

# Mission: Iconic Reef

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### 0.1 The Data

The RVC, stationary-point-count method is modified from Bohnsack and Bannerot (1986) and is conducted on shallow (<100ft), hardbottom coral reef habitats. Field surveys use a one-stage design to sample 50 m x 50 m grid cells selected using a stratified-random sampling allocation. This data set represents sample locations in the Florida Keys. Only those strata types found within the MIR areas were considered (table 1).

### 0.2 Fish Species

A selection of fish species were chosen to represent different trophic levels and functional roles.

Table 1: Table 1. Number of sites sampled.

PROT	STRAT	description	n
Outside	FK01	inshore reefs, all depths	15
Outside	FK02	mid-channel patch reefs, all depths	170
Outside	FK03	offshore patch, all depths	96
Outside	FK04	forereef, low rugosity, <12m	181
Outside	FK05	forereef, high rugosity, <12m	167
Inside	FK01	inshore reefs, all depths	12
Inside	FK02	mid-channel patch reefs, all depths	25
Inside	FK03	offshore patch, all depths	15
Inside	FK04	forereef, low rugosity, <12m	20
Inside	FK05	forereef, high rugosity, <12m	125

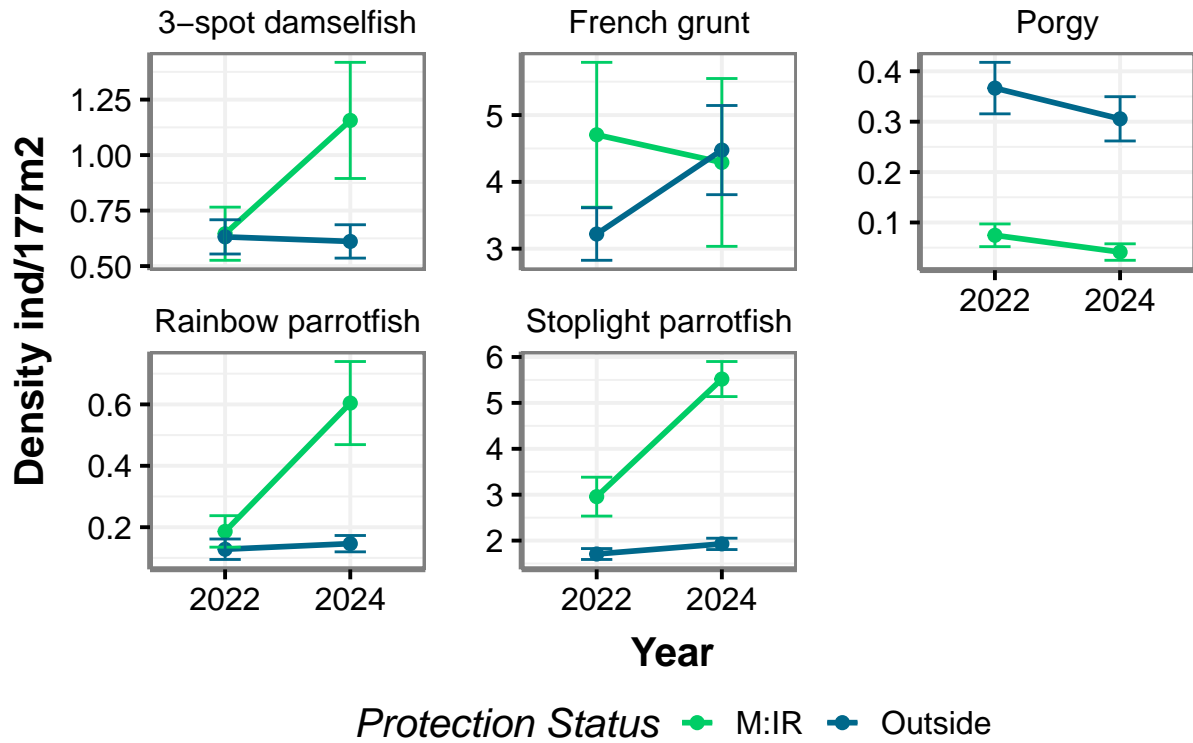
Table 2: Table 2. Fish species. For analysis, both porgy species were combined.

SPECIES_CD	CommonName	SciName
HAE FLAV	French grunt	Haemulon flavolineatum
SPA VIRI	Stoplight parrotfish	Sparisoma viride
SCA GUAC	Rainbow parrotfish	Scarus guacamaia
STE PLAN	3-spot damselfish	Stegastes planifrons
CAL CALA	Porgy	Calamus calamus
CAL NODO	Porgy	Calamus nodosus

### 0.3 Density

Density is represented as the number of individuals per 177 m<sup>2</sup>.

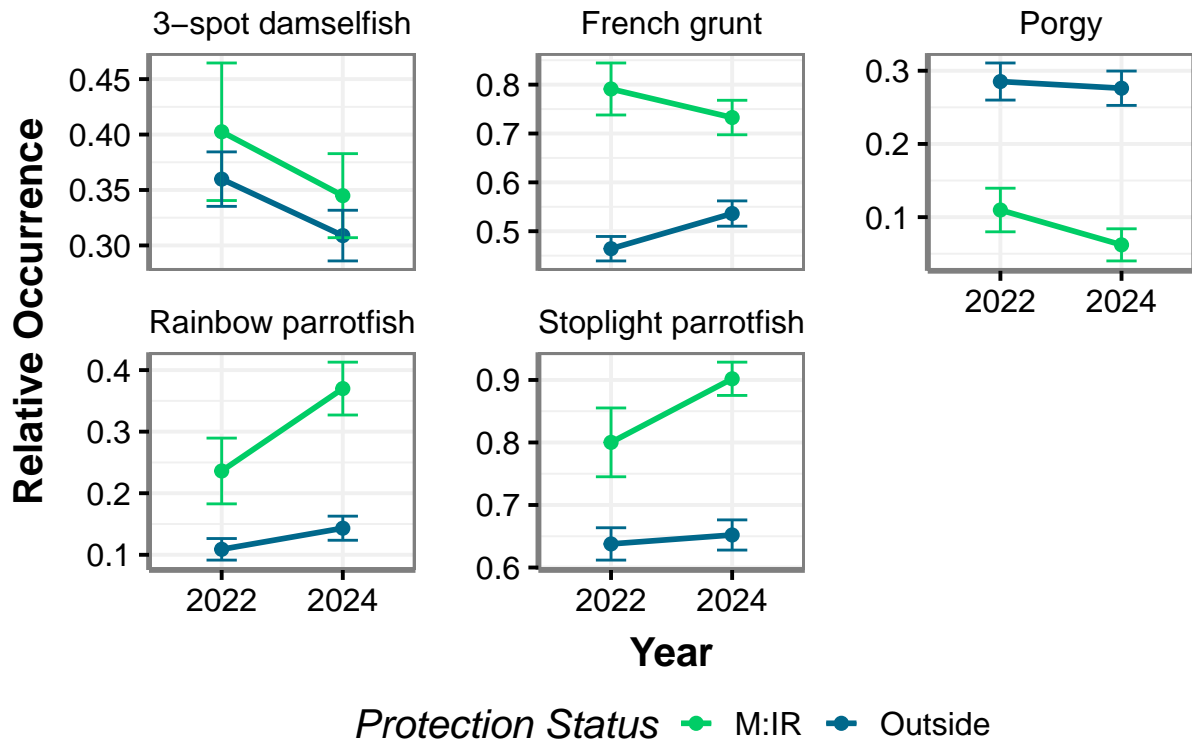
```
MIR_domain_dens_by_year(MIR_data, spp_list)
```



### 0.4 Occurrence

Survey occurrence within MIR sites and outside.

```
MIR_domain_occ_by_year(MIR_data, spp_list)
```

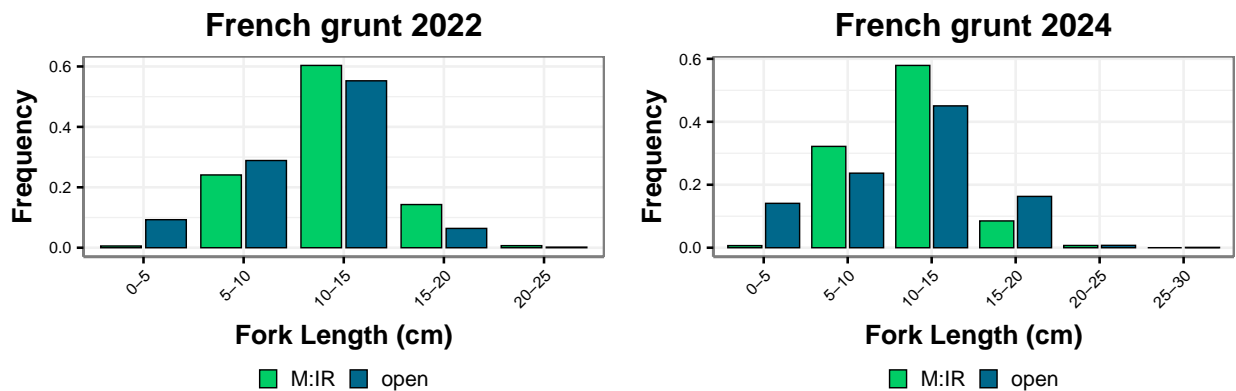


## 0.5 Length Frequency

Relative length frequency of species within MIR sites and outside.

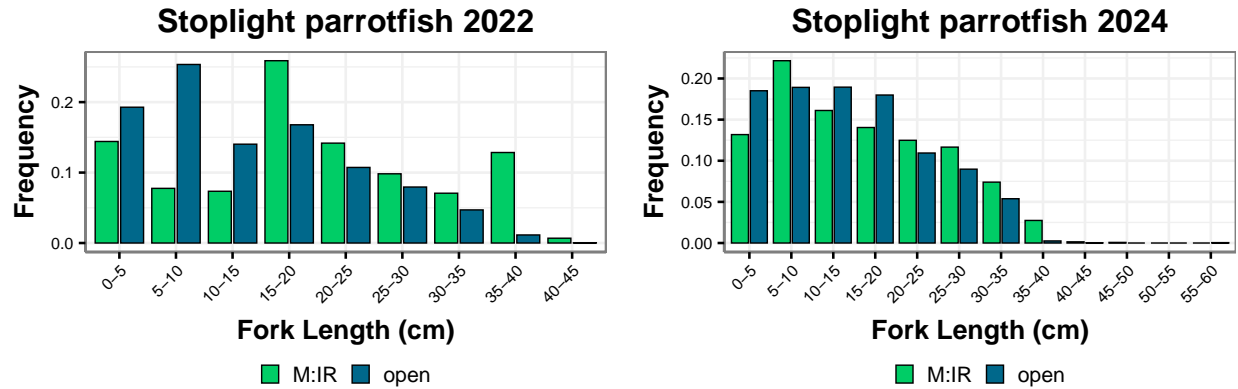
### 0.5.1 French Grunt

```
MIR_LF(df = MIR_data, spp = "hae flav", bin_size = 5, yrs = 2022, spp_name = "French grunt")
MIR_LF(df = MIR_data, spp = "hae flav", bin_size = 5, yrs = 2024, spp_name = "French grunt")
```



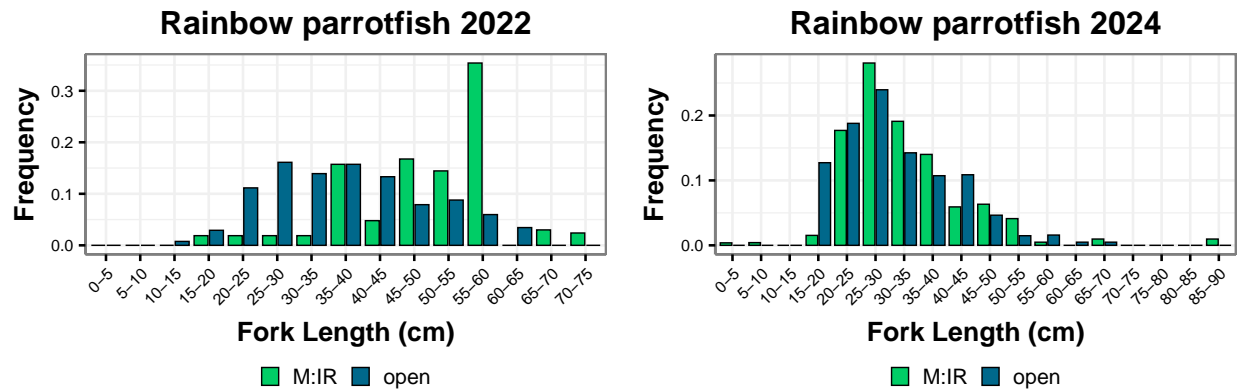
### 0.5.2 Stoplight Parrotfish

```
MIR_LF(df = MIR_data, spp = "spa viri", bin_size = 5, yrs = 2022, spp_name = "Stoplight parrotfish")
MIR_LF(df = MIR_data, spp = "spa viri", bin_size = 5, yrs = 2024, spp_name = "Stoplight parrotfish")
```



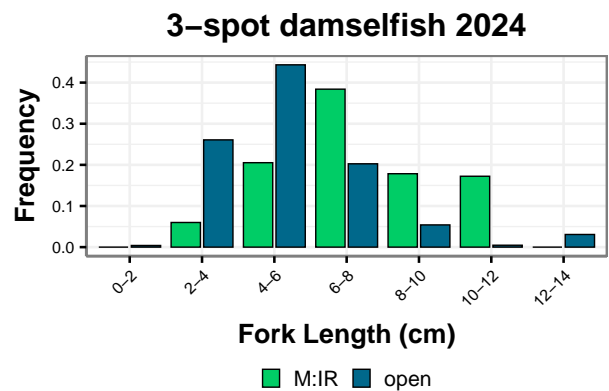
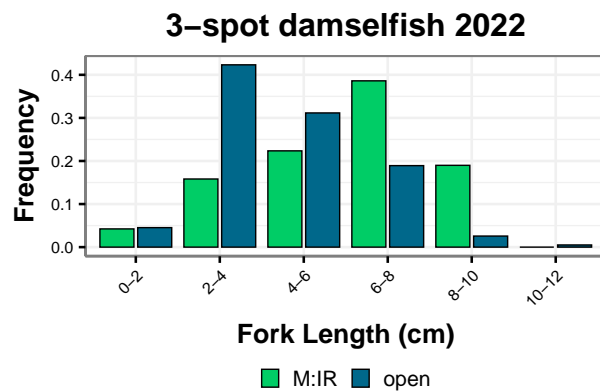
### 0.5.3 Rainbow Parrotfish

```
MIR_LF(df = MIR_data, spp = "sca guac", bin_size = 5, yrs = 2022, spp_name = "Rainbow parrotfish")
MIR_LF(df = MIR_data, spp = "sca guac", bin_size = 5, yrs = 2024, spp_name = "Rainbow parrotfish")
```



### 0.5.4 3-Spot Damselfish

```
MIR_LF(df = MIR_data, spp = "ste plan", bin_size = 2, yrs = 2022, spp_name = "3-spot damselfish")
MIR_LF(df = MIR_data, spp = "ste plan", bin_size = 2, yrs = 2024, spp_name = "3-spot damselfish")
```



#### 0.5.5 Porgy

```
MIR_data_copy <- MIR_data
MIR_data_copy$sample_data <- MIR_data_copy$sample_data %>%
  mutate(SPECIES_CD = if_else(SPECIES_CD == "CAL CALA", "CAL NODO", SPECIES_CD))
#Merged CAL CALA and CAL NODO to graph both porgy species together
MIR_LF(df = MIR_data_copy, spp = "CAL NODO", bin_size = 2, yrs = 2022, spp_name = "Porgy")
MIR_LF(df = MIR_data_copy, spp = "CAL NODO", bin_size = 2, yrs = 2024, spp_name = "Porgy")
```

