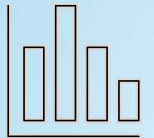
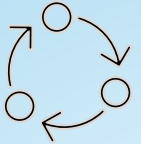
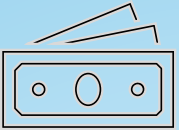
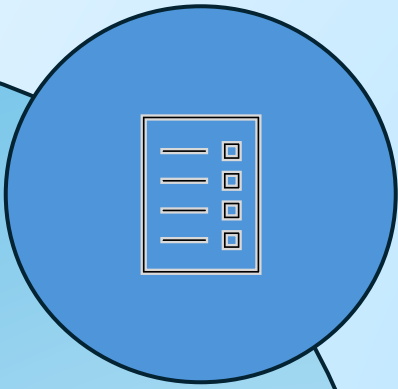
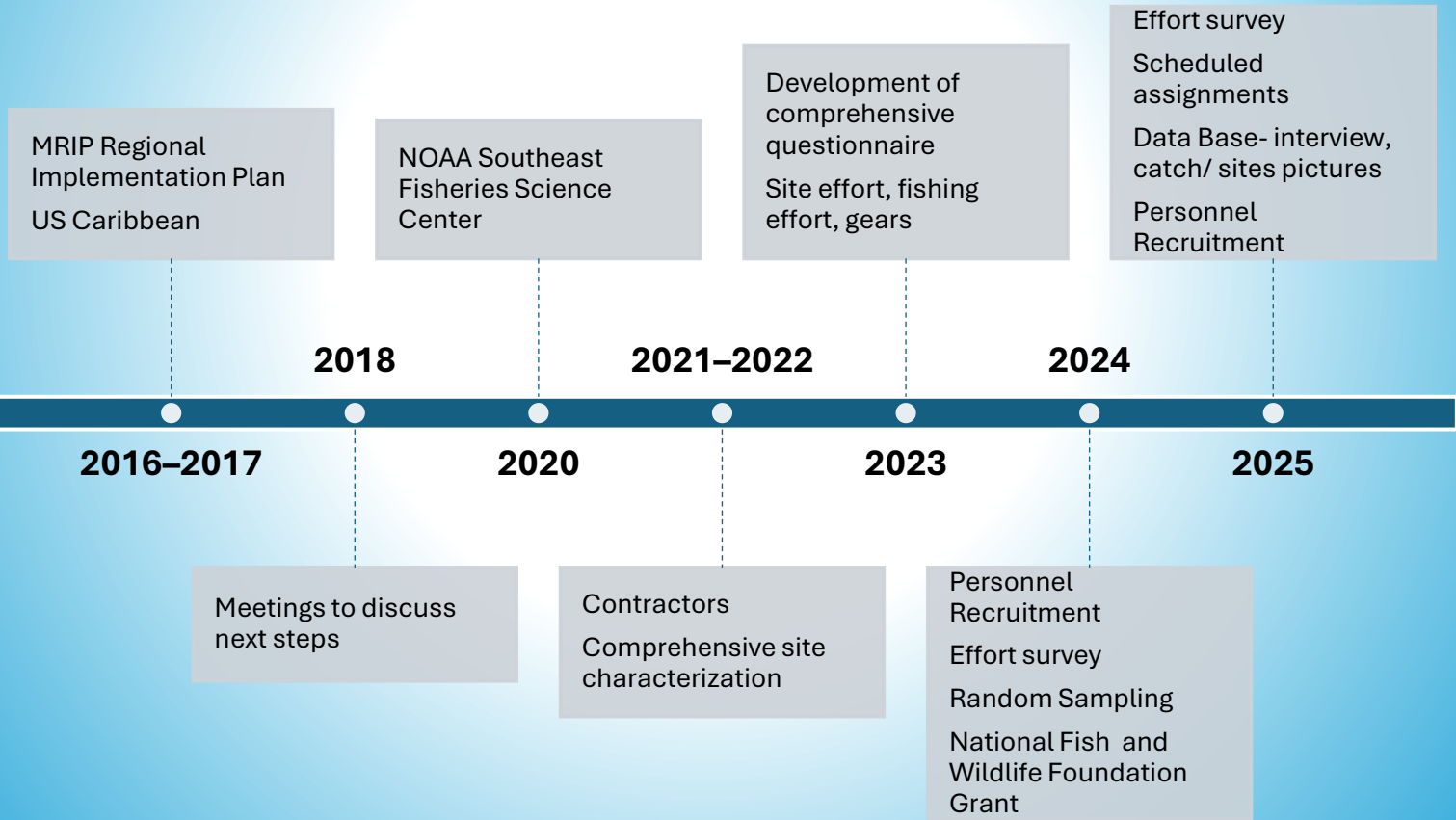


# An Update of the Puerto Rico Marine Recreational Statistics Program



# Timeline



# Funding



Recreational and Sport Fishing Division

DNER staff salaries  
Vehicles  
Equipment



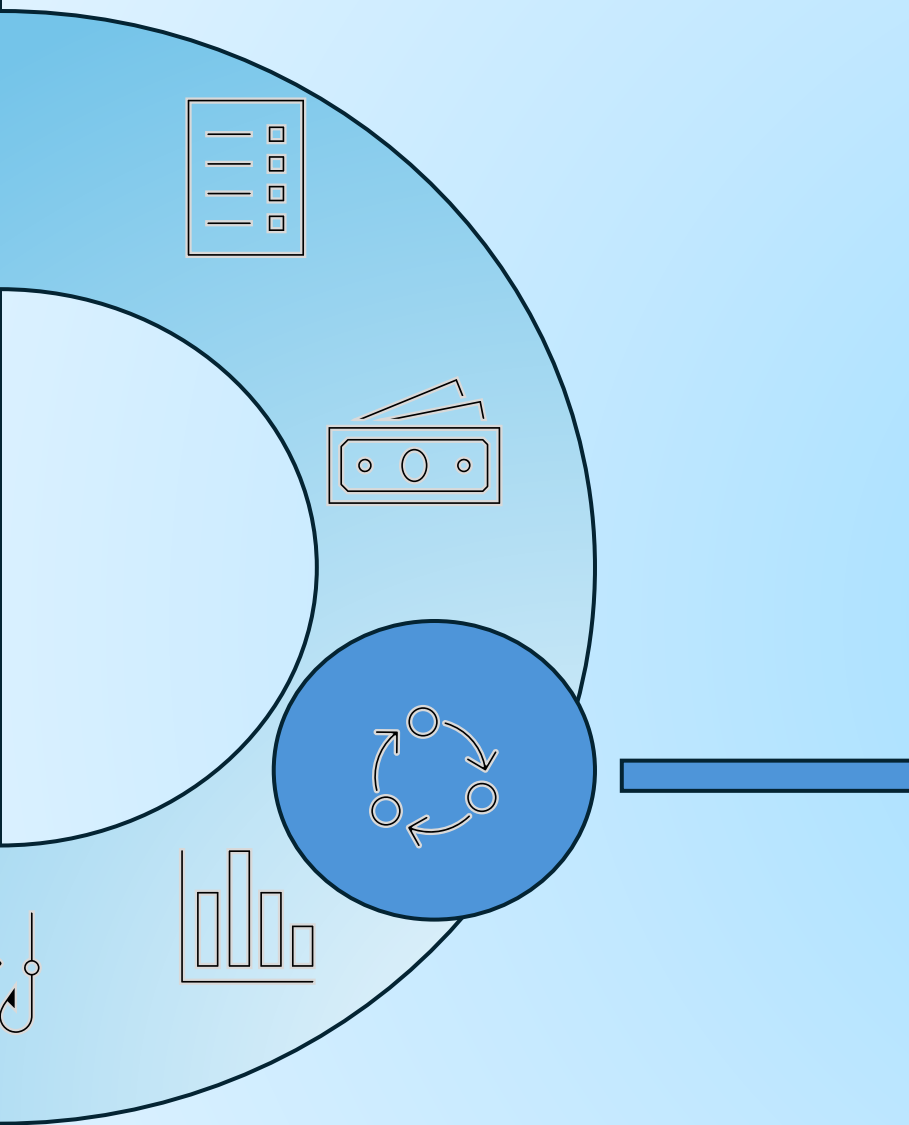
Southeast Fisheries  
Science Center

Fisheries  
Information  
System (FIS)  
Caribbean  
Territorial  
Initiative (TI)



National Fish and  
Wildlife  
Foundation Grant

- Personnel
- Data Quality
- Electronic Data system



## Methodology

- By weekly meetings
- Scheduled assignments




# Methodology

- Random sampling
- Two Periods
  - 10:00-13:30
  - 13:30-17:00

## ➤ Site Characterization




 PUERTO RICO MARINE RECREATIONAL STATISTICS SURVEY  
 SITE CHARACTERIZATION

Interviewer name: **KCV PR-002** Date: **02/25/2014**

Site ID: **2007** Site Status:

State: **Puerto Rico** Latitude: **18.0051503**

County: **Cabo Rojo** Longitude: **-87.1718111**

County Code: **23** Director: **Boschero, Rene Ramon**  
**Entrenador de Boscheron**

Site Name: **Boscheron**

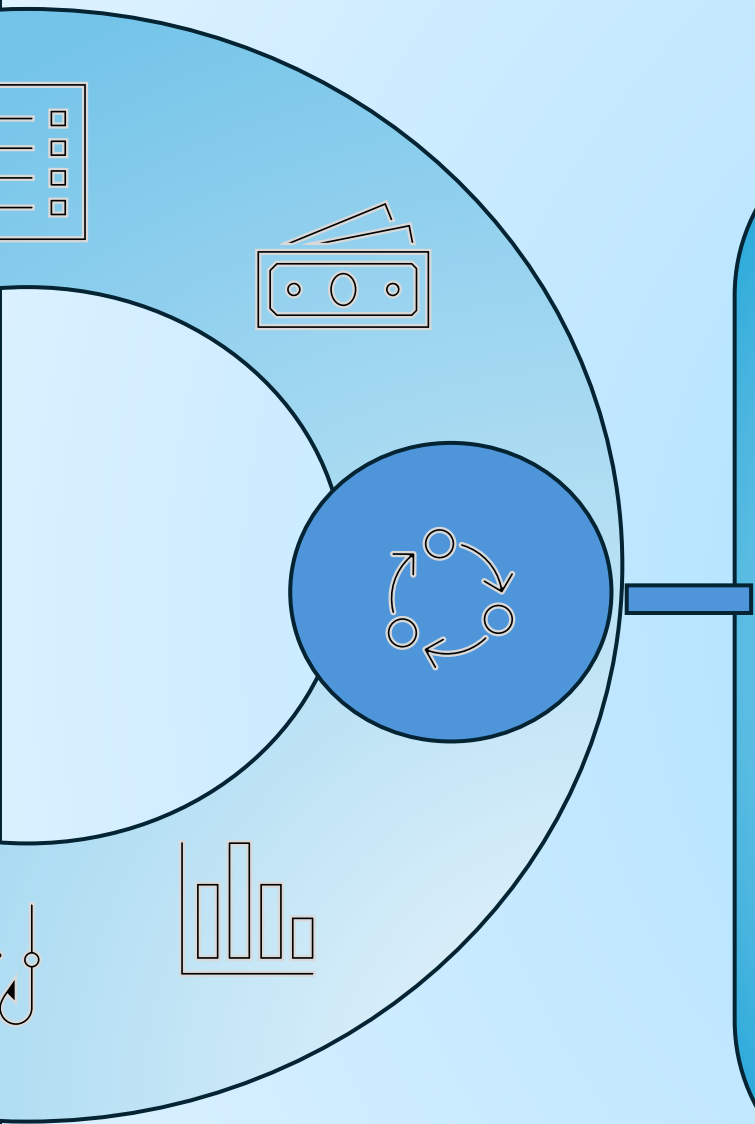
Street Address:

City: **Cabo Rojo** Zip: **00622**

State: **PR**

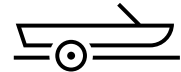
	Yes/No	Inland	Ocean	Both	N/A
Tackle shop	N	Y			
Fish cleaning stations	N				
Retail bait	N				
Boat storage	N				
Boat maintenance/Repair	N				
Fuel Dock	N				
Restaurant (on-site/immediate vicinity)	Y				
Lodging (on-site/immediate vicinity)	Y				
Fishing activity affected by tide	Y				
Tournaments	N				
Private Access	N				
Can we interview?	Y				
Is fee charged to the public for use of site?	Y				

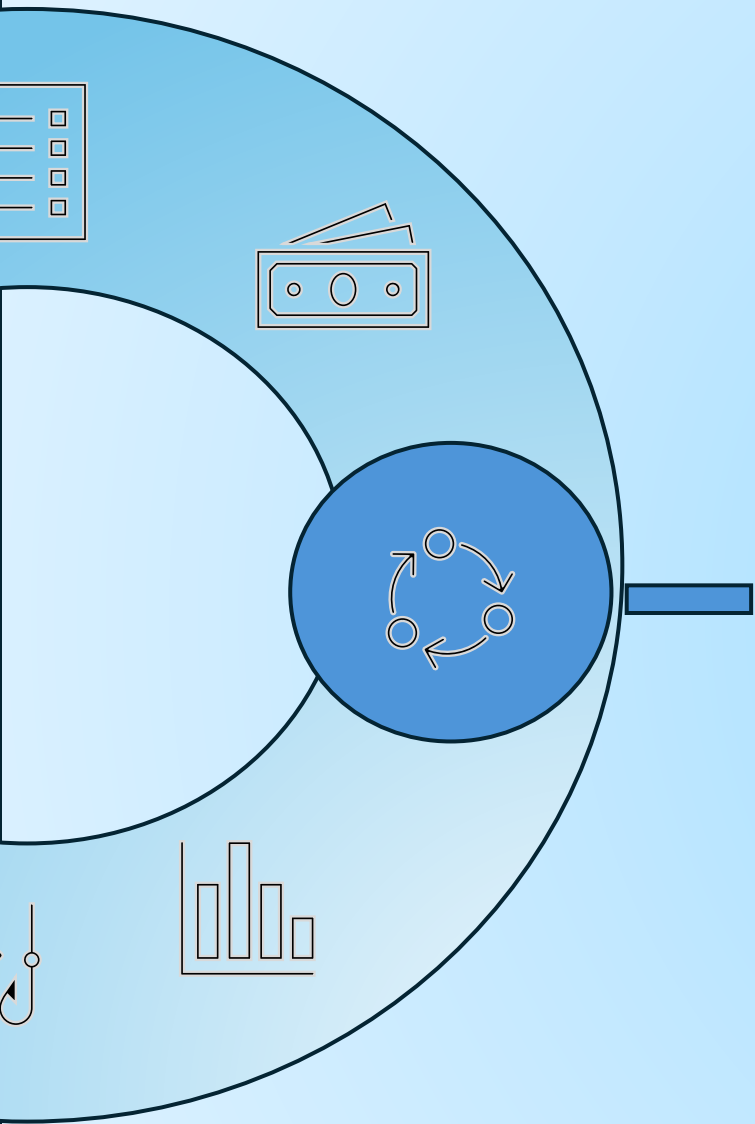
	Inland	Ocean	Both	N/A
Shore Area	Y			
Beach Bank		Man.	Both	N/A
Shore Made	Y			
#Boat slips				
# Parking spaces				
# Trailer Parking spaces				
# Ramps				
# Charter using site				
Comments				



## Methodology

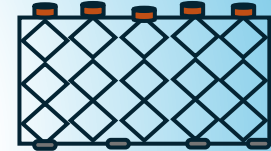
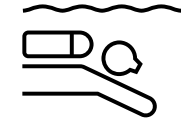
- Interview
- General Individual Boat Trip Info
  - Fleet type-commercial, private, for hire, other
  - Boat- description
  - Activities for the day
  - Questions about fishing activity
    - Bait, target species, FAD's



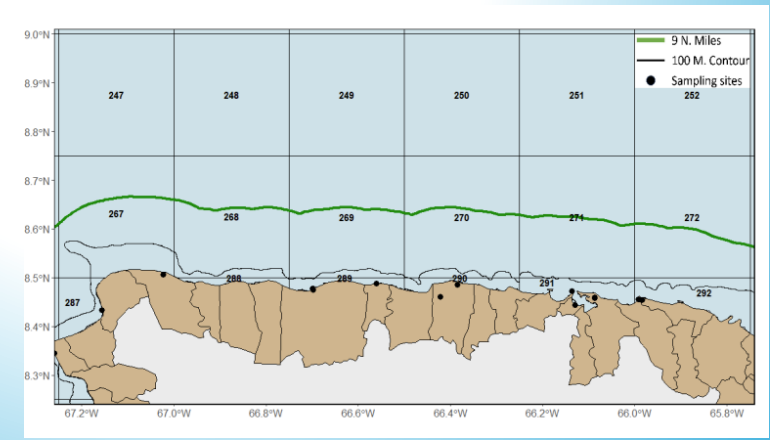


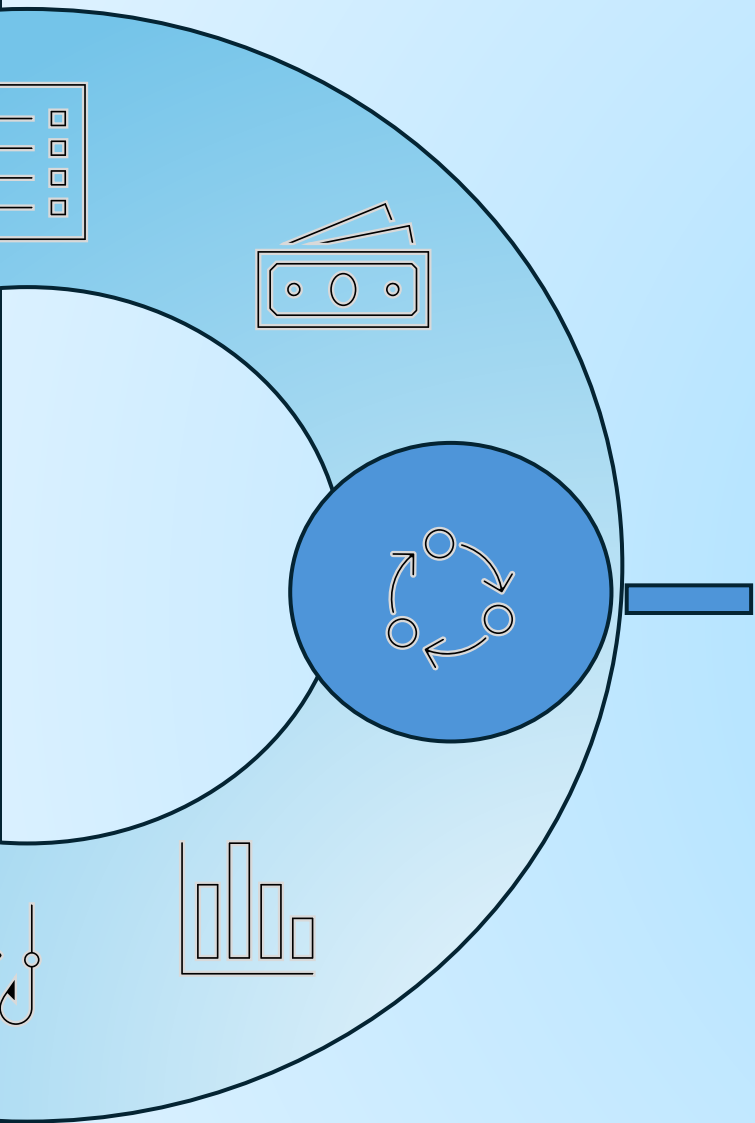
## Methodology

➤ Effort per Gear



➤ Fishing Location

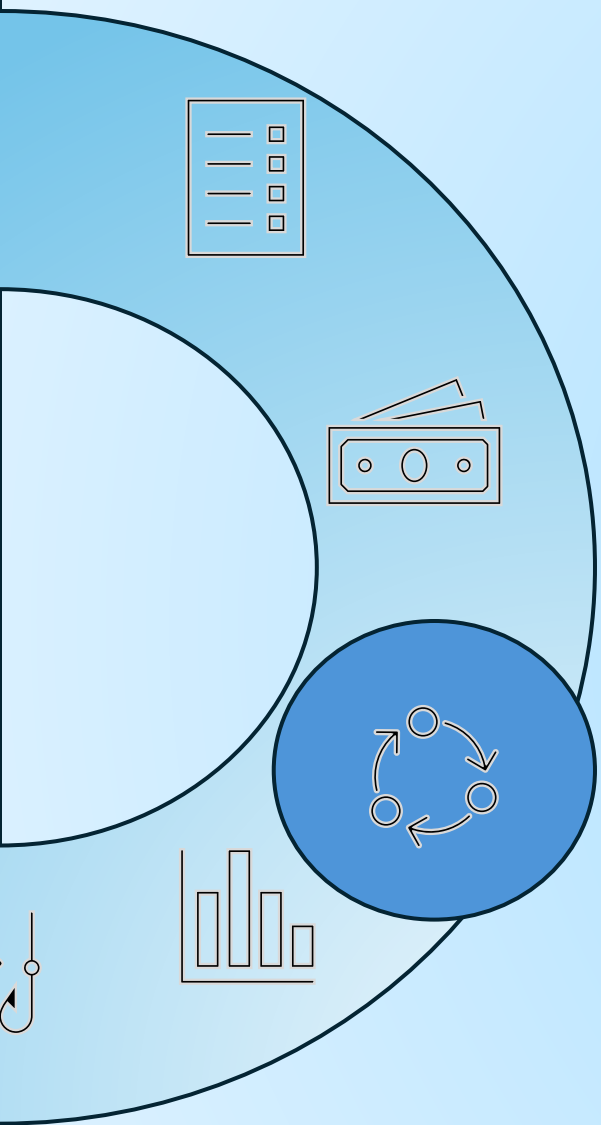




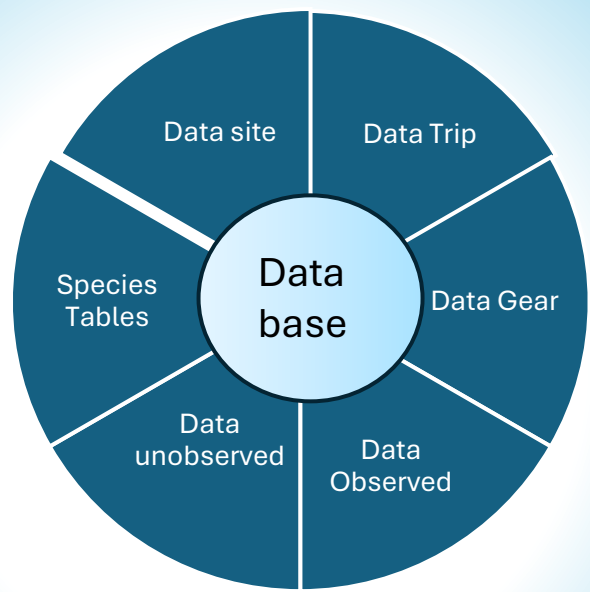
## Methodology

- Catch characterization
  - All catch
    - Length
    - Weight
  - Unobserved catch

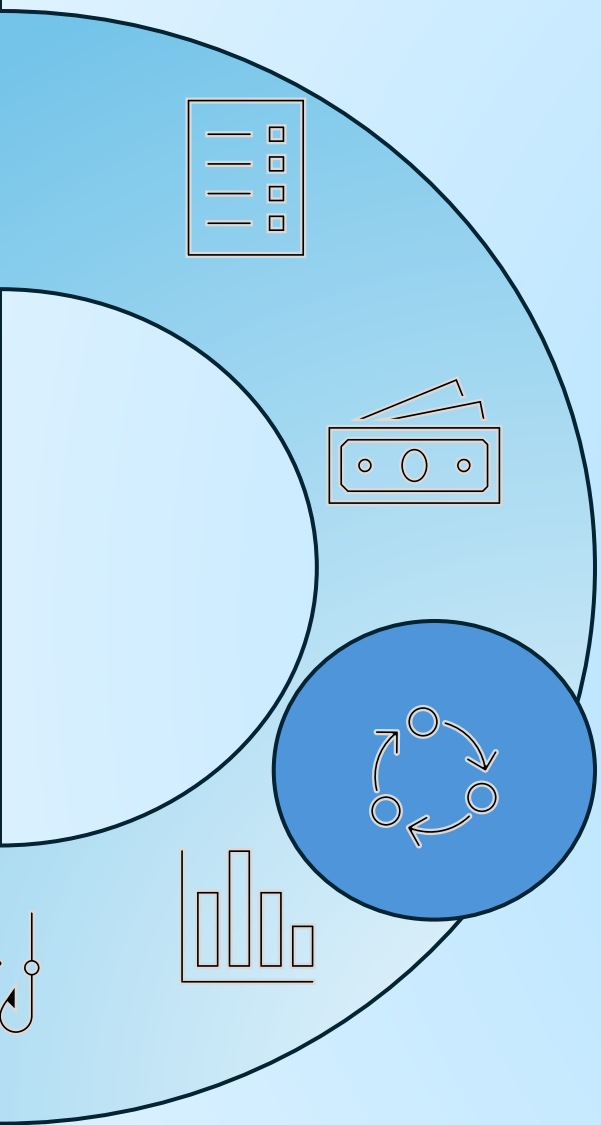




# Methodology



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	data_site	location_code	site_id	sampler_id	assignment	shift_time	arrival_time	departure_time	weather	n_trailers_arrive	n_trailers_depart	n_car_racks_arrive	n_car_racks_depart	ongoing_trips
2	20240117	2295	20240117-2295	pr002	1	10:00-13:00	09:56	13:00	p	4	6	2	1	6
3	20240123	2261	20240123-2261	pr002	1	10:00-13:00	09:56	13:00	p	2	2	0	0	2
4	20240123	2295	20240123-2295	pr002	2	14:00-17:00	14:02	17:02	p	0	0	0	0	0
5	20240124	2063	20240124-2063	pr002	1	10:00-13:00	10:00	13:00	p	0	0	0	0	0
6	20240127	1603	20240127-1603	pr002	1	12:30-15:30	12:30	15:30	g	0	1	0	0	1
7	20240129	2228	20240129-2228	pr002	1	10:10-13:00	10:10	13:10	g	2	2	0	0	2
8	20240130	2063	20240130-2063	pr002	2	14:00-17:00	14:00	17:00	g	30	28	5	7	28
9	20240130	2261	20240130-2261	pr002	1	10:00-13:00	09:55	13:00	g	5	4	0	0	4
10	20240201	2063	20240201-2063	pr002	2	14:00-17:00	14:00	17:00	f	20	16	0	0	16
11	20240201	2295	20240201-2295	pr002	1	11:00-13:00	11:00	13:00	f	10	9	0	0	9
12	20240210	2063	20240210-2063	pr002	1	10:00-13:00	09:51	13:00	b	2	2	0	0	2
13	20240210	2262	20240210-2262	pr002	2	14:00-16:00	13:54	17:00	b	0	0	0	0	0







## Data Quality Management



- **QA**
  - Reducing possibility of erroneous entry
  - Early phases of building data entry system (tablet/app-based entry)
    - Built in validations to reduce possible errors
  - Using Oracle Apex
  
- **QC**
  - Validating and correcting erroneous entry
  - Checking for erroneous entries including:
    - Relational keys to link data frames
    - No blank/missing data
    - Valid entries based on variables
  - Using R



	<b>Results</b>	
	Site Visits	Fisher Interviews
 2022	504	Characterization
 2023	420	167
 2024	237	169
 2025	254	168



# Species

56 Species

24 families

20 finfish

4  
shellfish and  
mollusks

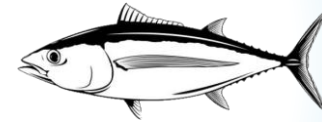
- Angelfishes
- Barracudas
- Bigeyes
- Flounders
- Jacks
- Leatherjackets
- Mackerels
- Mojarras
- Neddlefishes
- Parrotfishes
- Puffers
- Scorpionfishes
- Sea basses
- Sharks
- Snappers
- Snooks
- Surgeonfishes
- Tilefishes
- Tunnas
- Wrasses

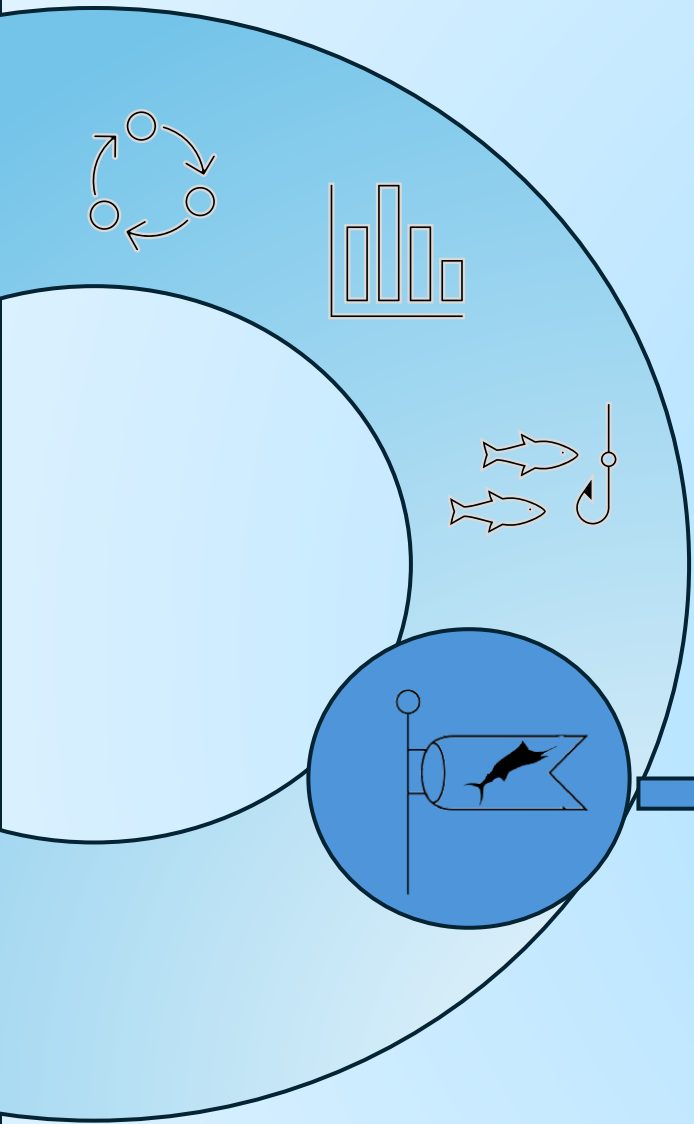
- Lobsters
- Conch
- Octopus
- Oysters



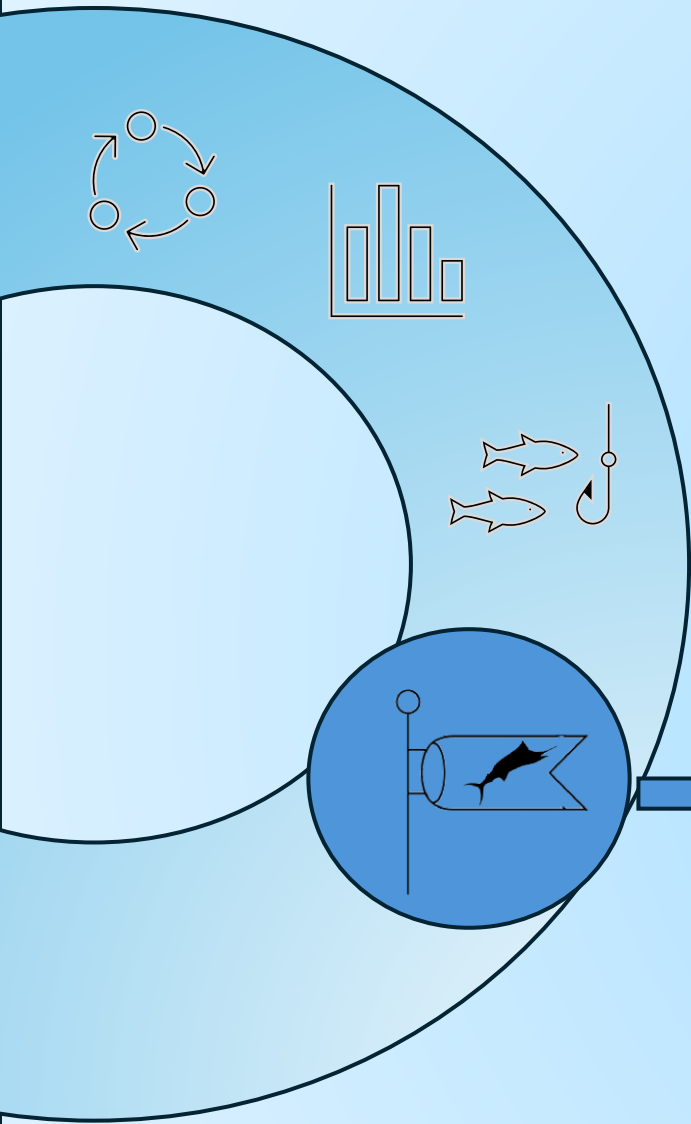


# Habitats





# Fishing Tournaments



# Fishing Tournaments

- ✓ Marine Recreational Statistics Survey
  - ✓ 1954-1983
  - ✓ 1988-1998
  - ✓ 1999-2025

Database

973 tournaments

50,000 +

Shore fishing

Kayak

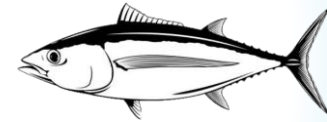
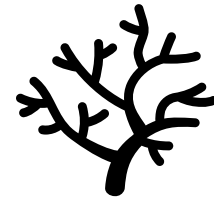
Spearfishing

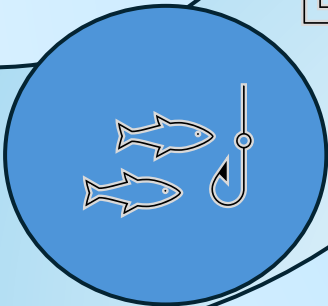
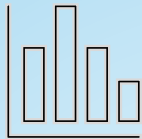
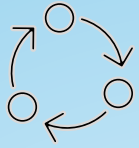
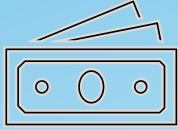
Bottom  
fishing

Pelagic



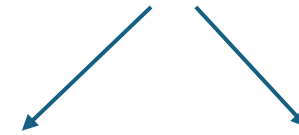
# Habitats





# Species

210 species



203 finfish  
\*3 freshwater

4  
shellfish and  
mollusks



Thanks!  
[grodriguezf@drna.pr.gov](mailto:grodriguezf@drna.pr.gov)

