



# Estimating Fishing Intensity on Spawning Aggregation Sites by Means of Aerial Survey in the Florida Keys



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## INTRODUCTION

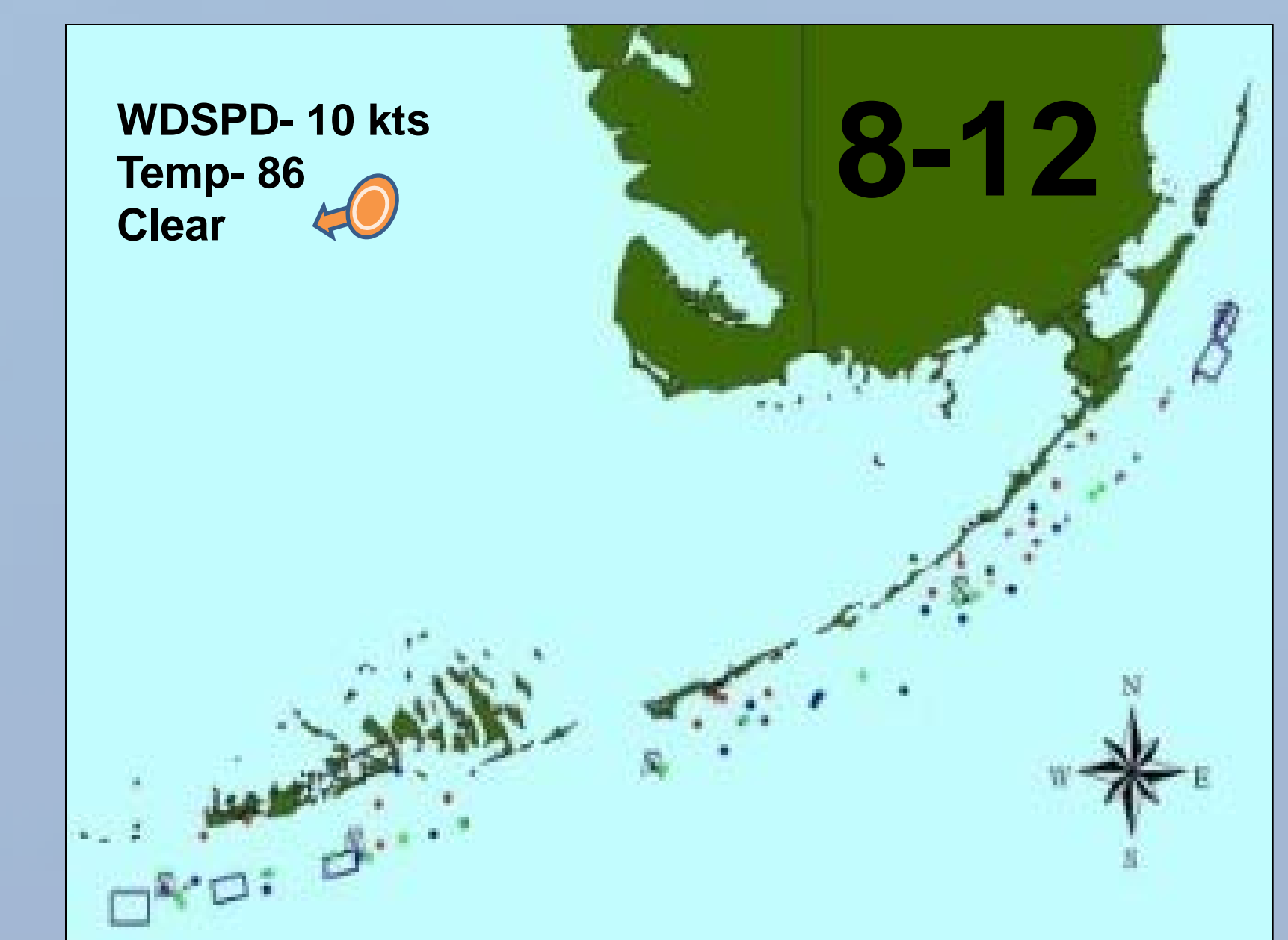
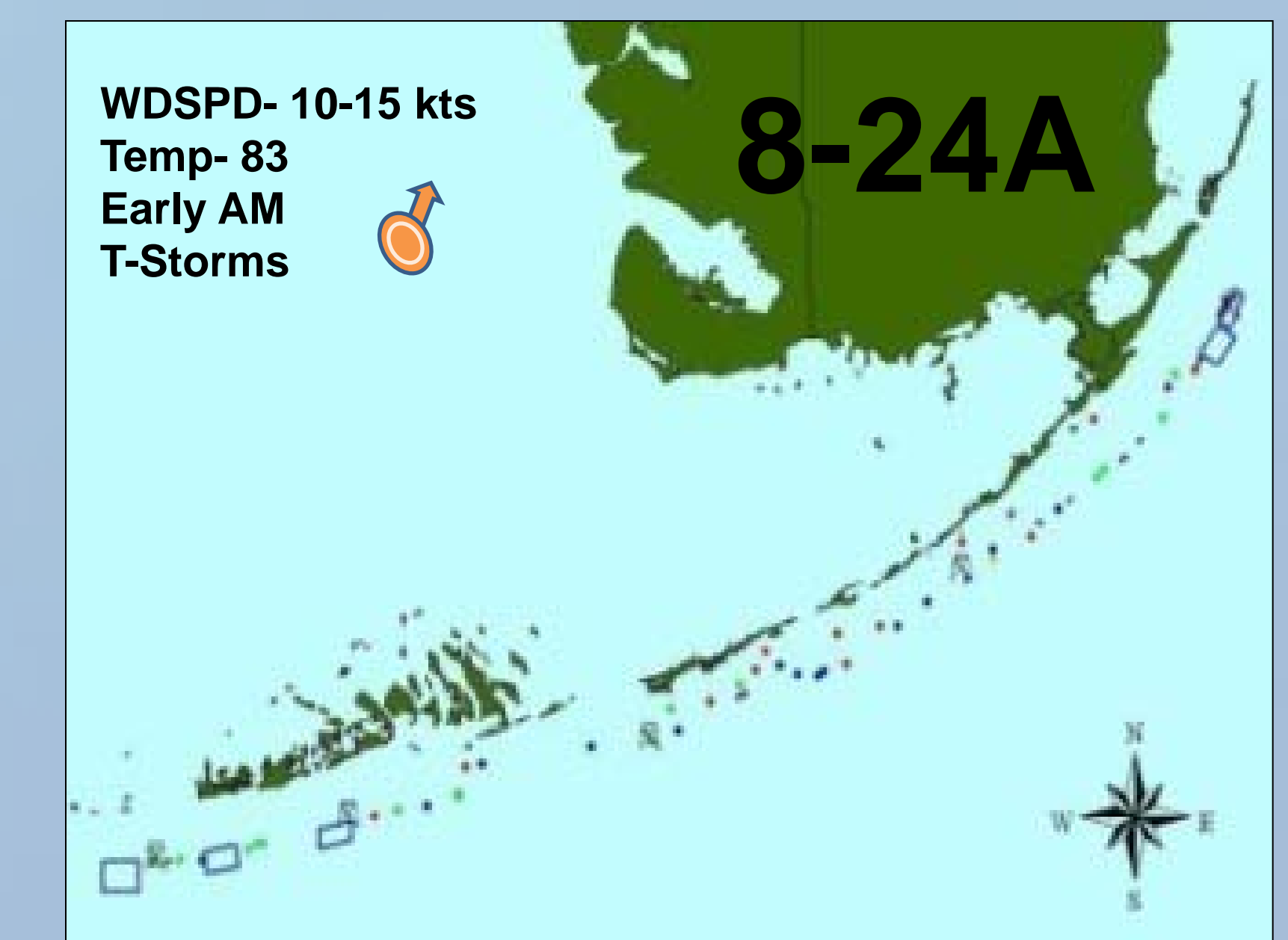
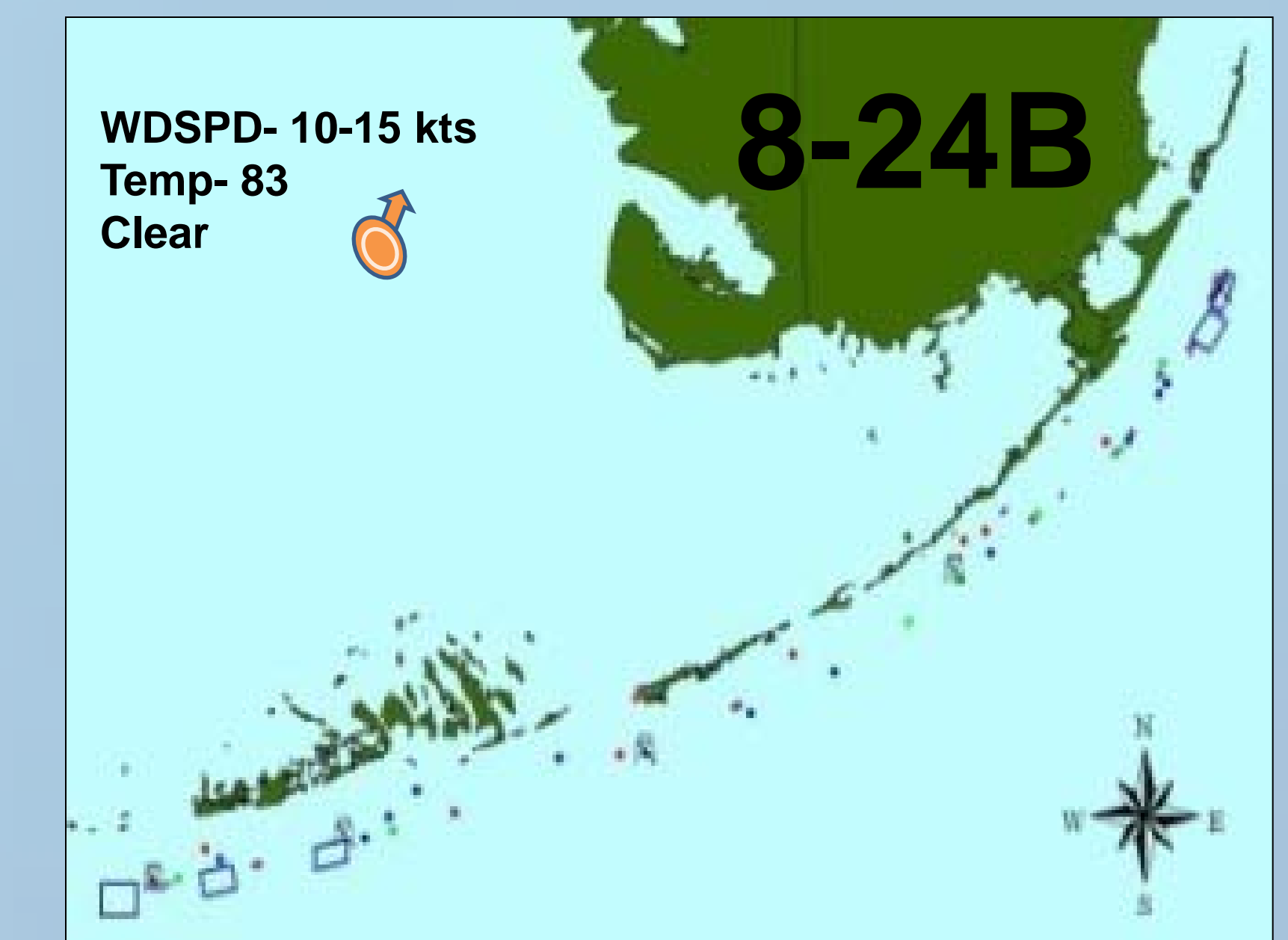
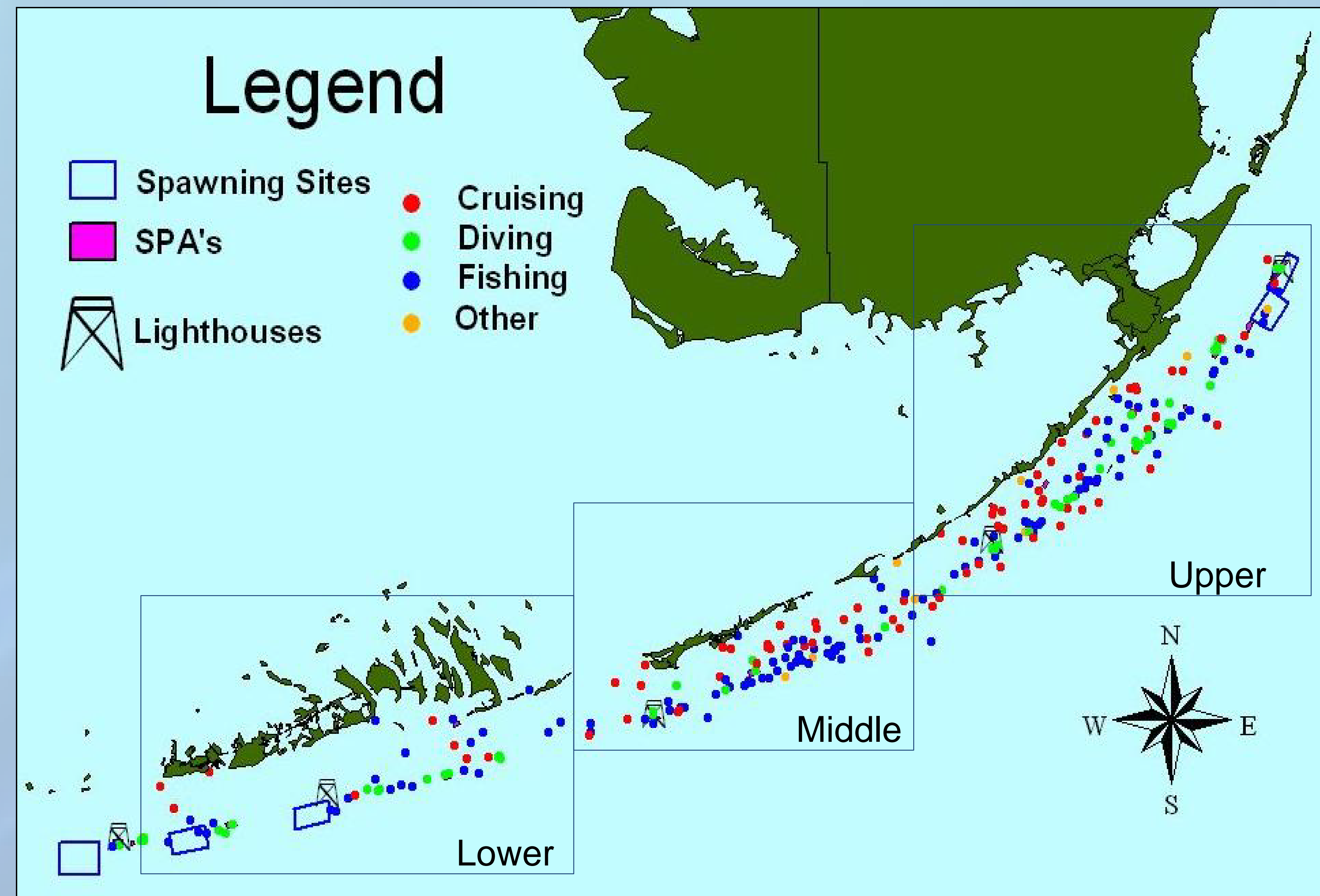
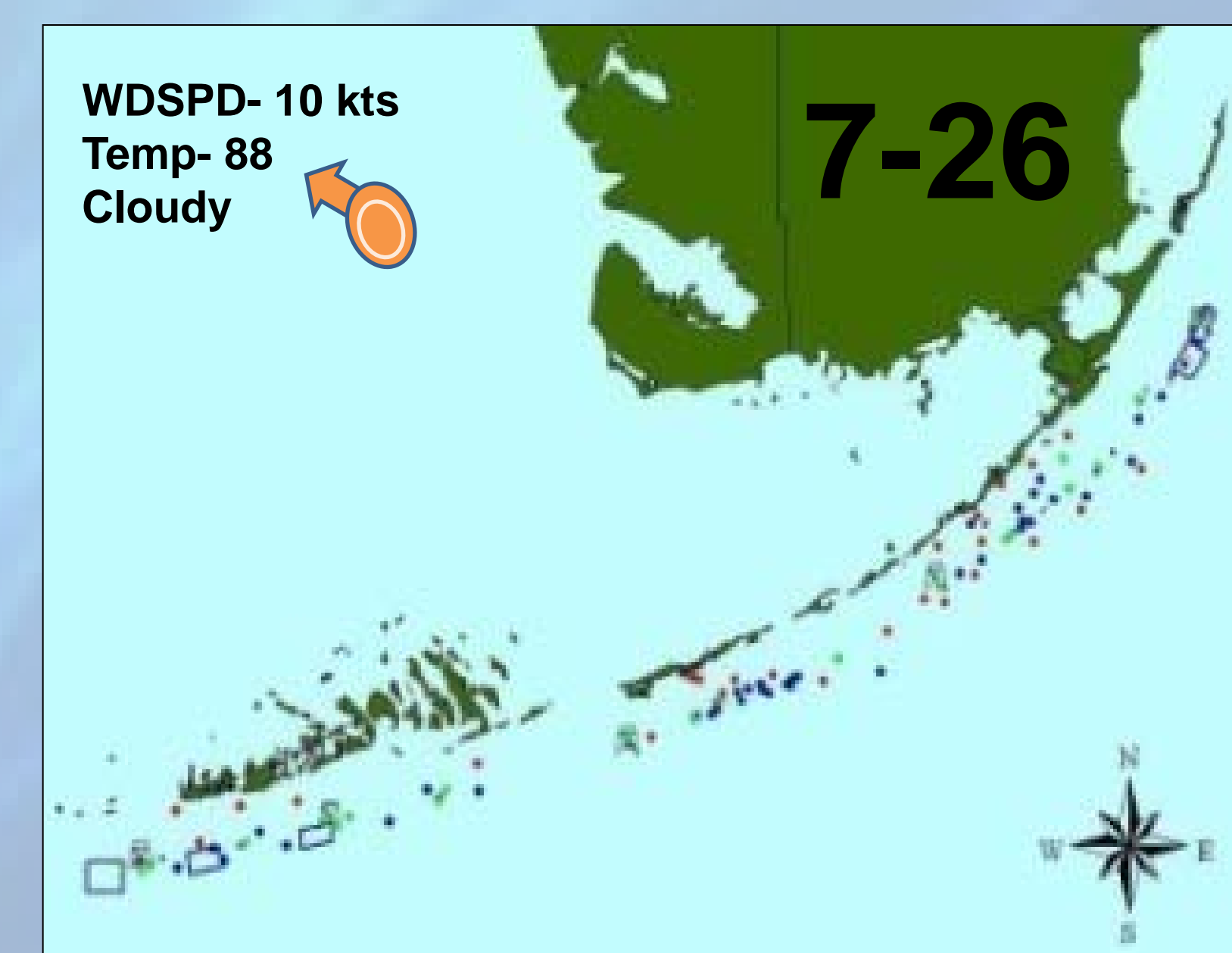
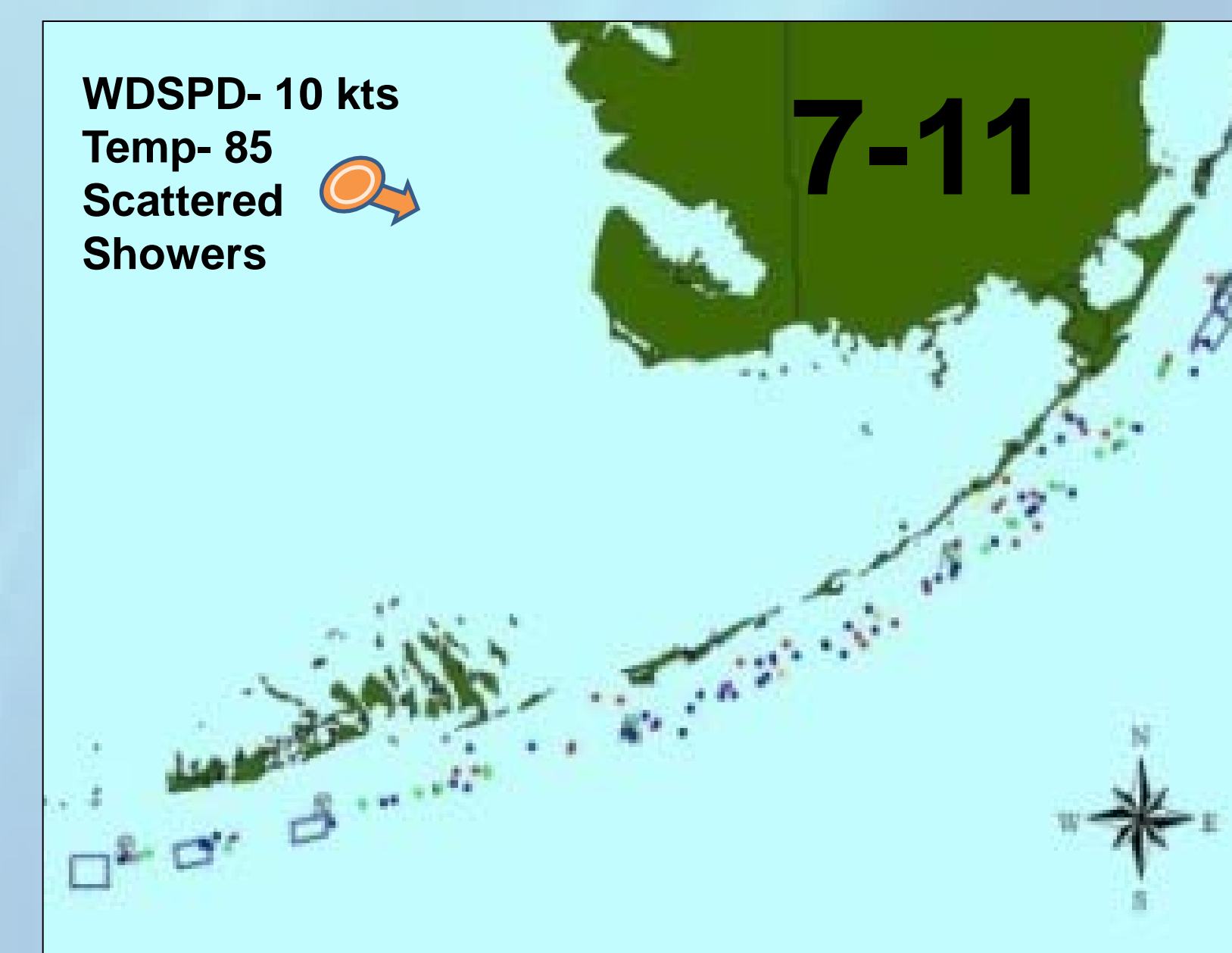
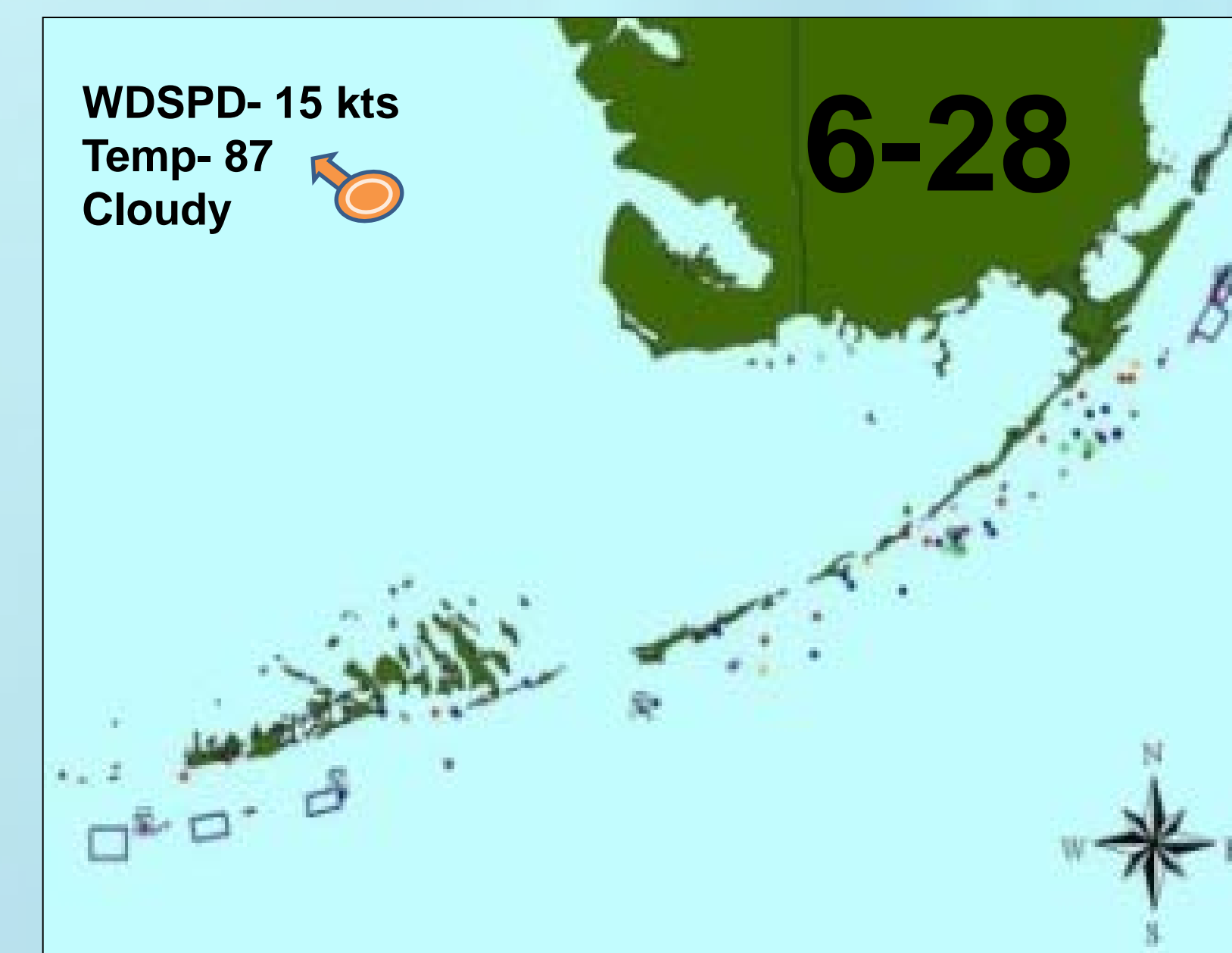
Reef fish spawning aggregations (FSA) are a vital part of the life cycle of many reef fishes. Unfortunately, the act of aggregation leaves many species particularly vulnerable to overfishing. The protection and conservation of FSAs is critical to the sustainable management of reef fish species including grouper and snapper, from both fisheries and ecosystem perspectives. To effectively manage and prevent overexploitation of commercially important reef fish spawning aggregation sites, a variety of data gathering techniques have been employed by FWC in conjunction with NOAA and FKNMS. These include traditional diver visual census surveys and acoustic mapping. In order to obtain the necessary information on the existing fishing effort on FSAs in waters of the Florida Keys we have initiated Keys-wide aerial surveys during spawning moons in an attempt to identify FSAs experiencing elevated fishing pressure, and to discover previously unidentified spawning areas.

## METHODS

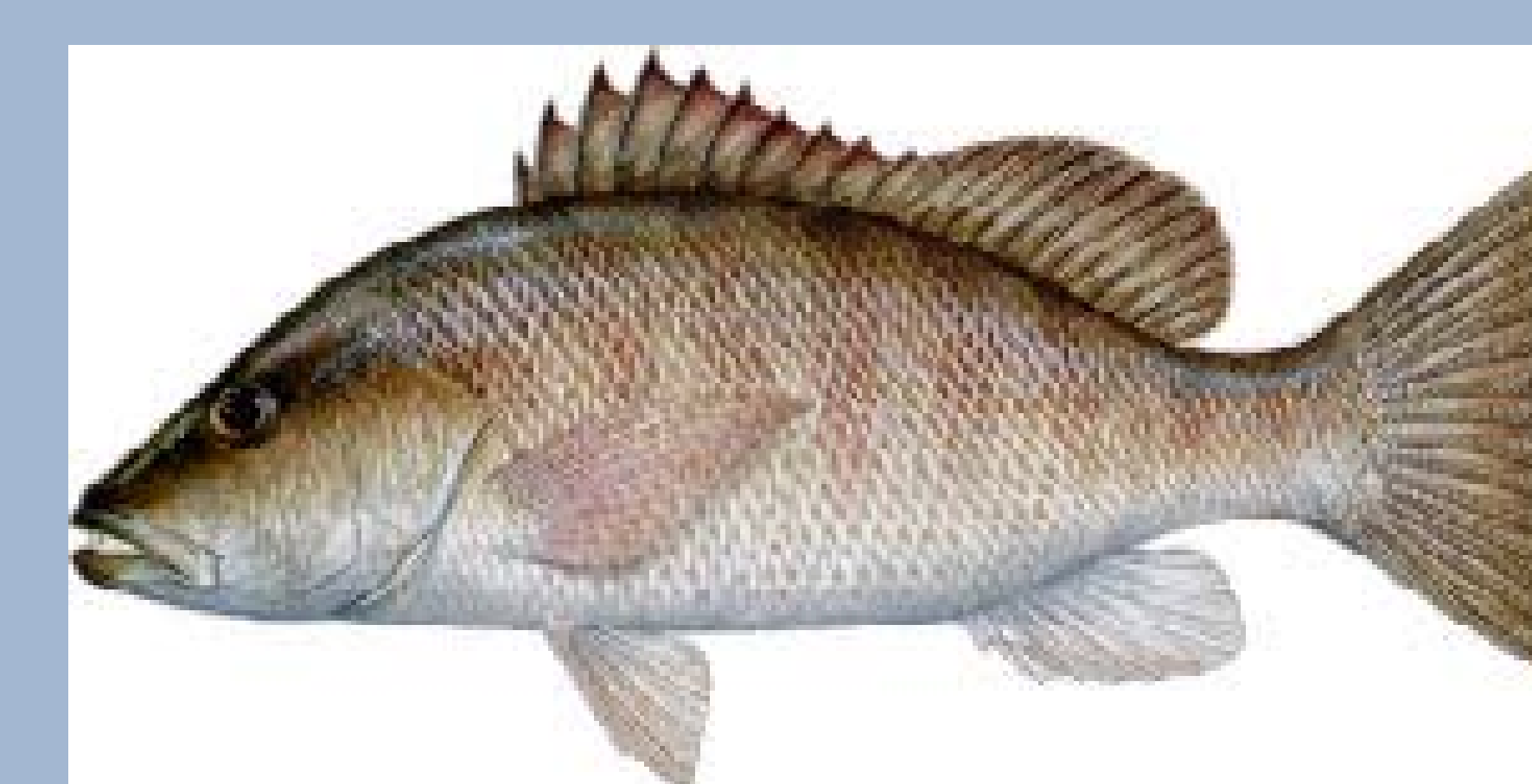
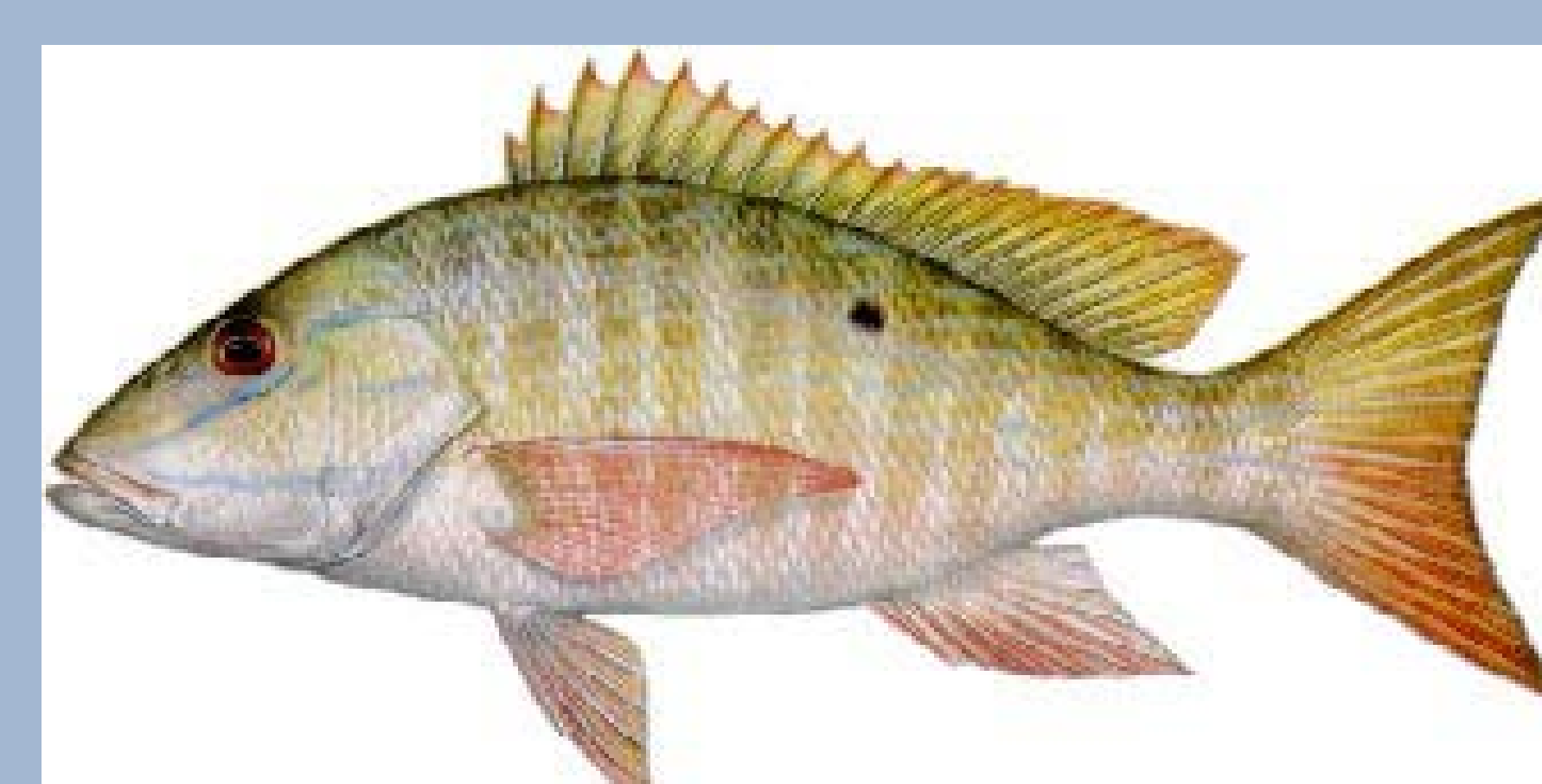
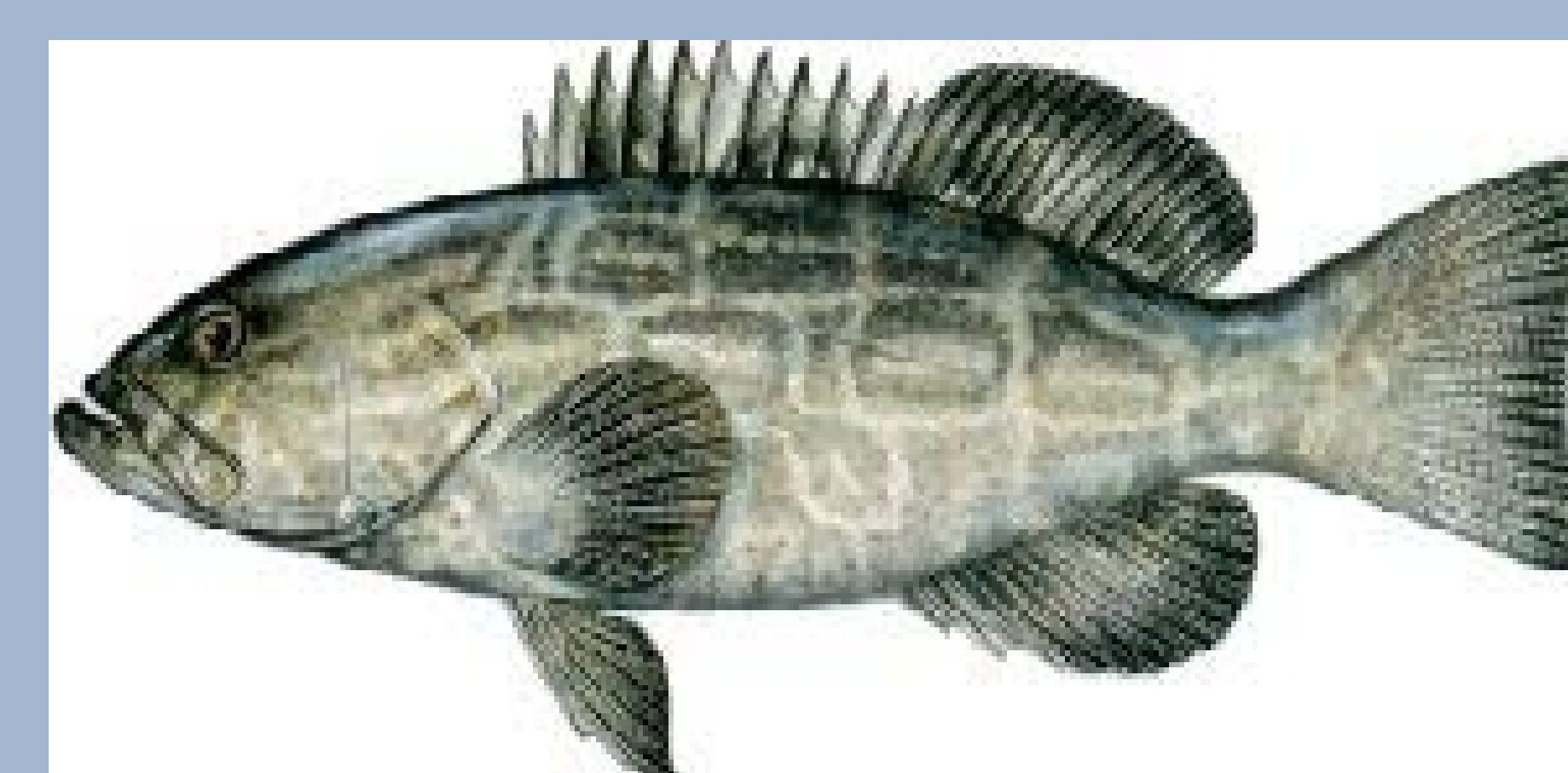
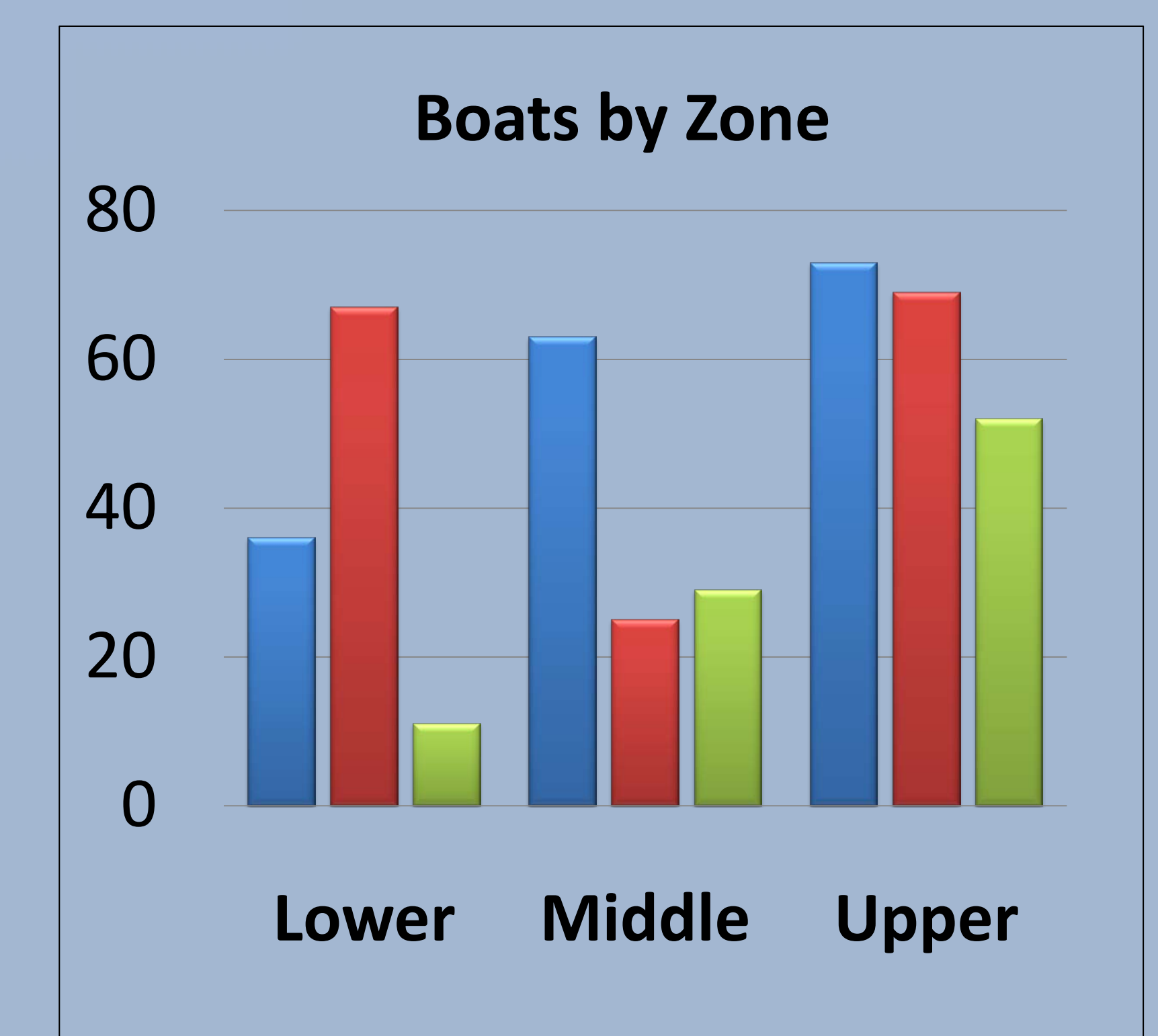
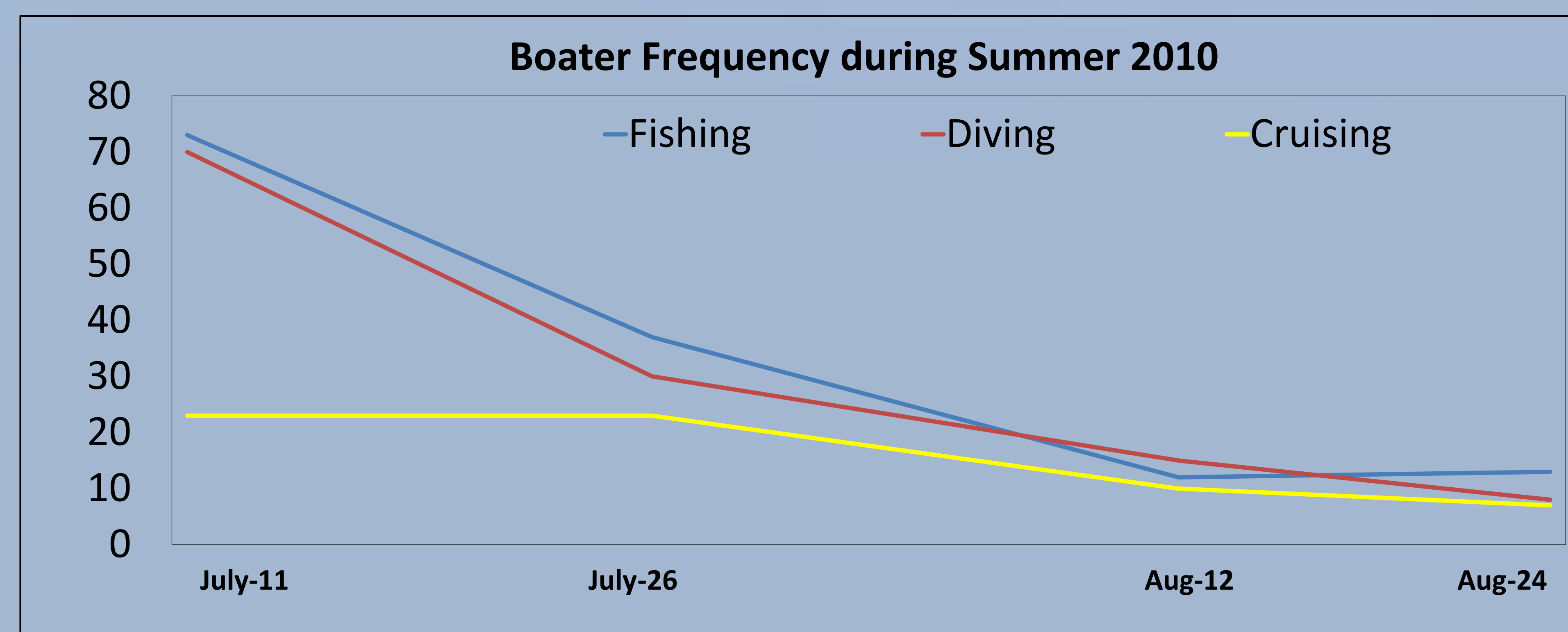
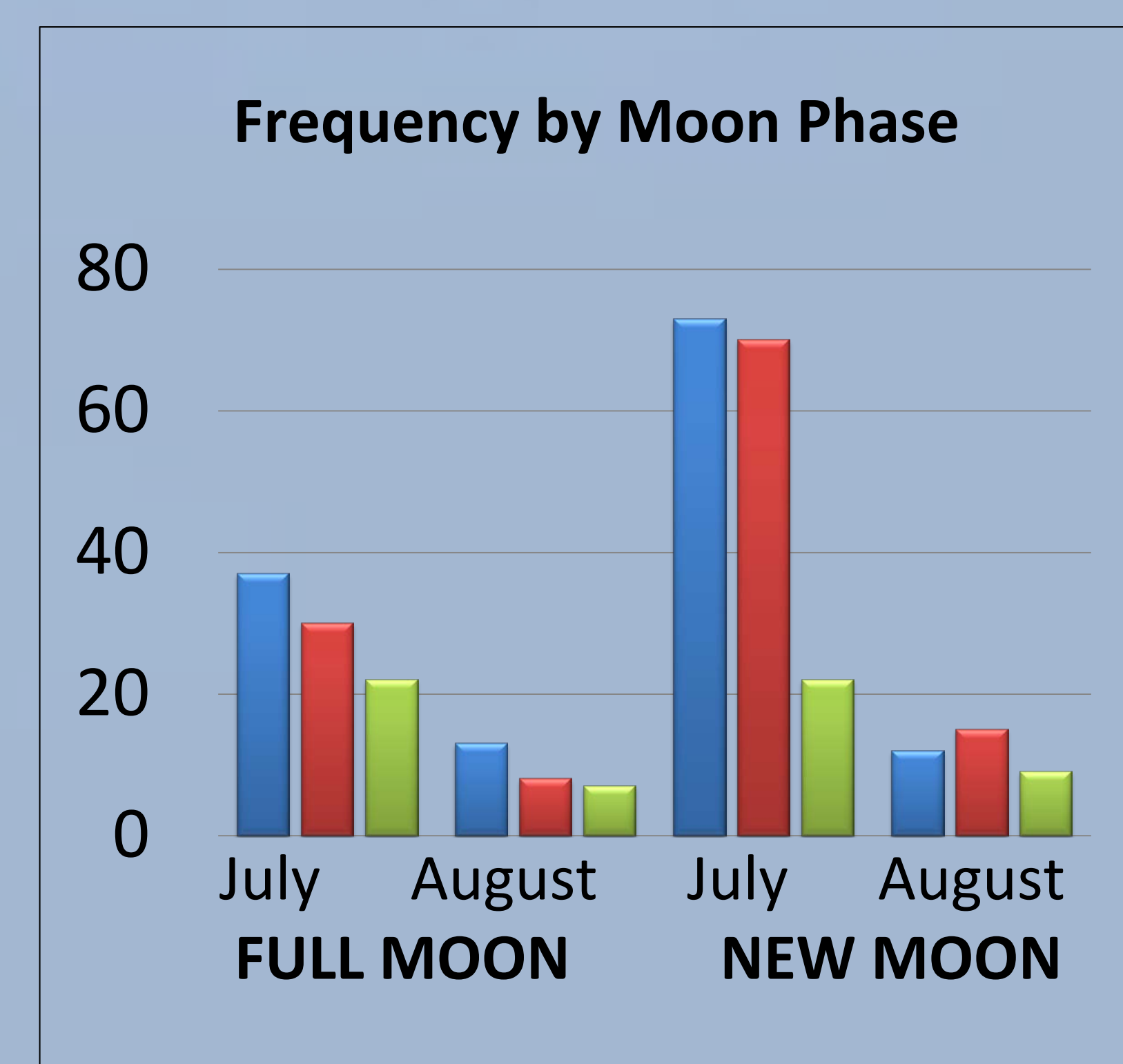
- Aerial surveys are conducted over the Reef tract of the Florida Keys during the New and Full moon spawning moths of snapper. (June to August)
- All surveys initiated at the same approximate time with relation to sunset (1730-1800hrs).
- Flight path replicated for each survey: Lower keys (Key West-Big Pine), Middle Keys (Big Pine - Long Key), Upper Keys (Islamorada-Carysfort.)
- The positions of all vessels observed during flight are recorded along with their type and current activity. Using Arcview.
- Fishing activities were recorded as: Fishing- Diving- Cruising- Partying- Other

## RESULTS/CONCLUSION

- Based on preliminary findings, fishing pressure is not significantly greater during full moon events.
- It appears the upper keys is more heavily fished. This might be a result of its easy accessibility, proximity to reef, and also the consistently more favorable conditions.
- It was determined that a number of flights over the course of a few days will be required to accurately survey the fishing pressure throughout the keys during full moon cycles.



Date	Total Boats	Fishing	Diving	Cruising	Other	Party
6/28/2010	46	23	9	14	0	0
7/11/2010	194	73	70	23	3	25
7/26/2010	90	37	30	23	0	0
8/12/2010	38	12	15	10	1	0
8/24/2010A	59	14	29	15	1	1
8/24/2010B	28	13	8	7	0	0



### Acknowledgements:

Many thanks to James Baker, Pilot & CEO of AirStar© Executive Airways for his services and expertise. I would also like to thank Michelle Dancy, and Jessica Snook for their assistance with data collection.