

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

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*Center for*  
**SPORTFISH SCIENCE  
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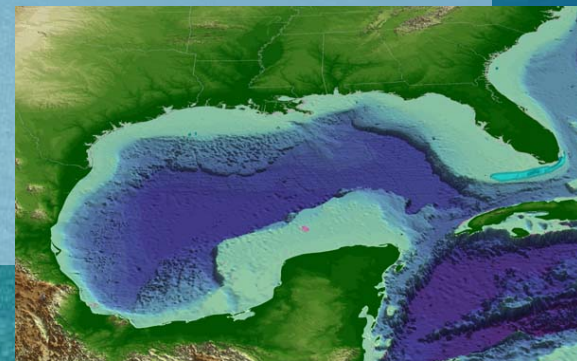
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# Background

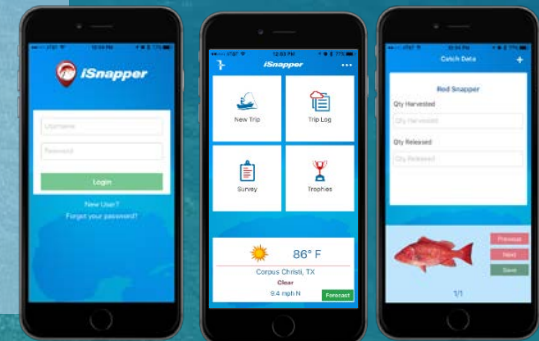
- **20% buffer on Red Snapper harvest due to consistent overharvest of quota**
- **Season has been drastically reduced**
  - Only 3 days in 2017\*!
- **MRIP/ TPWD creel surveys not designed to get harvest estimates from abbreviated season**
- **Opportunity to use new data reporting techniques**





# The Progression

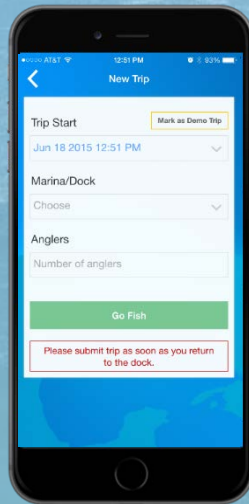
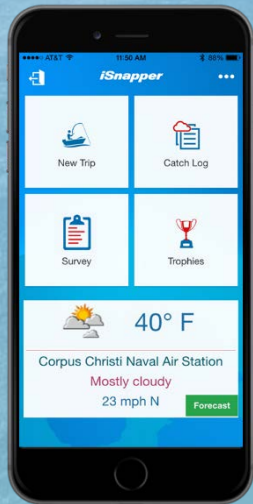
- In 2011, piloted “app” with 16 for-hire vessels throughout Gulf
  - Stop-by-stop catch and effort
- In 2015, restructured the app for private anglers
  - Catch, effort, and socioeconomic data collected
  - “hot-spot” selective sampling (2015 & 2016)
- In 2017, changed sampling technique to address high error
  - Followed TPWD stratified proportional random sampling



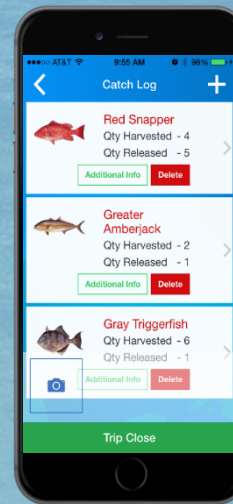
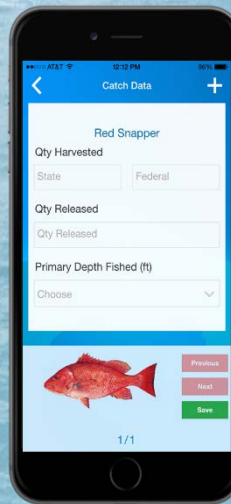


# Steps to Enter Catch

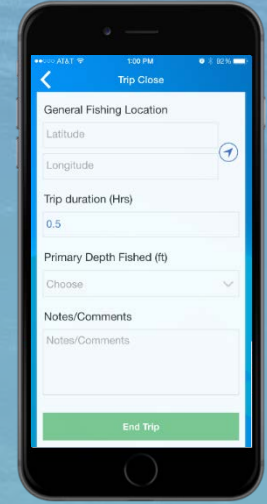
## Step 1: New Trip



## Step 2: Catch Data

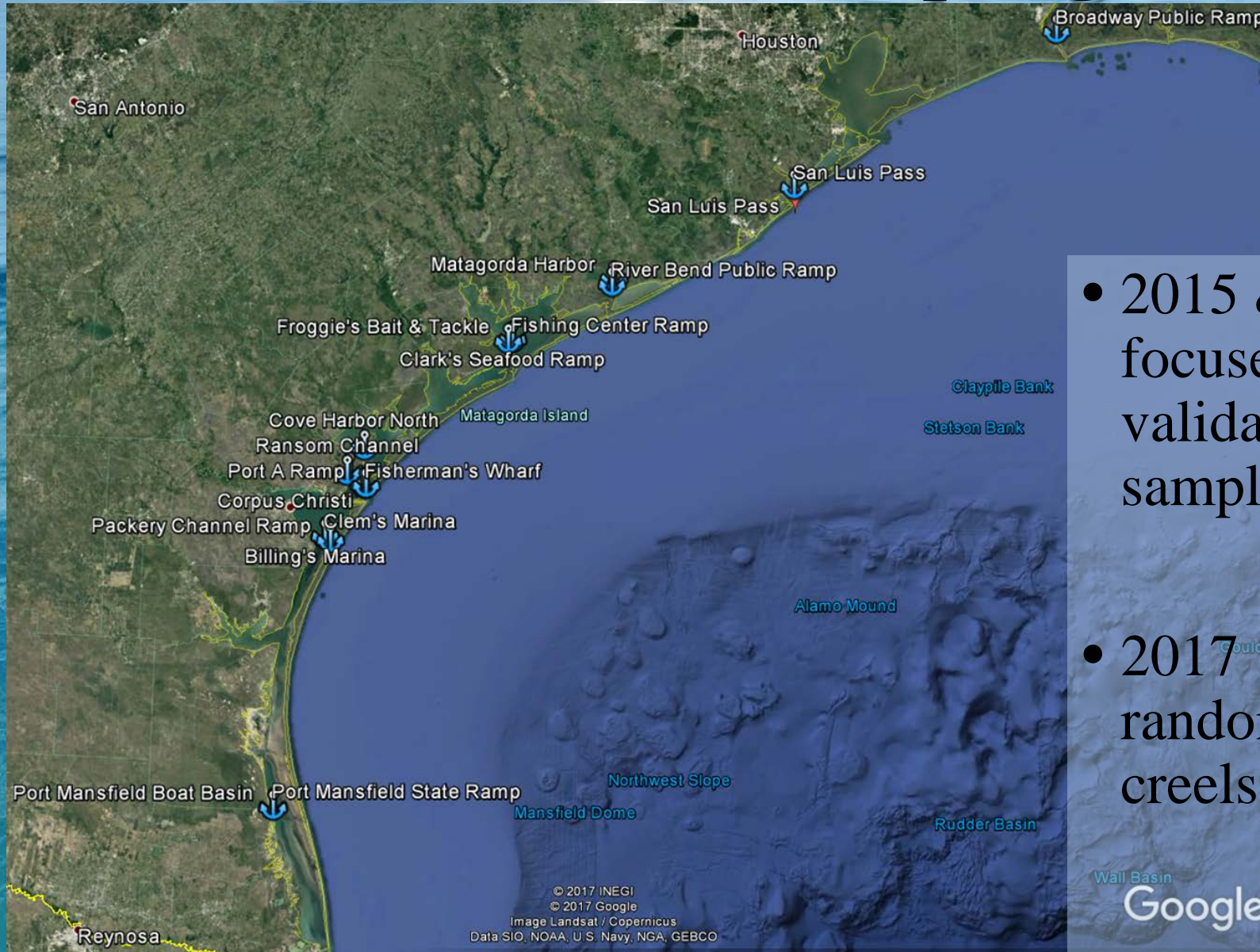


## Step 3: End Trip





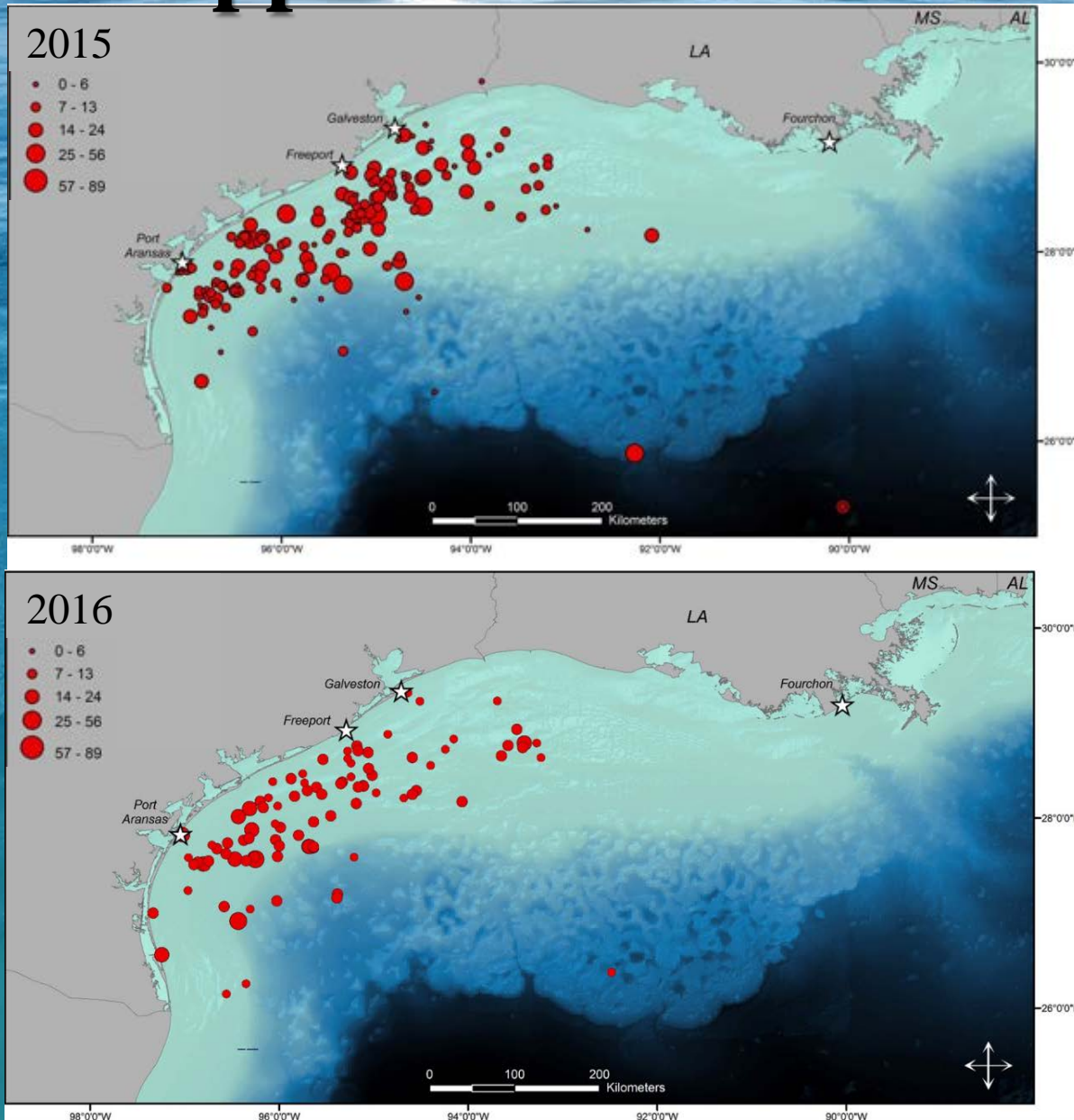
# Gulf Access Sampling



- 2015 & 2016 focused on validation sampling
- 2017 randomized creels



# 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
Catch	50	0.0%	20	40.0%	30	115
Depth (m)	Number Released		Number Harvested		Discard Rate	
1 - 10	10		8		55.6%	
11 - 20	48		91		34.5%	
21 - 30	399		138		74.3%	
31 - 40	611		431		58.6%	
41 - 50	596		600		49.8%	
51 - 60	0		0		0.0%	
61 - 70	112		82		57.7%	
71 - 80	15		53		22.1%	
81 - 90	0		0		0.0%	
91+	49		67		42.2%	
Unknown	100		49		67.1%	
Total	1940		1519		56.1%	

# 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 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
Gender of respondent: (n = 37)	Male	97%
	Female	3%
Do you keep your boat at a marina or trailered? (n = 37)	Marina	32%
	Trailered	68%
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 23<sup>rd</sup> and closing Sept 4<sup>th</sup>**
    - **Friday – Sunday**
    - **Included July 3<sup>rd</sup> & 4<sup>th</sup> (4<sup>th</sup> of July weekend) and Sept 4<sup>th</sup> (Labor Day weekend)**

# Harvest Estimates

## Private Recreational Summaries

	Number Harvested	Weight (lbs)	Angler Trips
<b>2017 (39 days) *</b>			
TX- iSnapper	43,992 $\pm$ 15,311	238,548	24,364
TX- TPWD	TBD	TBD	TBD
<b>2016 (11 days)</b>			
TX- iSnapper	55,062 $\pm$ 31,610	262,769	27,825
TX- TPWD	18,743 $\pm$ 4,554	89,416	12,277
<b>2015 (10 days)</b>			
TX- iSnapper	58,251 $\pm$ 25,344	277,127	23,358
TX- TPWD	32,062 $\pm$ 6,229	152,771	17,126

\* 2017 estimates are for the extended federal season 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

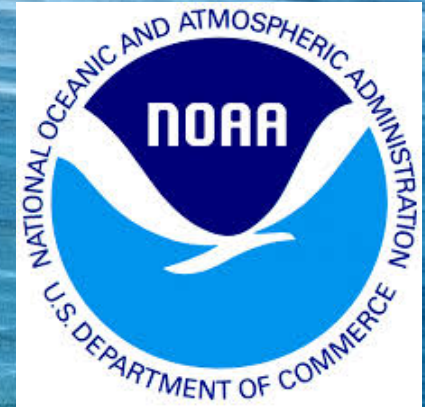


# **Future Recommendations**

- **Mandatory reporting?**
- **Validation of vessel registration number during registration**
- **“Guest trip” submission**



# Acknowledgements



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# Questions?

