

## Supplement to Long-term trends in reef fish populations in Bonaire Marine Park

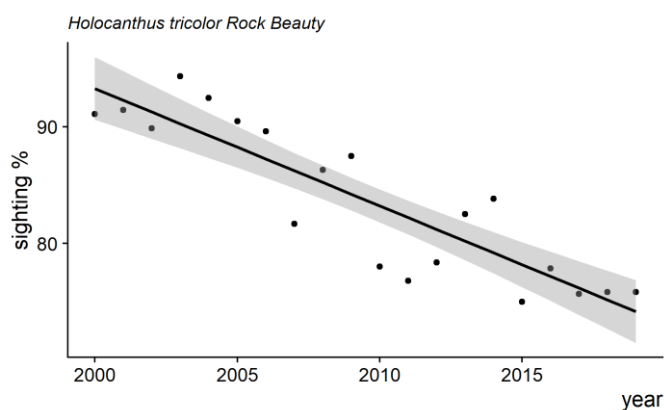
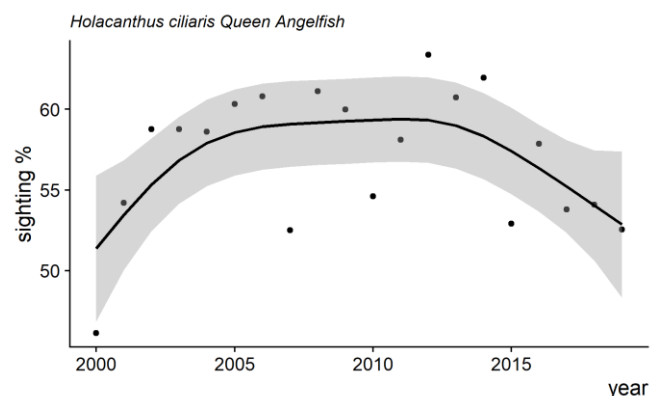
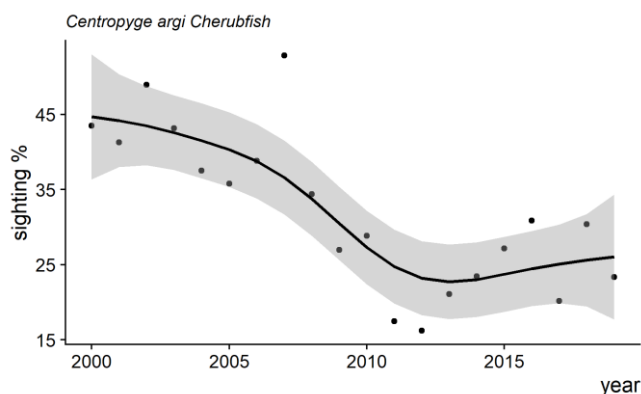
### Sighting frequencies of individual reef fish species 2000-2019

Species with more than 10% sighting frequency in any year. Literature used on food sources:

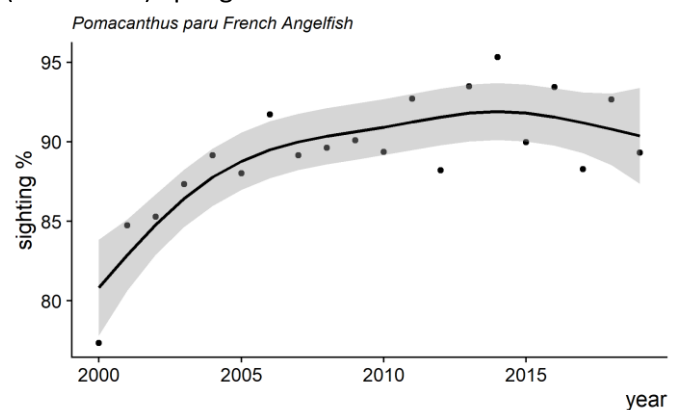
Facultative Spongivorous according to Randall and Hartman (1968), with percentages sponges in gut content, Facultative corallivorous according to Rotjan and Lewis (2008) and (Facultative) Piscivorous to Hixon (2015).

Bridled goby complex re-identified as *Coryphopterus venezuelae*, following Bennema and Van Moorsel (2022).

#### Pomacanthidae Angelfishes (Spongivorous)



(Facultative) Spongivorous for 97%

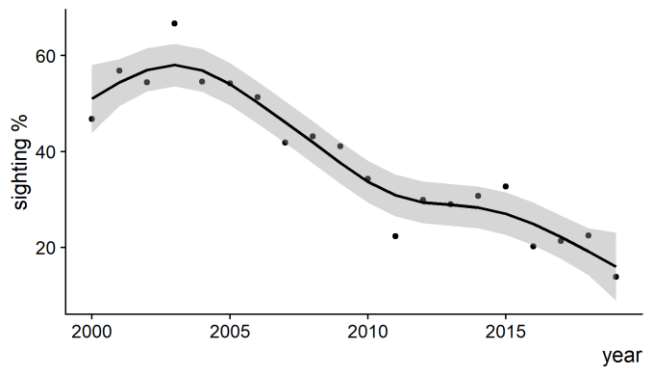


(Facultative) Spongivorous for 97%

(Facultative) Spongivorous for 75%

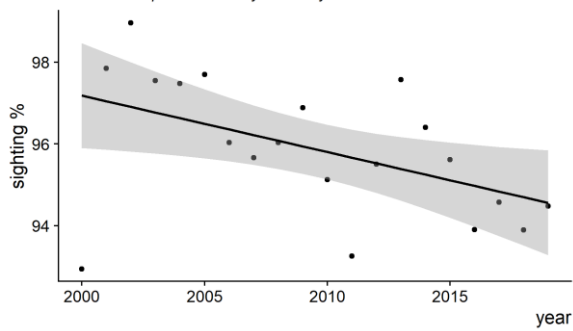
#### Prognathidae Butterflyfishes

*Prognathodes aculeatus* Longsnout Butterflyfish

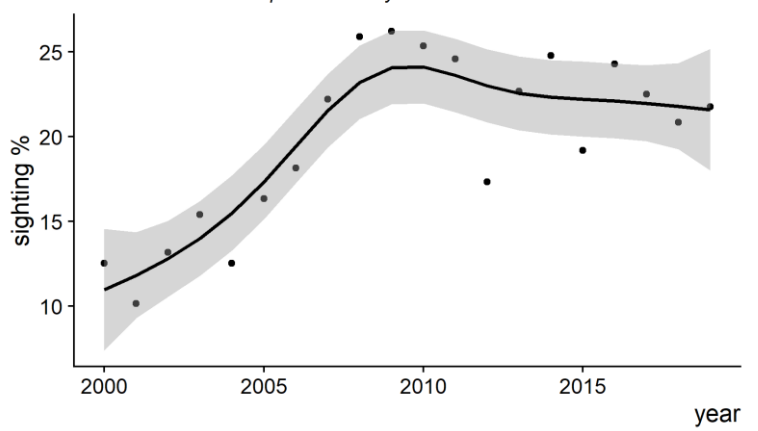


## Chaetodontidae Butterflyfishes (Facultative corallivorous)

*Chaetodon capistratus* Foureye Butterflyfish

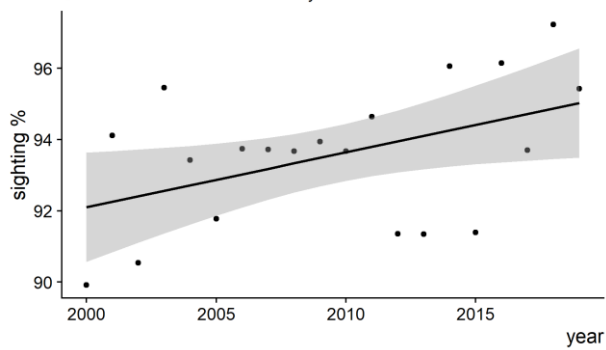


*Chaetodon ocellatus* Spotfin Butterflyfish



## Facultative corallivorous

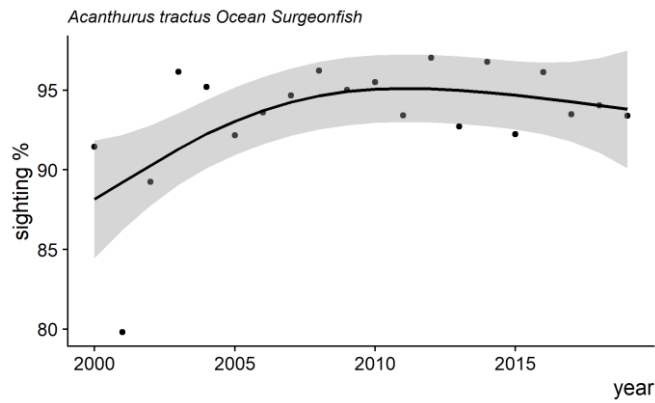
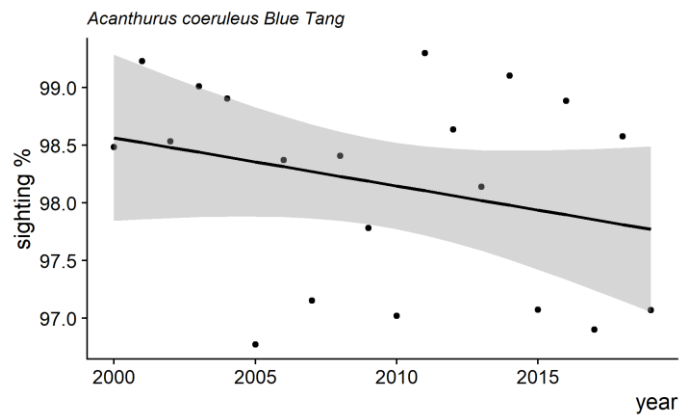
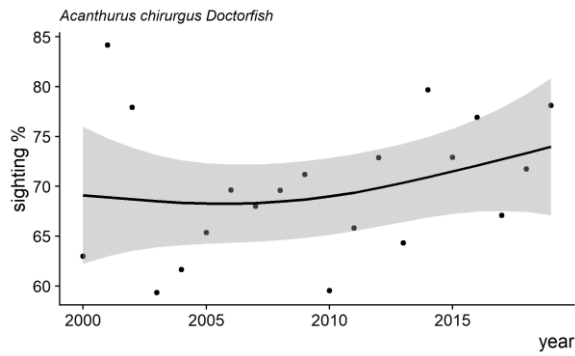
*Chaetodon striatus* Banded Butterflyfish



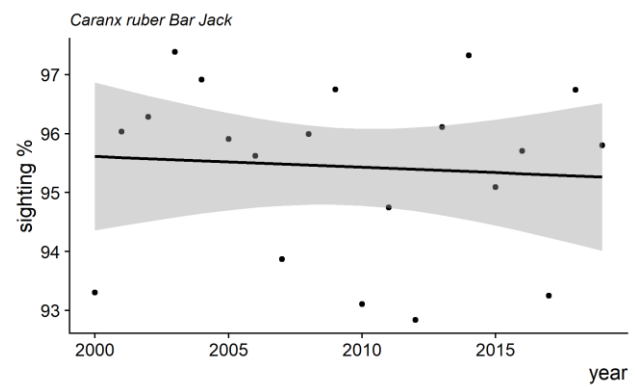
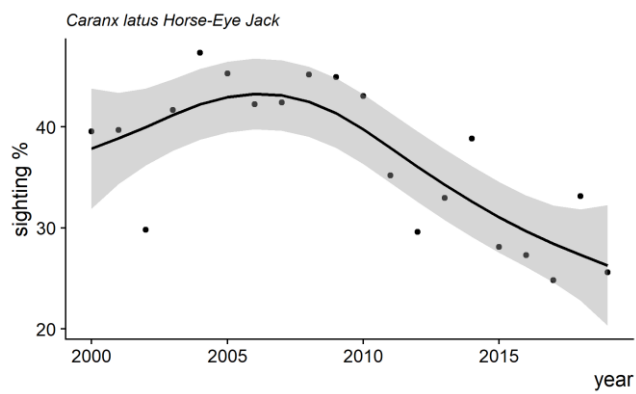
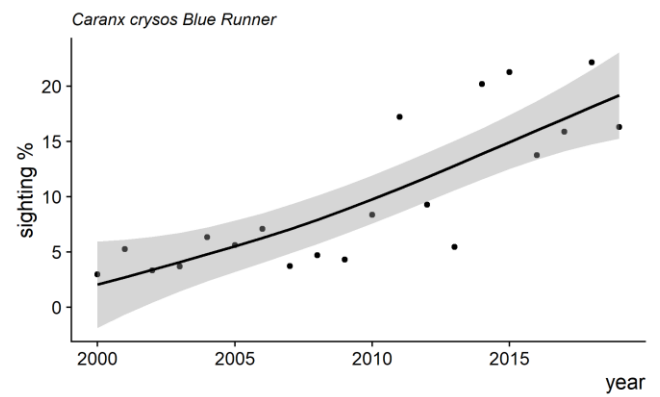
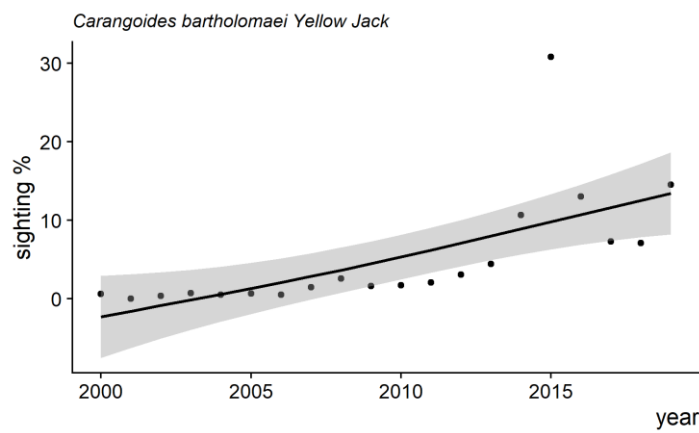
## Facultative corallivorous

## Facultative corallivorous

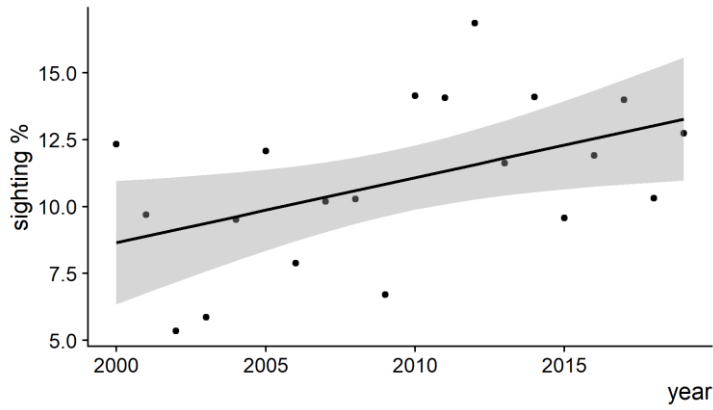
## Acanthuridae Surgeonfishes (Herbivorous)



## Carangidae Jacks (Piscivorous)

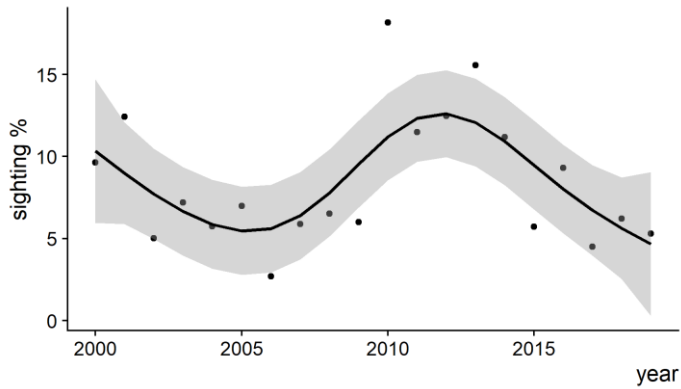


*Trachinotus goodei* Palometa



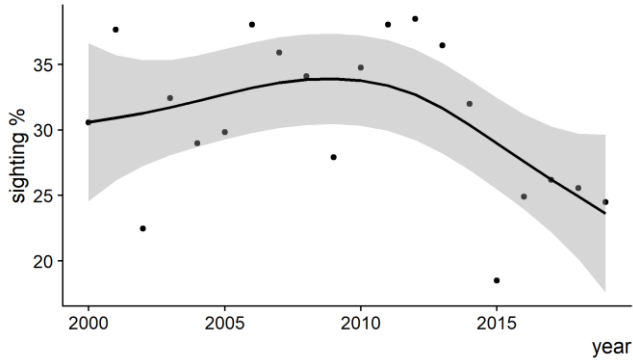
## Belonidae Needlefishes

*Tylosurus crocodilus* Houndfish



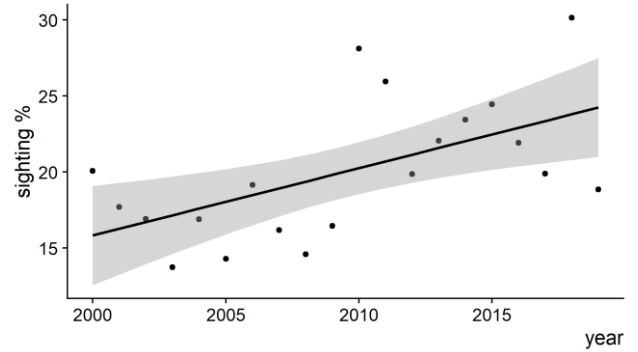
## Sphyraenidae Barracudas

*Sphyraena barracuda* Great Barracuda



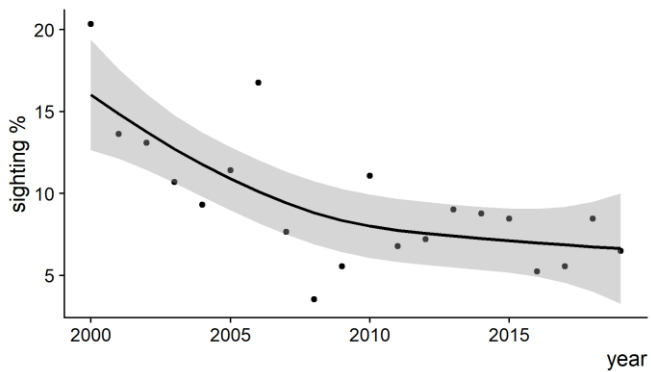
## Albulidae Bonefishes

*Albula vulpes* Bonefish

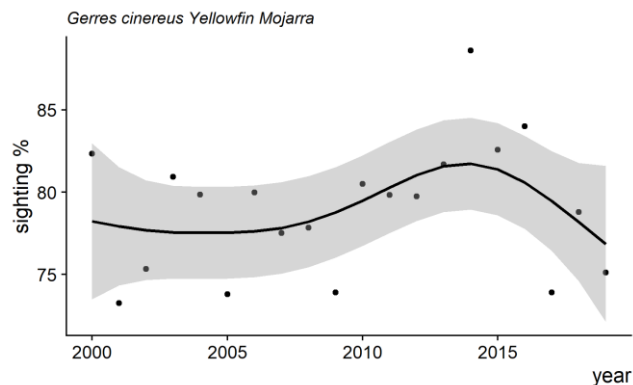
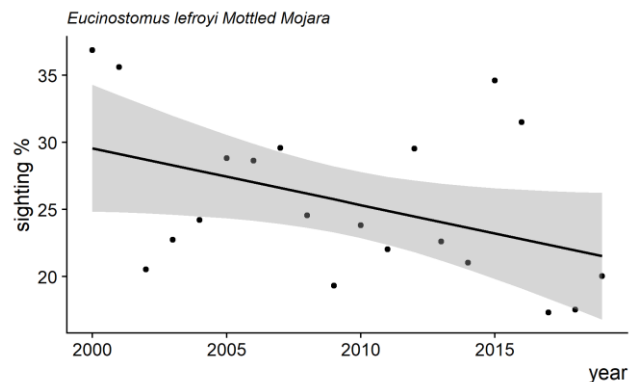


## Mulgilidae Mullet

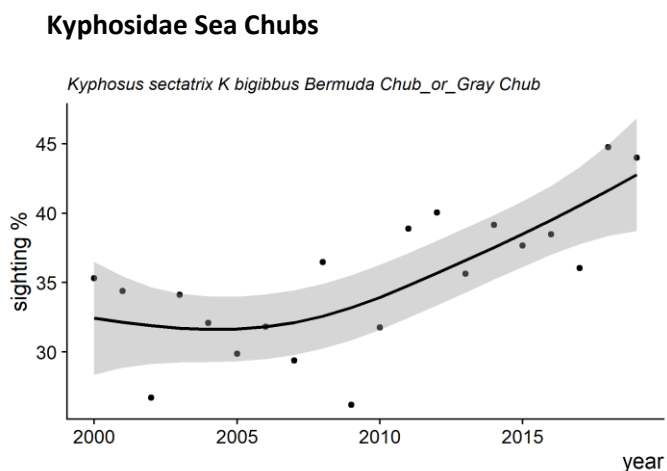
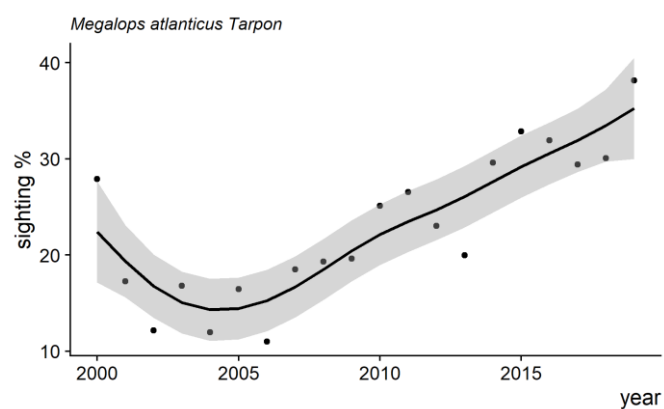
*Mugil curema* White Mullet



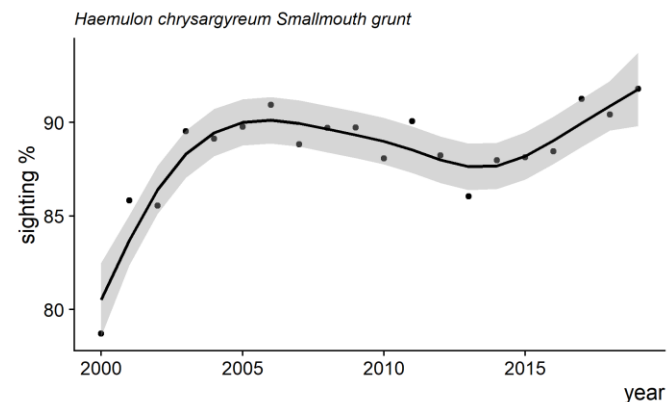
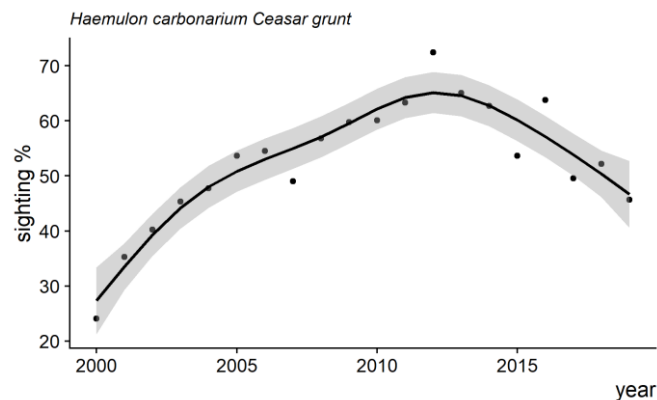
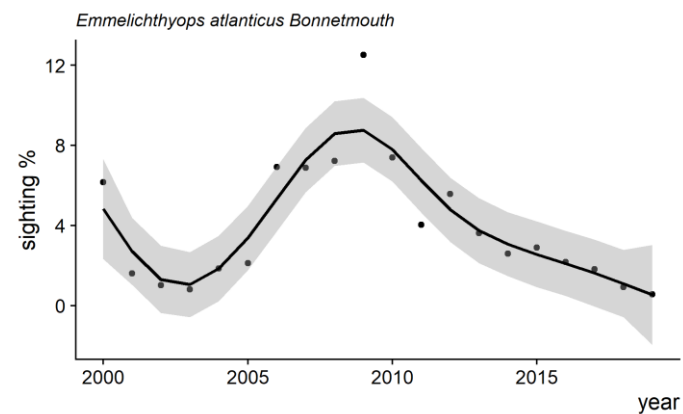
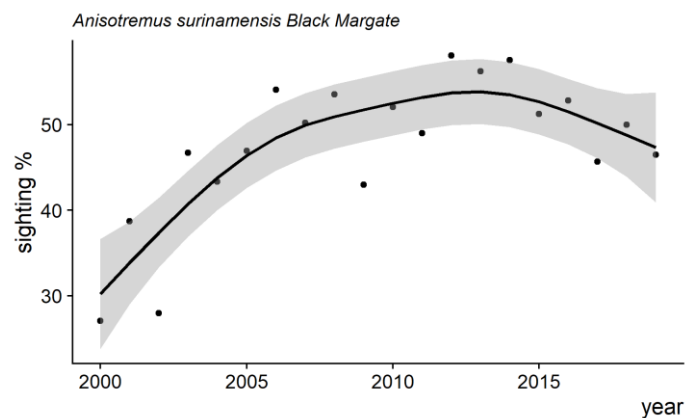
## Gerreidae Mojarras

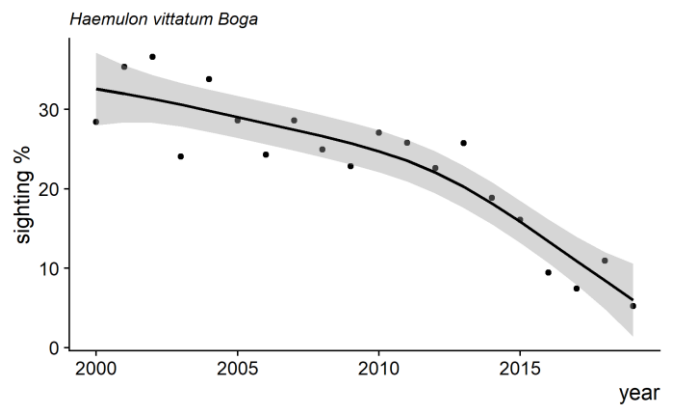
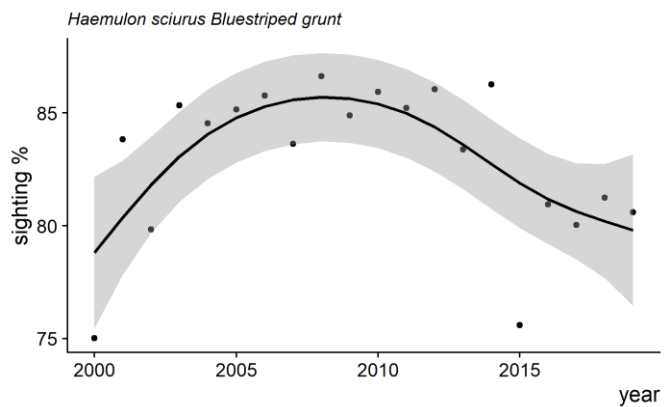
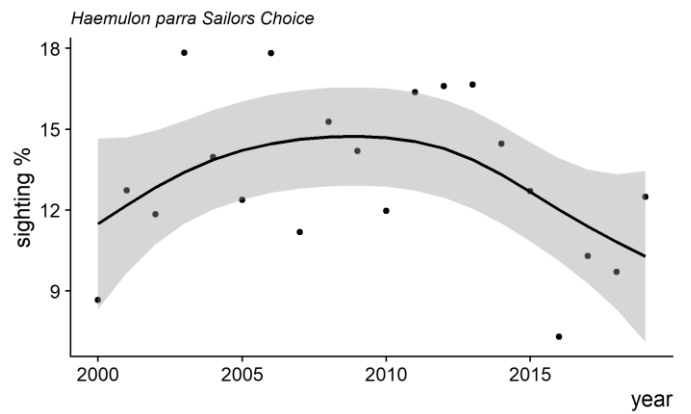
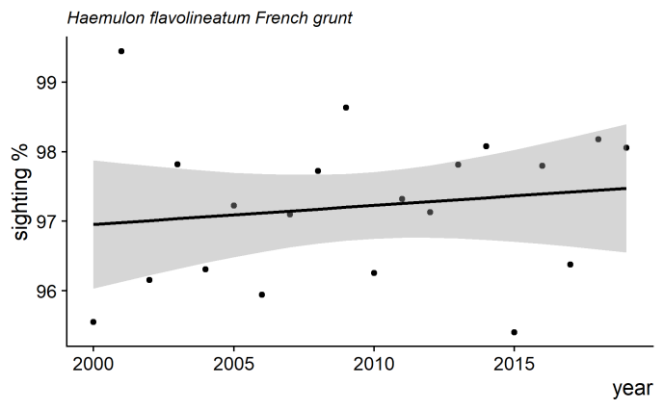


## Megalopidae Tarpons

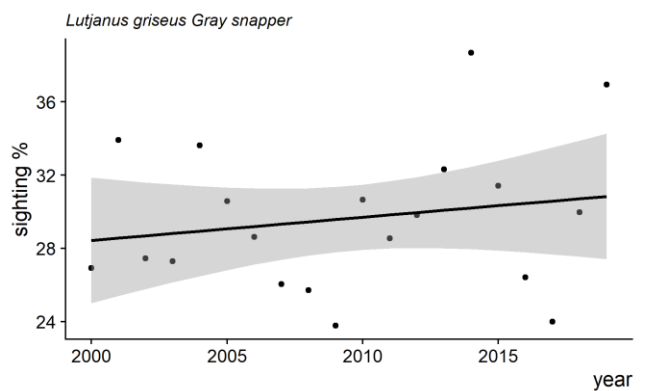
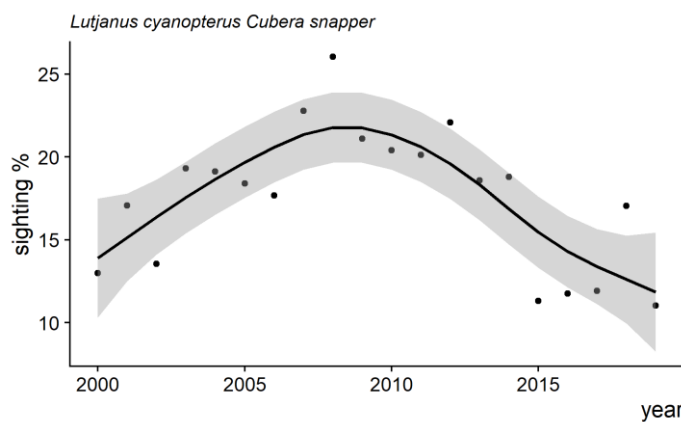
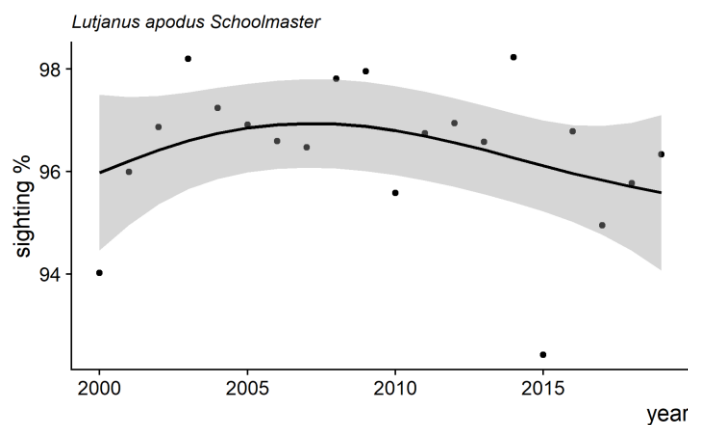
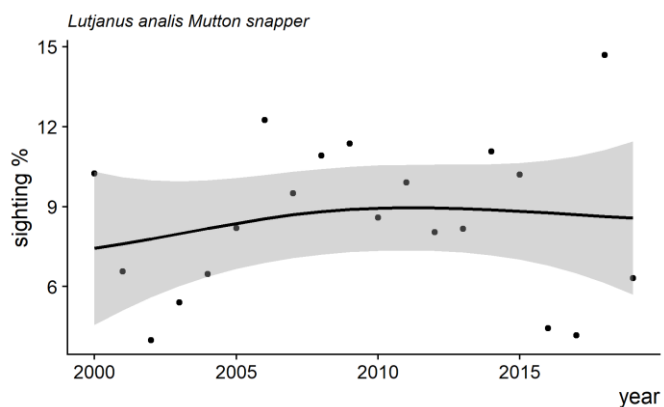


## Haemulidae Grunts

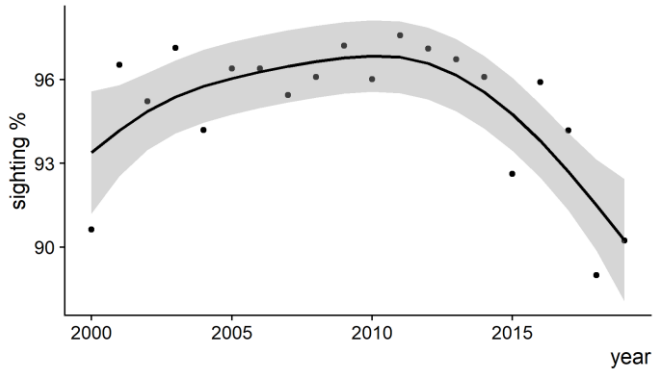




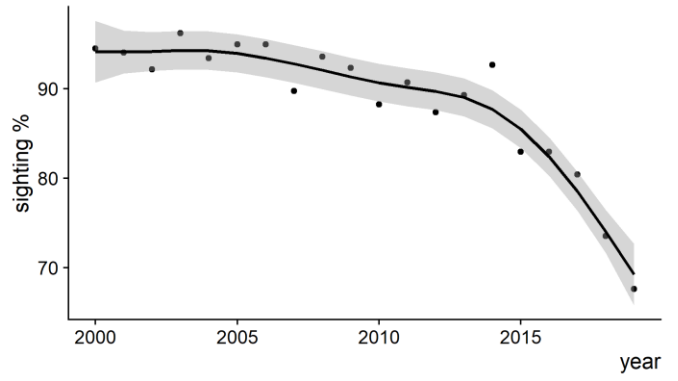
## Lutjanidae Snappers (Piscivorous)



*Lutjanus mahogoni* Mahogani snapper

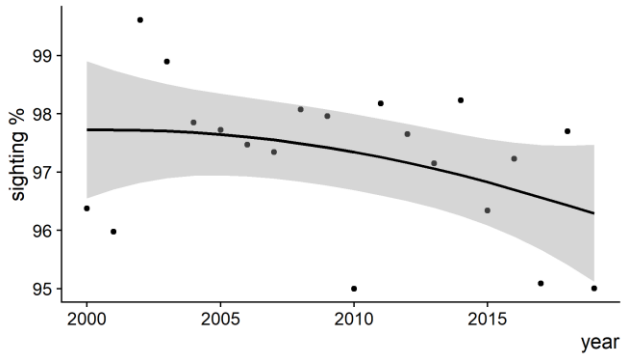


*Ocyurus chrysurus* Yellowtail Snapper

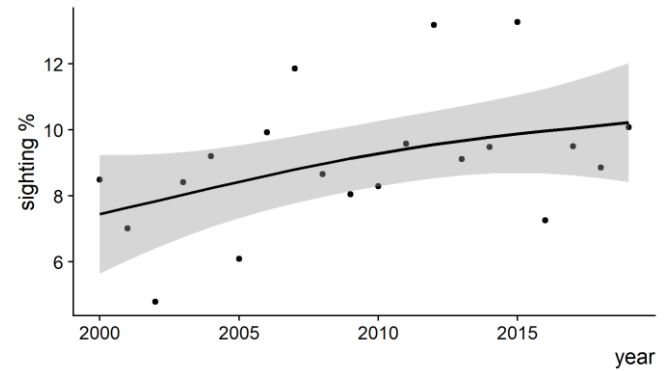


## Pomacentridae Damselfishes

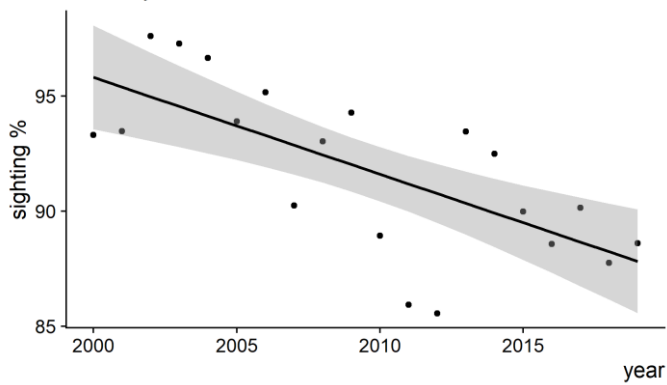
*Abudefduf saxatilis* Sergeant Major



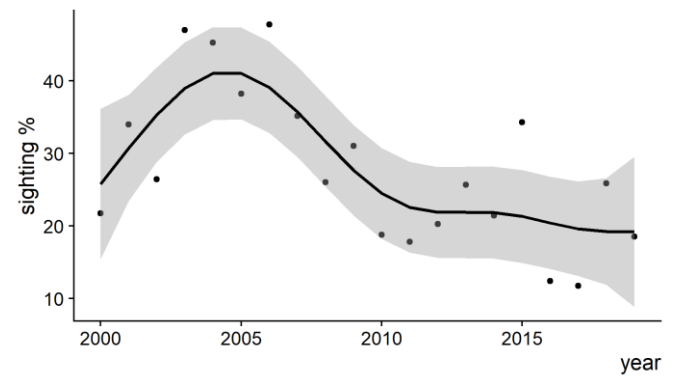
*Abudefduf taurus* Night Sergeant



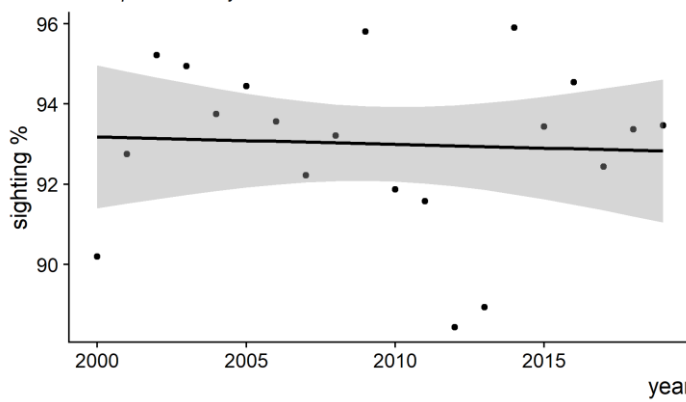
*Chromis cyanea* Blue chromis



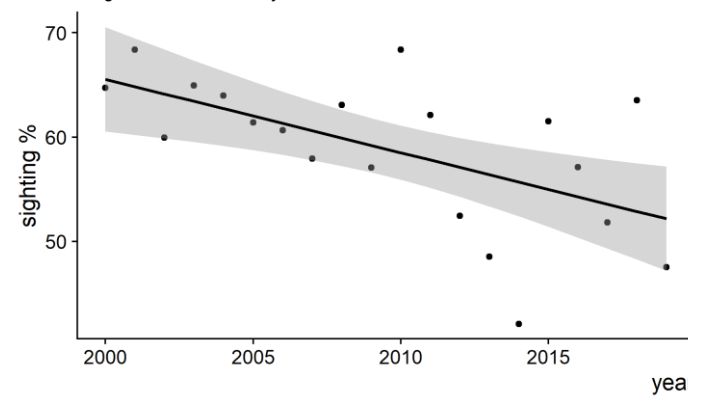
*Chromis insolata* Sunshinefish

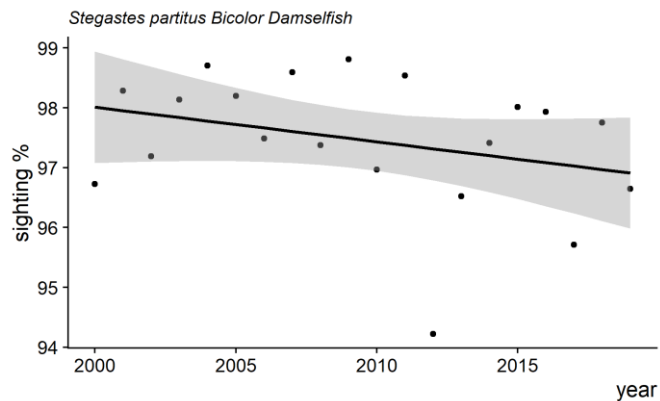
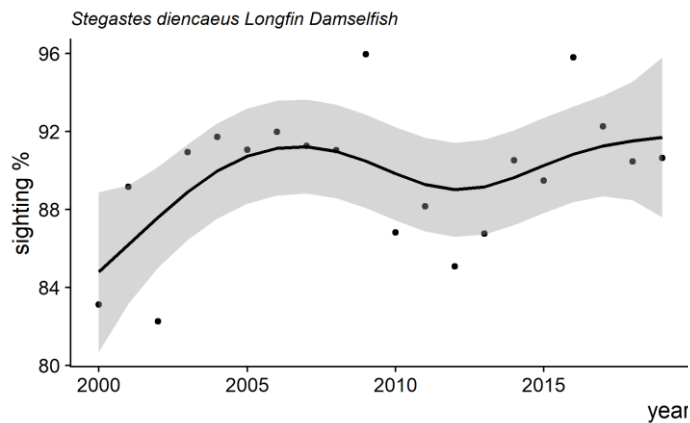


*Microspathodon chrysurus* Yellowtail Damselfish

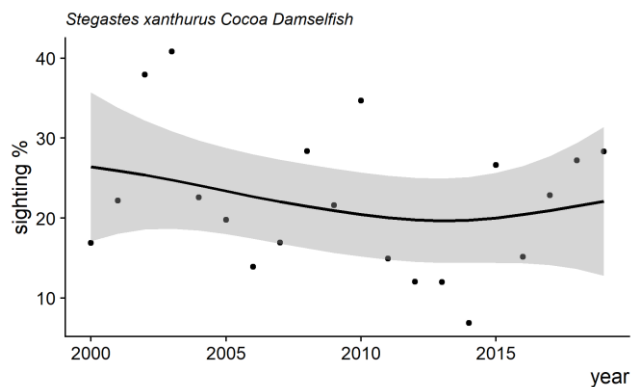
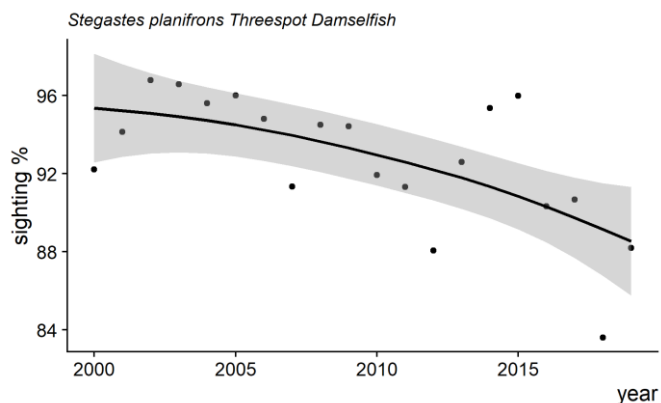


*Stegastes adustus* Dusky Damselfish



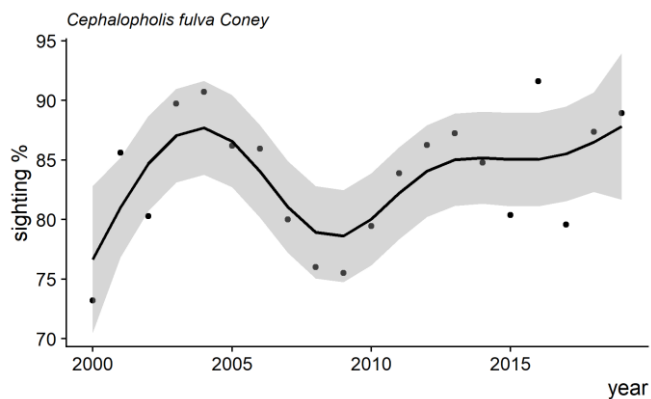
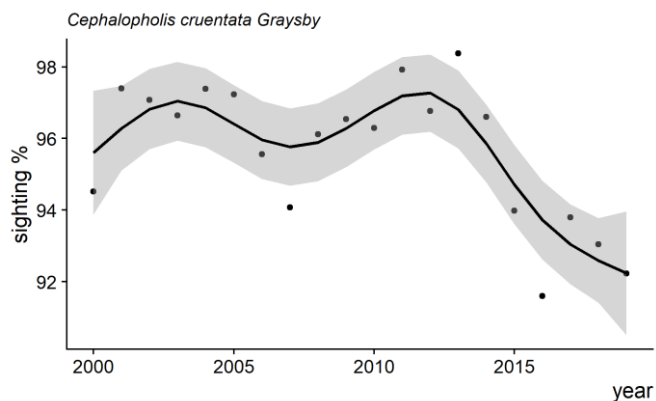


Protects algal garden

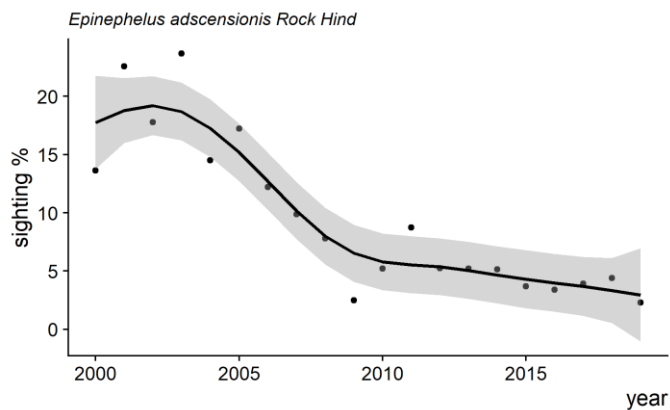


Protects algal garden

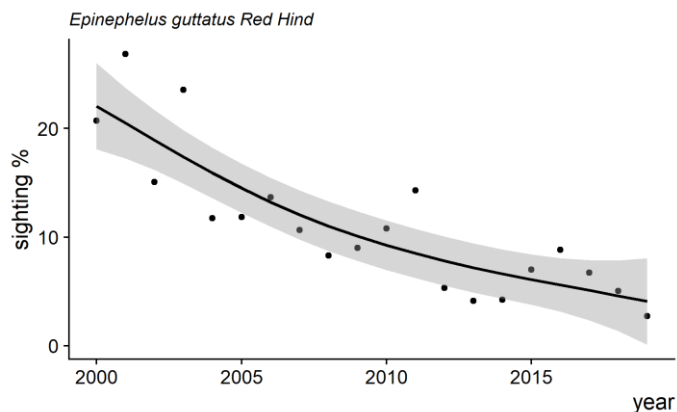
## Serranidae Groupers (Piscivorous), Sea Basses and Hamlets



Small grouper



Small grouper

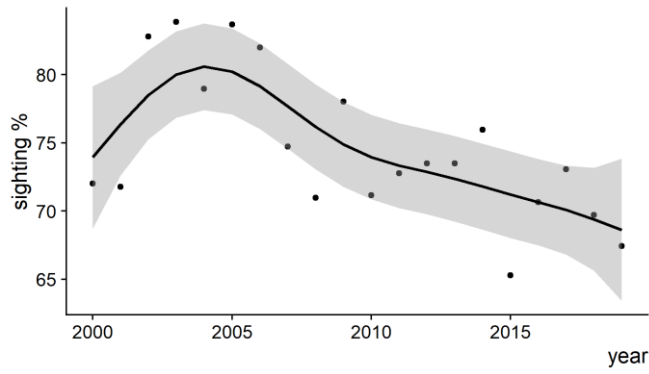


Mid-sized grouper

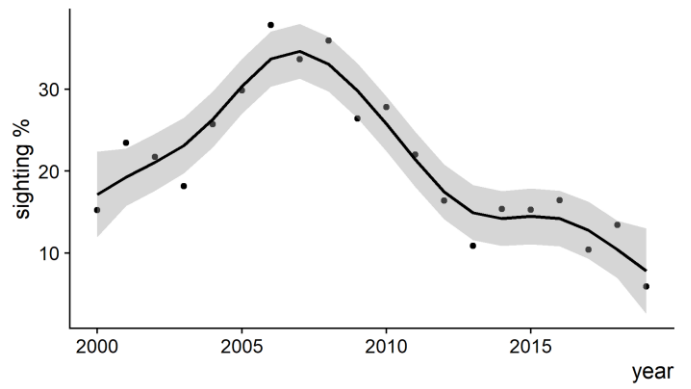
Mid-sized grouper



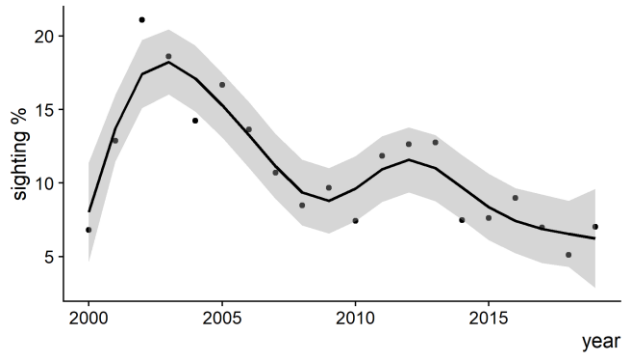
*Hypoplectrus chlorurus* Yellowtail Hamlet



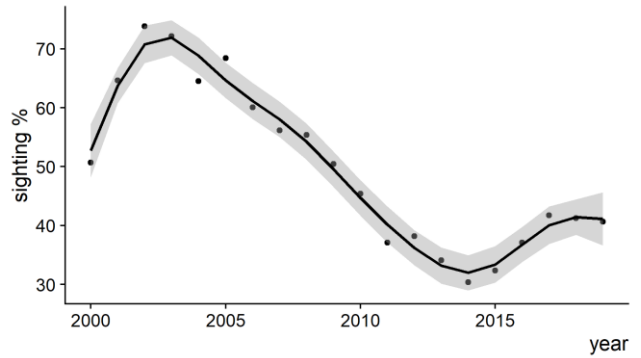
*Hypoplectrus* Hybrid Hamlet hybrid



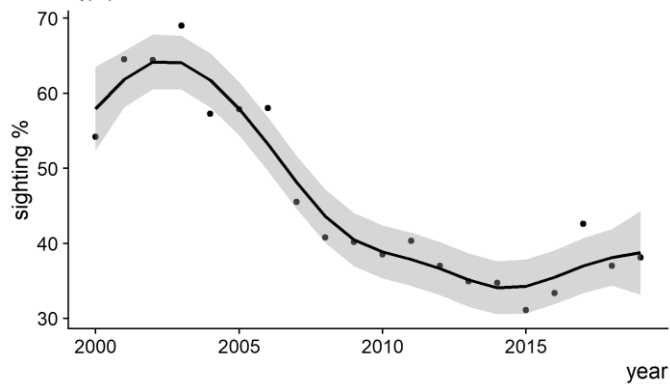
*Hypoplectrus nigricans* Black Hamlet



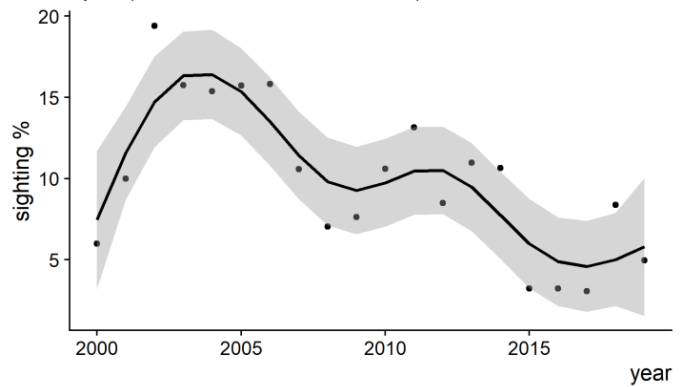
*Hypoplectrus puella* Barred Hamlet



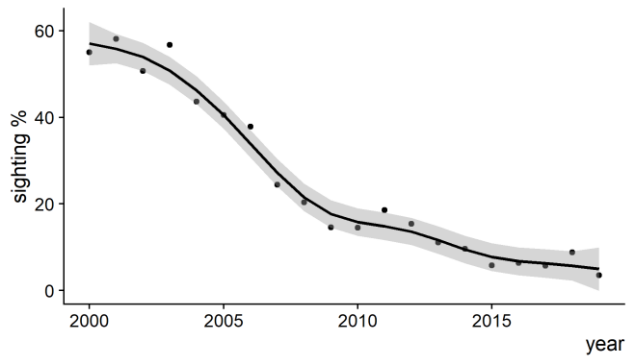
*Hypoplectrus unicolor* Butter Hamlet



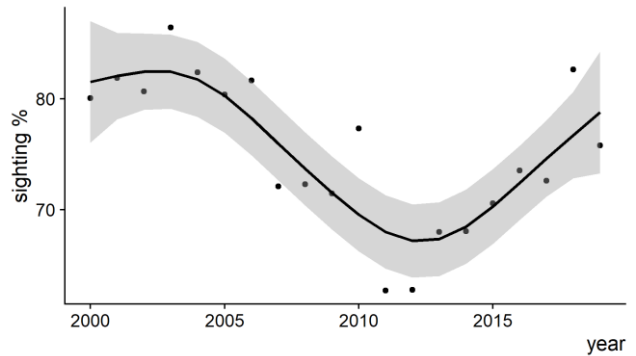
*Mycteroperca interstitialis* Yellowmouth Grouper



*Mycteroperca tigris* Tiger Grouper



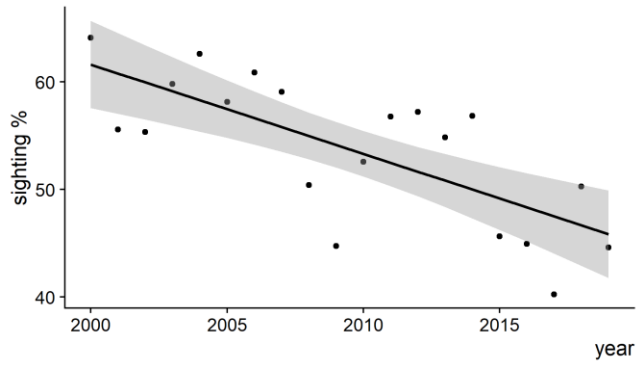
*Paranthias furcifer* Creolefish



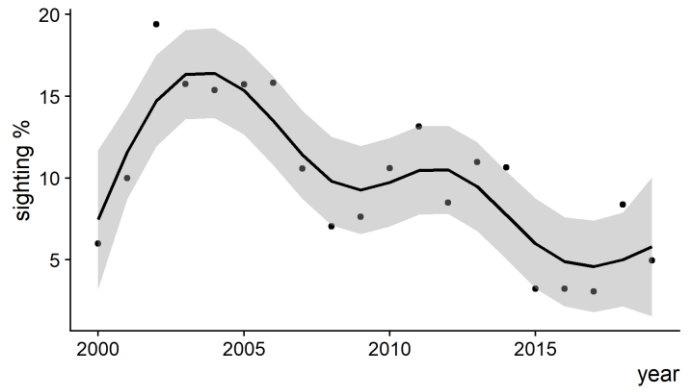
### Mid-sized grouper

### Large grouper

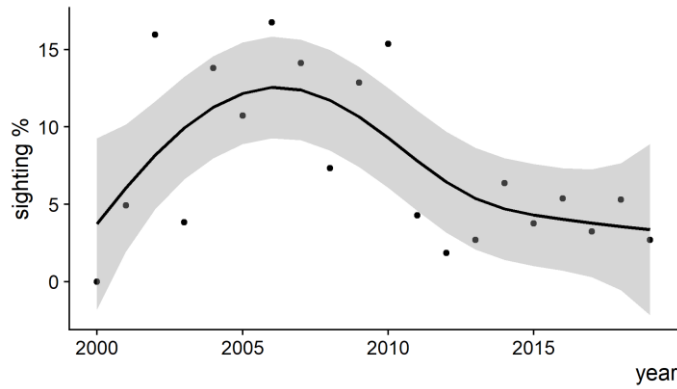
*Rypticus saponaceus* Greater Soapfish



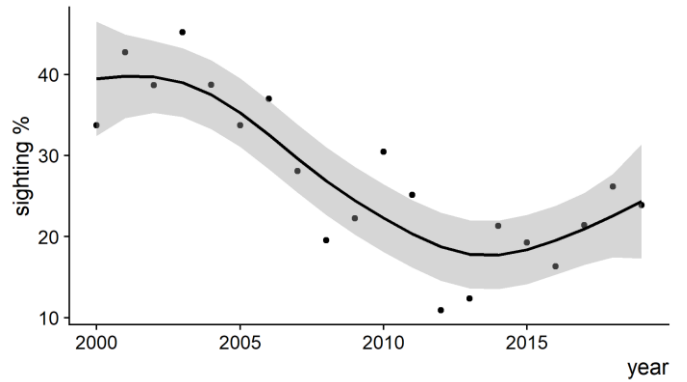
*Mycteroperca interstitialis* Yellowmouth Grouper



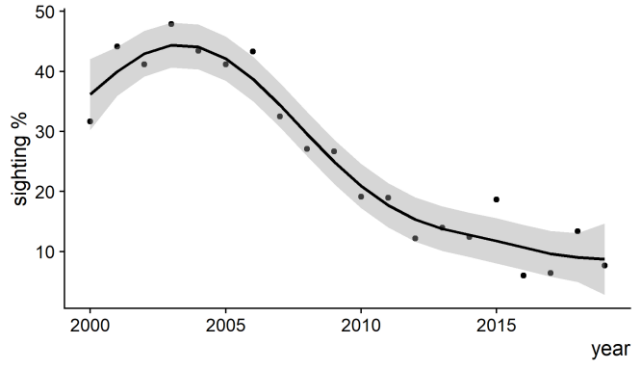
*Schultzea beta* School Bass



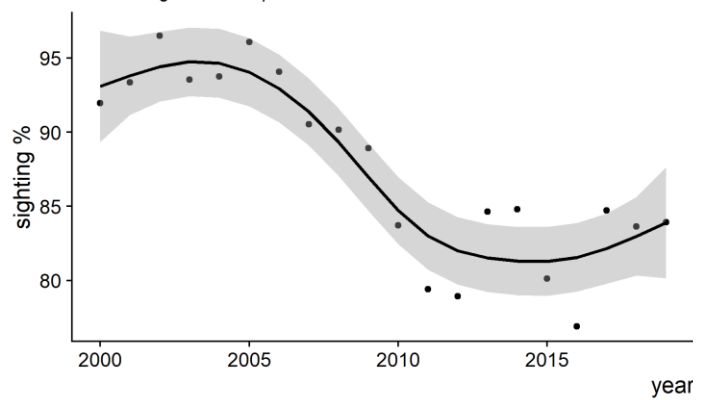
*Serranus baldwini* Lantern Bass



*Serranus tabacarius* Tobaccofish

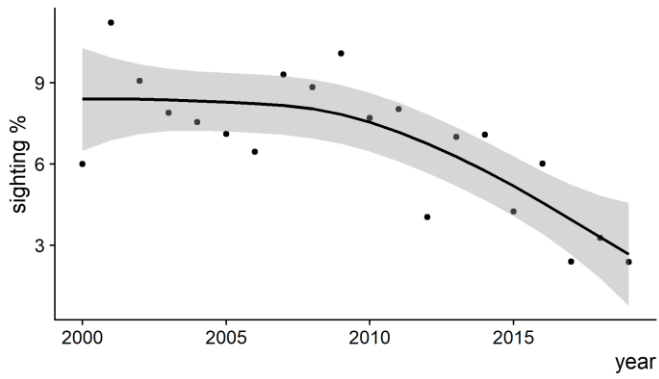


*Serranus tigrinus* Harlequin Bass

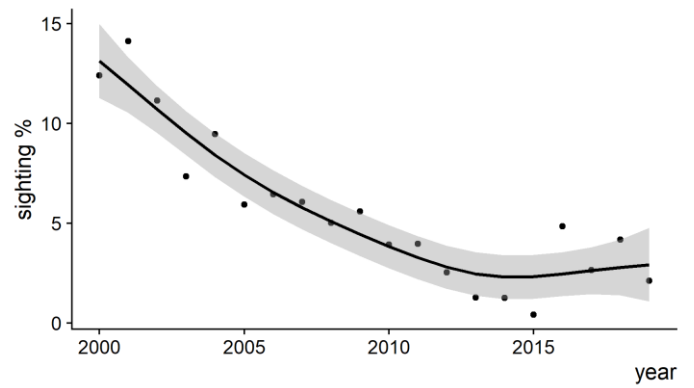


## Scaridae Parrotfishes (Herbivorous coral grazers)

*Scarus coelestinus* Midnight parrotfish

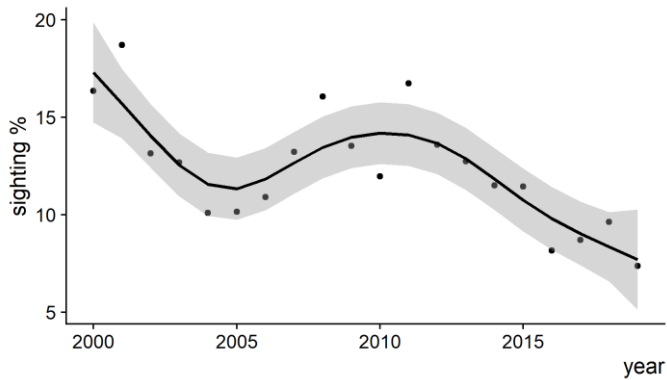


*Scarus coeruleus* Blue parrotfish



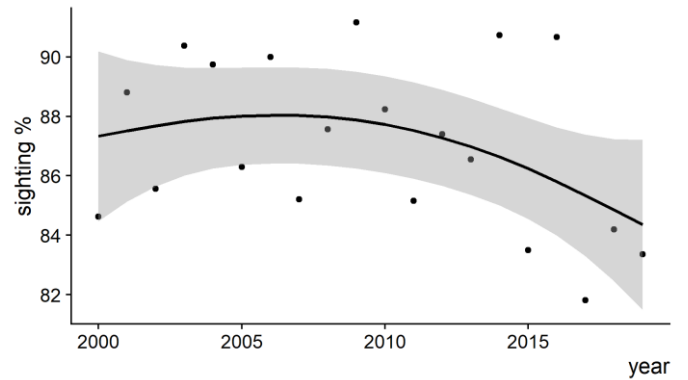
### Large parrotfish

*Scarus guacamaia* Rainbow parrotfish



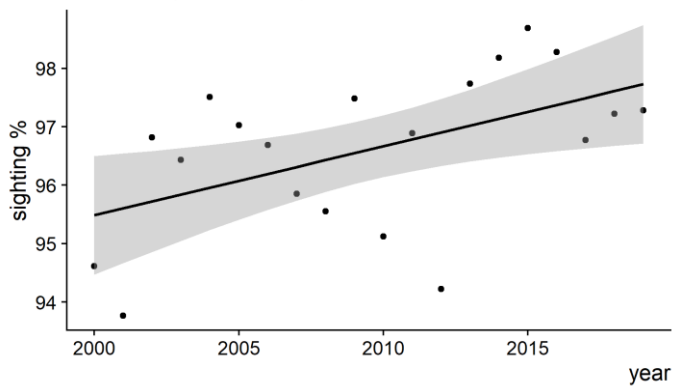
### Large parrotfish

*Scarus iseri* Striped parrotfish

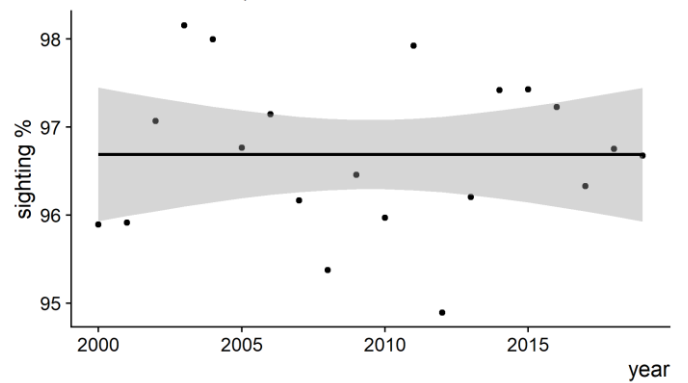


### Large parrotfish

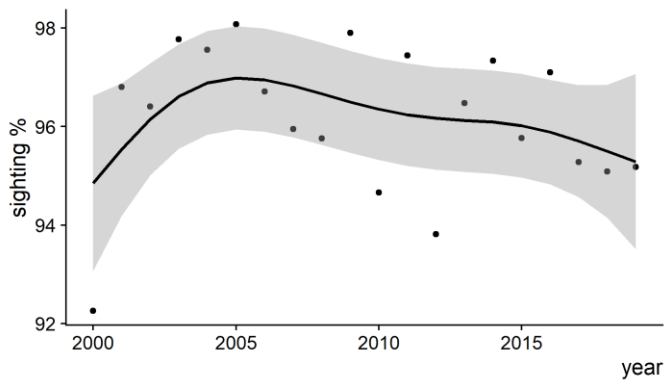
*Scarus taeniopterus* Princess parrotfish



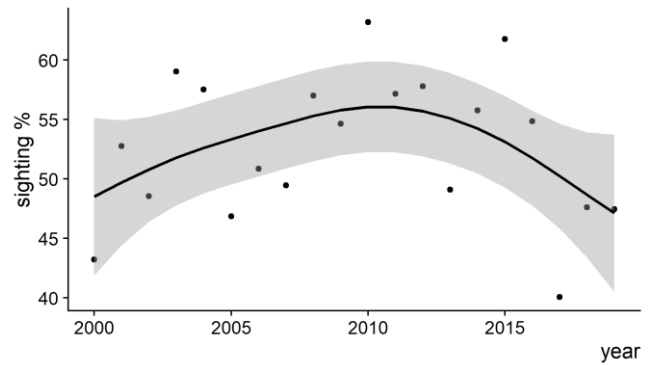
*Scarus vetula* Queen parrotfish



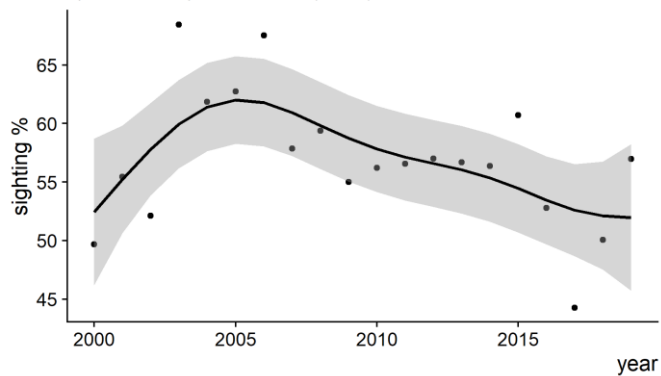
*Sparisoma aurofrenatum* Redband parrotfish



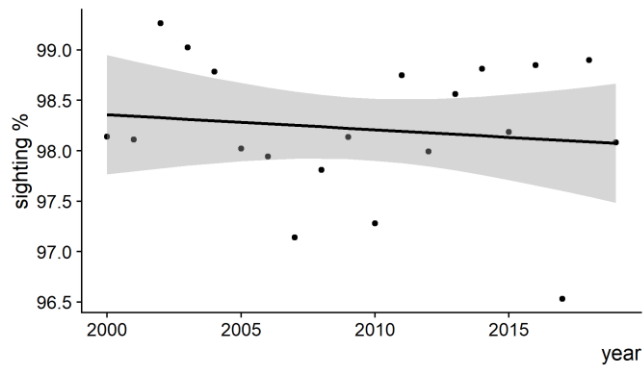
*Sparisoma chrysopterus* Redtail parrotfish



*Sparisoma rubripinne* Yellowtail (Redfin) Parrotfish

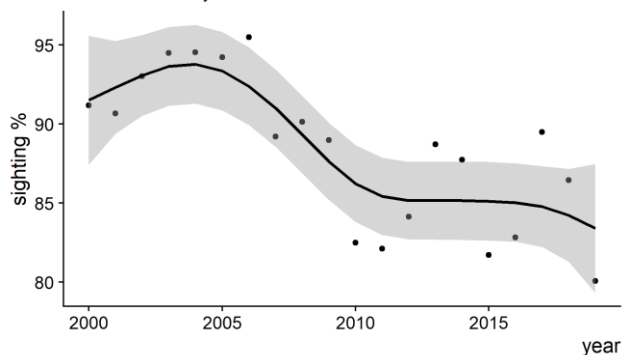


*Sparisoma viride* Stoplight Parrotfish



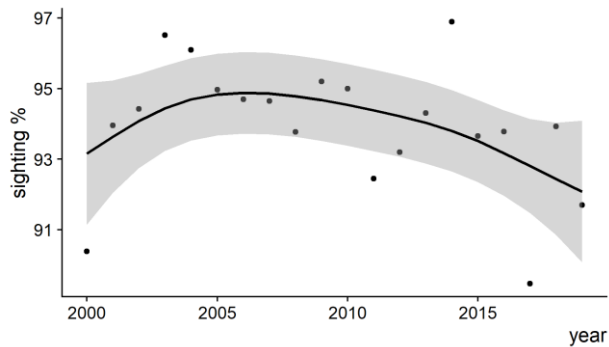
## Grammatidae Basslets

*Gramma loreto* Fairy basslet

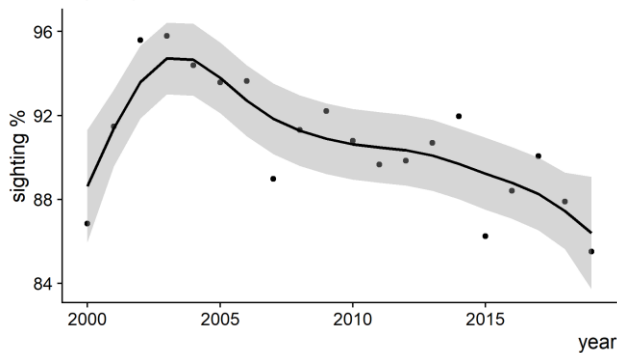


## Labridae Wrasses

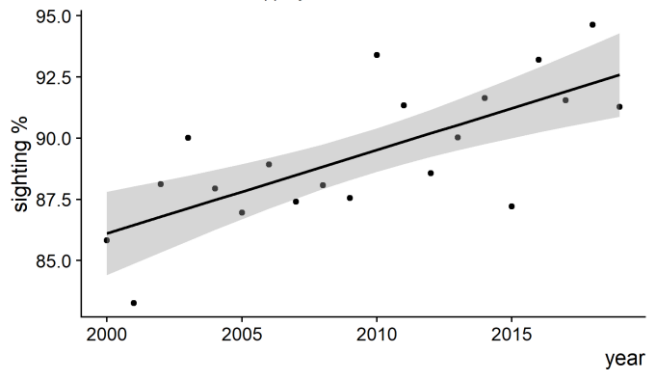
*Bodianus rufus* Spanish hogfish



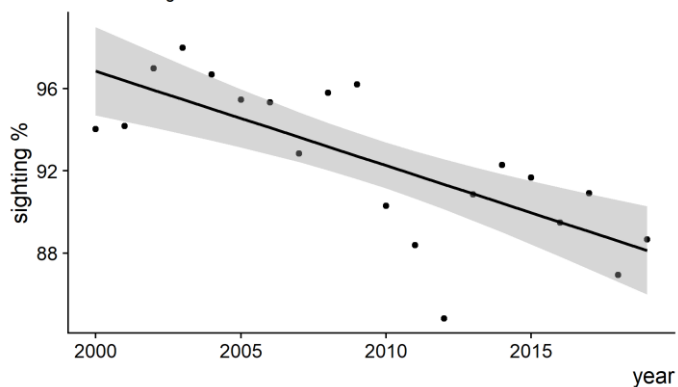
*Clepticus parrae* Creole wrasse



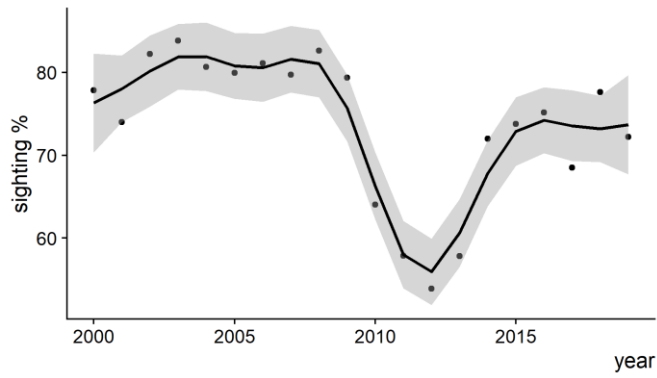
*Halichoeres bivittatus* Slippery Dick



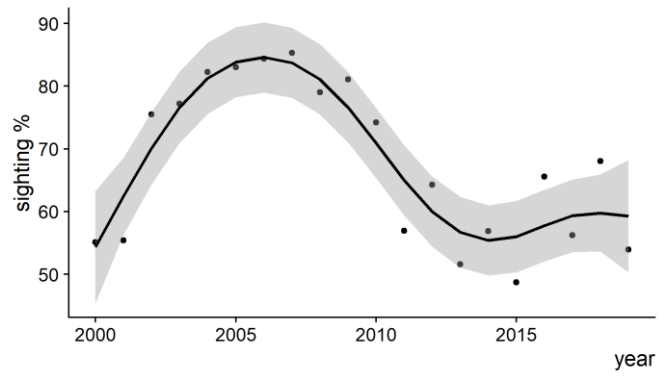
*Halichoeres gamoti* Yellowhead wrasse



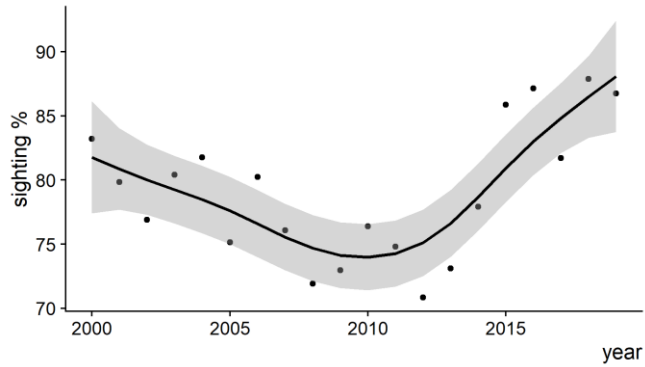
*Halichoeres maculipinna* Clown wrasse



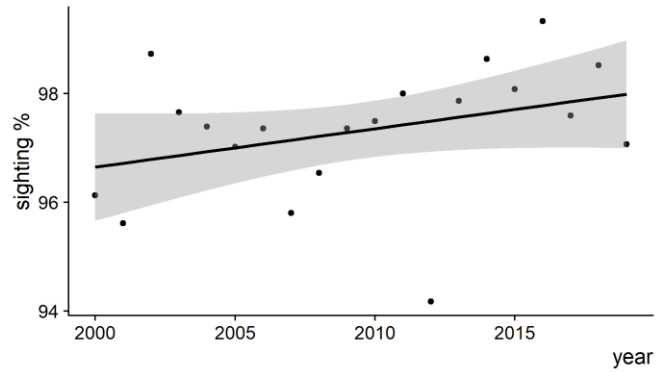
*Halichoeres pictus* Rainbow wrasse



*Halichoeres radiatus* Puddingwife

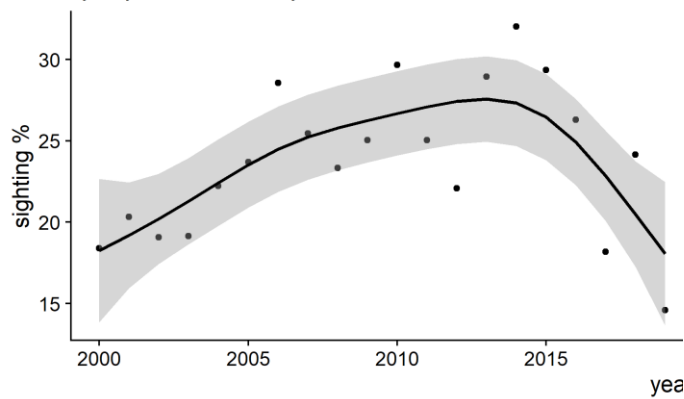


*Thalassoma bifasciatum* Bluehead

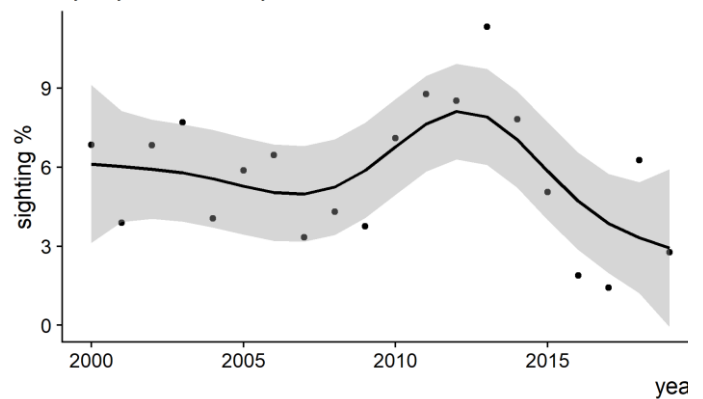


### Cleaner wrass when young

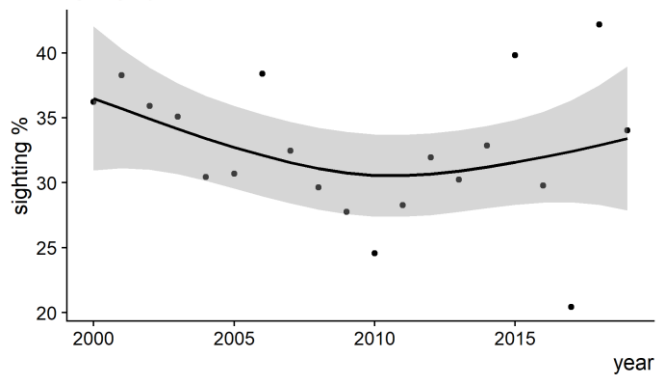
*Xyrichtys martinicensis* Rosy Razorfish



*Xyrichtys novacula* Pearly Razorfish

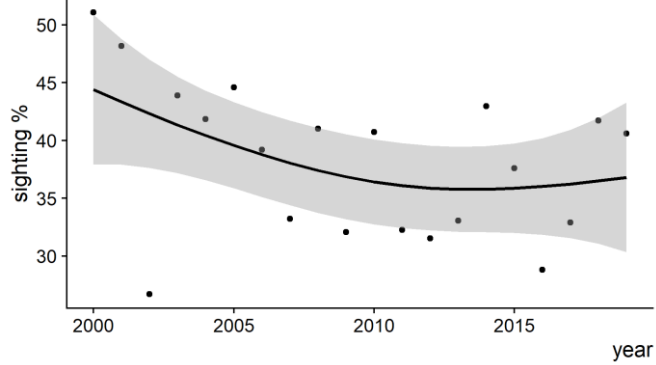


*Xyrichtys splendens* Green Razorfish

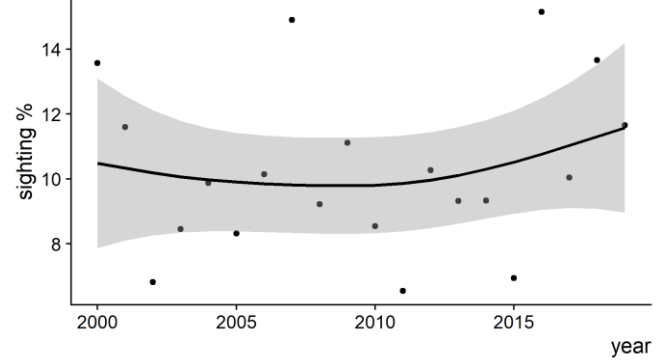


## Holocentridae Squirelfishes (Piscivorous)

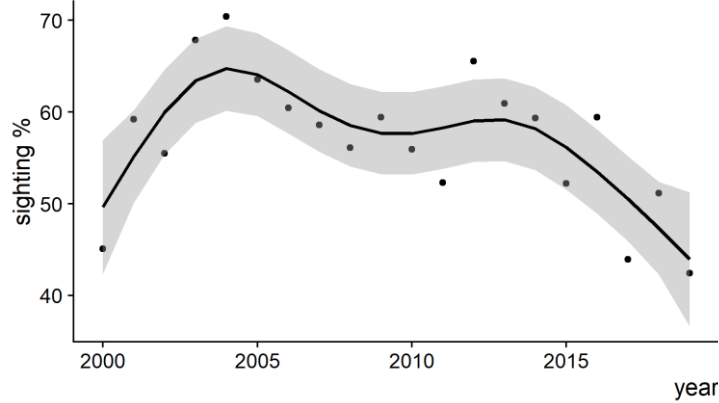
*Holocentrus adscensionis* Squirrelfish



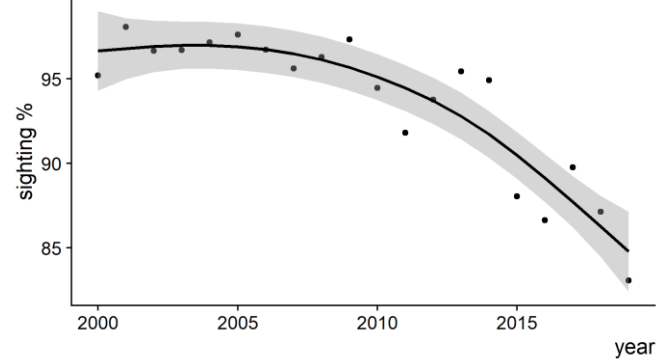
*Holocentrus coruscus* Reef Squirrelfish



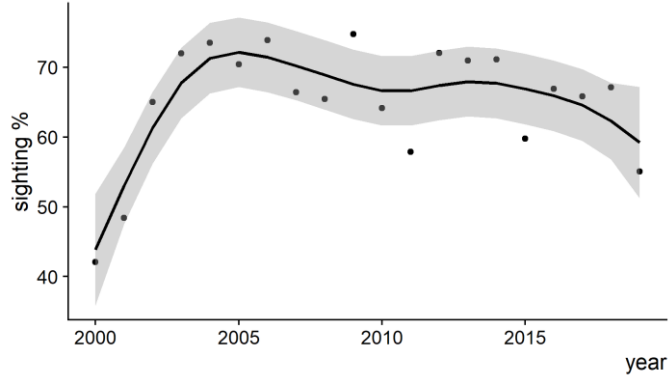
*Holocentrus rufus* Longspine Squirrelfish



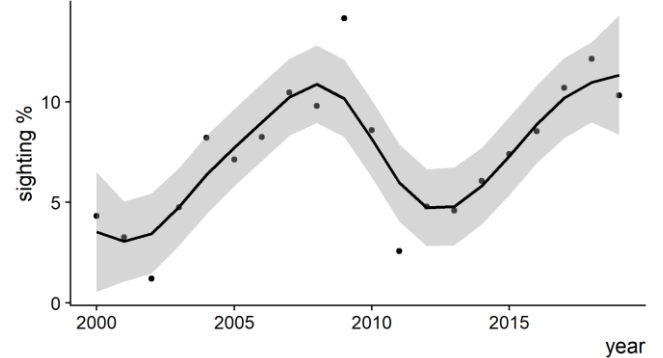
*Myripristis jacobus* Blackbar Soldierfish



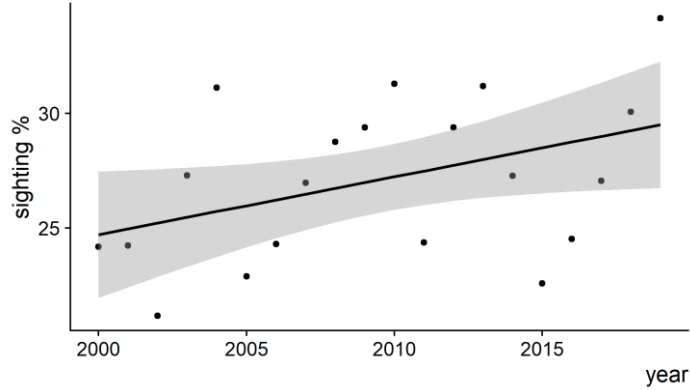
*Neoniphon marianus* Longjaw Squirrelfish



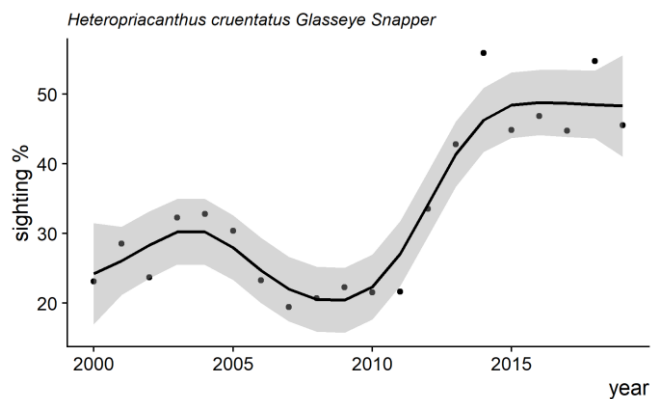
*Plectrypops retrospinus* Cardinal Soldierfish



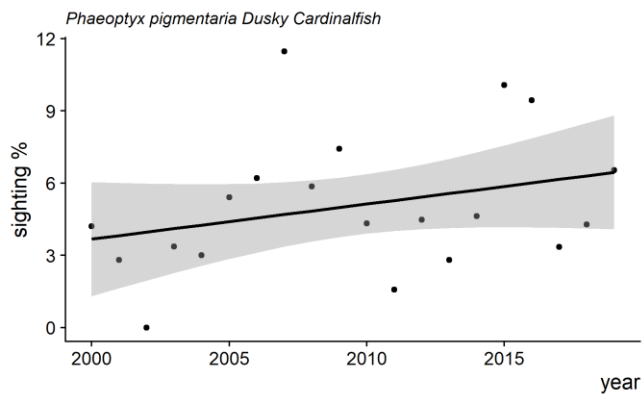
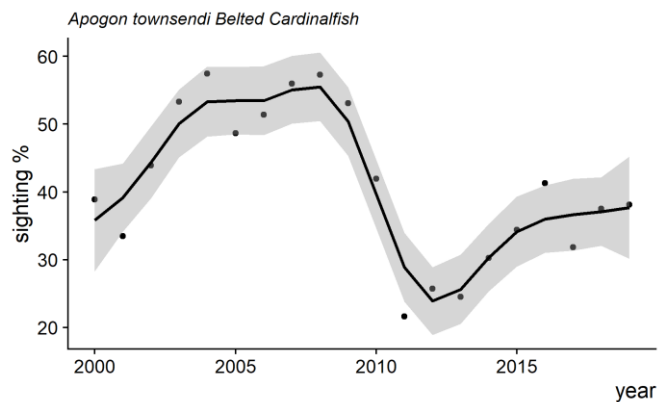
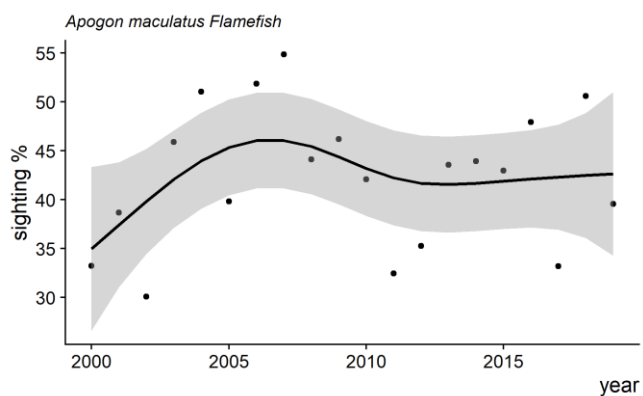
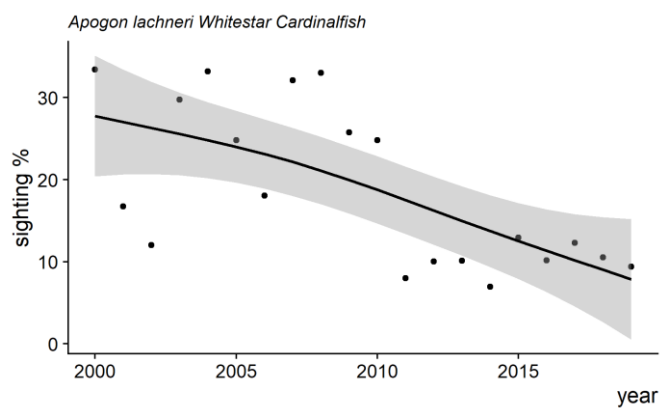
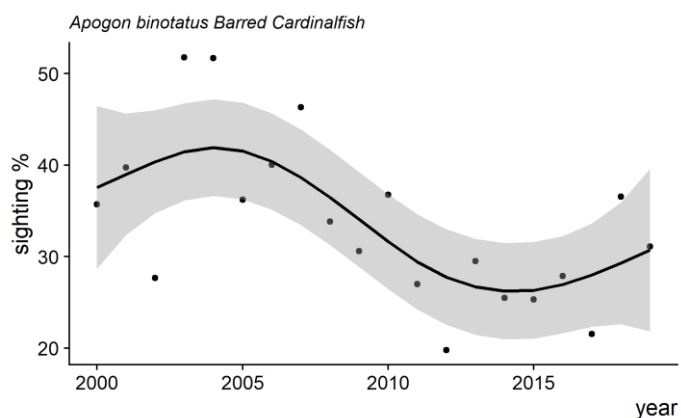
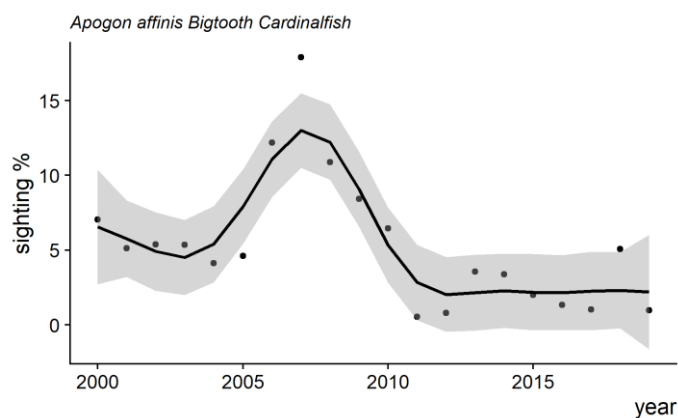
*Sargocentron vexillarium* Dusky Squirrelfish



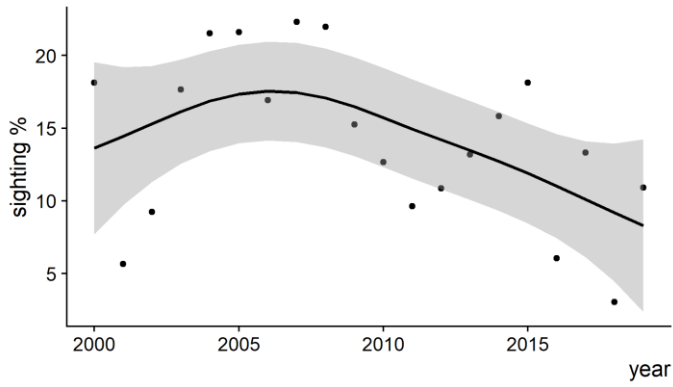
## Priacanthidae Bigeyes



## Apogonidae Cardinalfishes (Piscivorous)

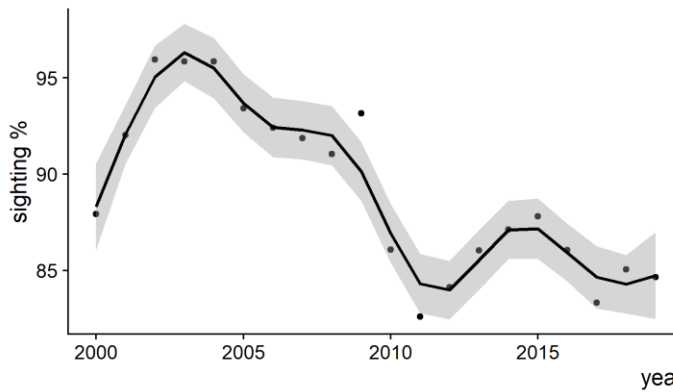


*Phaeoptyx xenus* Sponge Cardinalfish

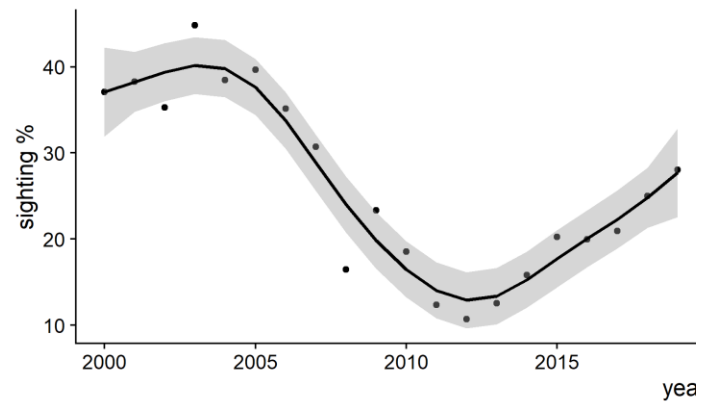


## Gobiidae Gobies

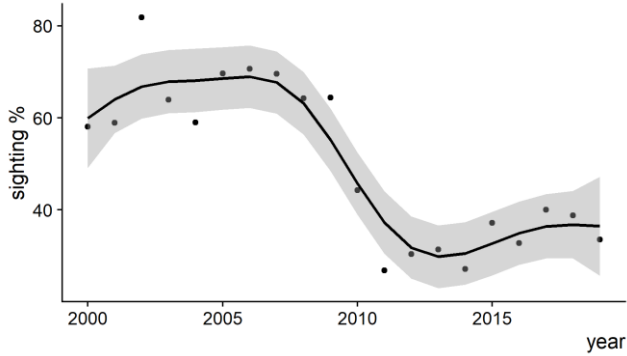
*Coryphopterus venezuelae* Bridled goby



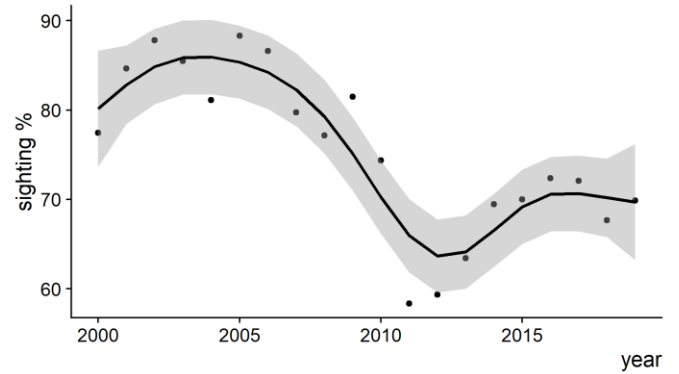
*Coryphopterus dicrus* Colon goby



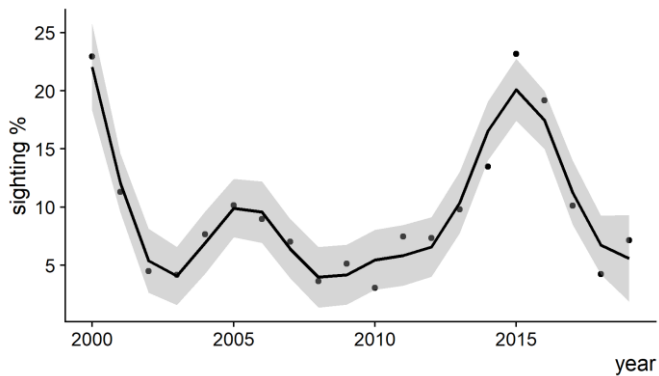
*Coryphopterus eidolon* Pallid Goby



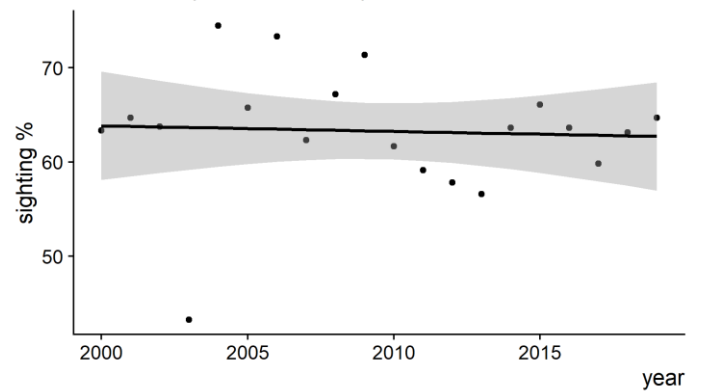
*Coryphopterus lipernes* Peppermint Goby



*Elacatinus chancei* Shortstripe Goby



*Elacatinus evelynae* Sharknose Goby

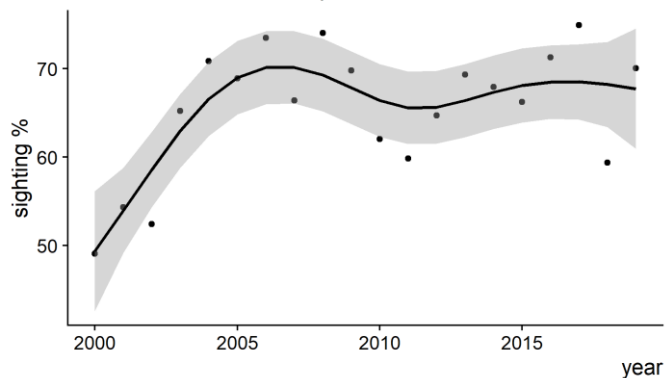


Cleaner goby

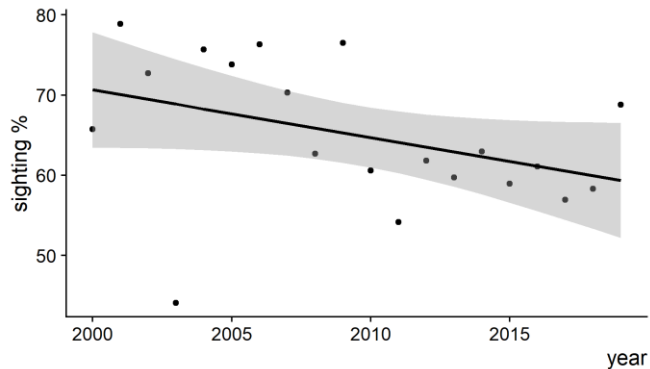
Cleaner goby



*Elacatinus horsti*, Yellowline Goby

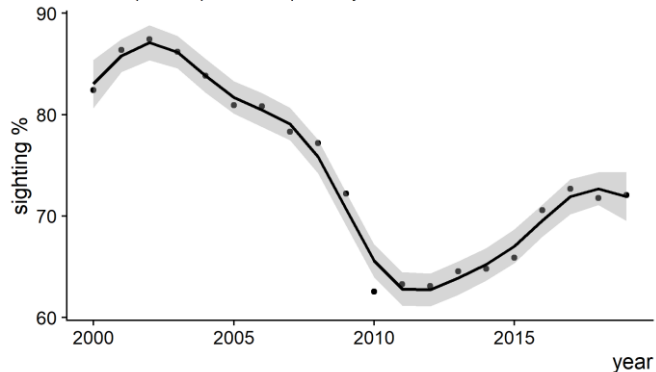


*Elacatinus randalli* Yellownose Goby



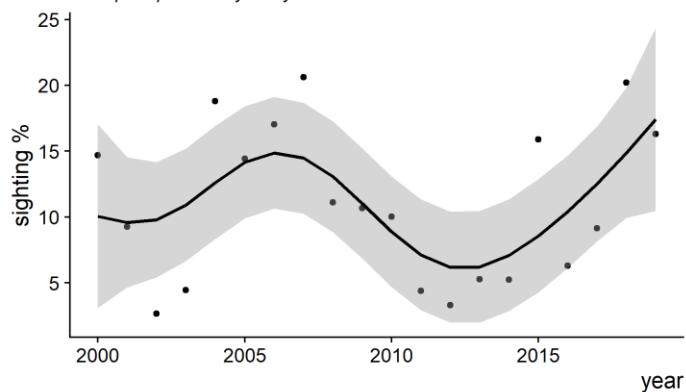
## Cleaner goby

*Gnatholepis thompsoni* Goldspot Goby

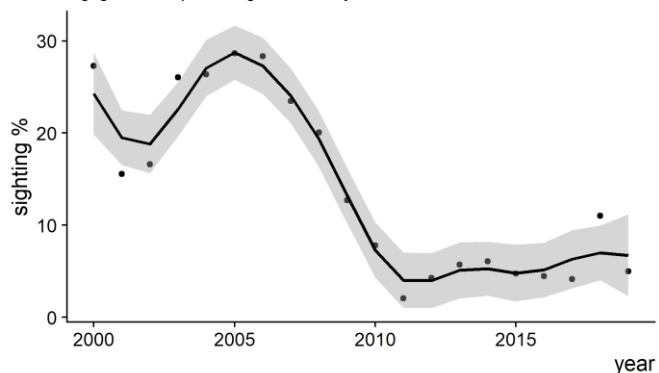


## Cleaner goby

*Priolepis hipolitii* Rusty Goby

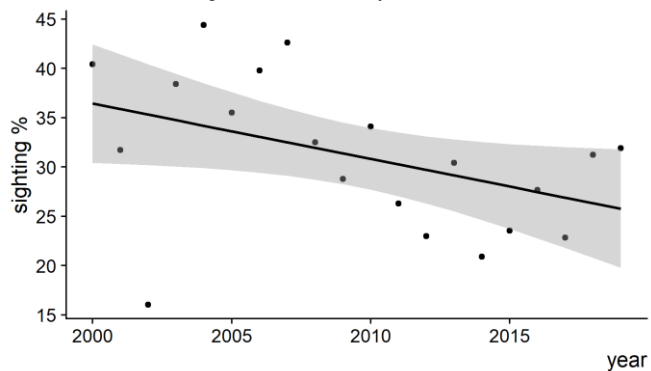


*Tigrigobius dilepis* Orangesided Goby

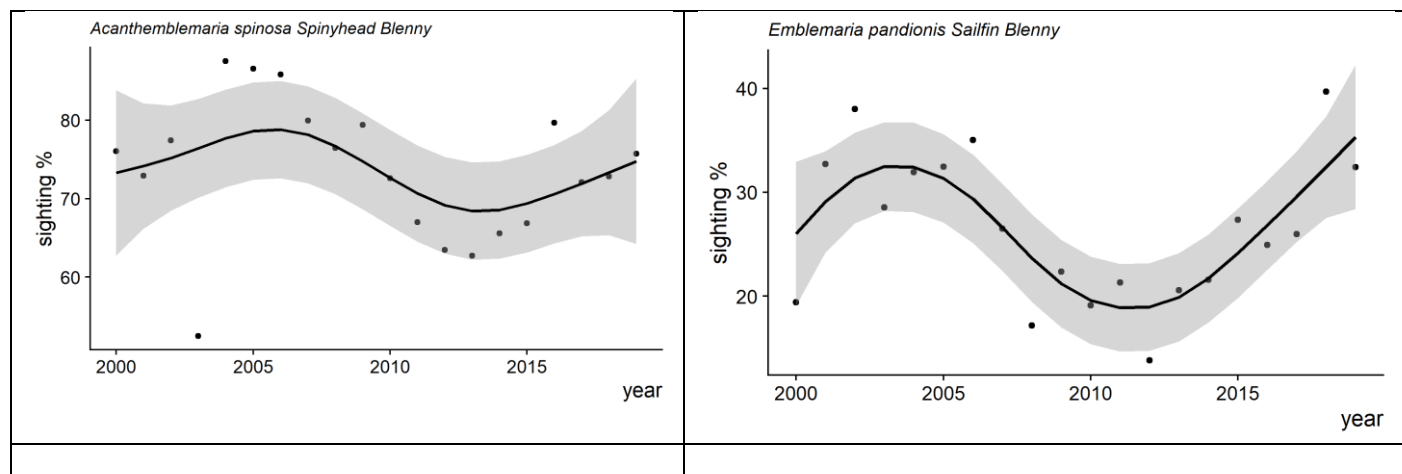


## Labrisomidae Labrisomid blennies

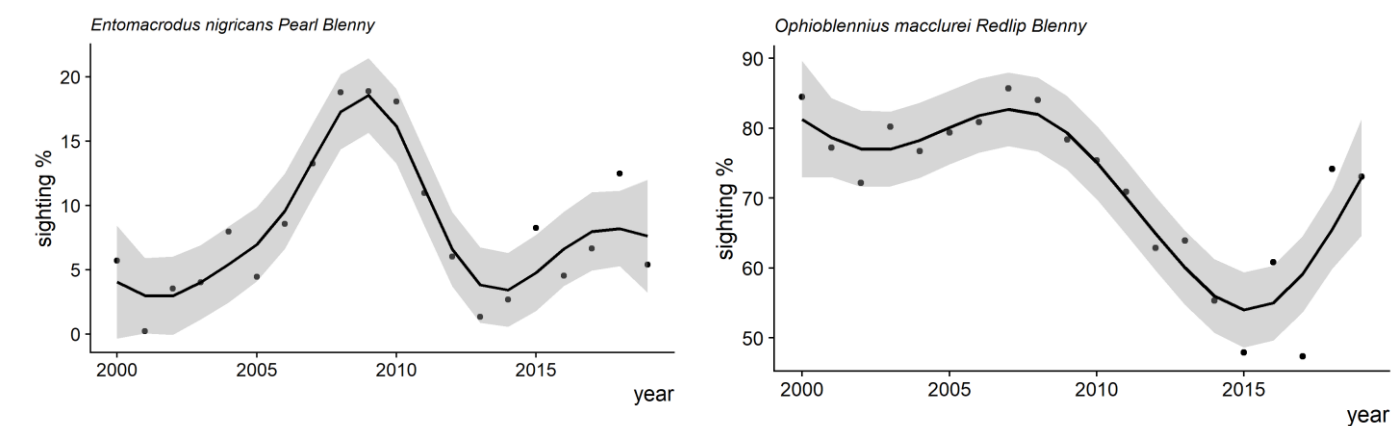
*Malacoctenus triangulatus* Saddled Blenny



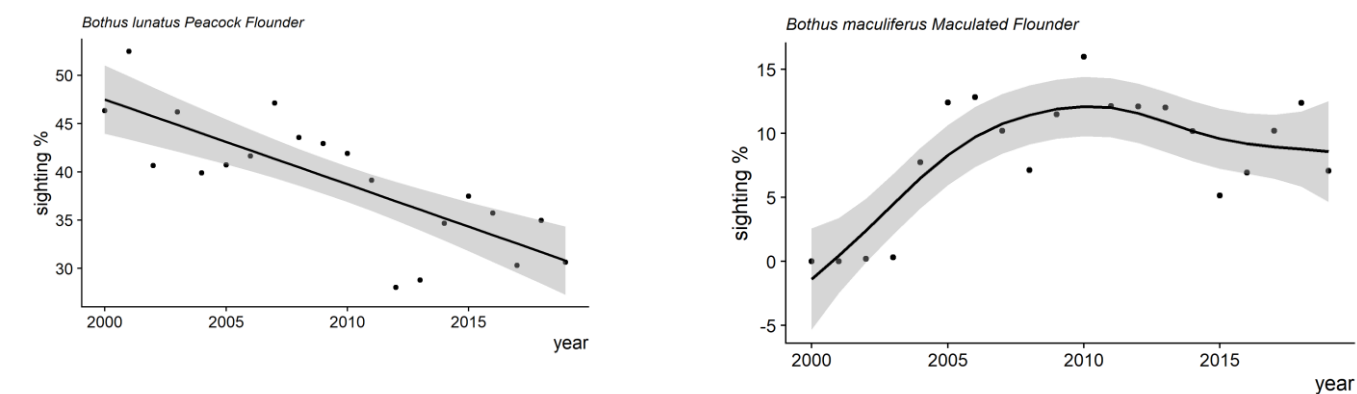
## Chaenopsidae Flag blennies



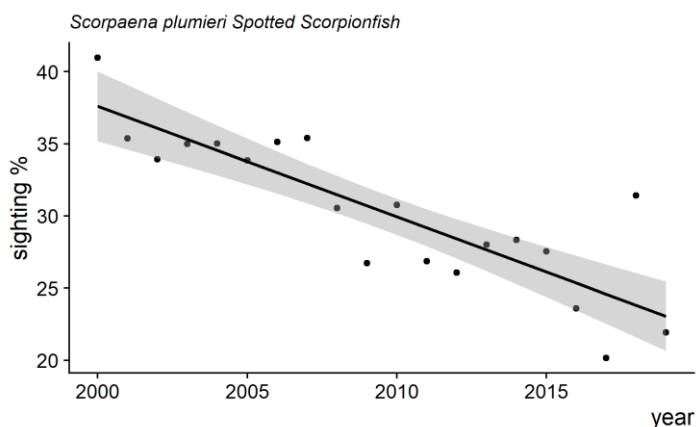
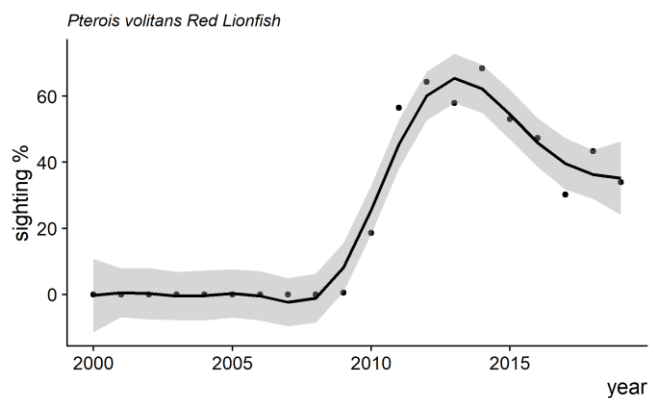
## Blenniidae Combtooth blennies



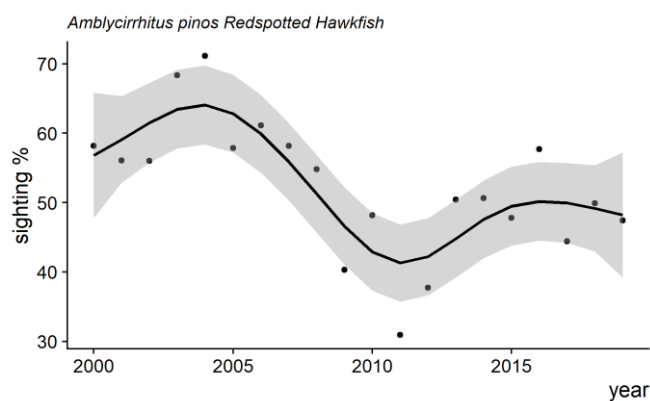
## Bothidae Left-eye Flounders (Piscivorous)



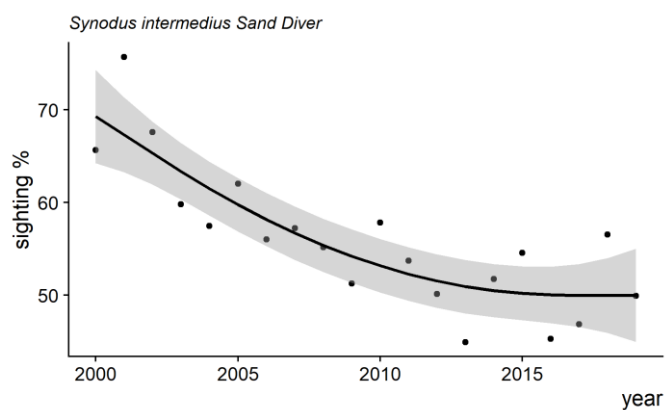
## Scorpaenidae Scorpionfishes (Piacivorous)



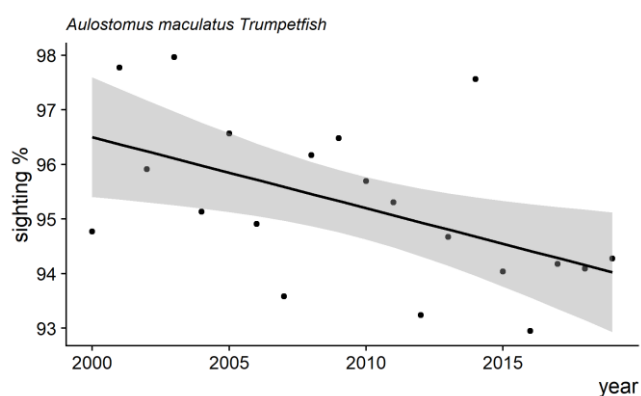
## Cirrhitidae Hawkfishes



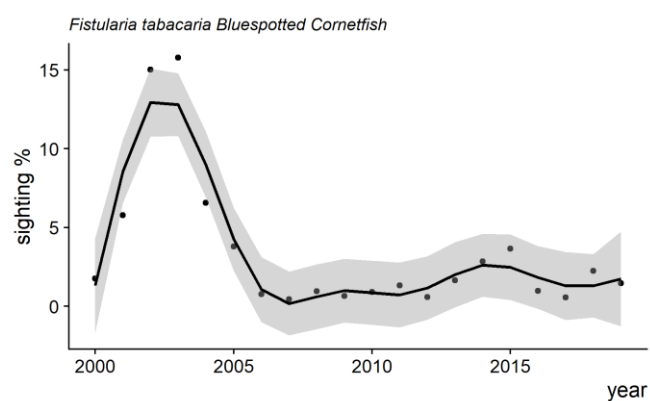
## Synodontidae Lizardfishes (Piscivorous)



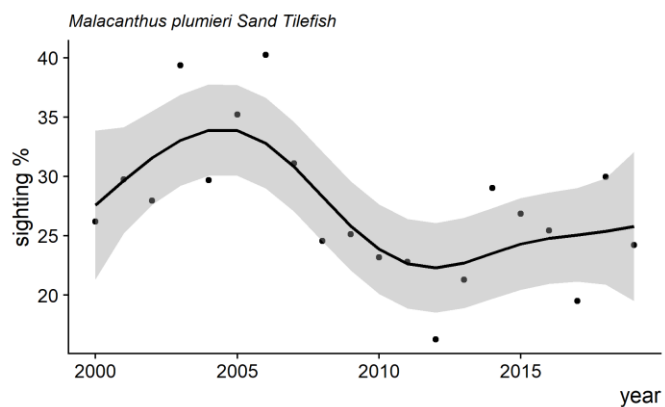
## Aulostomidae Trumpetfishes (Piscivorous)



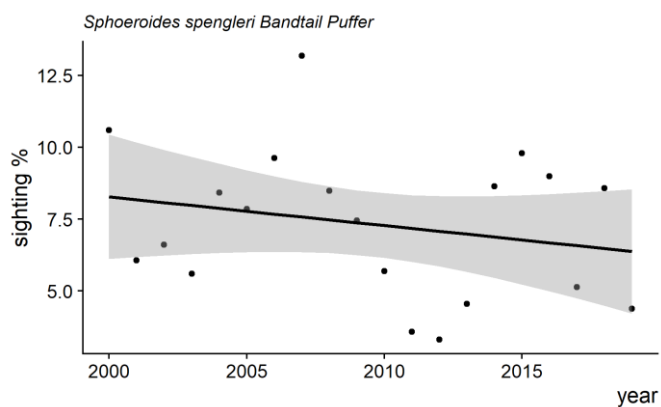
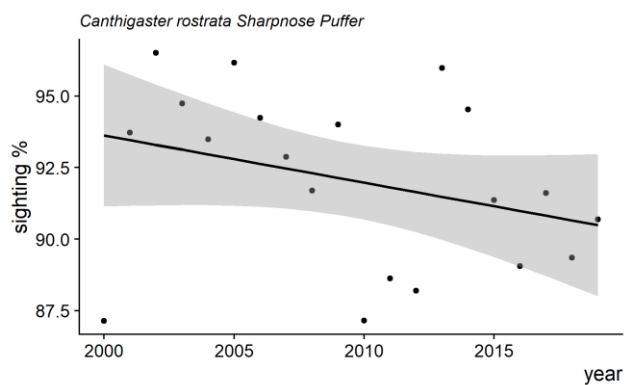
## Fistulariidae Cornetfishes (Piscivorous)



## Malacanthidae Tilefishes

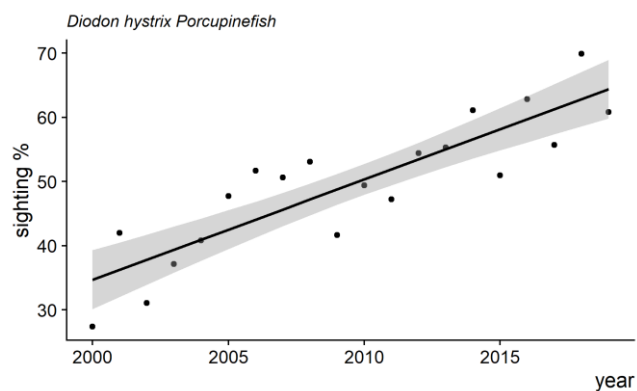
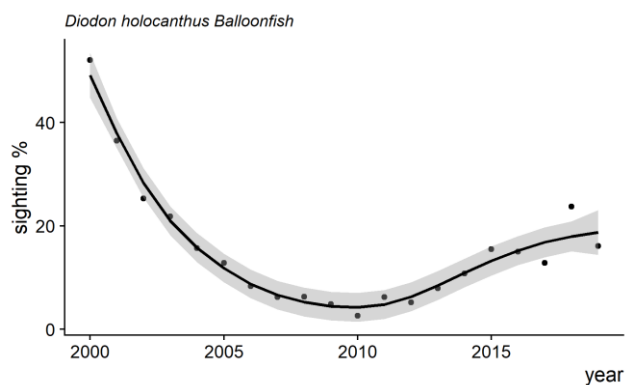


## Tetraodontidae Puffers

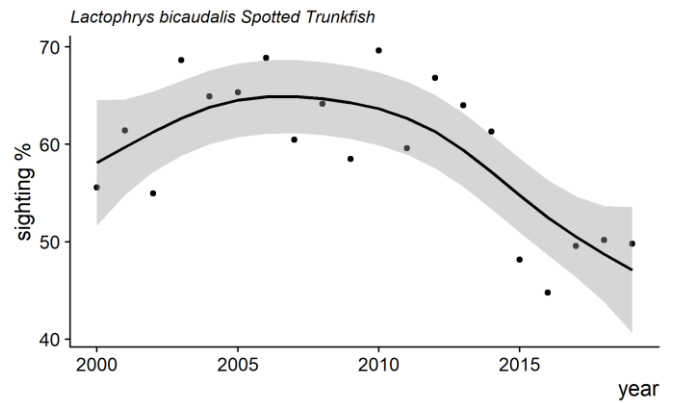
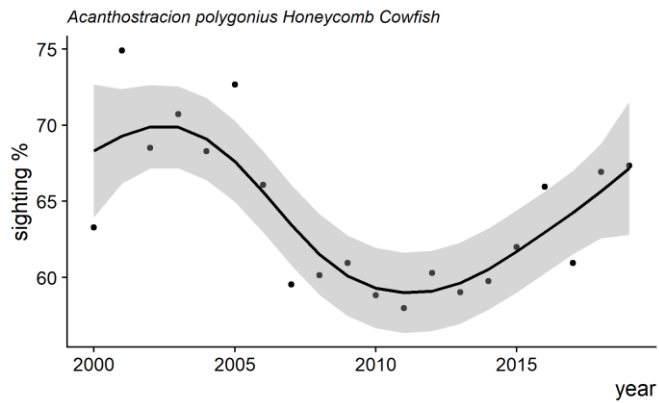


Facultative spongivororous for 15%

## Diodontidae Porcupinefishes

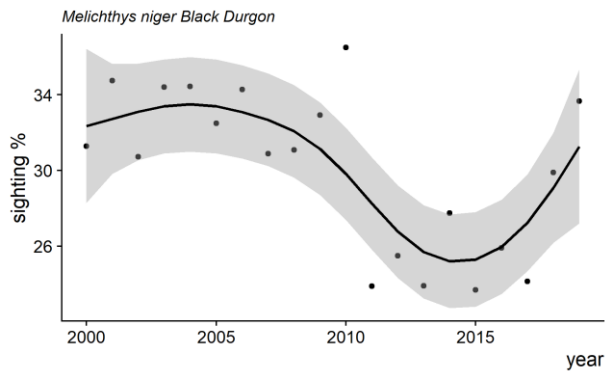


## Ostraciidae Boxfishes

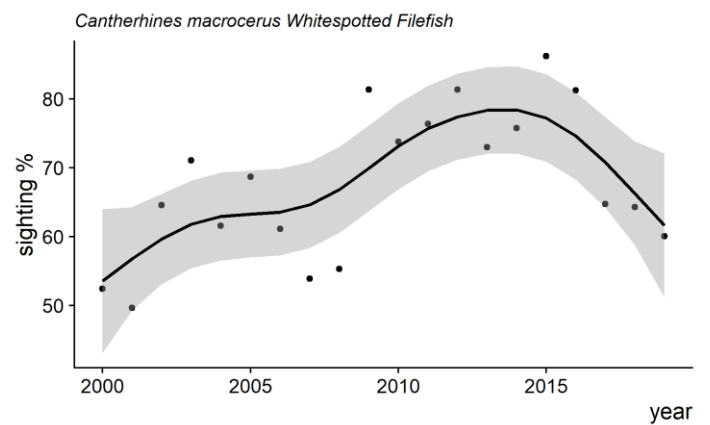
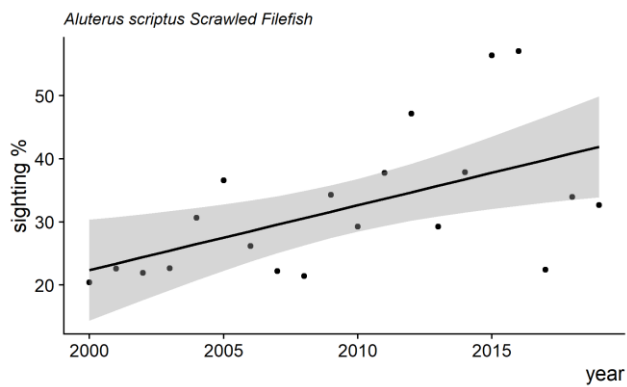


Facultative Spongivorous for 12%

## Balistidae Triggerfishes

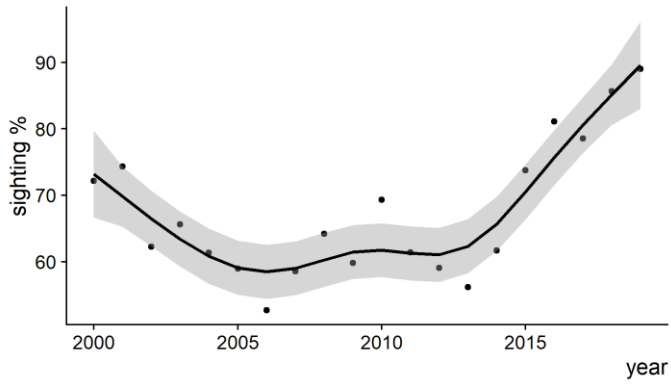


## Monacanthidae Filefishes

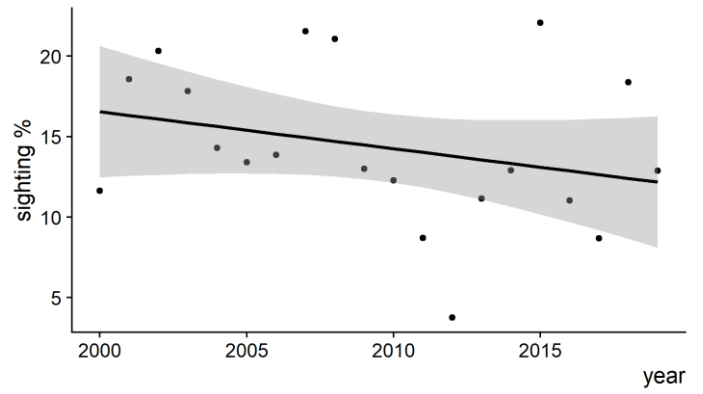


(Facultative) Spongivorous for 87%

*Cantherhines pullus* Orangespotted Filefish



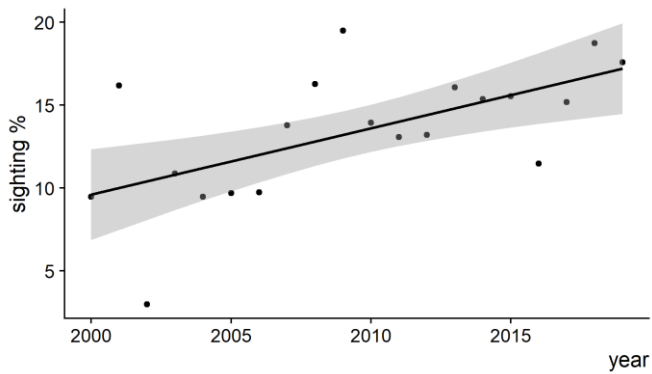
*Monacanthus tuckeri* Slender Filefish



Facultative Spongivorous for 31%

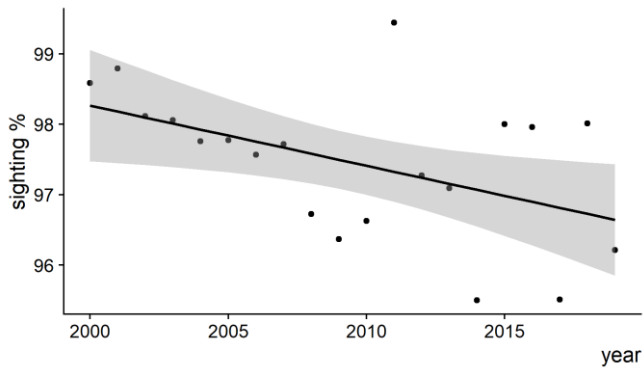
## Pempheridae Sweepers

*Pempheris schomburgkii* Glassy Sweeper

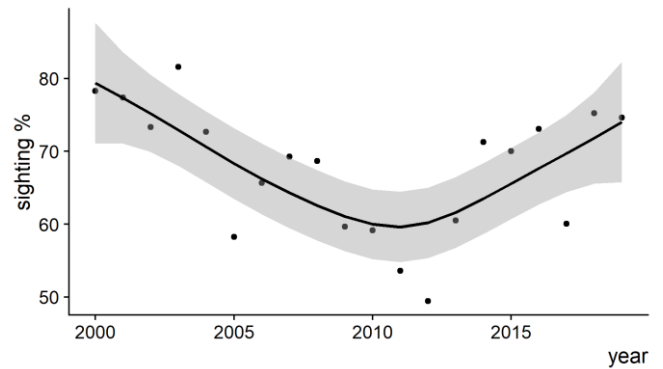


## Mullidae Goatfishes (Piscivorous)

*Mulloidichthys martinicus* Yellow Goatfish

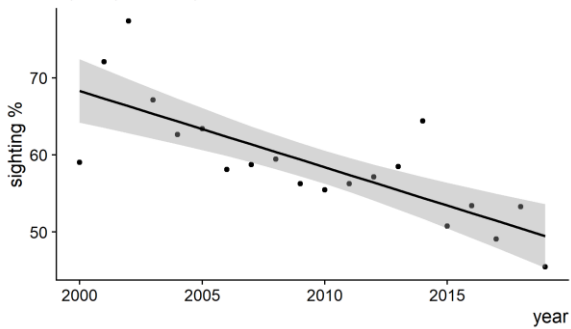


*Pseudupeneus maculatus* Spotted Goatfish

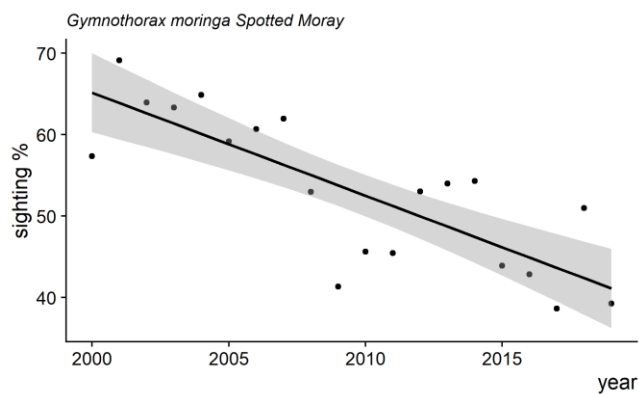
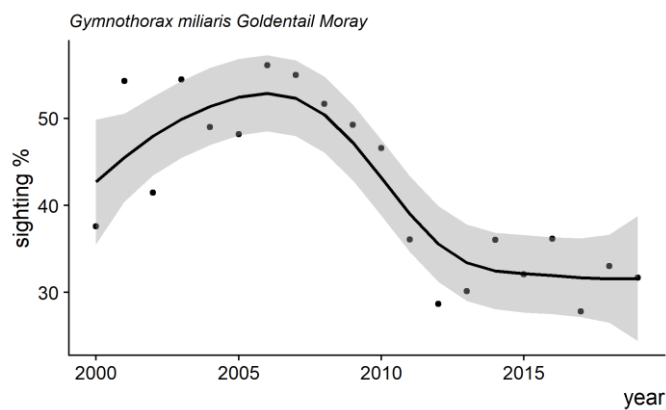
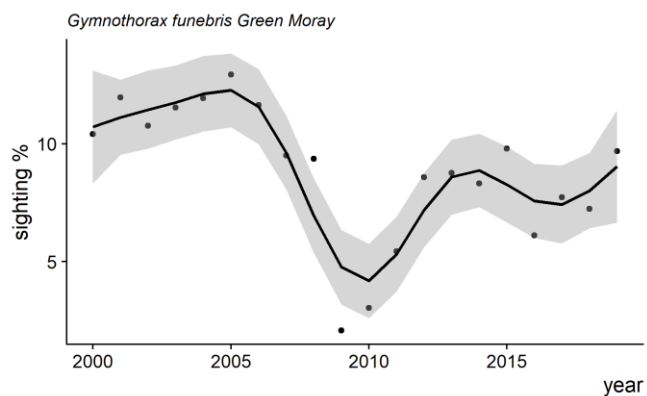
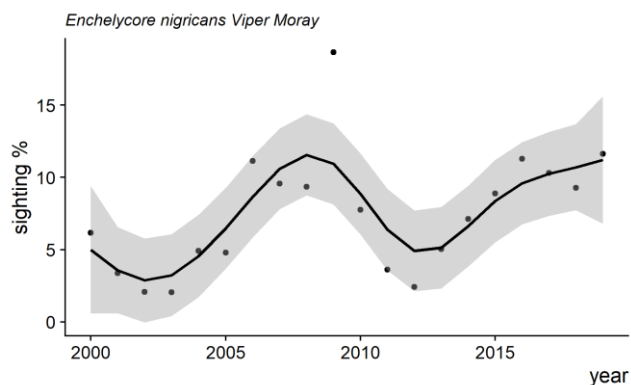
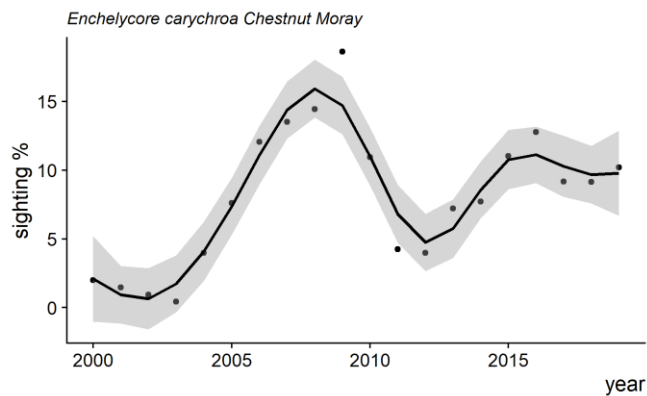
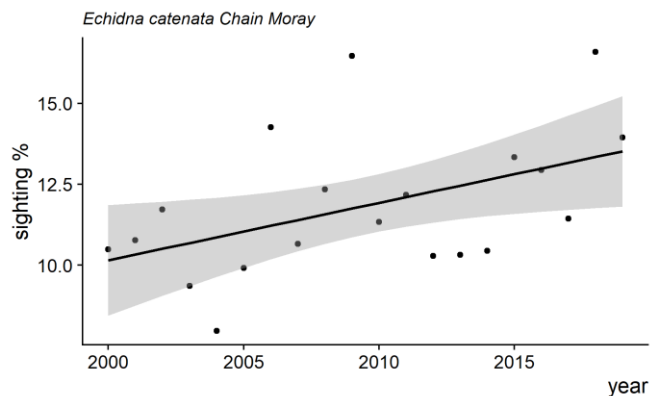


## Sciaenidae Drums

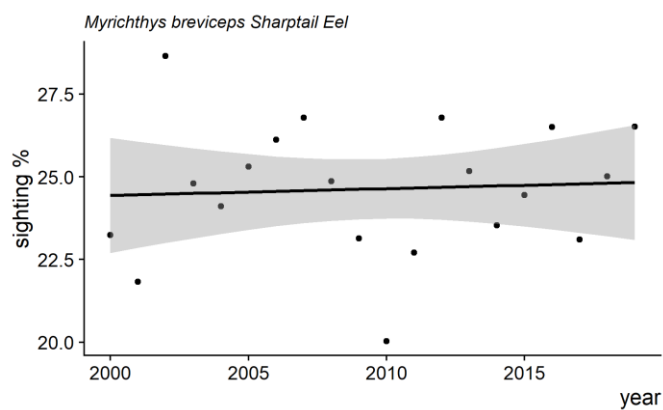
*Equetus punctatus* Spotted Drum



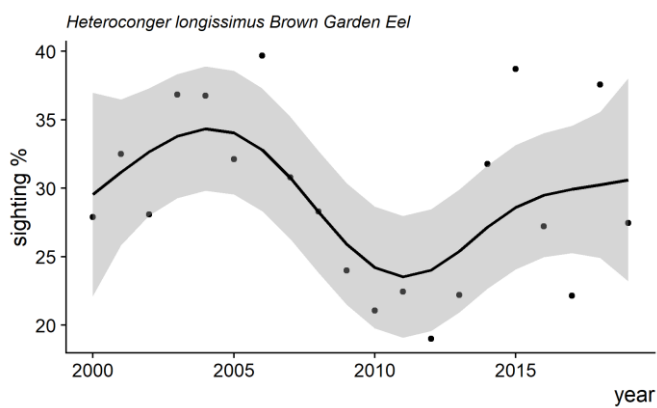
## Muraenidae Moray eels (Piscivorous)



## Ophichthidae Snake eels (Piscivorous)



## Congridae Conger eels



## **Sources on ecological roles**

Hixon, M., 2015. Predation: Piscivory and the ecology of coral reef fishes. In C. Mora (Ed.), *Ecology of fishes on coral reefs* (pp. 41–52). Cambridge, UK: Cambridge University Press.

Randall JE, Hartman WD, 1968. Sponge-feeding fishes of the West Indies. *Marine Biology* 1: 216–225.

Rotjan RD, Lewis SM, 2008. Impact of coral predators on tropical reefs. *Marine Ecology Progress Series* 367:73–91.