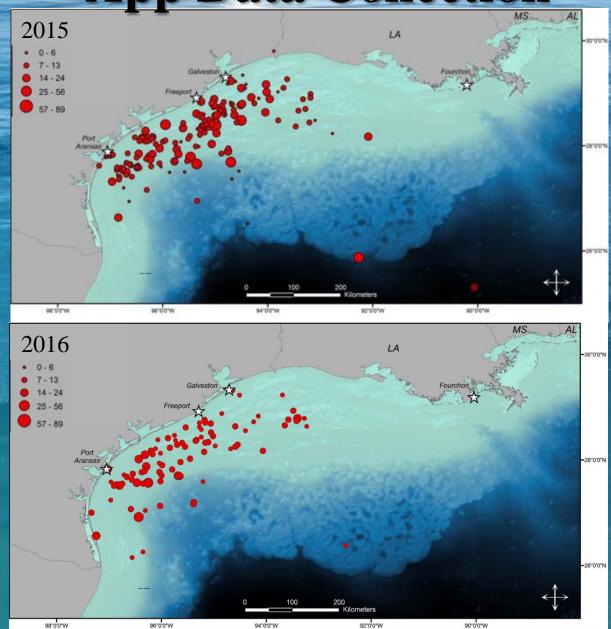
Port Mansfield Boat Basin Port Mansfield State Ramp

Reynosa

© 2017 INEGI © 2017 Google Image Landsat / Copernicus Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Mansfield Dome

App Data Collection



App Data Collection

Species	Number Captured	Percent of Total Capture	Number Harvested	Discard Rate	Number Released	Number of Anglers
Red Snapper	3459	82.0%	1519	56.1%	1940	663
King Mackerel	139	2.4%	85	38.8%	54	148
Dolphinfish	119	1.0%	98	17.6%	21	99
Blue Runner*	57	0.7%	42	26.3%	15	21
				40.00/		117
Depth (m)	Number Released	N	lumber Harv	ested	Disc	ard Rate
1 - 10	10		8		5.	5.6%
11 - 20	48		91		3-	4.5%
21 - 30	399		138		7-	4.3%
31 - 40	611		431		5	8.6%
41 - 50	596		600		4	9.8%
51 - 60	0		0		0	0.0%
61 - 70	112		82		5	7.7%
71 - 80	15		53		2	2.1%
81 - 90	0		0		0	0.0%
91+	49		67		42	2.2%
Unknown	100		49		6	7.1%
Total	1940		1519		5	6.1%

App Data Collection

Questions $(N = 37)$		Mean
People living in your household? $(n = 35)$		2.9
· · · · · · · · · · · · · · · · ·		
How many people in your household, have been recreational saltwater fishing		25
in the last 12 months? $(n = 35)$		2.5
How many days did you spend saltwater fishing in the last 12 months? (n = 35)		38
How many of those days were spent offshore? $(n = 35)$		12
How many days will this trip last? $(n = 37)$		1.5
$C_{\rm enders}$ of mean and ends (m. 27)	Mala	070/
Gender of respondent: (n = 37)	Male Female	97% 3%
	remate	370
Do you keep your boat at a marina or trailered? (n = 37)	Marina	32%
$b \circ y \circ u$ keep y $o u i v \circ u i u i u i u i u i u i u i u i u i u$	Trailered	68%
		0070
What is the estimated bait and tackle expenses for this trip? $(n = 37)$		\$180
	Total =	\$6,673
What is the estimated fuel consumption used for this trip (gallons)? (n = 37)		85.6
	Total =	3,166
What is the total distance traveled by boat during this trip (miles)? $(n = 37)$		106
	Total =	3,921

2017 season

Initially only 3 days

• Gulf states gave up state water days for 36 additional federal days (39 days total)

- Re-opened June 23rd and closing Sept 4th
 - Friday Sunday
 - Included July 3rd & 4th (4th of July weekend) and Sept 4th (Labor Day weekend)

Harvest Estimates

Private Recreational Summaries

	Number Harvested	Weight (lbs)	Angler Trips		
2017 (39 days) *					
TX- iSnapper	TBD	TBD	TBD		
TX- TPWD	TBD	TBD	TBD		
2016 (11 days)					
TX- iSnapper	$55,062 \pm 31,610$	262,769	27,825		
TX- TPWD	$18,743 \pm 4,554$	89,416	12,277		
2015 (10 days)					
TX- iSnapper	58,251 ± 25,344	277,127	23,358		
TX- TPWD	$32,062 \pm 6,229$	152,771	17,126		
* 2017 estimates are currently being calculated and are considered preliminary; anticipated to be finalized in early 2018					

Conclusions

• Smartphones have the capability to collect self-reported fisheries data

• Need high reporting and validation rates

Challenges

- Abbreviated seasons, narrow window to promote data collection
- Frustration regarding data collection
 - Distrust of data collection process
- Angler awareness took time
 - Multiple medias used to encourage anglers to report
 - 3 continuous years anglers are now familiar with app

• Anglers value contribution but also want to see *immediate* benefits

Future Recommendations

Mandatory reporting?

• Validation of vessel registration number during registration

"Guest trip" submission

Acknowledgements







MARINE RECREATIONAL INFORMATION PROGRAM

Center for SPORTFISH SCIENCE & CONSERVATION



EXAS A&M NIVERSITY ORPUS HRISTI FOR GULF OF MEXICO STUDIES

PHOLEN LS, DEPARTMENT OF COMMENSION

Questions?

