ENSO

```
density <- arrow::read_feather(here::here("data", "tidy", "Density.feather")) %>%
  dplyr::filter(!CommonName %in% c(
    "soupfin shark", 'rockfish spp.', "barred sand bass",
    'black croaker', 'broadnose sevengill shark',
    'calico rockfish, juvenile', 'clingfish spp.',
    "copper rockfish, all", "crevice kelpfish",
    'canary rockfish, juvenile', 'cusk eel spp.',
    "finescale triggerfish, adult", "goby spp.",
    "gunnel spp.", "halfbanded rockfish, adult",
    "horn shark", "kelp greenling, adult",
    "kelp greenling, female", "kelp greenling, juvenile",
    "kelp greenling, male", "leopard shark",
    "monkeyface prickleback", "northern anchovy", "northern ronquil",
    "ocean sunfish", "onespot fringehead", "orangethroat pikeblenny",
    "Pacific bonito", "plain cardinalfish", "plainfin midshipman",
    "prickleback spp.", "rockfish spp., adult", "rosy rockfish, juvenile",
    "sailfin sculpin", "sanddab spp.", "sarcastic fringehead",
    "   bocaccio, adult", "brown rockfish, juvenile", "California halibut",
    "halfmoon, juvenile", "splitnose rockfish, juvenile", "spotfin sculpin",
    "squarespot rockfish, juvenile", "swallowtail damselfish", "thornback ray",
    "top smelt, juvenile", "walleye surfperch", "white abalone",
    "white seabass", "zebra perch", "sargo", "surfperch spp.",
    "tubesnout, juvenile", "wakame, adult", "wakame, juvenile",
    "wolf eel", "zebra goby", "baitfish unidentified",
    "bat ray", "spotted kelpfish", "garibaldi, subadult")) %>%
  dplyr::left_join(oni_yearly)
```

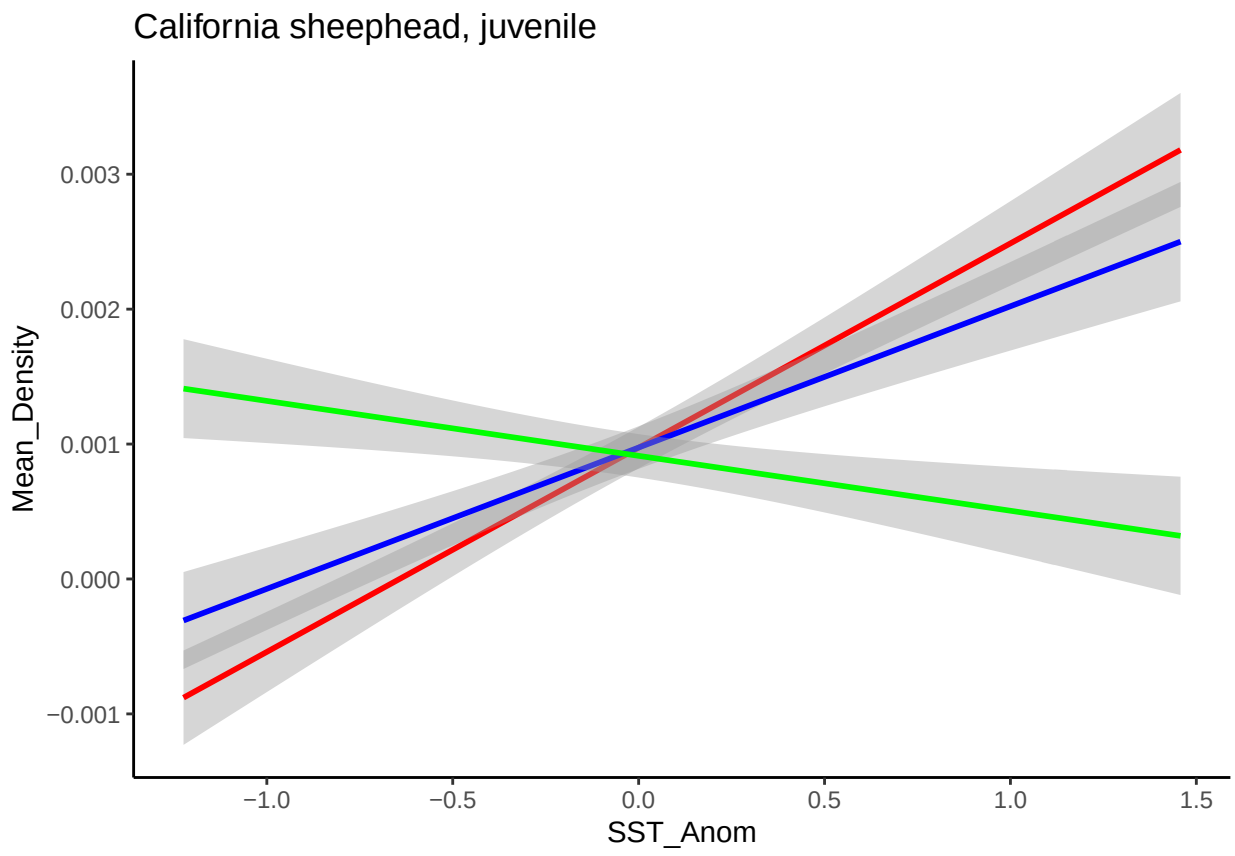
```
## Joining, by = "SurveyYear"
```

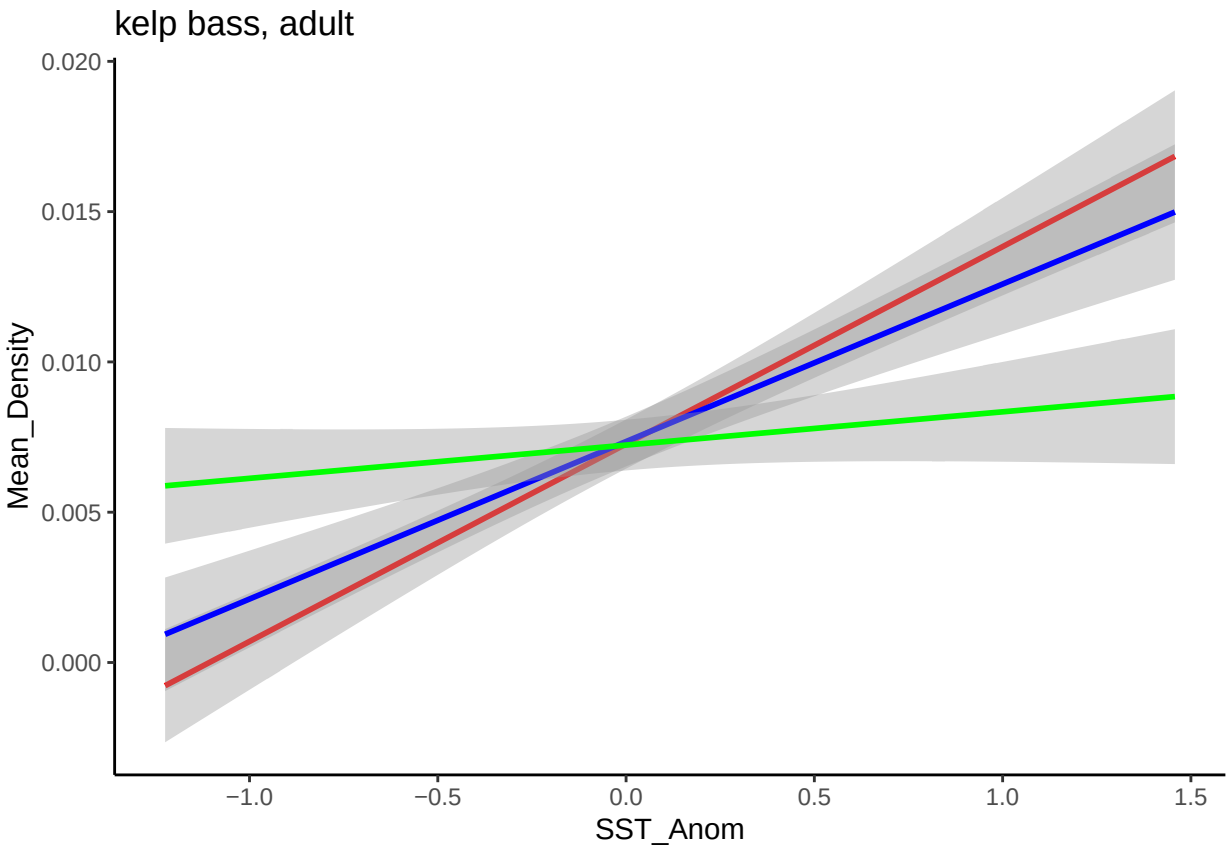
```
Results <- density %>%
  dplyr::group_by(CommonName) %>%
  dplyr::summarise(
    generics::tidy(
      stats::lm(Mean_Density ~ SST_Anom)
      )) %>%
  tidyr::pivot_wider(names_from = term, values_from = estimate) %>%
  dplyr::mutate(beta_0 = lag(`(Intercept)`, n = 1)) %>%
  tidyr::drop_na(SST_Anom, p.value) %>%
  dplyr::filter(p.value <= .05) %>%
  dplyr::arrange(p.value) %>%
  dplyr::mutate(statistic = round(statistic, 3),
                p.value = round(p.value, 3),
                p.value = ifelse(p.value < 0.001, "< 0.001", as.character(p.value)),
                `Predictor Variable` = "SST_Anom") %>%
  dplyr::rename(`Response Variable` = CommonName,
```

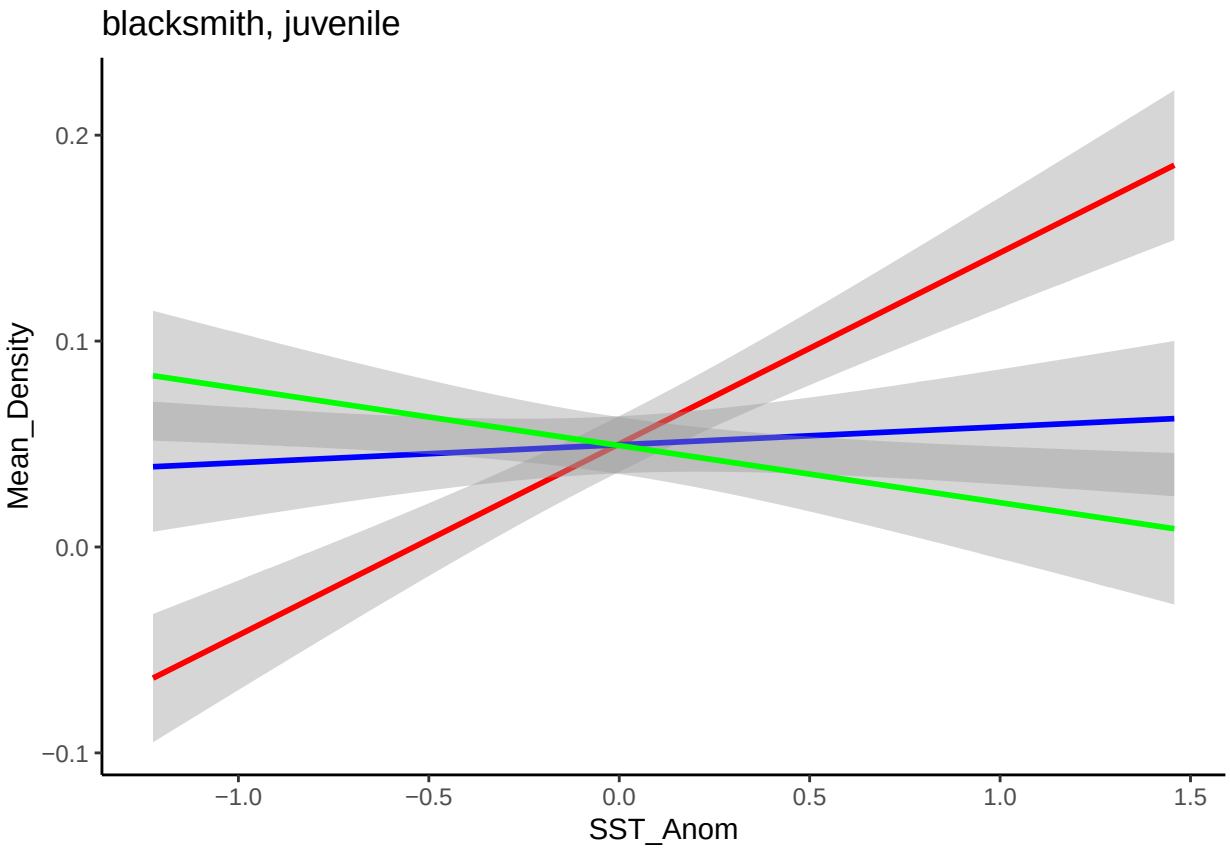
```
                beta_1 = SST_Anom) %>%
  dplyr::select(`Response Variable`, `Predictor Variable`,
                beta_0, beta_1, std.error, statistic, p.value)
```

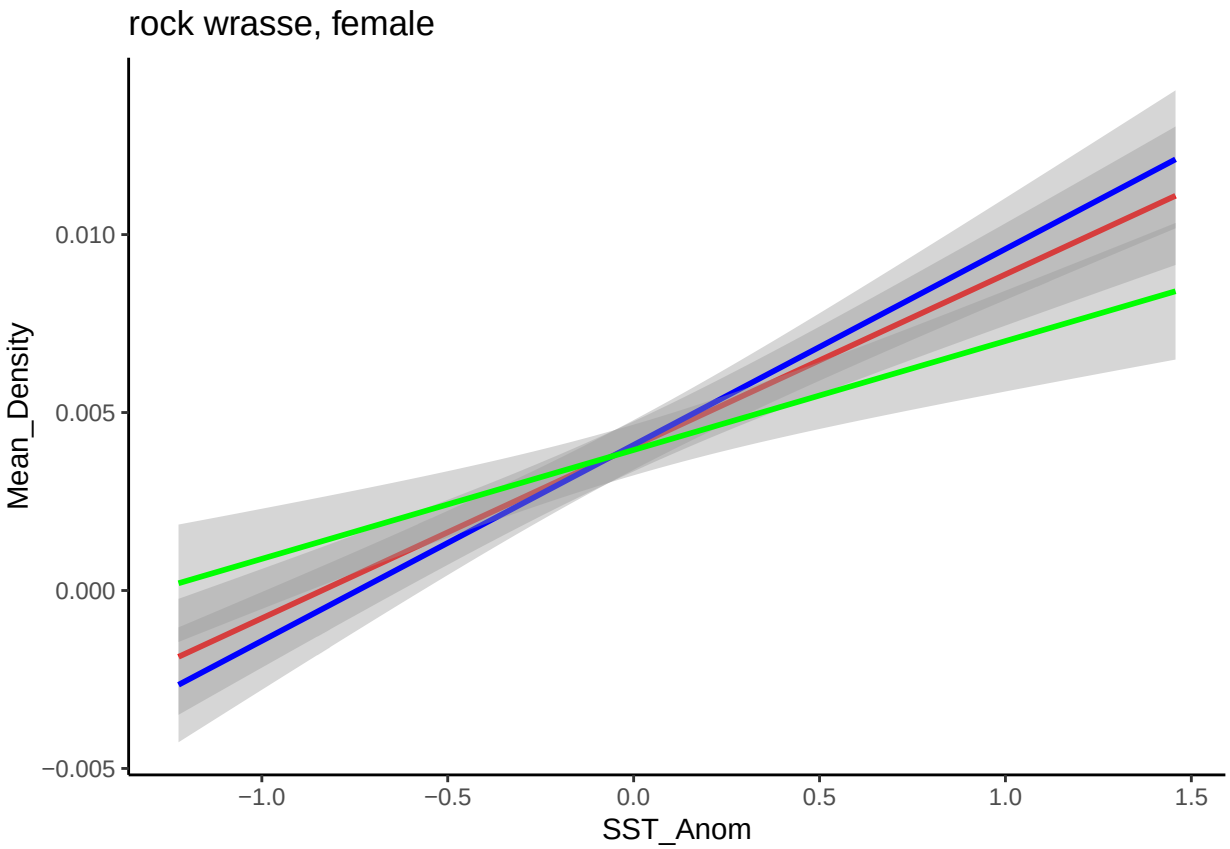
```
## `summarise()` has grouped output by 'CommonName'. You can override using the `.groups` argument.
```

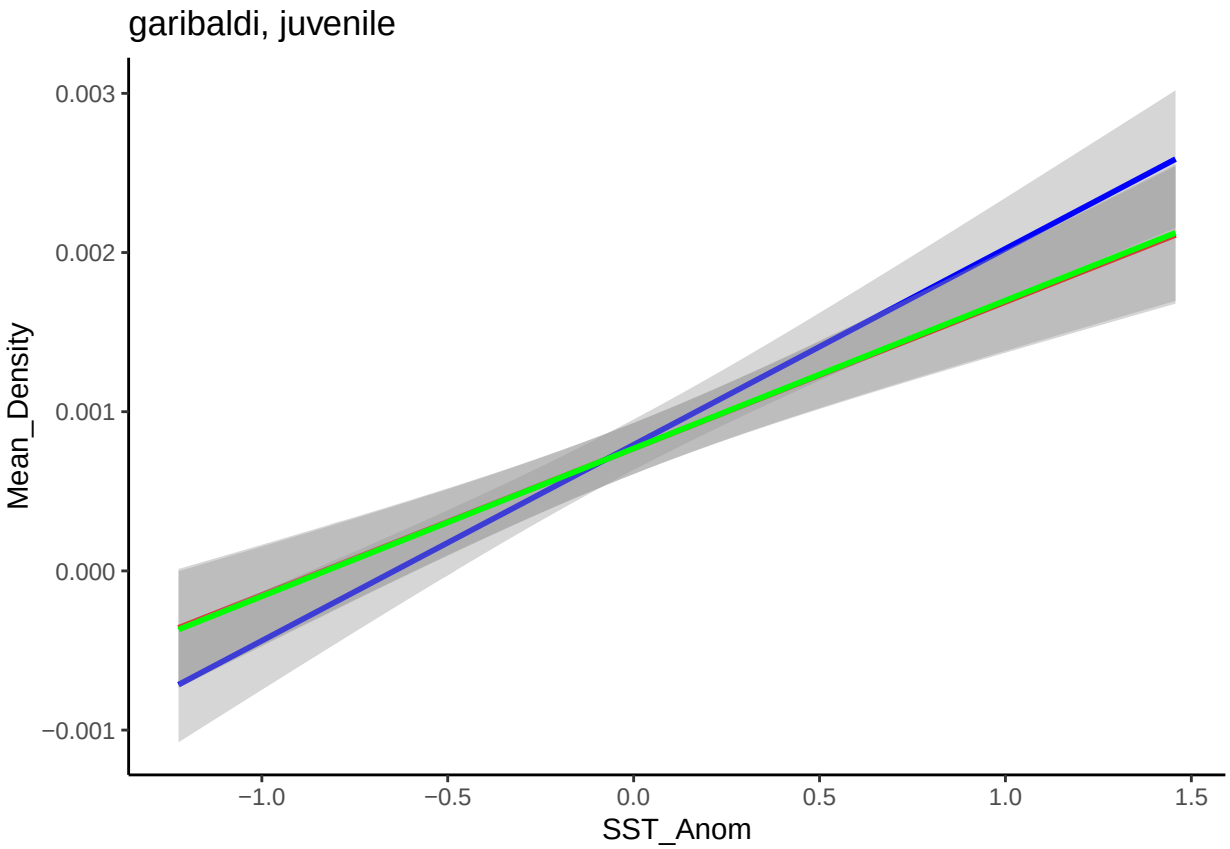
```
for (sp in unique(Results$`Response Variable`)) {
  p <- density %>%
    filter(CommonName == sp) %>%
    ggplot() +
    # geom_point() +
    geom_smooth(aes(y = Mean_Density, x = SST_Anom), method = lm, formula = "y~x", color = "red") +
    geom_smooth(aes(y = Mean_Density, x = SST_Anom_1), method = lm, formula = "y~x", color = "blue") +
    geom_smooth(aes(y = Mean_Density, x = SST_Anom_2), method = lm, formula = "y~x", color = "green") +
    labs(title = sp) +
    theme_classic()

  print(p)
}
```

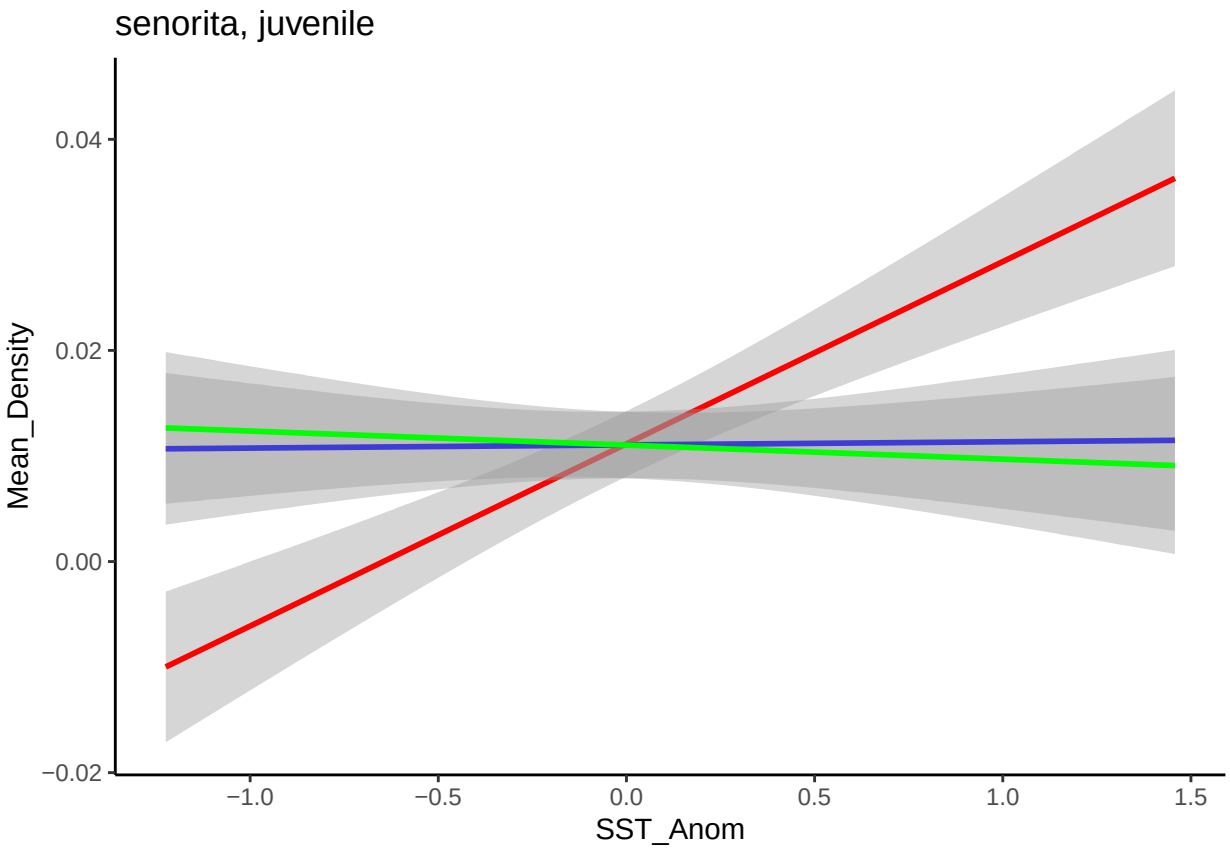


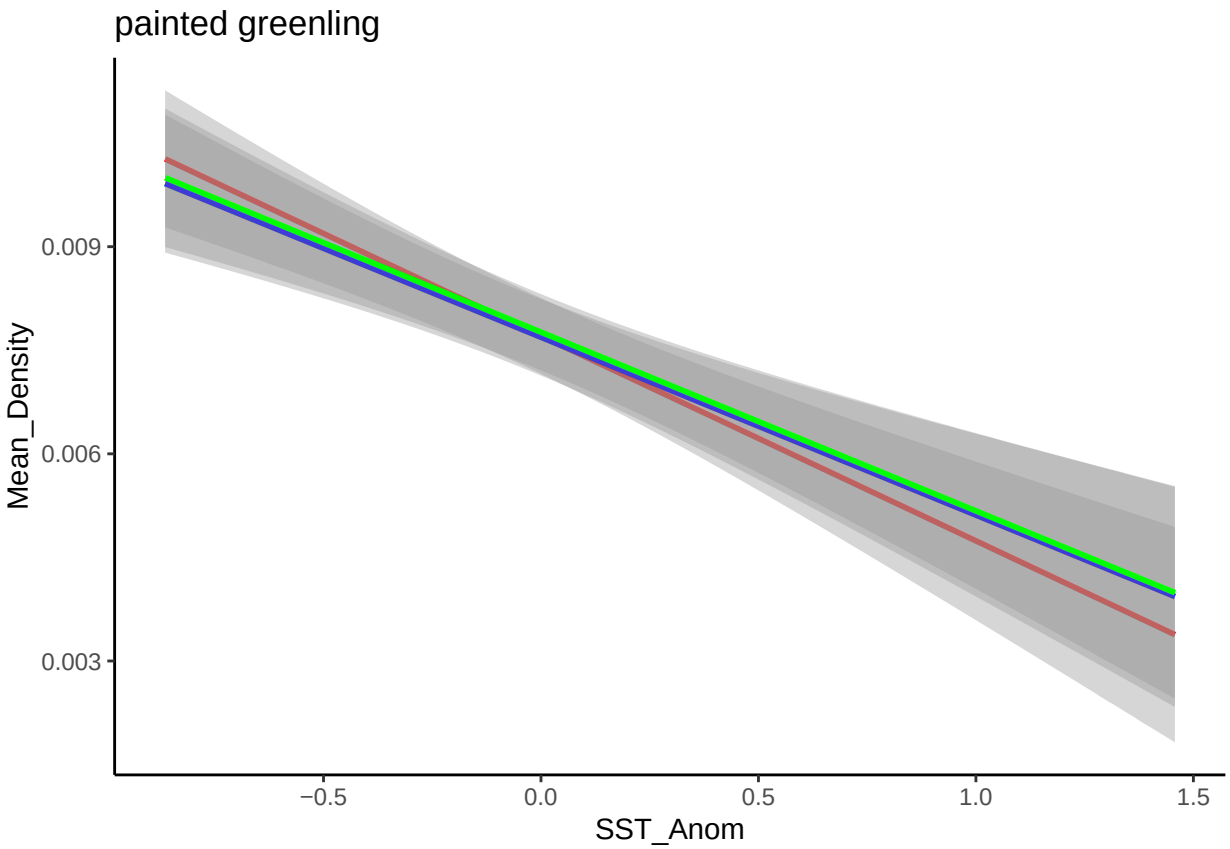

kelp bass, adult
0.020
0.015
0.010
0.005
0.000
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

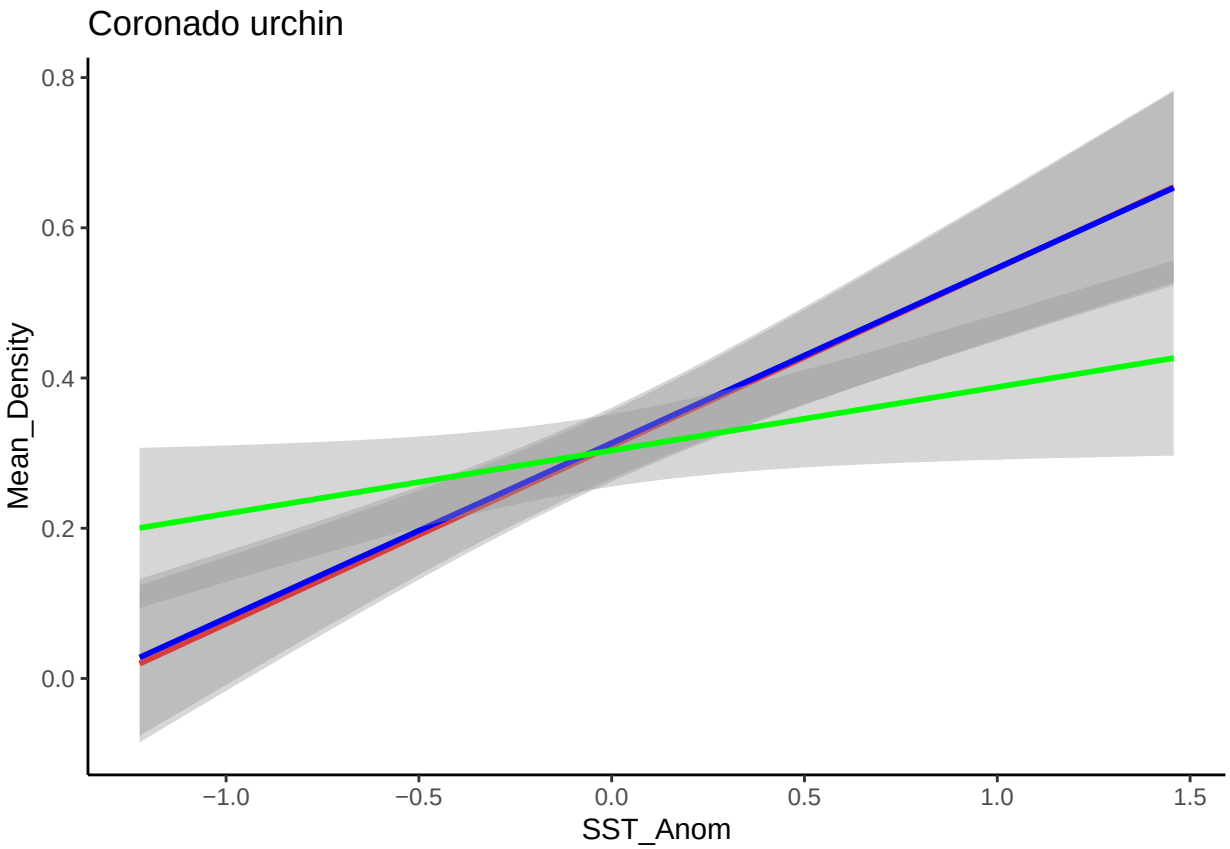

blacksmith, juvenile
Mean_Density
0.2
0.1
0.0
−0.1
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

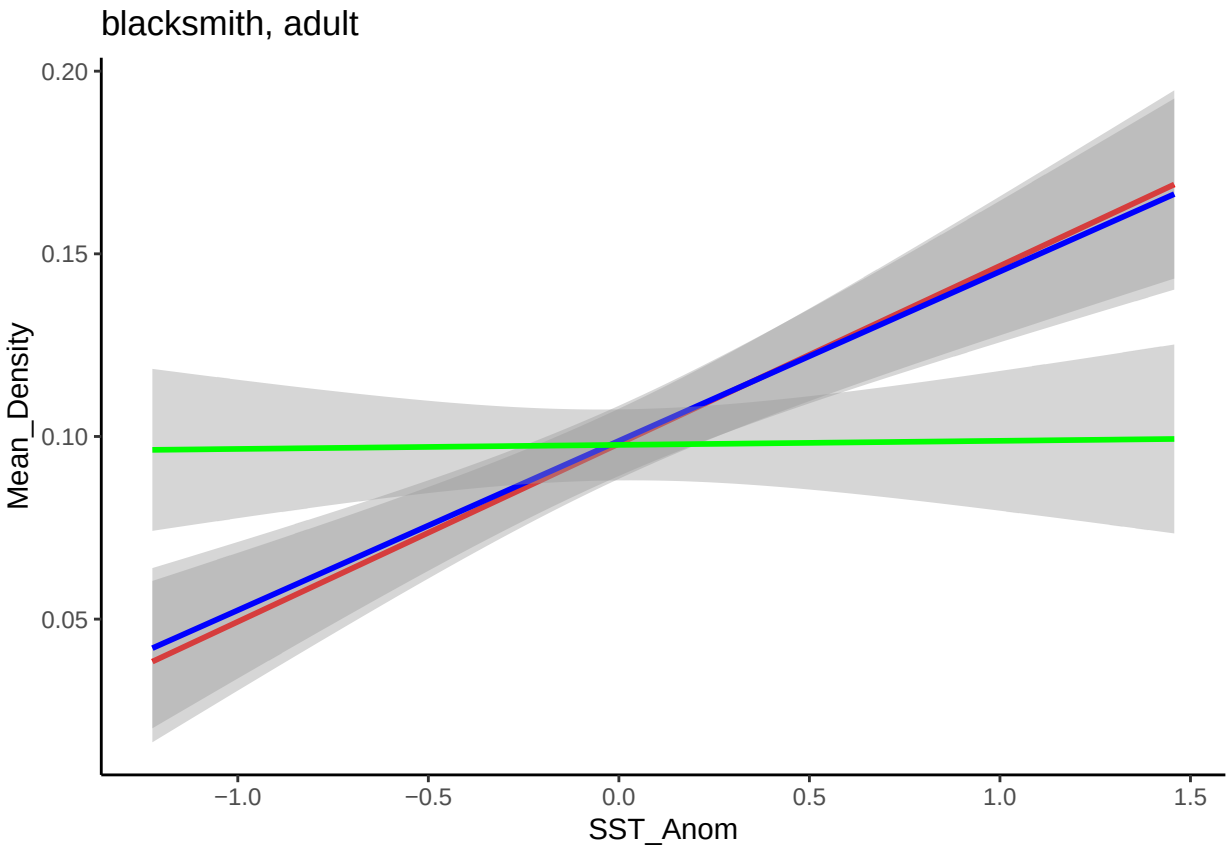

rock wrasse, female
Mean_Density
0.010
0.005
0.000
−0.005
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

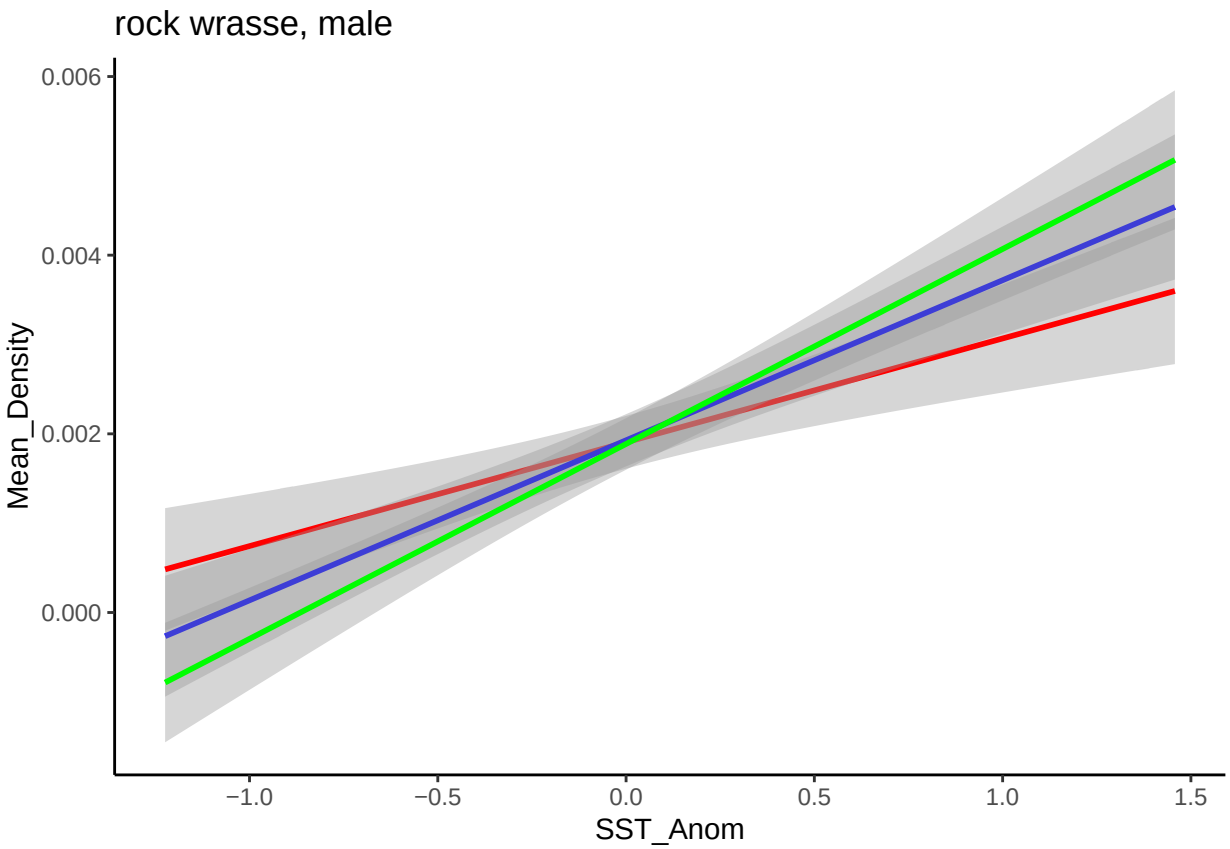

garibaldi, juvenile
Mean_Density
0.003
0.002
0.001
0.000
−0.001
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

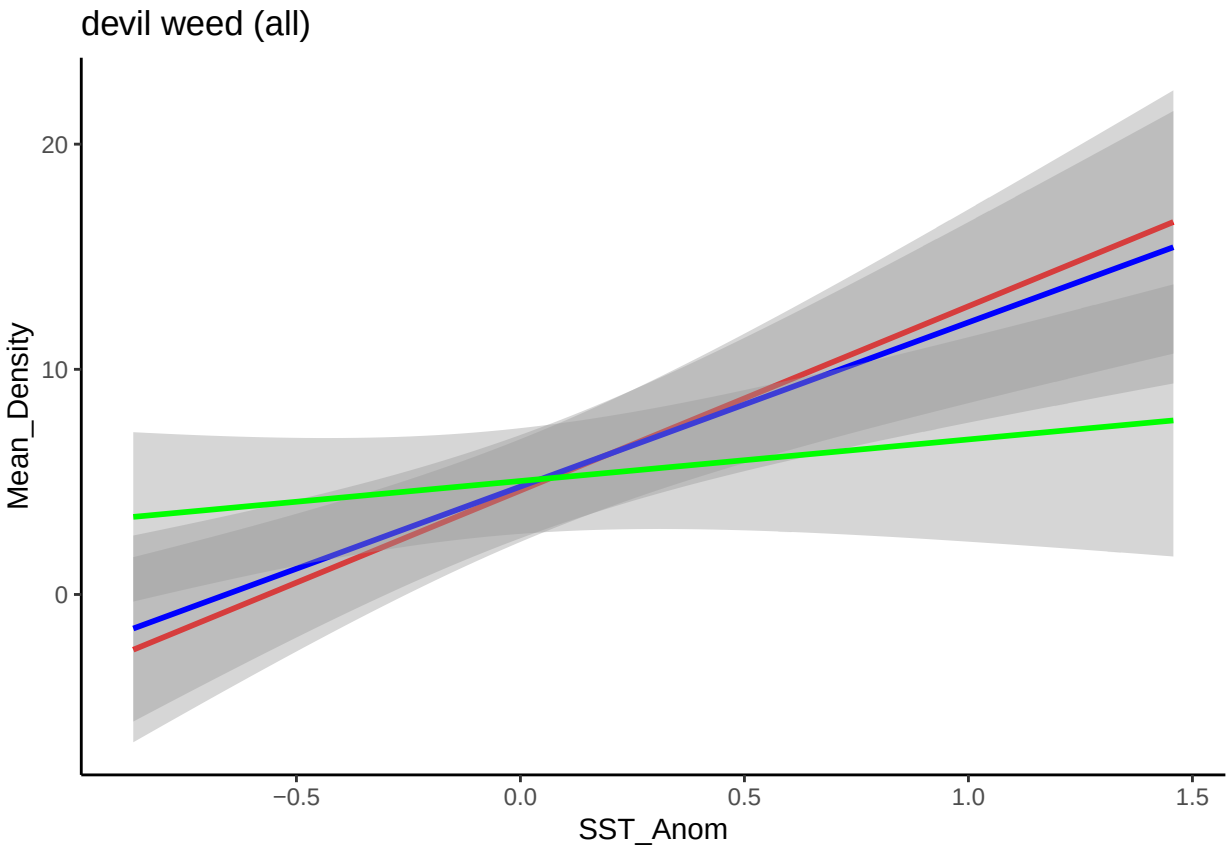

senorita, juvenile
Mean_Density
0.04
0.02
0.00
−0.02
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

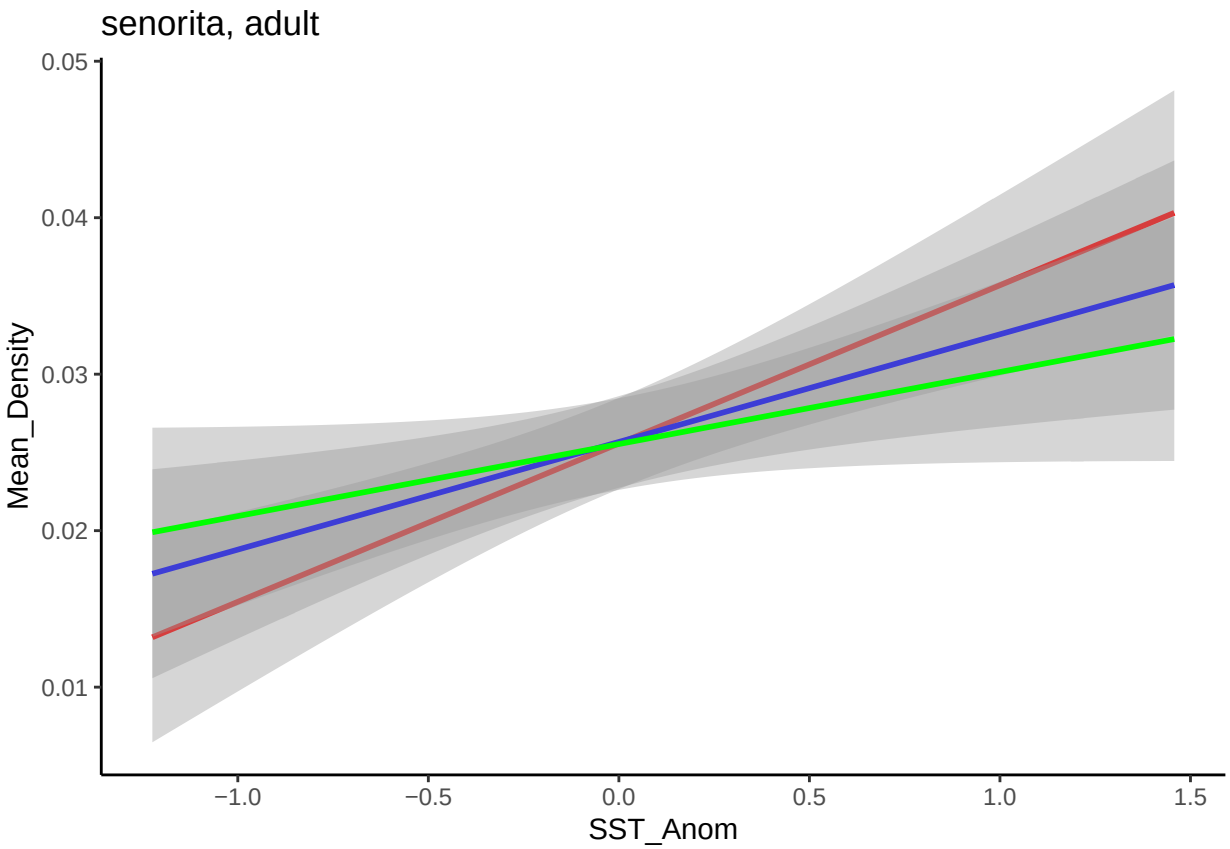

painted greenling
Mean_Density
0.009
0.006
0.003
−0.5
0.0
0.5
1.0
1.5
SST_Anom

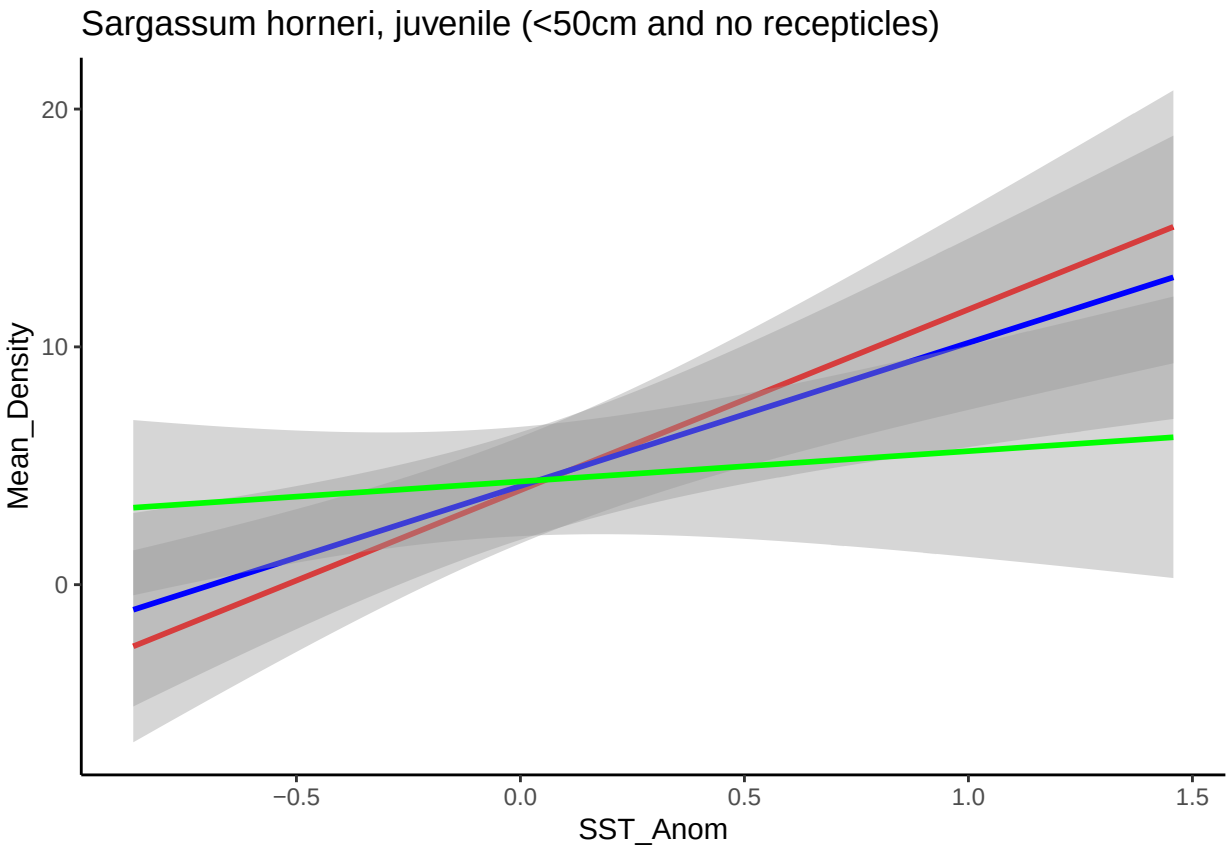

Coronado urchin
Mean_Density
0.8
0.6
0.4
0.2
0.0
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

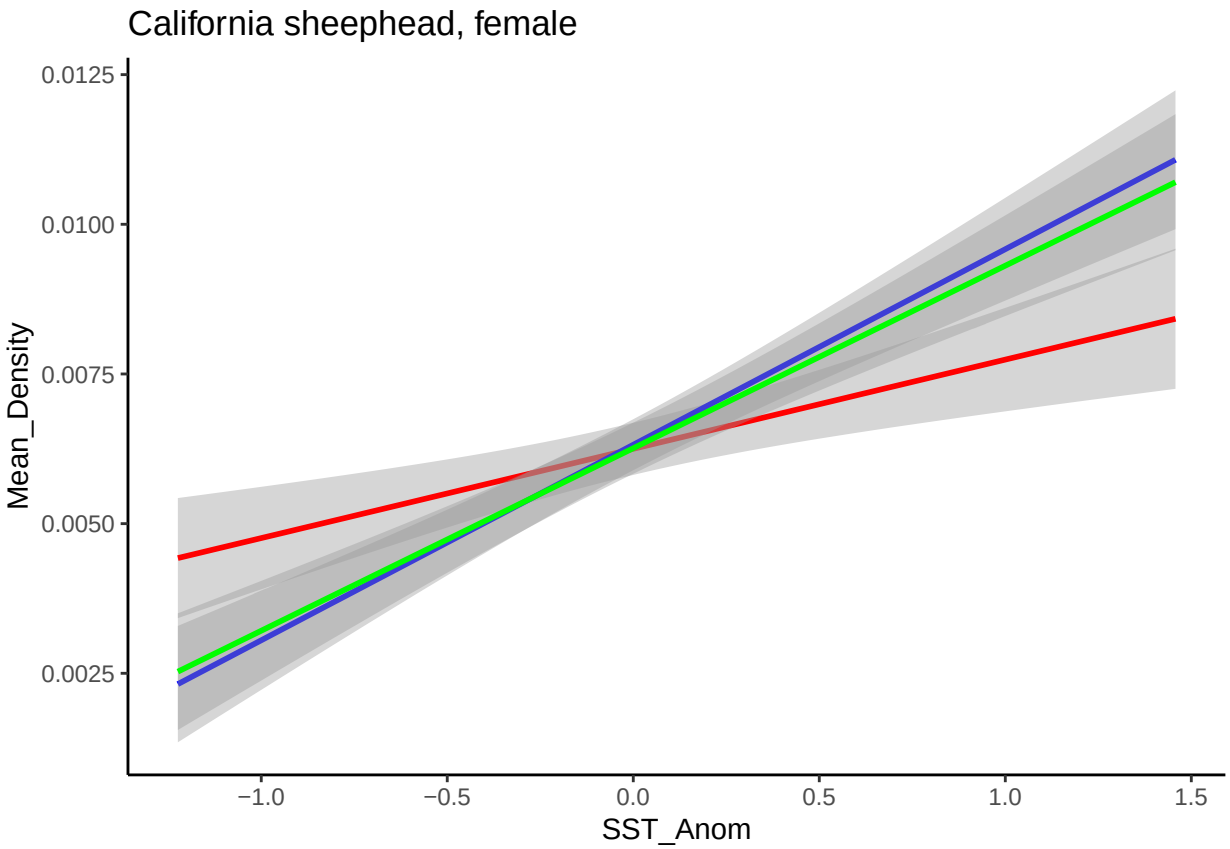

blacksmith, adult
0.20
0.15
0.10
0.05
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

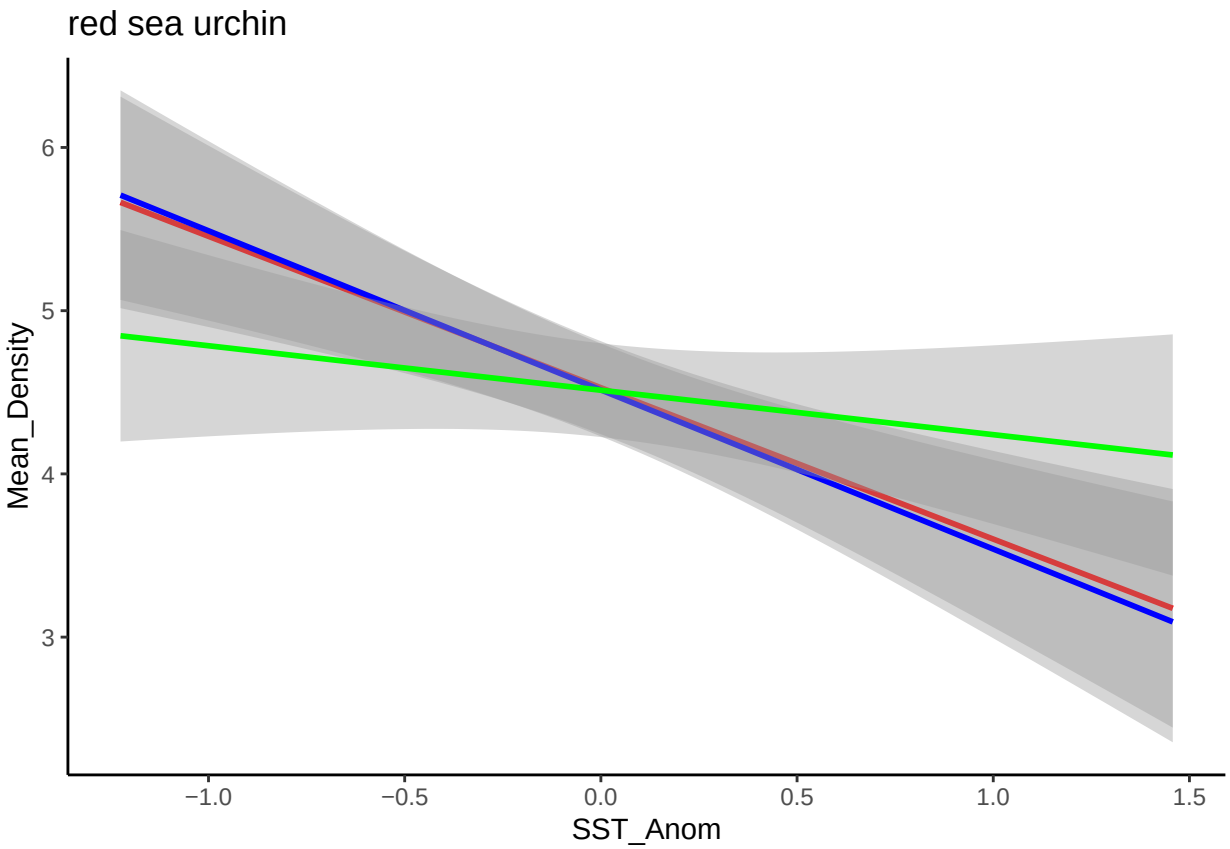

rock wrasse, male
0.006
0.004
0.002
0.000
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

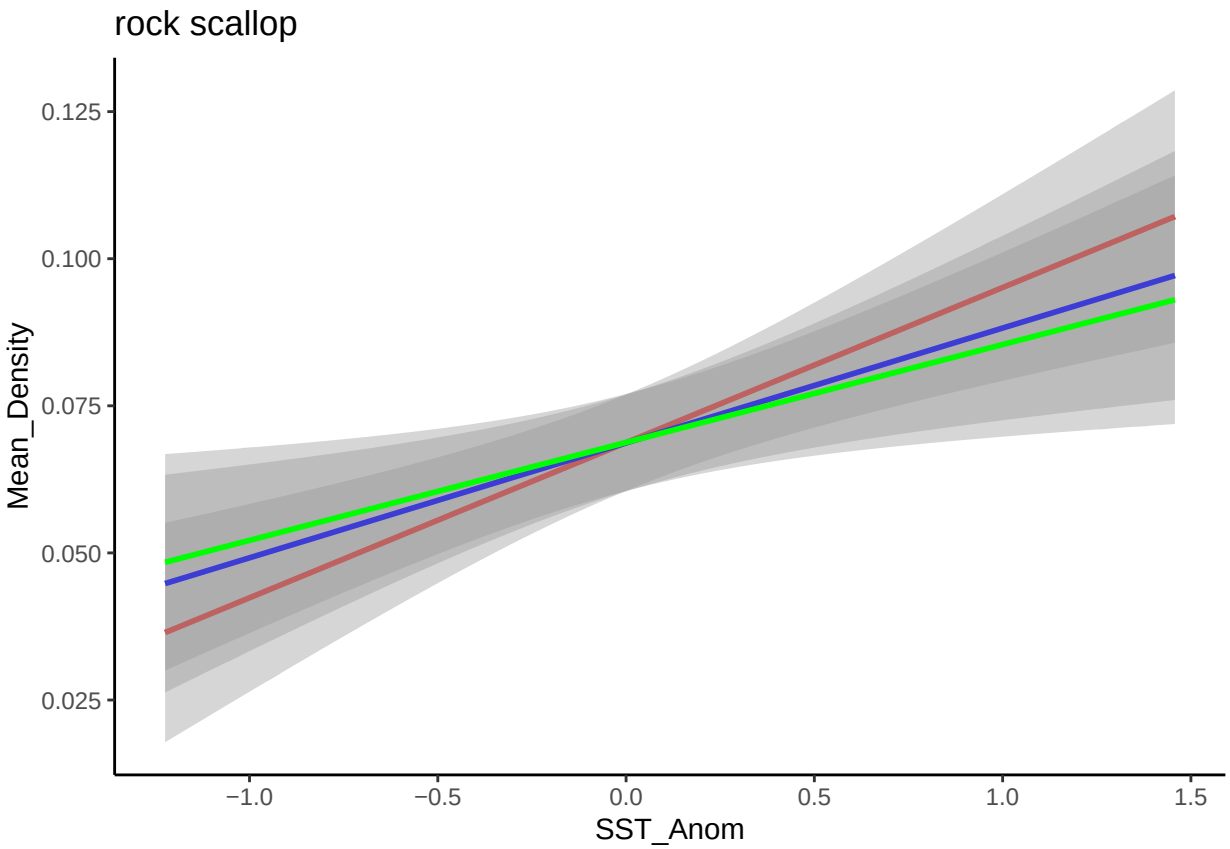

devil weed (all)
Mean_Density
20
10
0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

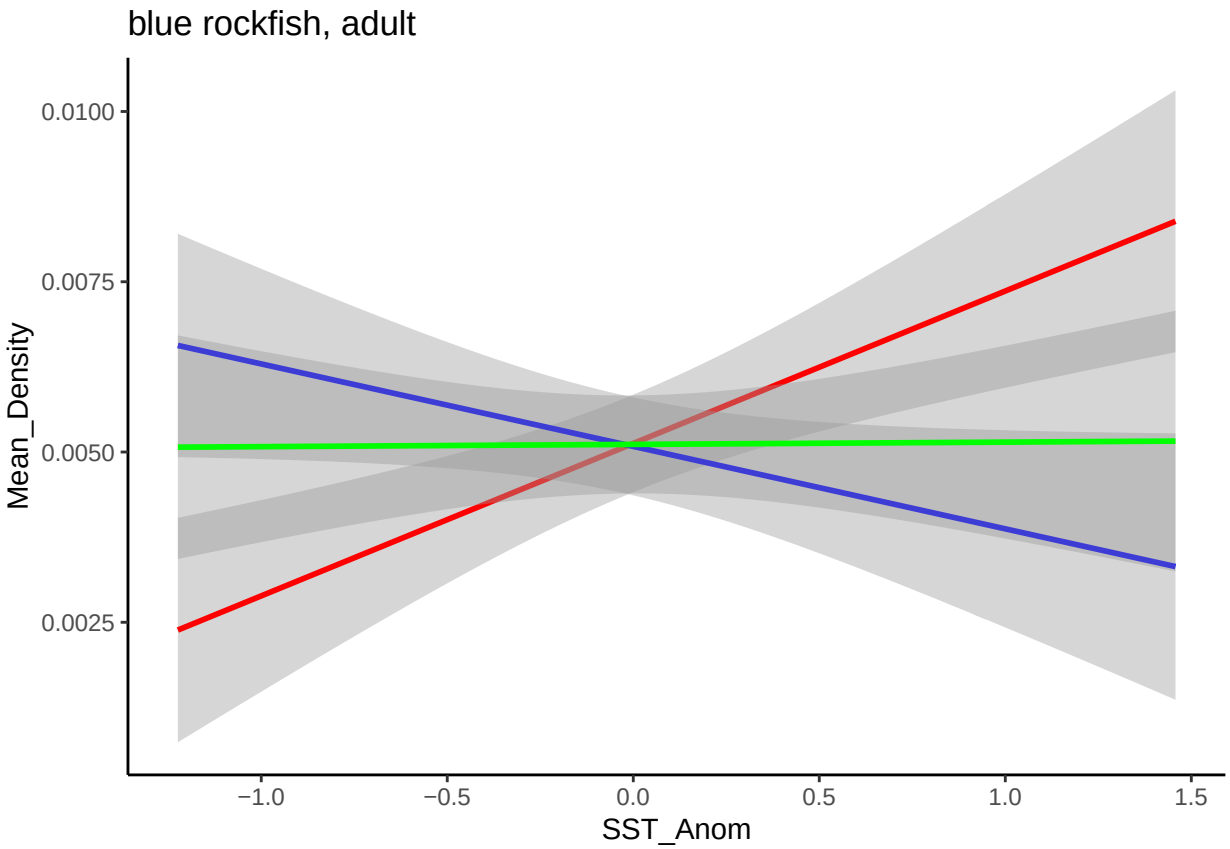

senorita, adult
0.05
0.04
0.03
0.02
0.01
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

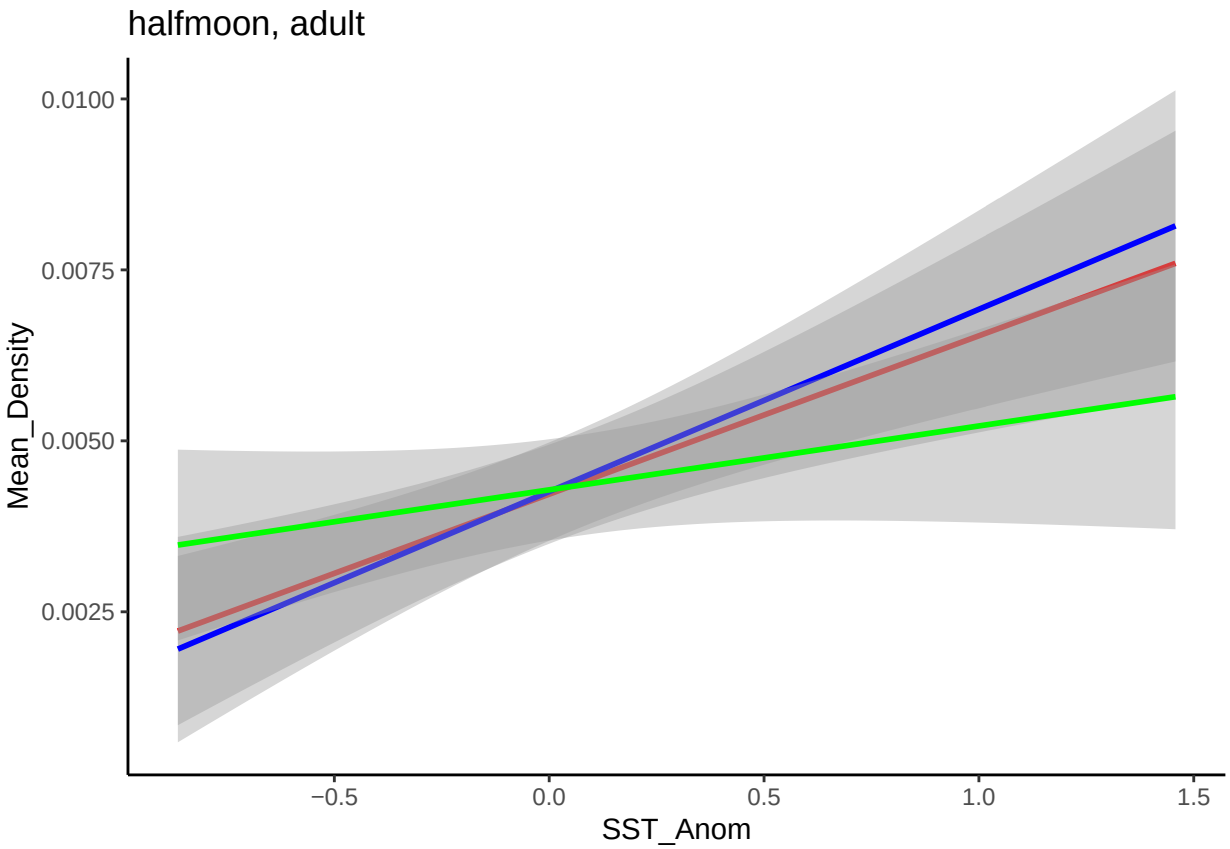

Sargassum horneri, juvenile (<50cm and no recepticles)
Mean_Density
20
10
0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

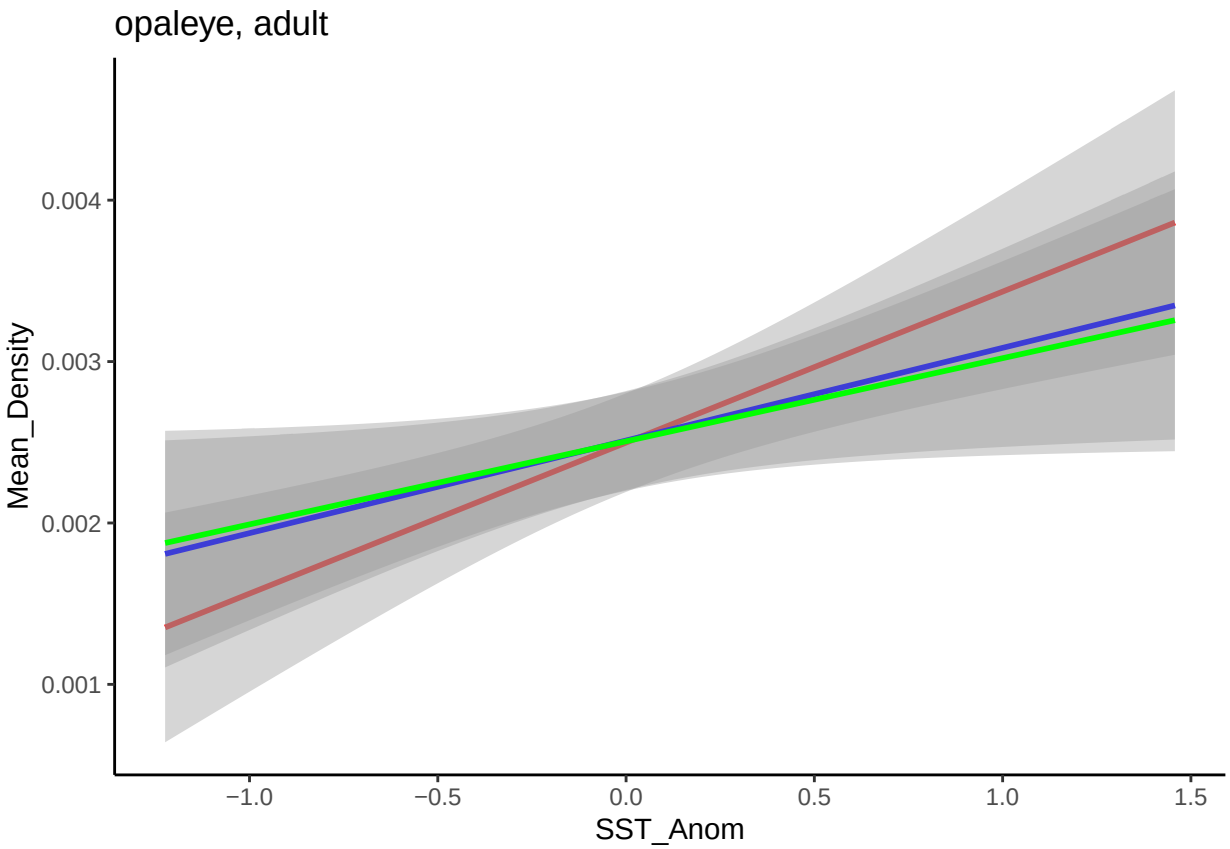

California sheephead, female
0.0125
0.0100
0.0075
0.0050
0.0025
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

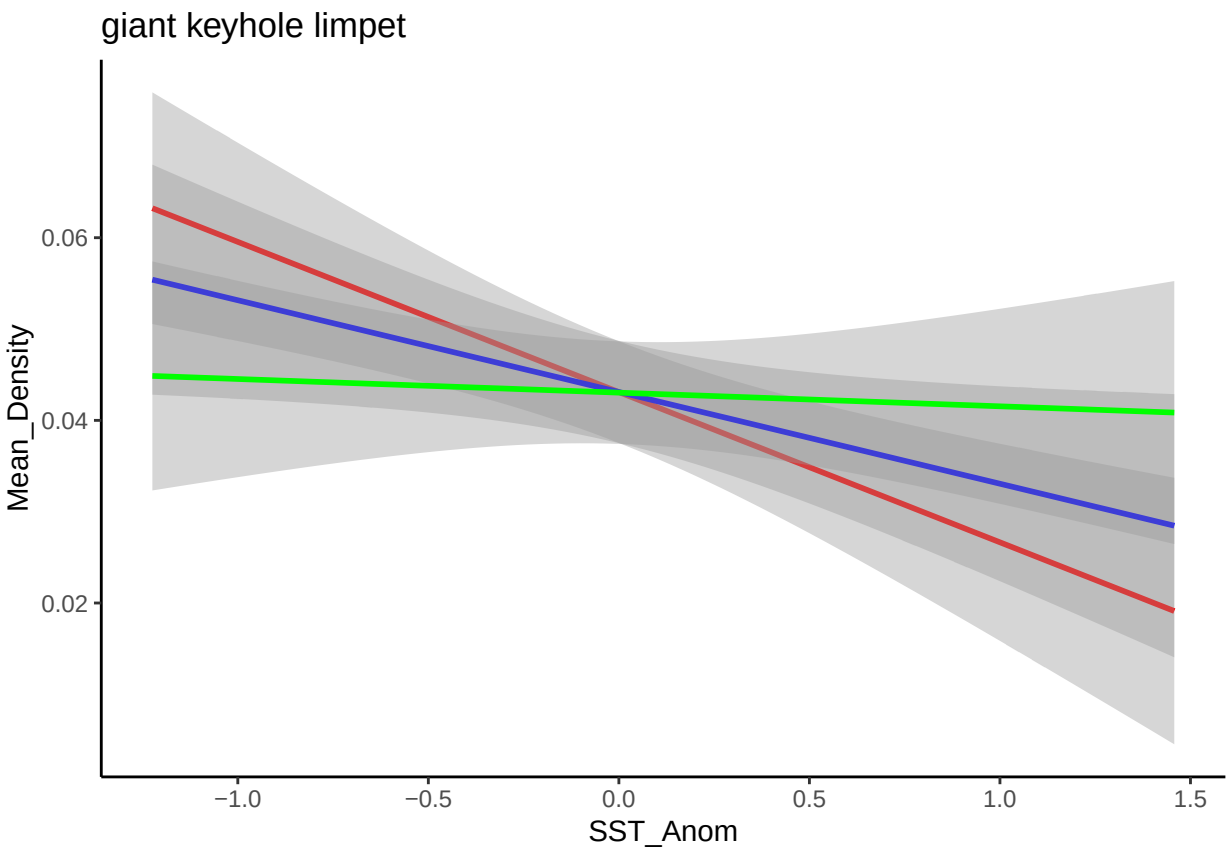

red sea urchin
Mean_Density
6
5
4
3
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

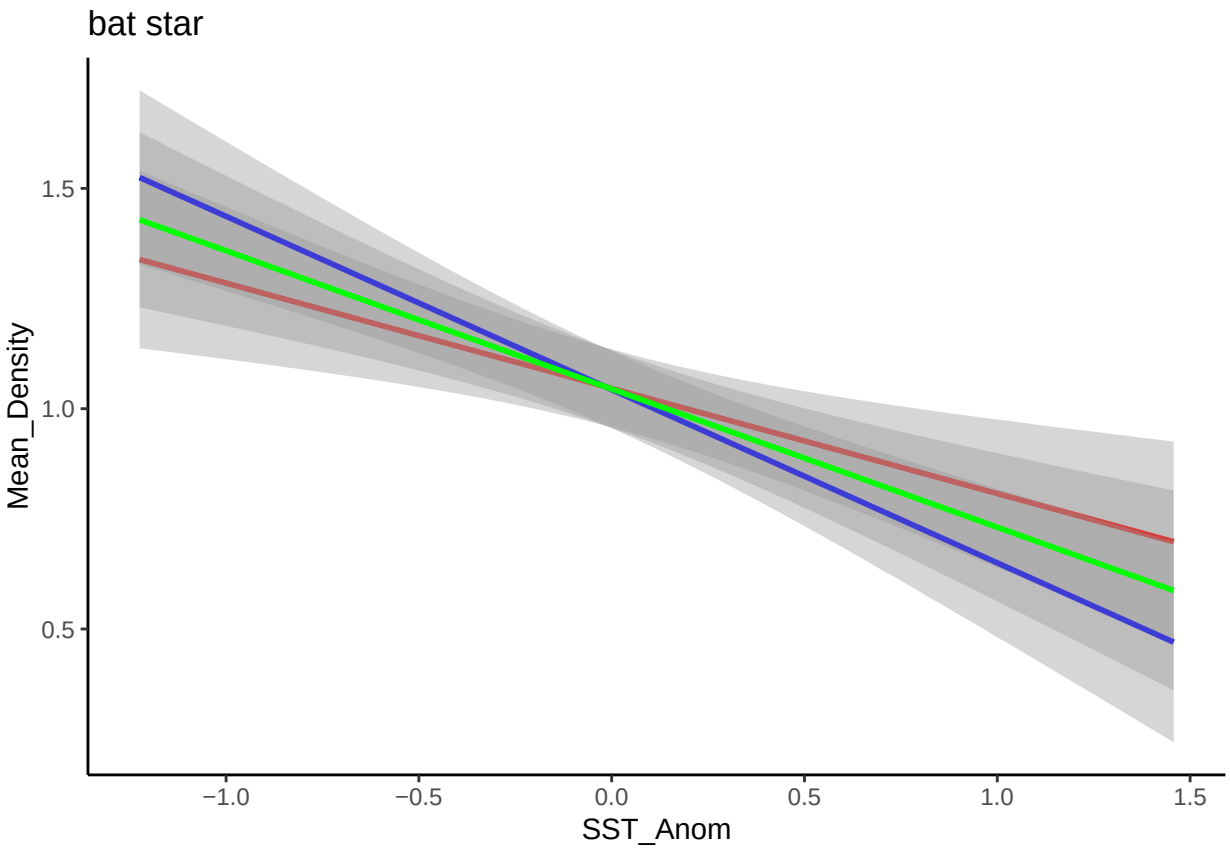

rock scallop
Mean_Density
0.125
0.100
0.075
0.050
0.025
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

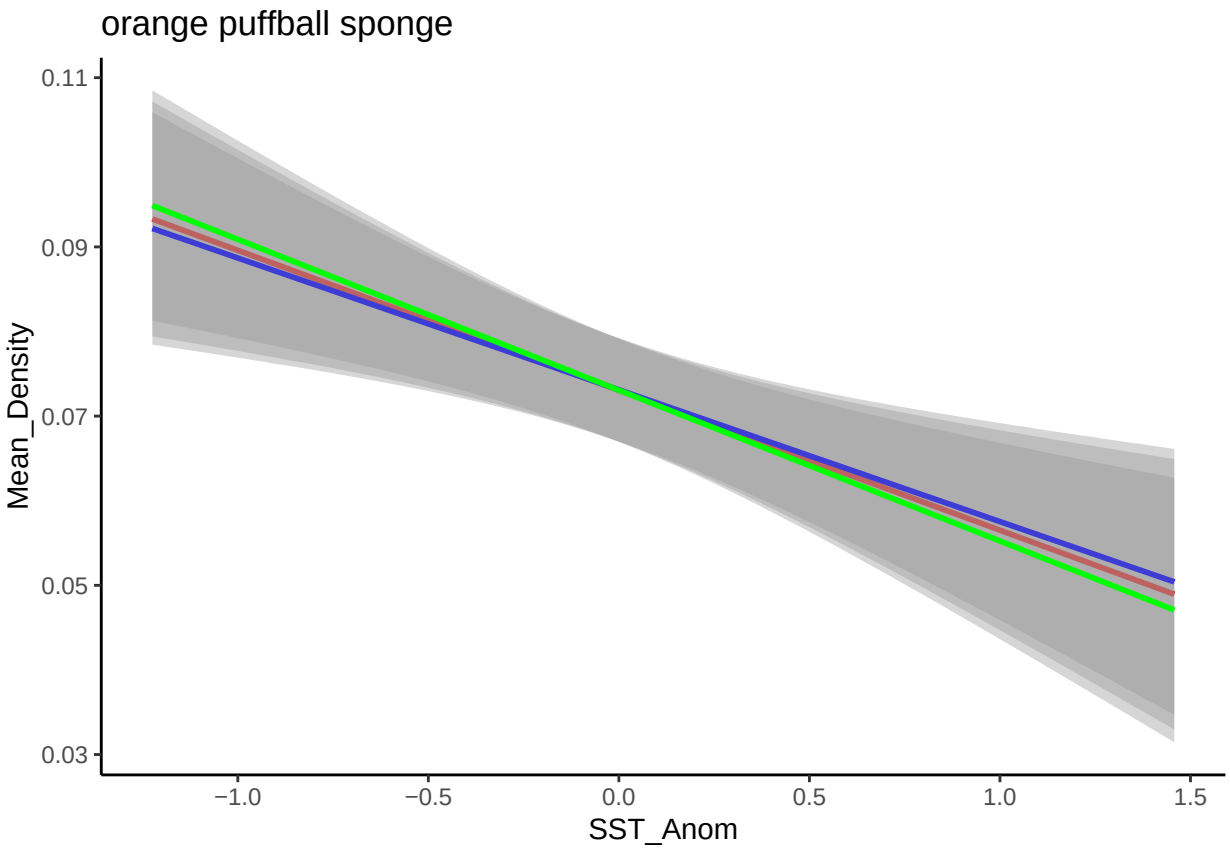

blue rockfish, adult
0.0100
0.0075
0.0050
0.0025
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

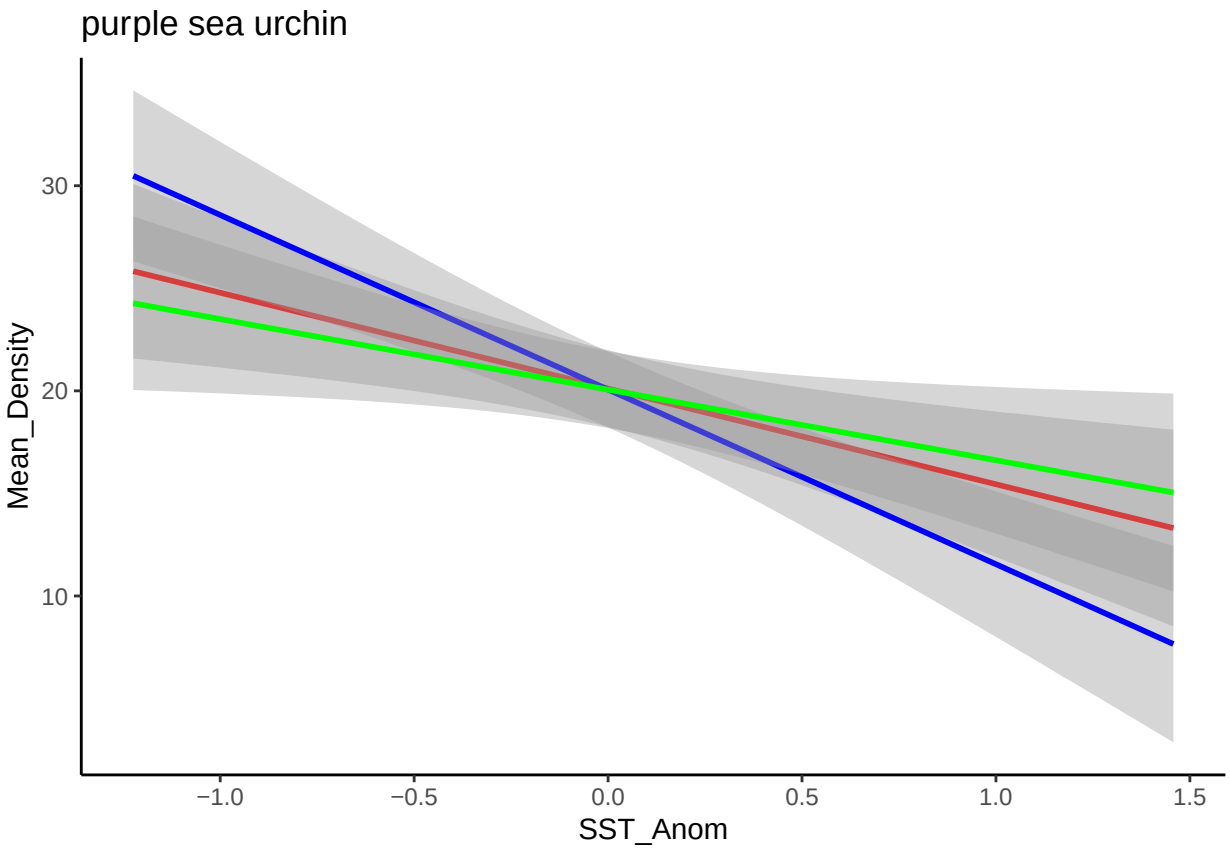

halfmoon, adult
0.0100
0.0075
0.0050
0.0025
Mean_Density
−0.5
0.0
0.5
1.0
1.5
SST_Anom

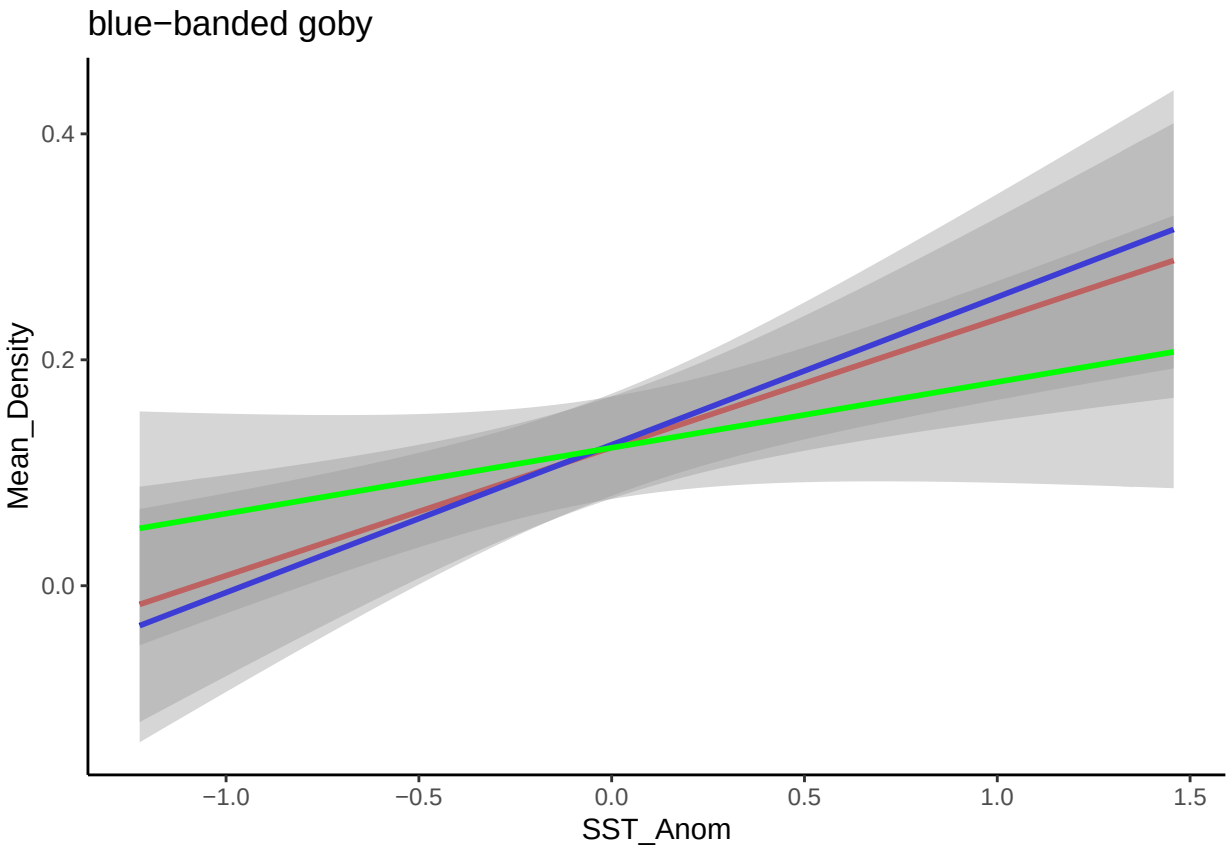

opaleye, adult
Mean_Density
0.004
0.003
0.002
0.001
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

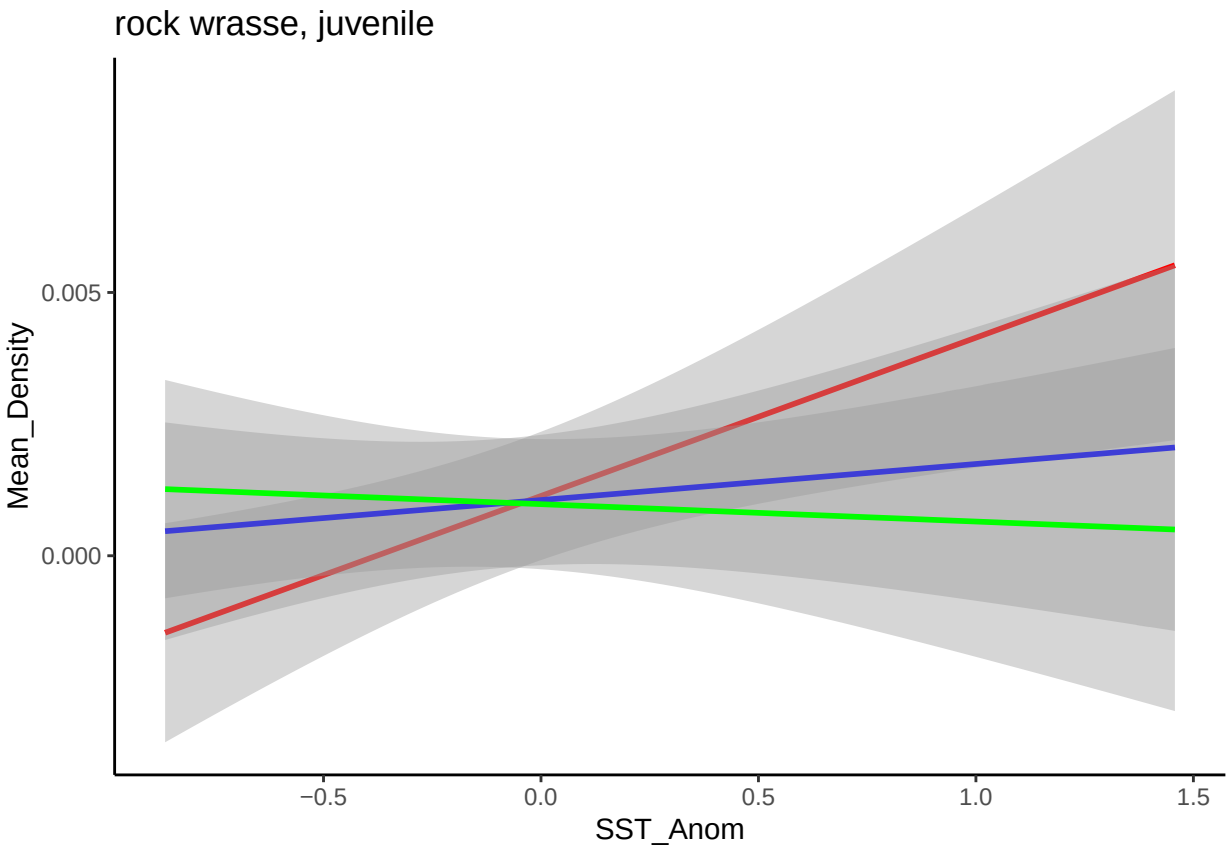

giant keyhole limpet
Mean_Density
0.06
0.04
0.02
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

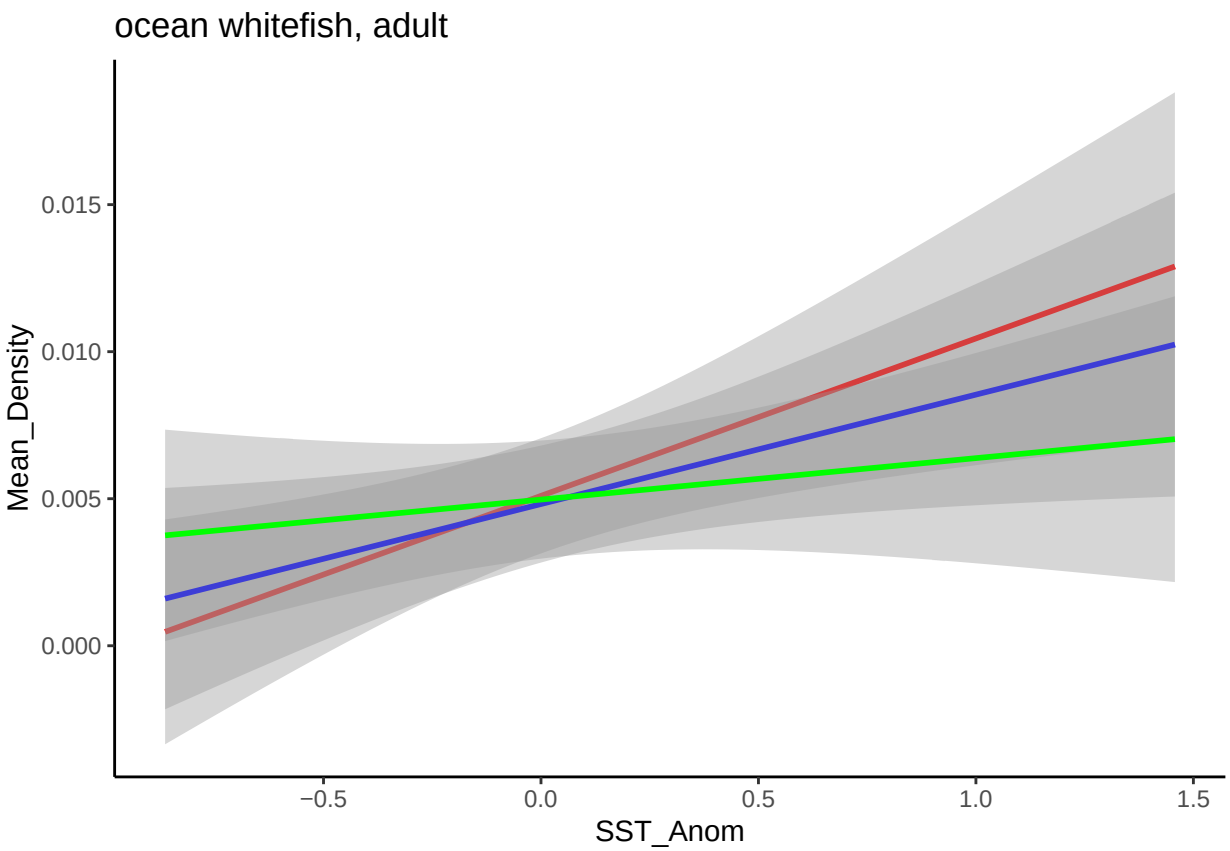

bat star
Mean_Density
1.5
1.0
0.5
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

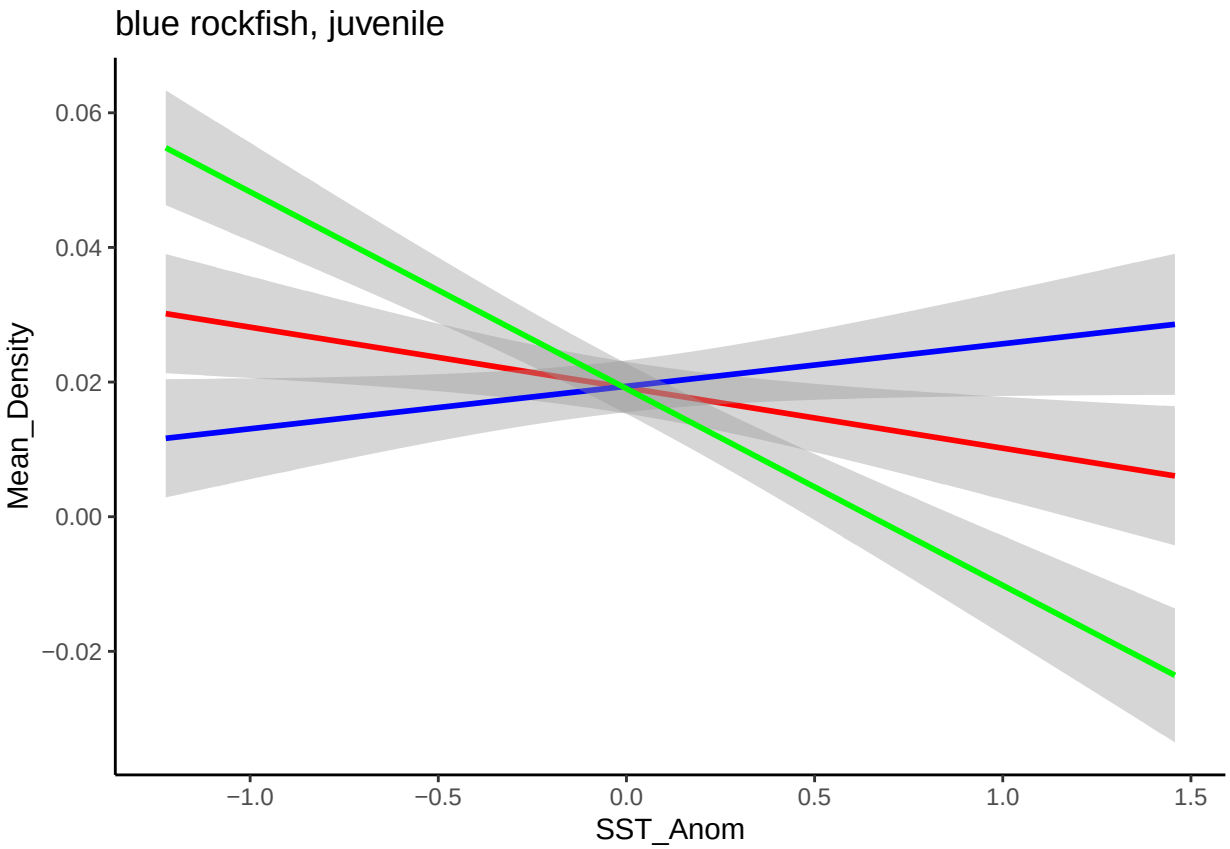

orange puffball sponge
Mean_Density
0.11
0.09
0.07
0.05
0.03
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

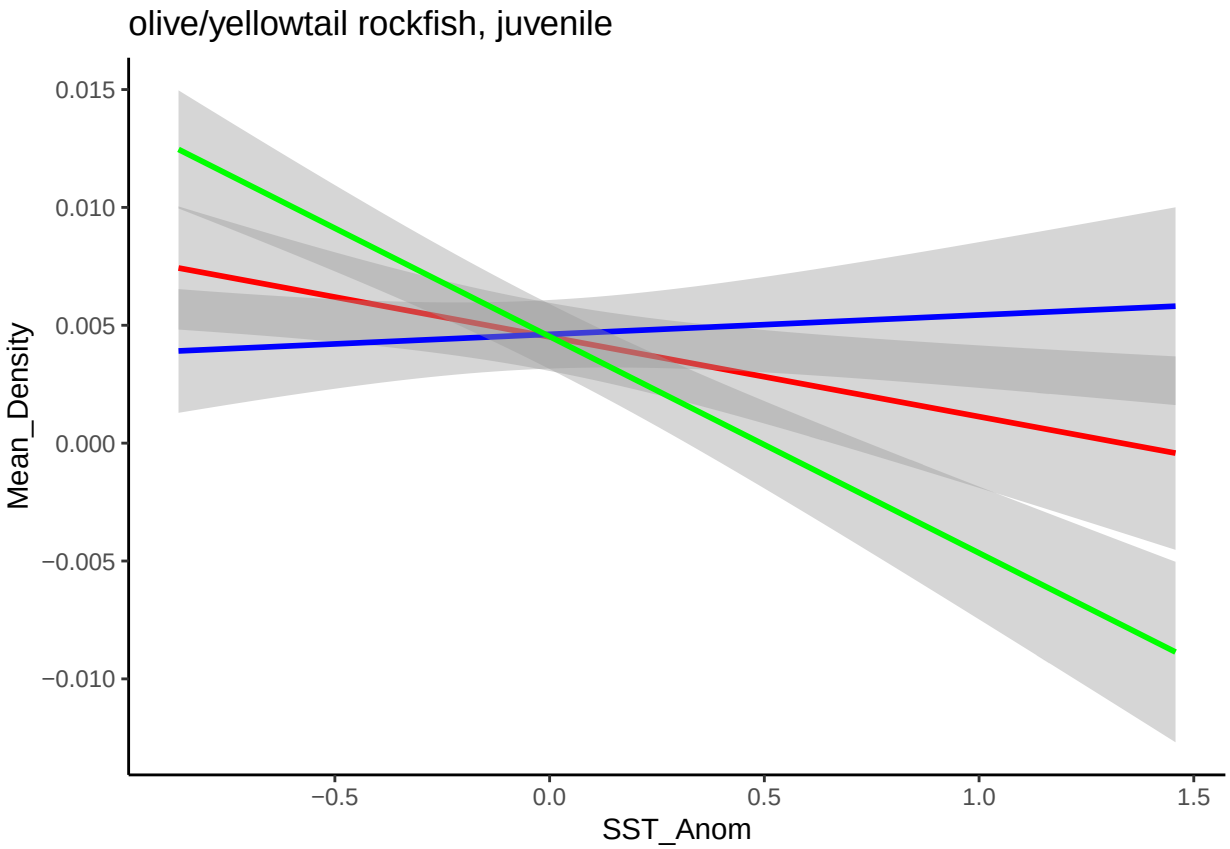

purple sea urchin
Mean_Density
30
20
10
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

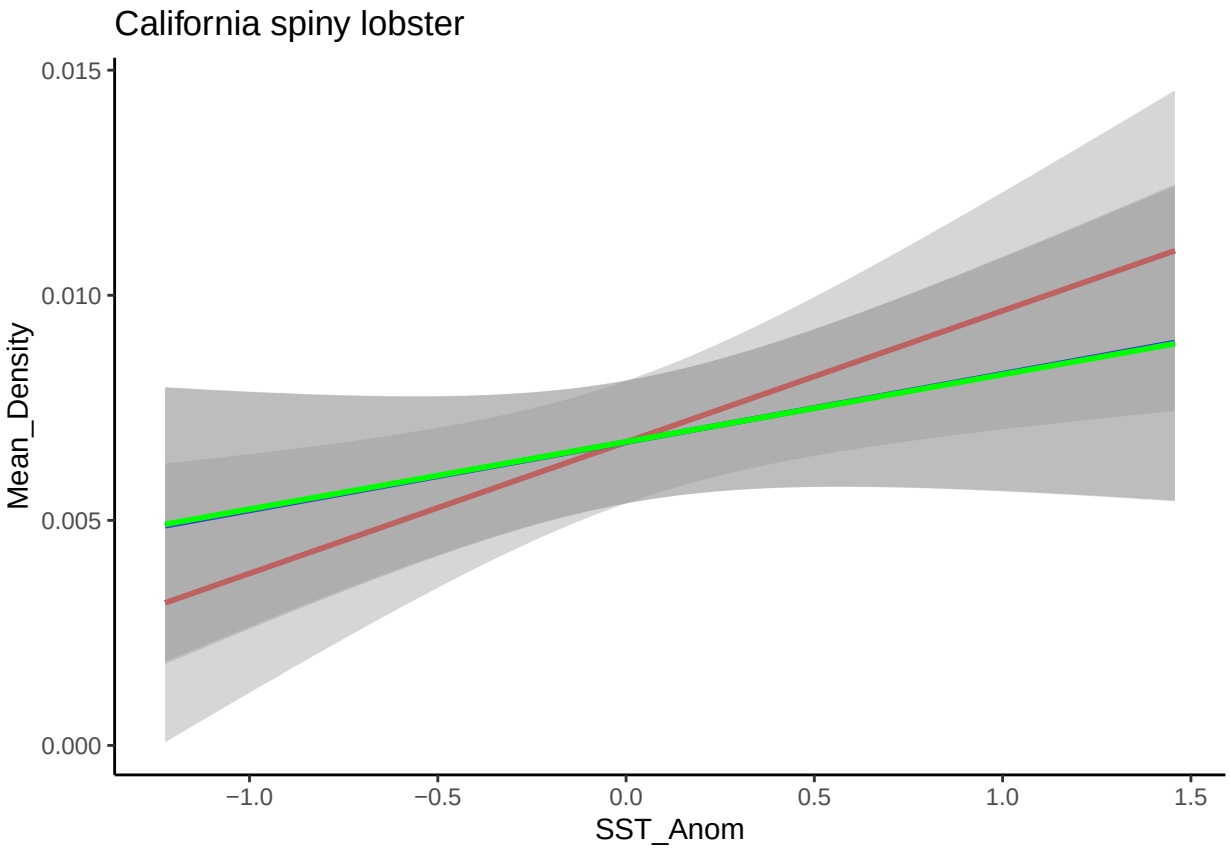

blue−banded goby
Mean_Density
0.4
0.2
0.0
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

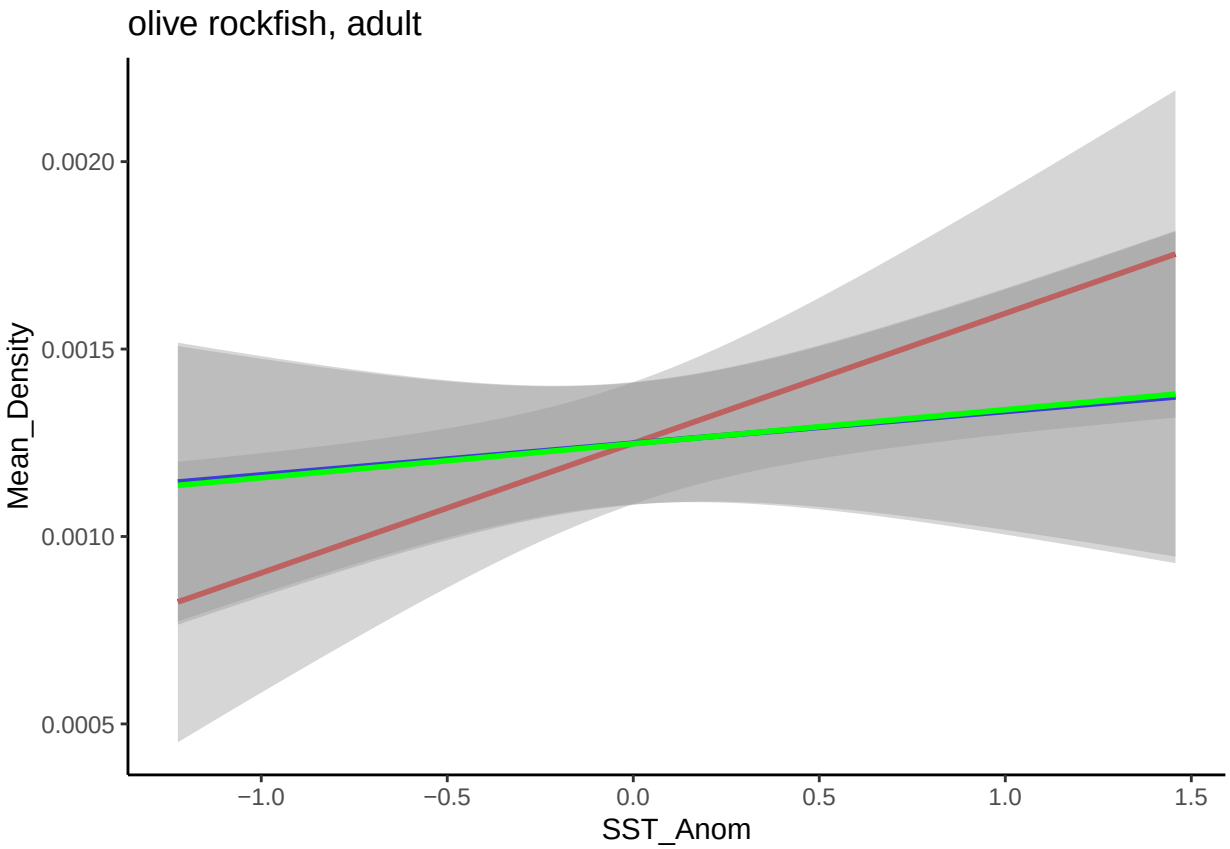

rock wrasse, juvenile
Mean_Density
0.005
0.000
−0.5
0.0
0.5
1.0
1.5
SST_Anom

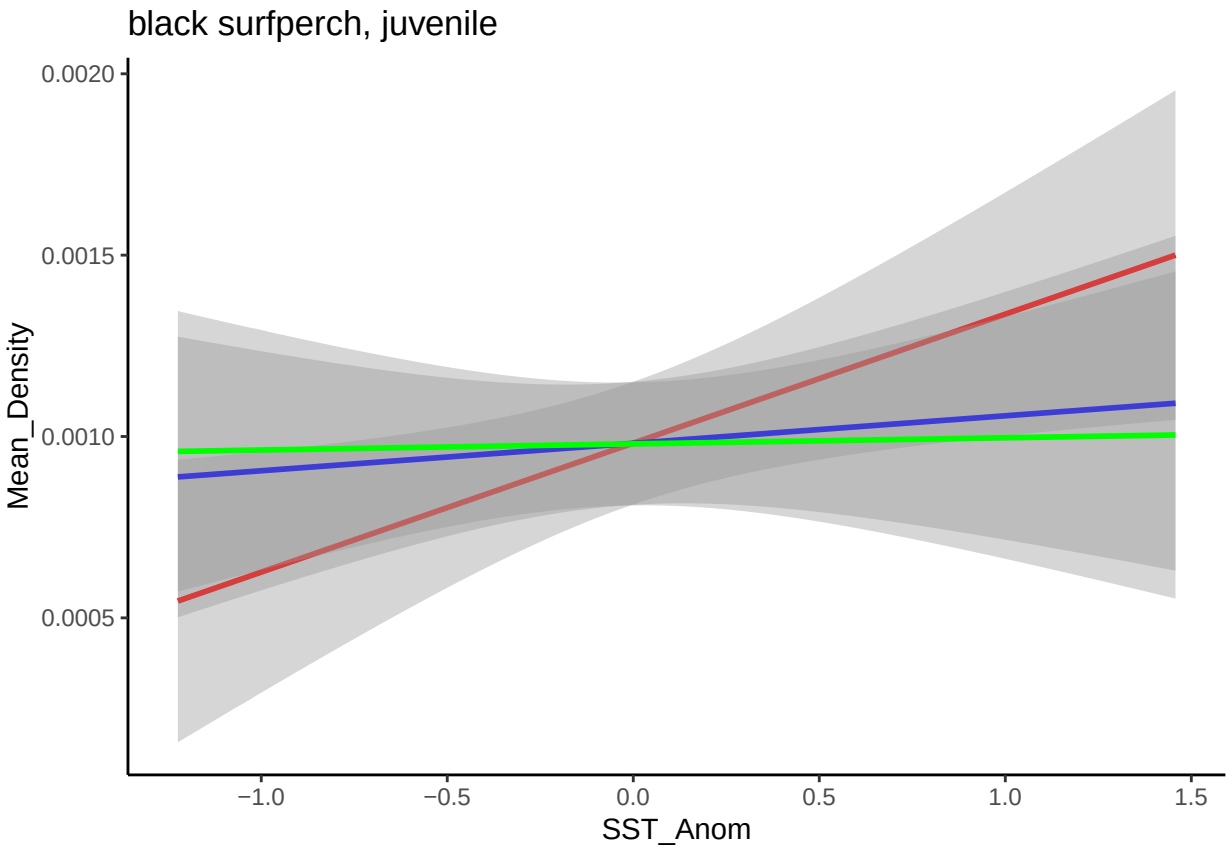

ocean whitefish, adult
Mean_Density
0.015
0.010
0.005
0.000
−0.5
0.0
0.5
1.0
1.5
SST_Anom

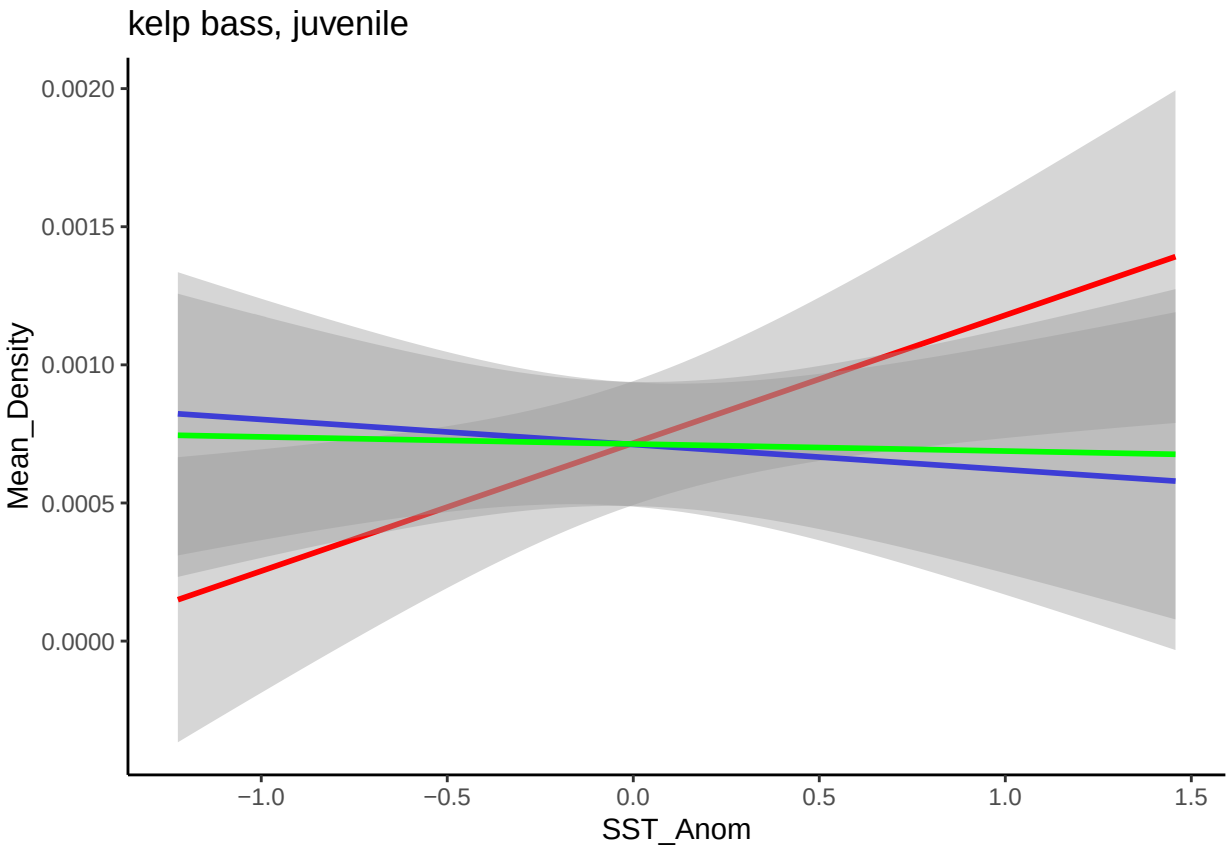

blue rockfish, juvenile
Mean_Density
0.06
0.04
0.02
0.00
−0.02
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

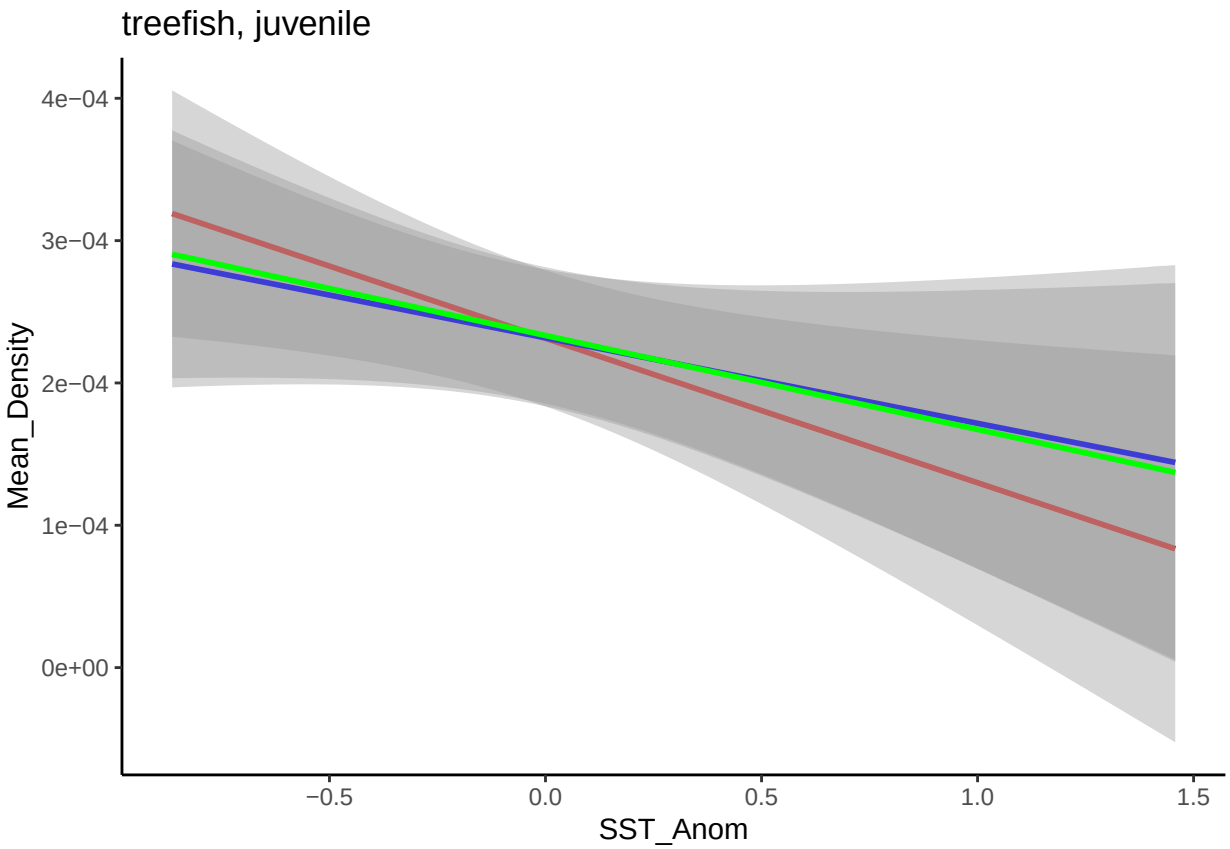

olive/yellowtail rockfish, juvenile
0.015
0.010
0.005
0.000
−0.005
−0.010
Mean_Density
−0.5
0.0
0.5
1.0
1.5
SST_Anom

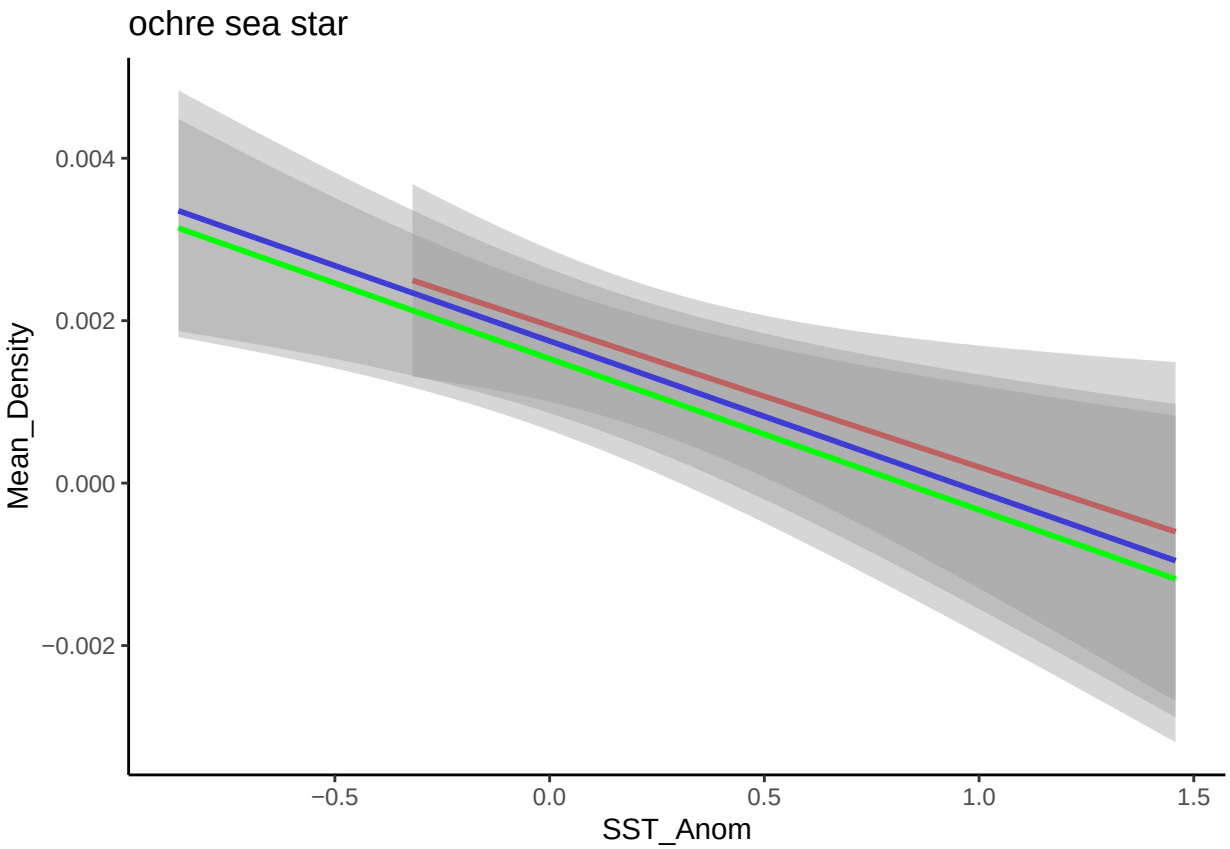

California spiny lobster
0.015
0.010
0.005
0.000
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

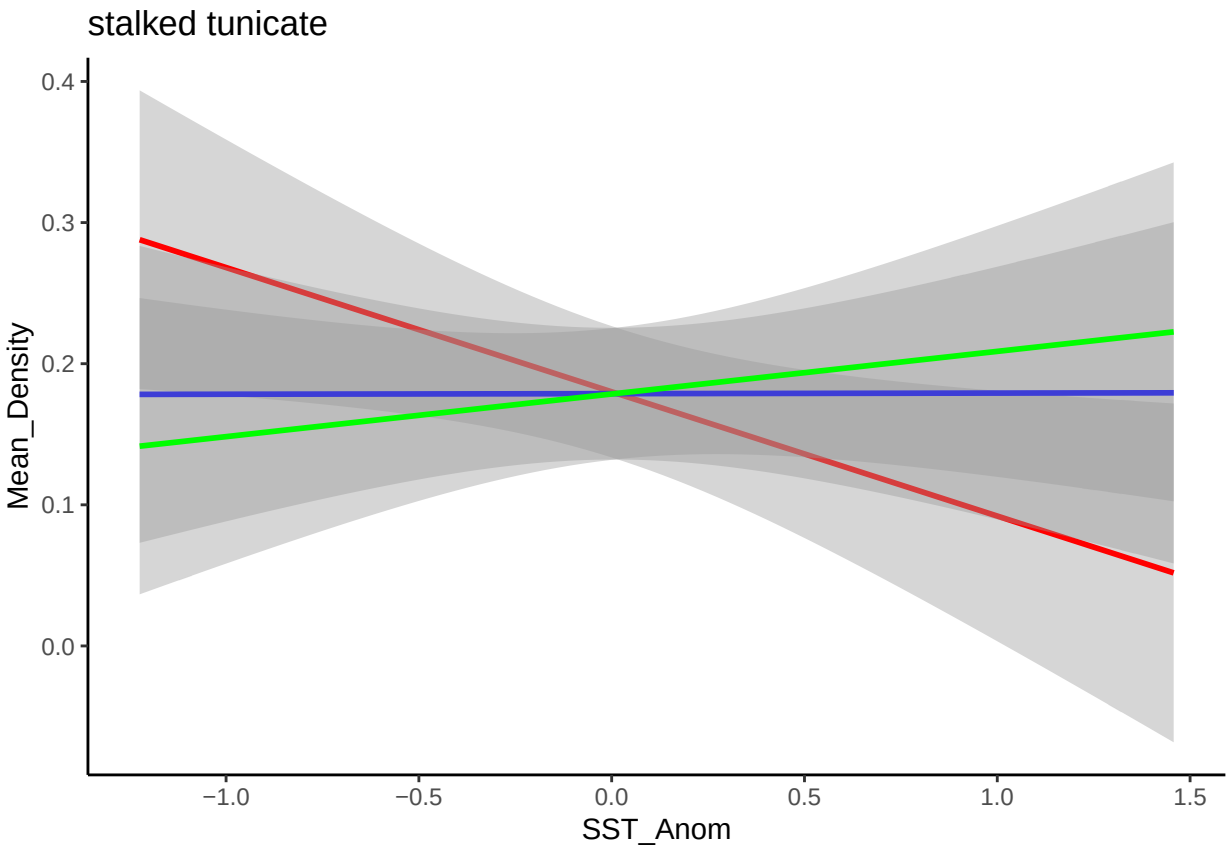

olive rockfish, adult
Mean_Density
0.0020
0.0015
0.0010
0.0005
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

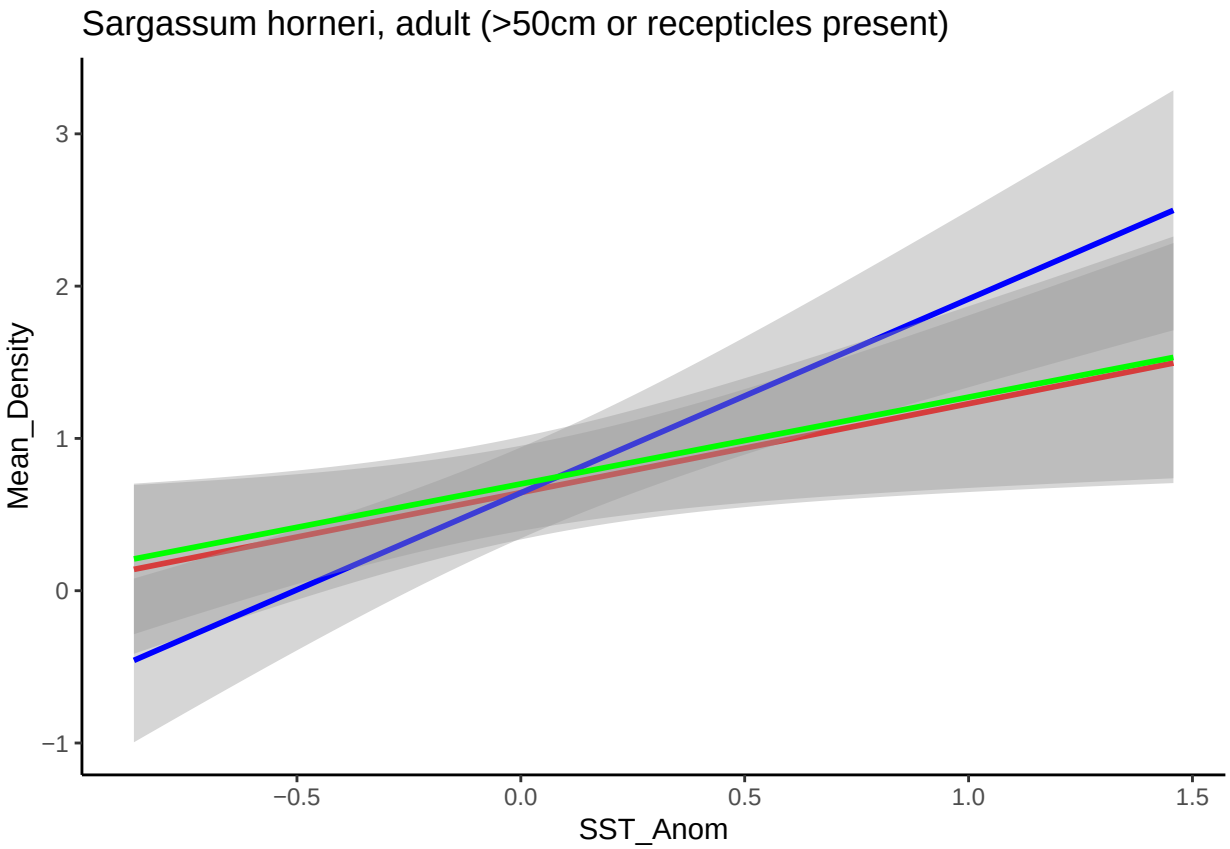

black surfperch, juvenile
0.0020
0.0015
0.0010
0.0005
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

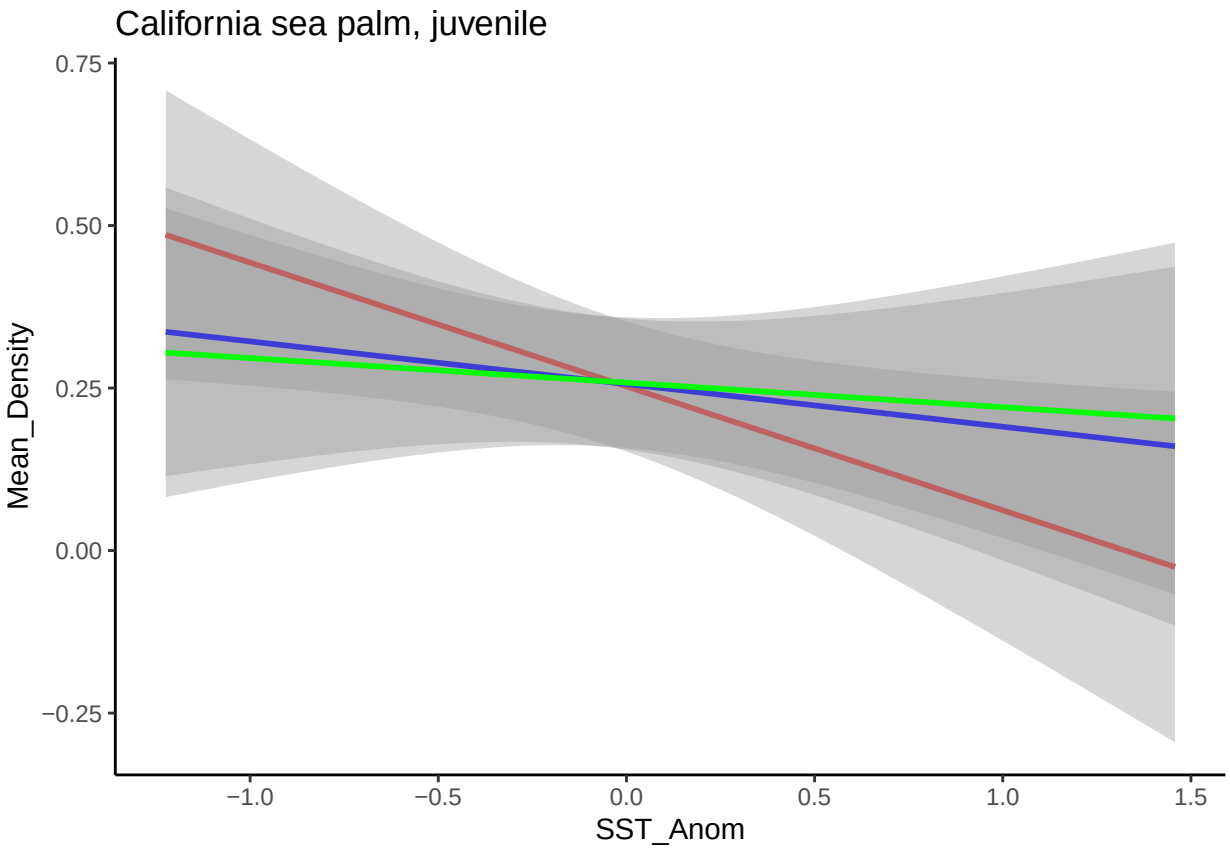

kelp bass, juvenile
0.0020
0.0015
0.0010
0.0005
0.0000
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

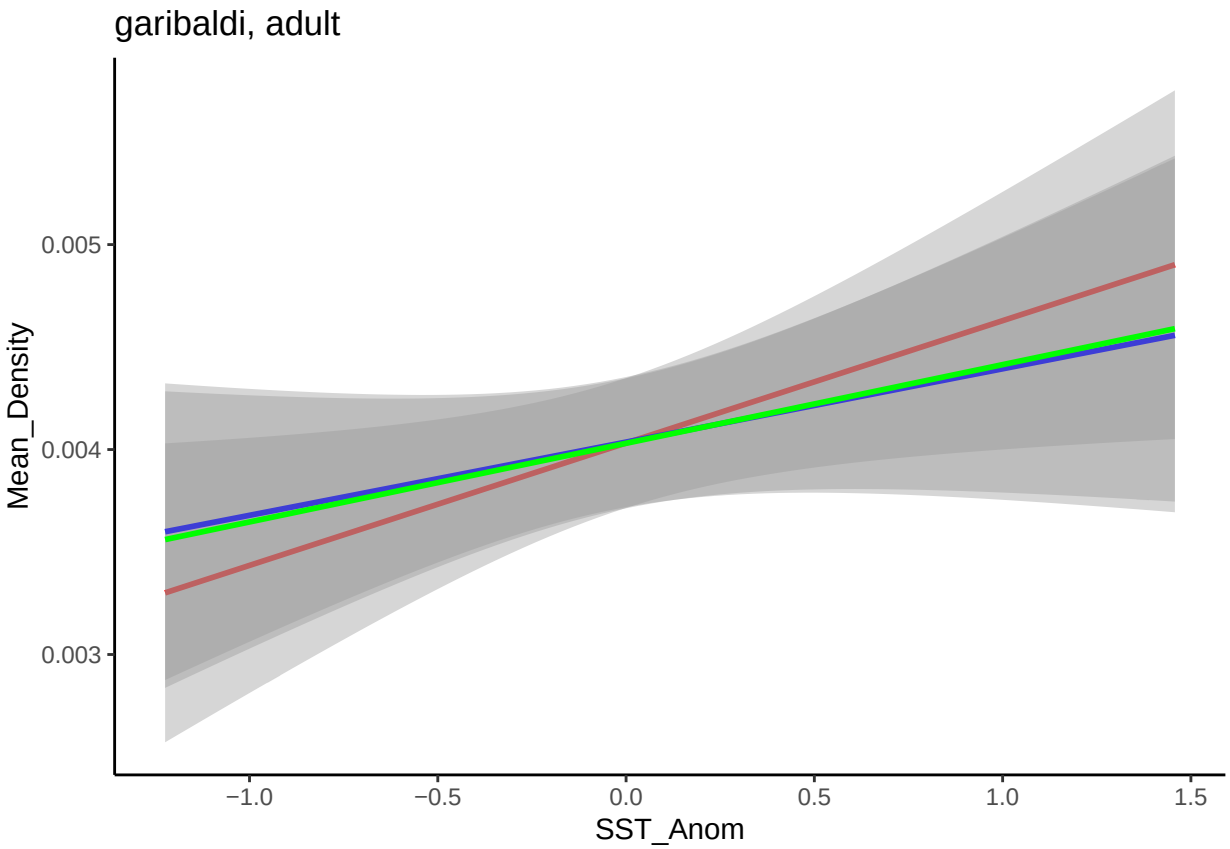

treefish, juvenile
4e−04
3e−04
2e−04
1e−04
0e+00
Mean_Density
−0.5
0.0
0.5
1.0
1.5
SST_Anom

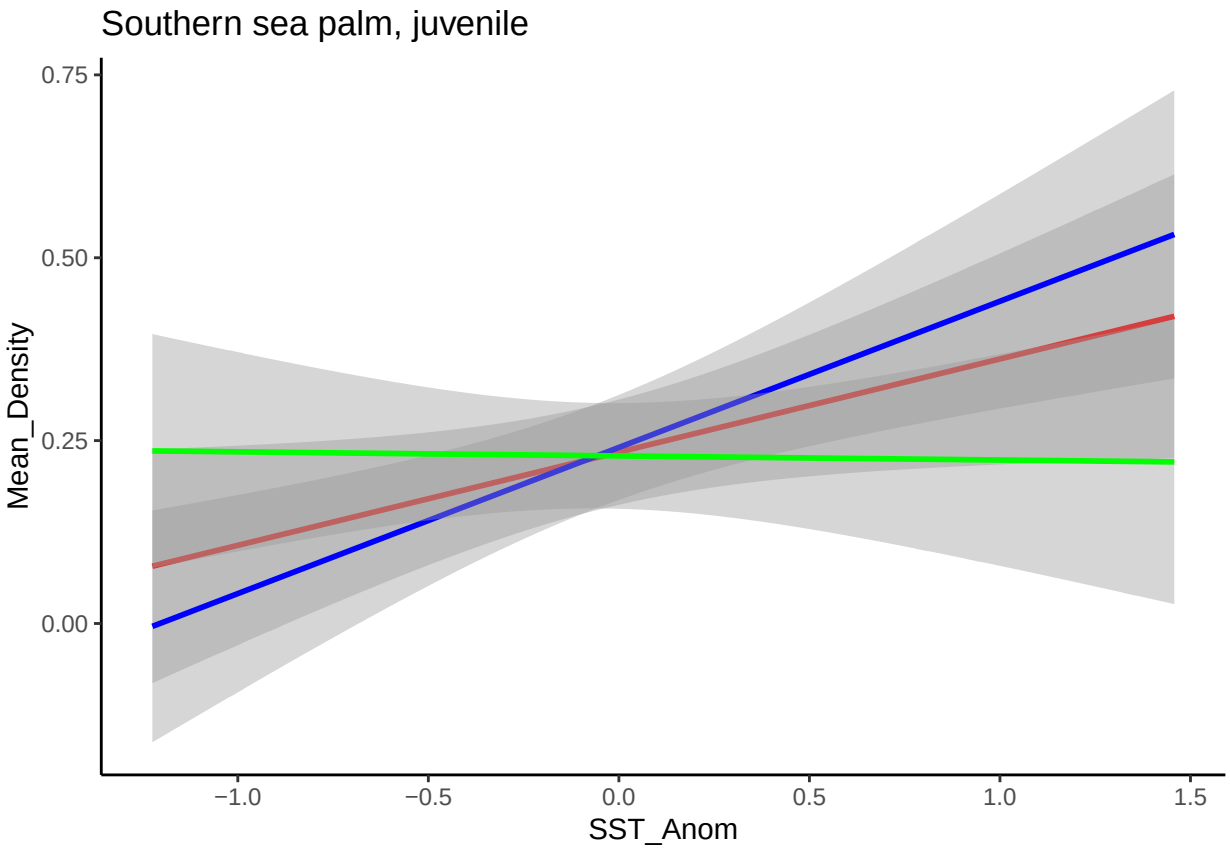

ochre sea star
Mean_Density
0.004
0.002
0.000
−0.002
−0.5
0.0
0.5
1.0
1.5
SST_Anom

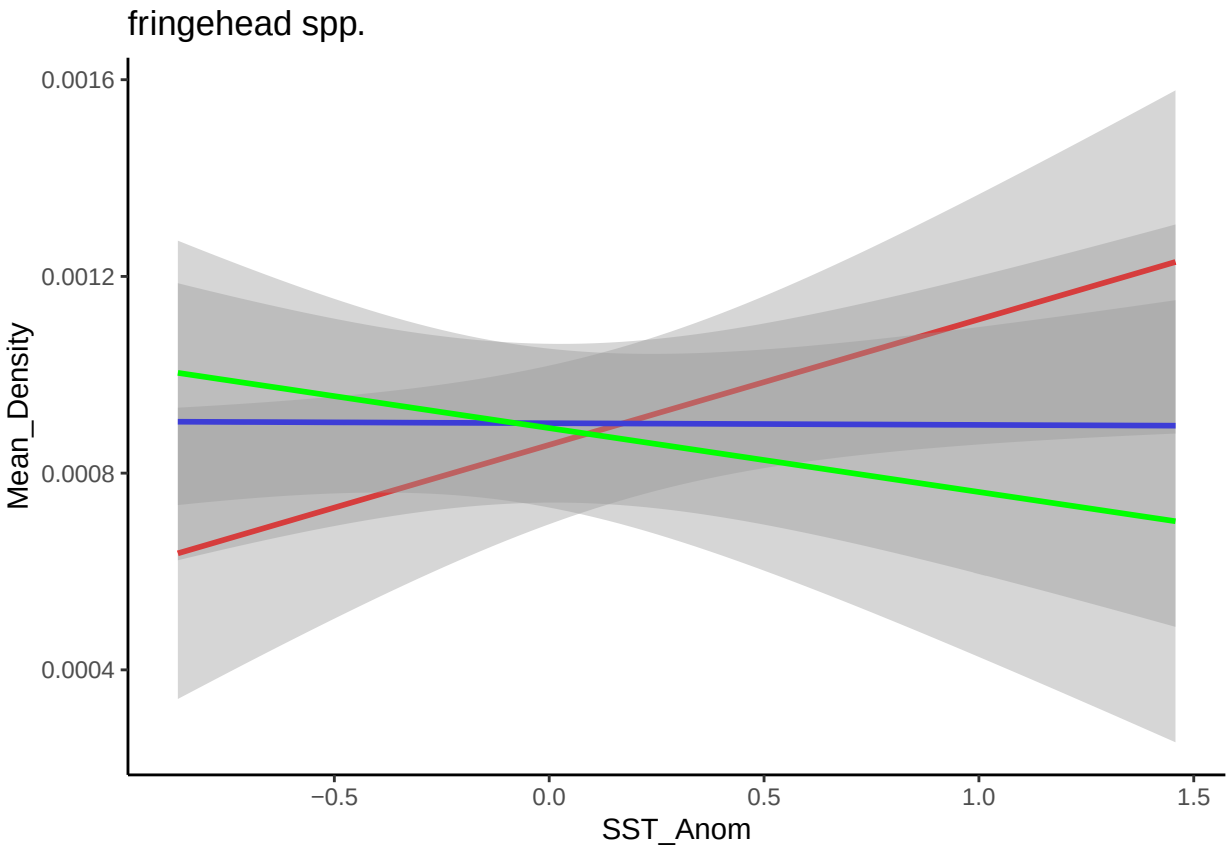

stalked tunicate
Mean_Density
0.4
0.3
0.2
0.1
0.0
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom

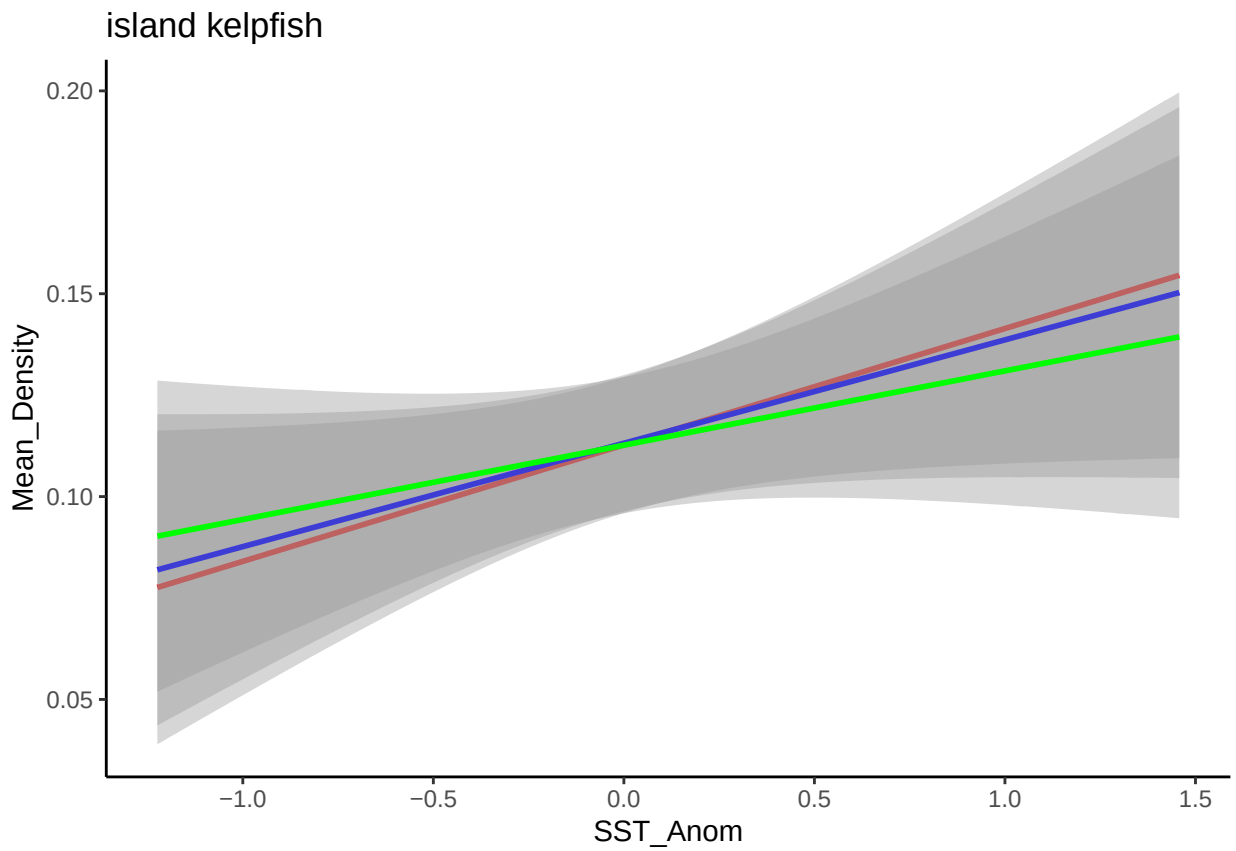

Sargassum horneri, adult (>50cm or recepticles present)
Mean_Density
3
2
1
0
−1
−0.5
0.0
0.5
1.0
1.5
SST_Anom


California sea palm, juvenile
0.75
0.50
0.25
0.00
−0.25
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom


garibaldi, adult
Mean_Density
0.005
0.004
0.003
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom


Southern sea palm, juvenile
0.75
0.50
0.25
0.00
Mean_Density
−1.0
−0.5
0.0
0.5
1.0
1.5
SST_Anom


fringehead spp.
0.0016
0.0012
0.0008
0.0004
Mean_Density
−0.5
0.0
0.5
1.0
1.5
SST_Anom



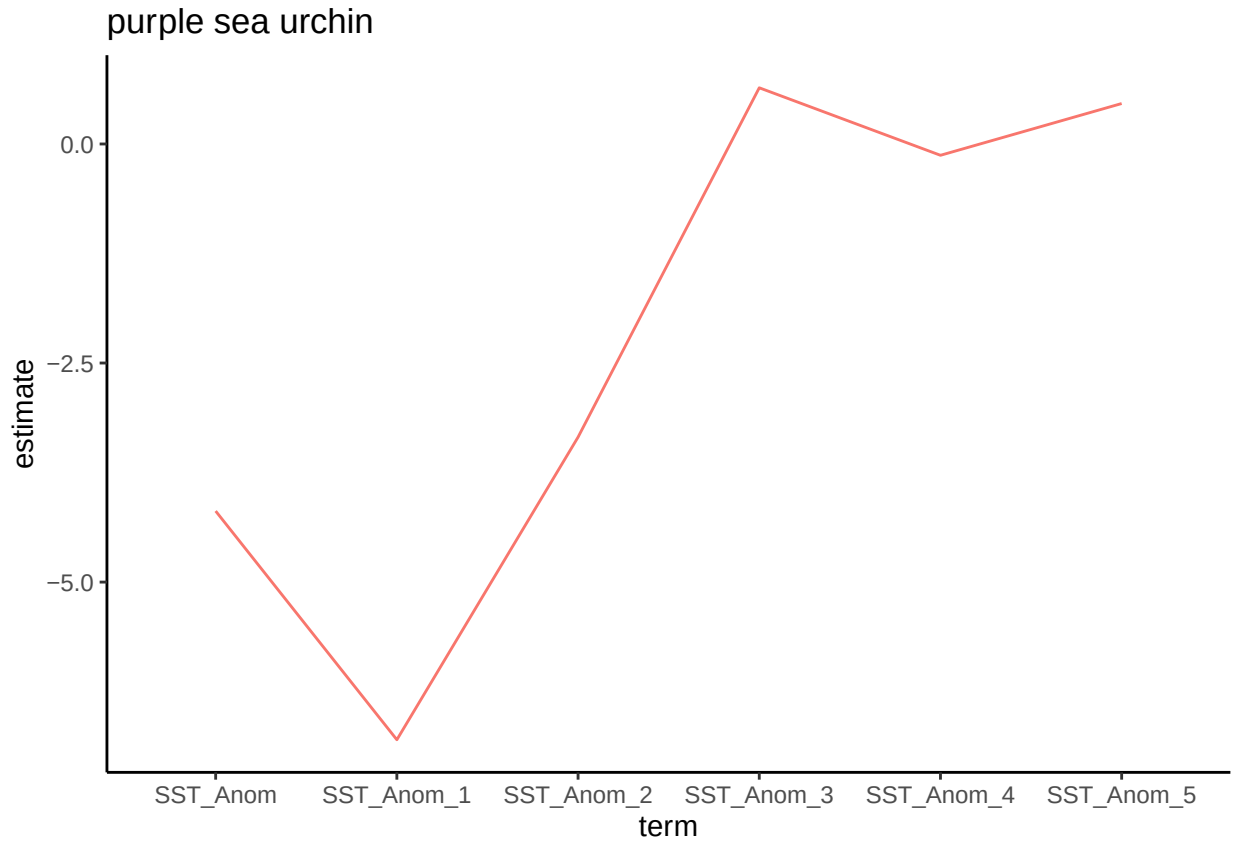

```
Results_lag_5 <- density %>%
  dplyr::group_by(CommonName) %>%
  dplyr::summarise(
    generics::tidy(
      stats::lm(Mean_Density ~ SST_Anom + SST_Anom_1 + SST_Anom_2 + SST_Anom_3 + SST_Anom_4 + SST_Anom_5
      )) %>%
  tidyr::drop_na(p.value) %>%
  dplyr::filter(p.value <= .05, term != "(Intercept)") %>%
  dplyr::arrange(estimate) %>%
  # dplyr::arrange(p.value) %>%
  dplyr::mutate(statistic = round(statistic, 3),
                p.value = round(p.value, 3),
                p.value = ifelse(p.value < 0.001, "< 0.001", as.character(p.value)))
```

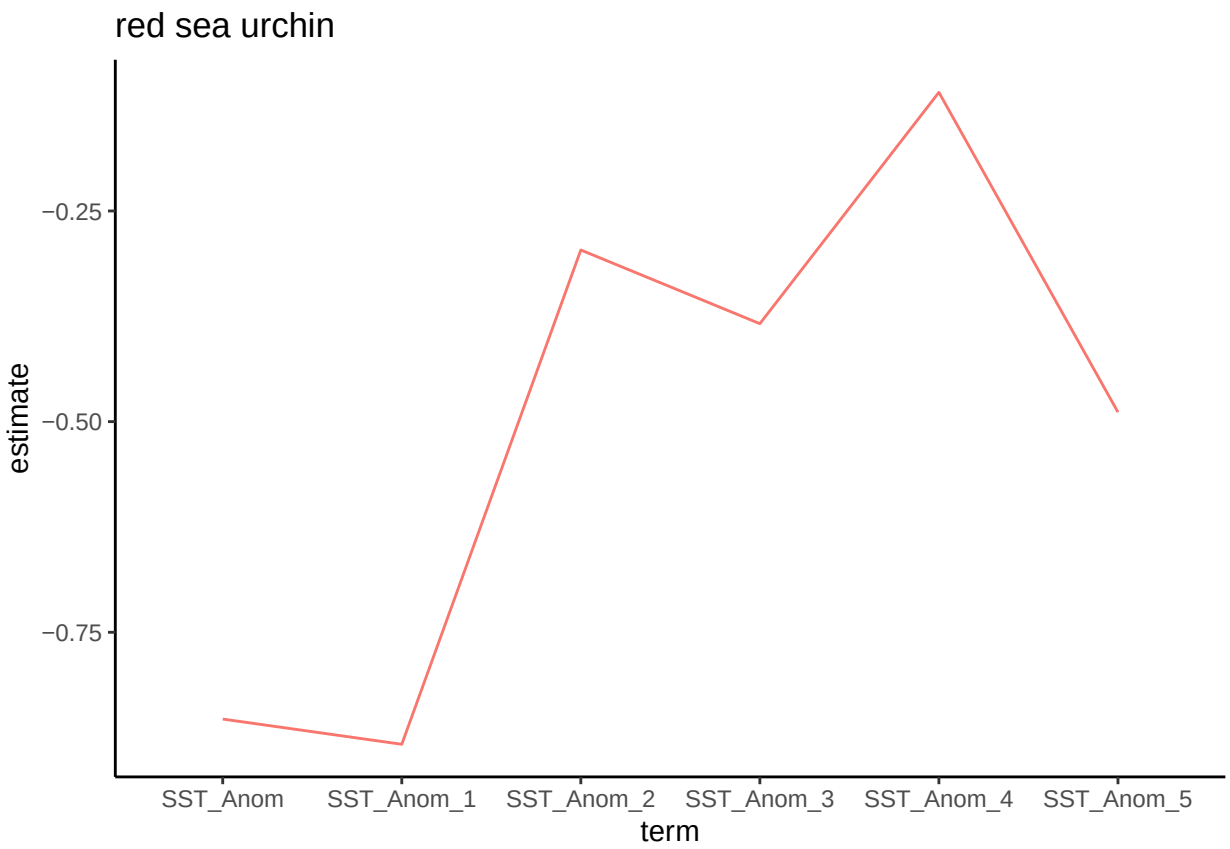
```
## `summarise()` has grouped output by 'CommonName'. You can override using the `.groups` argument.
```

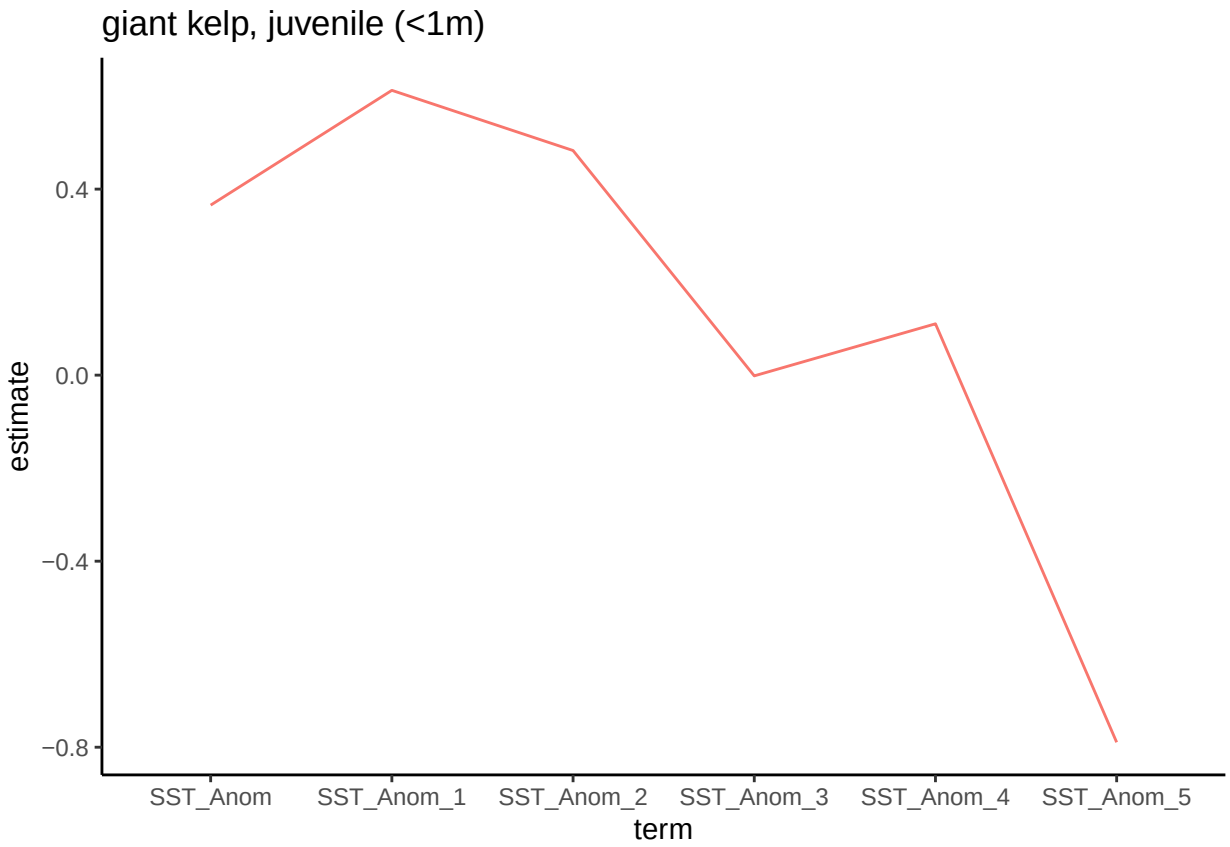
```
Results_lag <- density %>%
  dplyr::group_by(CommonName) %>%
  dplyr::summarise(
    generics::tidy(
      stats::lm(Mean_Density ~ SST_Anom + SST_Anom_1 + SST_Anom_2 + SST_Anom_3 + SST_Anom_4 + SST_Anom_5
      )) %>%
  tidyr::drop_na(p.value) %>%
  dplyr::filter(term != "(Intercept)")
```

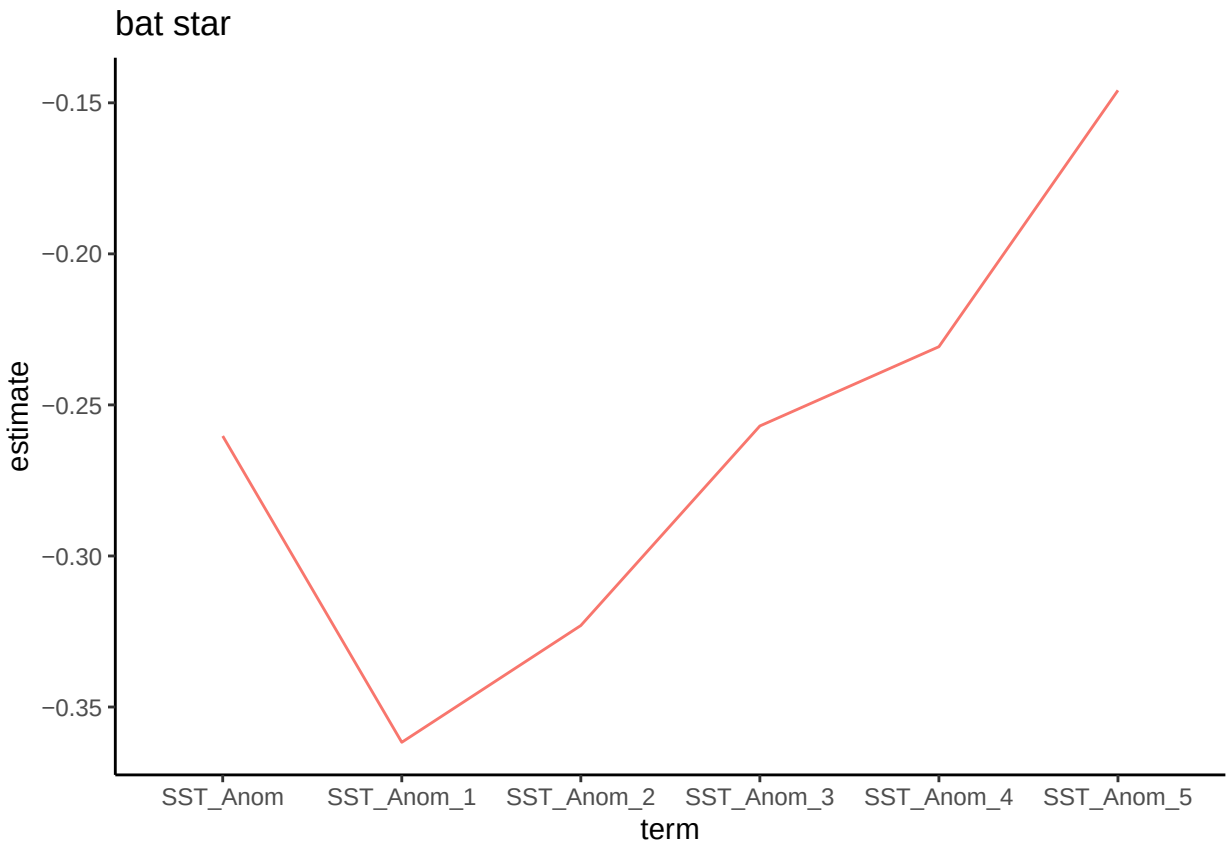
```
## `summarise()` has grouped output by 'CommonName'. You can override using the `.groups` argument.
```

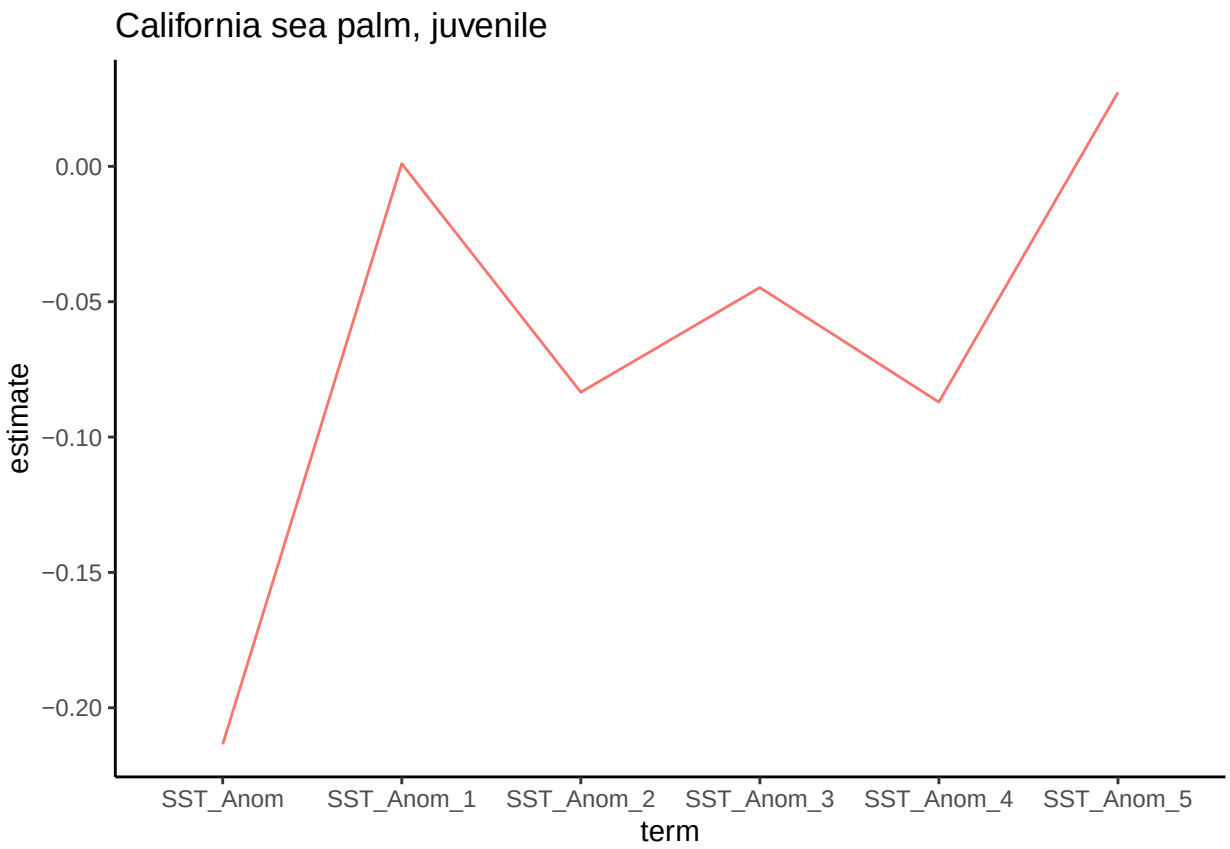
```r
for (sp in unique(Results_lag_5$CommonName)) {
  p <- Results_lag %>%
    filter(CommonName == sp) %>%
    ggplot(aes(x = term, y = estimate, color = CommonName, group = CommonName)) +
    geom_line(show.legend = F) +
    labs(title = sp) +
    theme_classic()

  print(p)
}
```

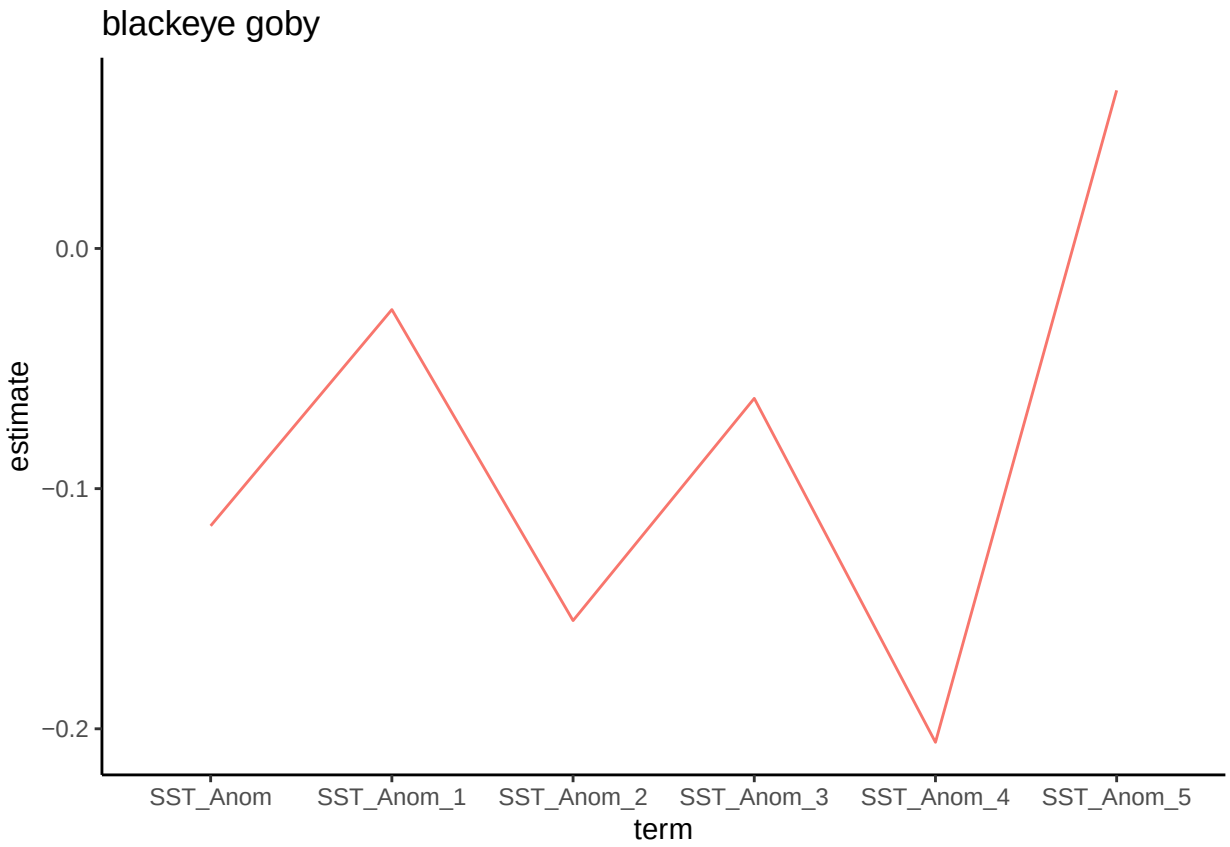


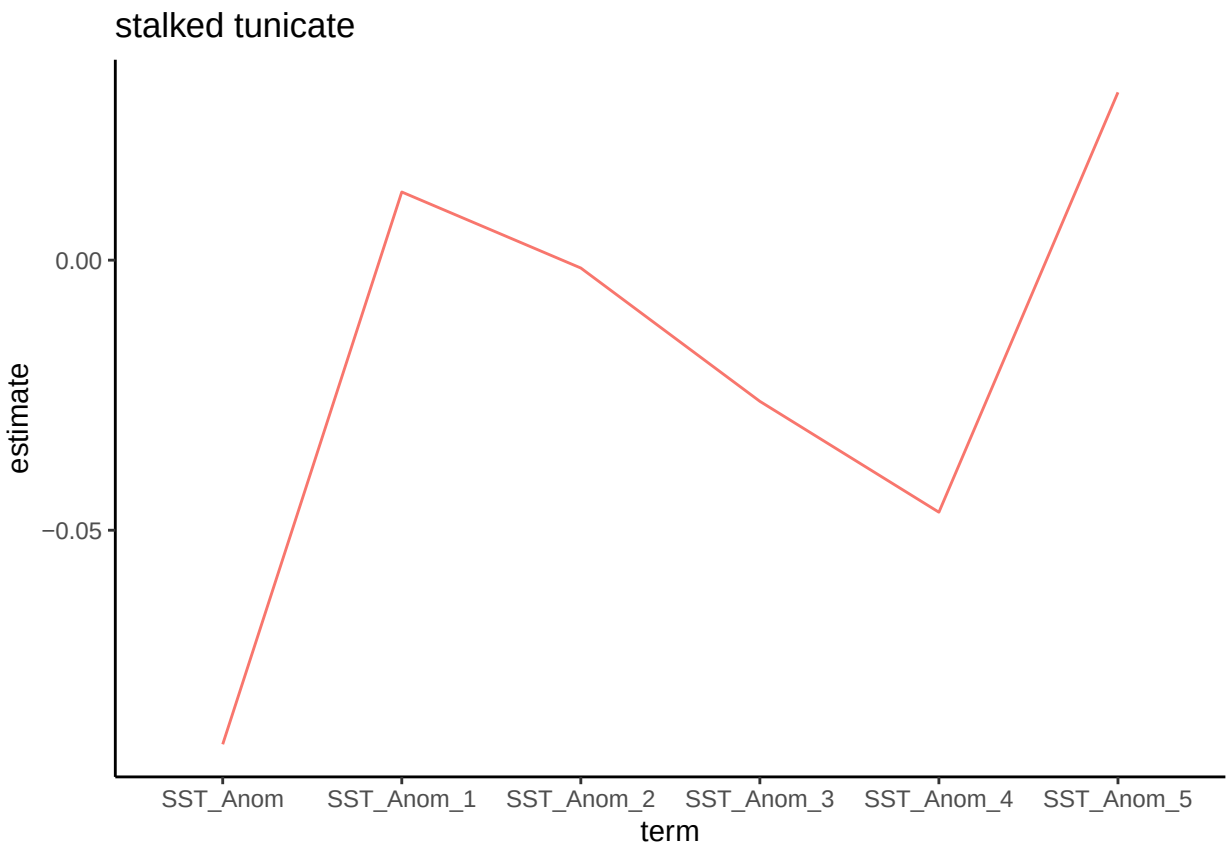

red sea urchin
estimate
−0.25
−0.50
−0.75
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

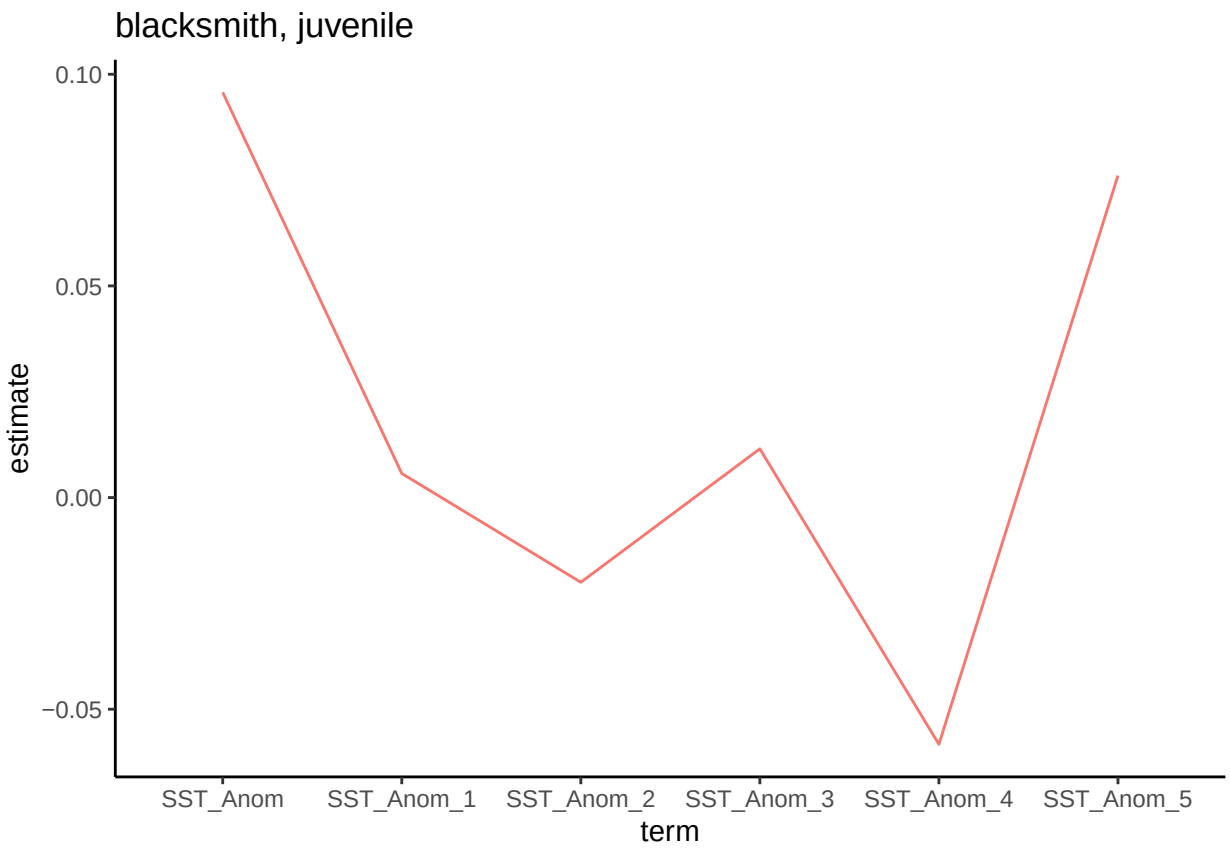

giant kelp, juvenile (<1m)
estimate
0.4
0.0
−0.4
−0.8
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

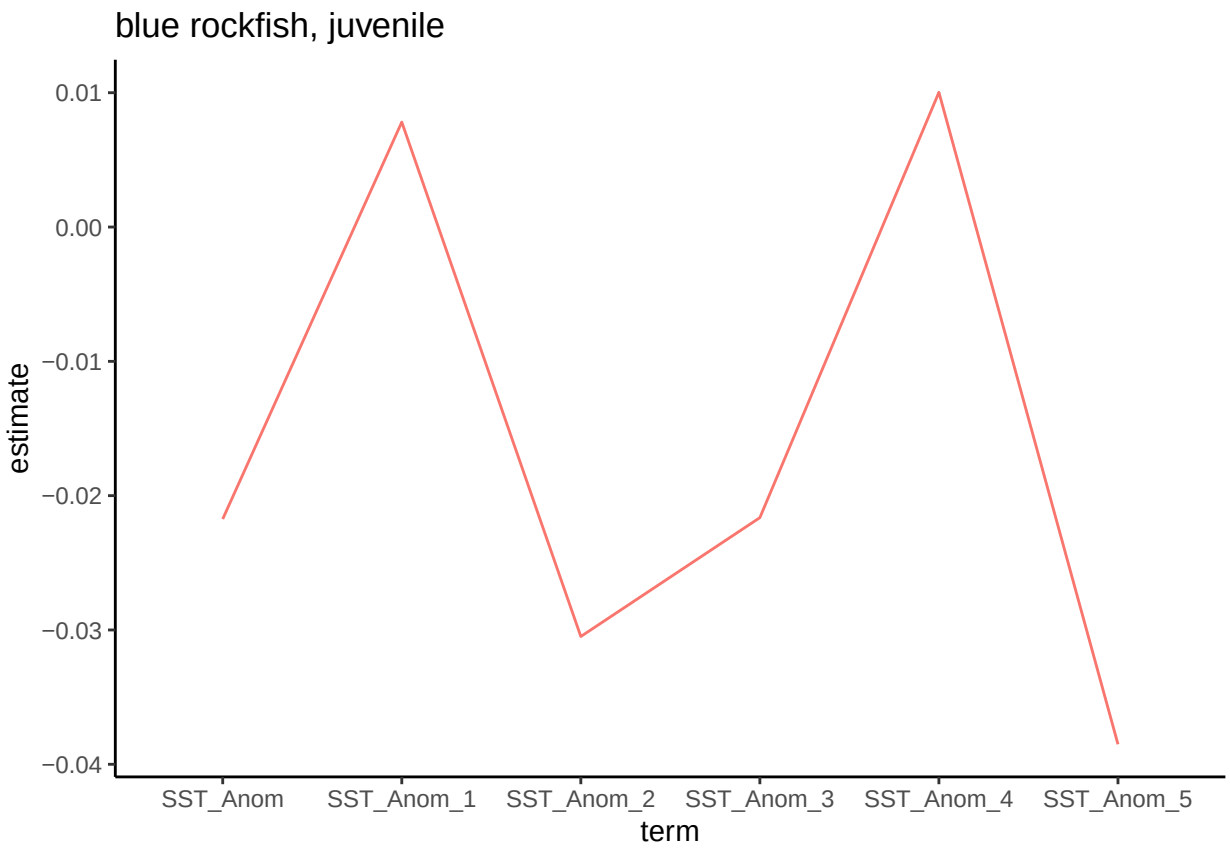

bat star
estimate
−0.15
−0.20
−0.25
−0.30
−0.35
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

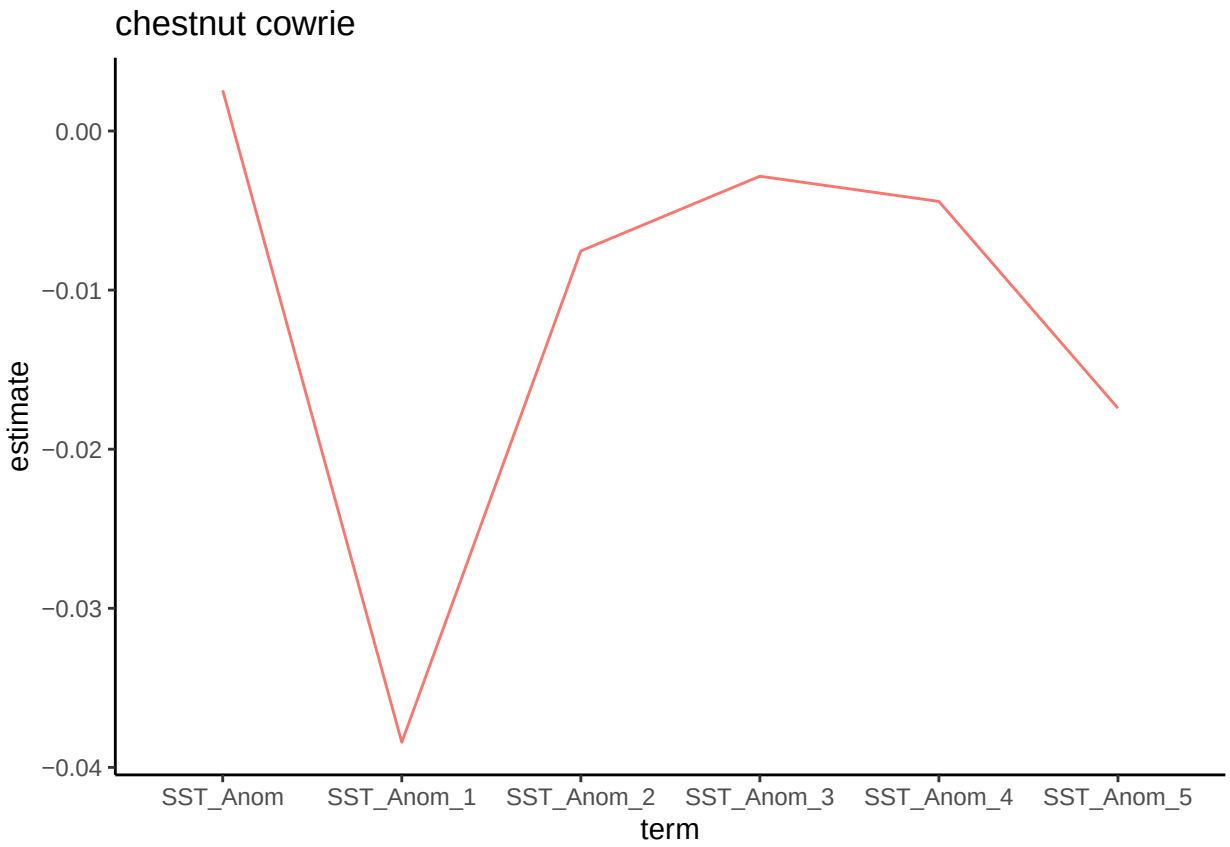

California sea palm, juvenile
0.00
−0.05
−0.10
−0.15
−0.20
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

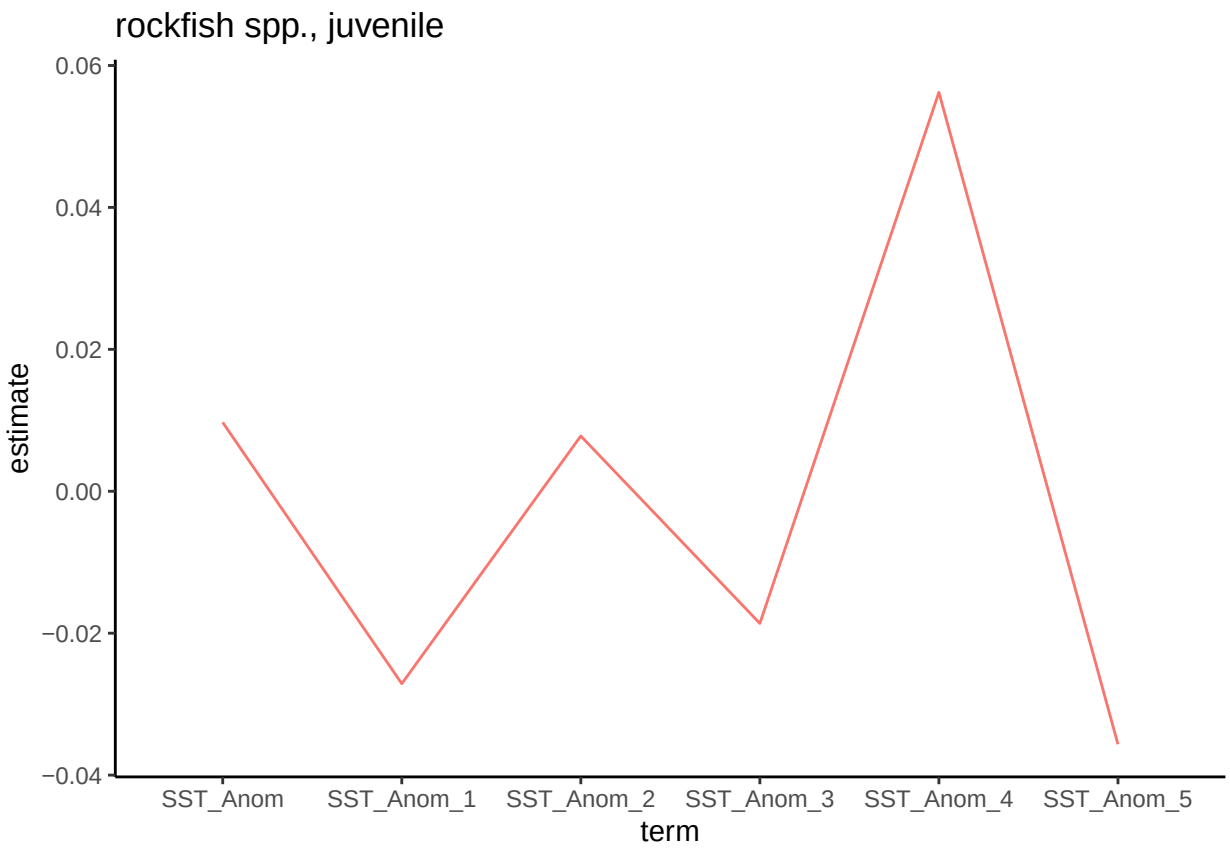

blackeye goby
0.0
−0.1
−0.2
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

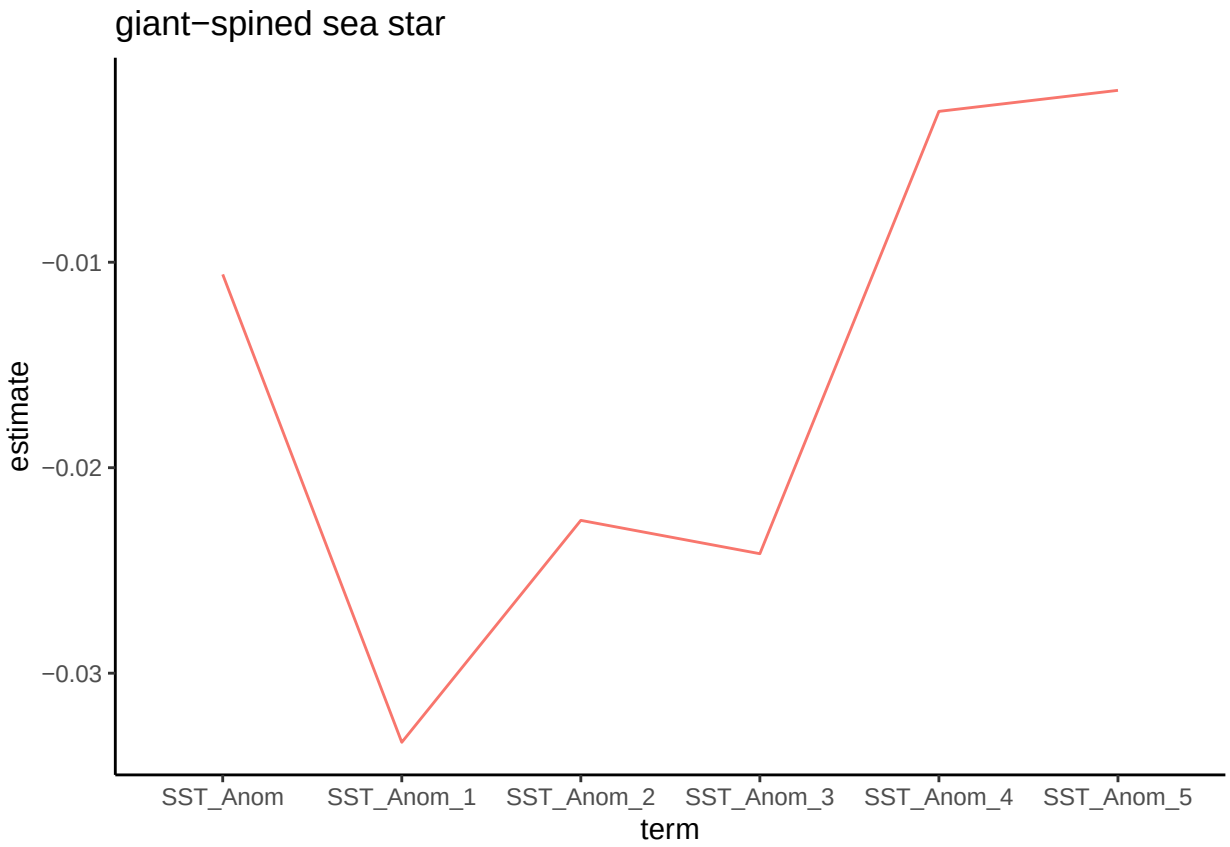

stalked tunicate
0.00
−0.05
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

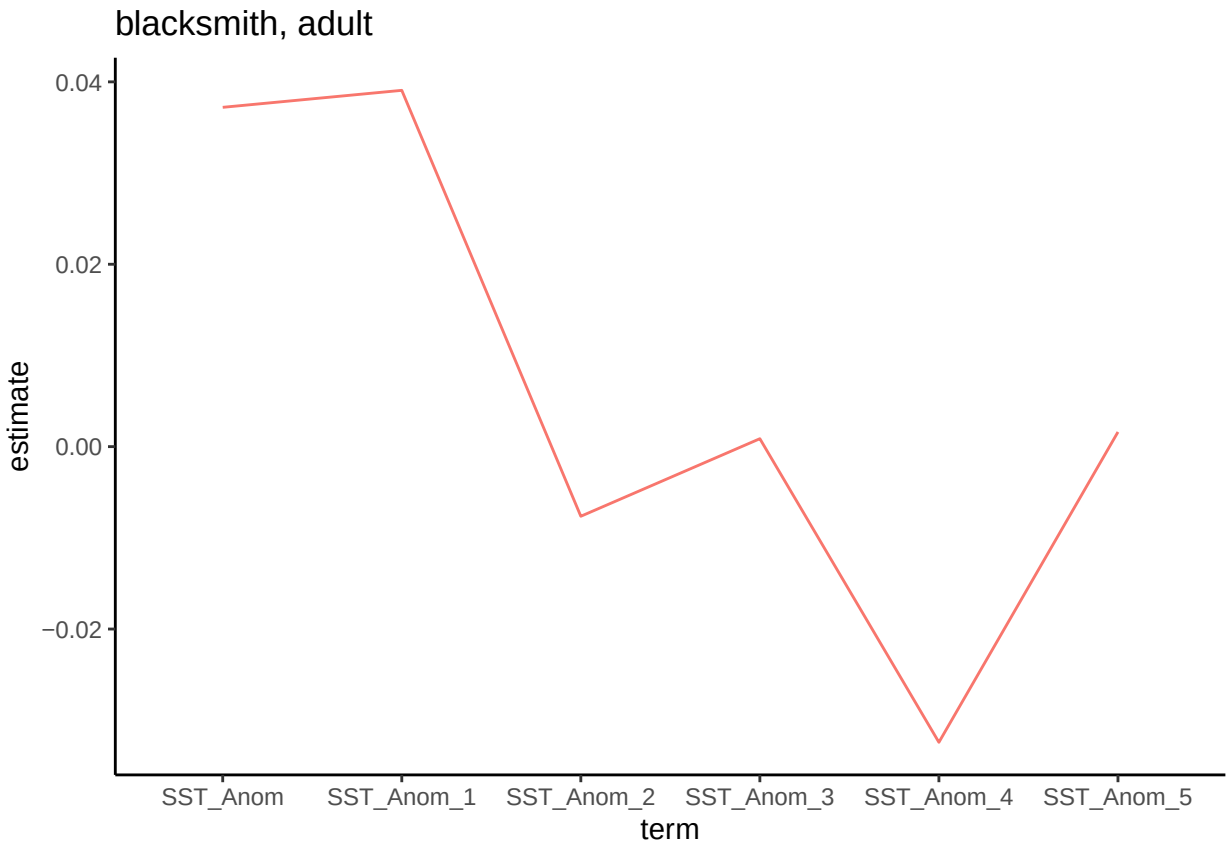

blacksmith, juvenile
0.10
0.05
0.00
−0.05
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

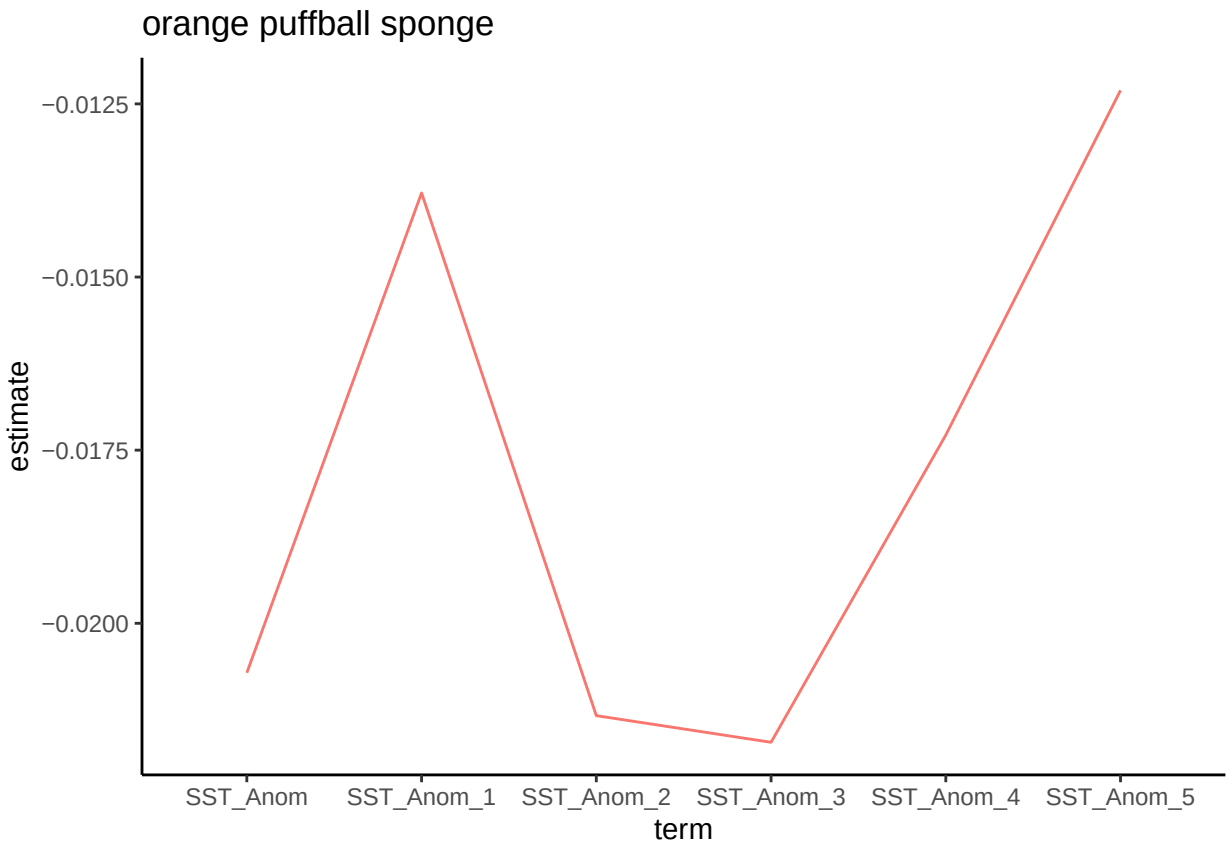

blue rockfish, juvenile
0.01
0.00
−0.01
−0.02
−0.03
−0.04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

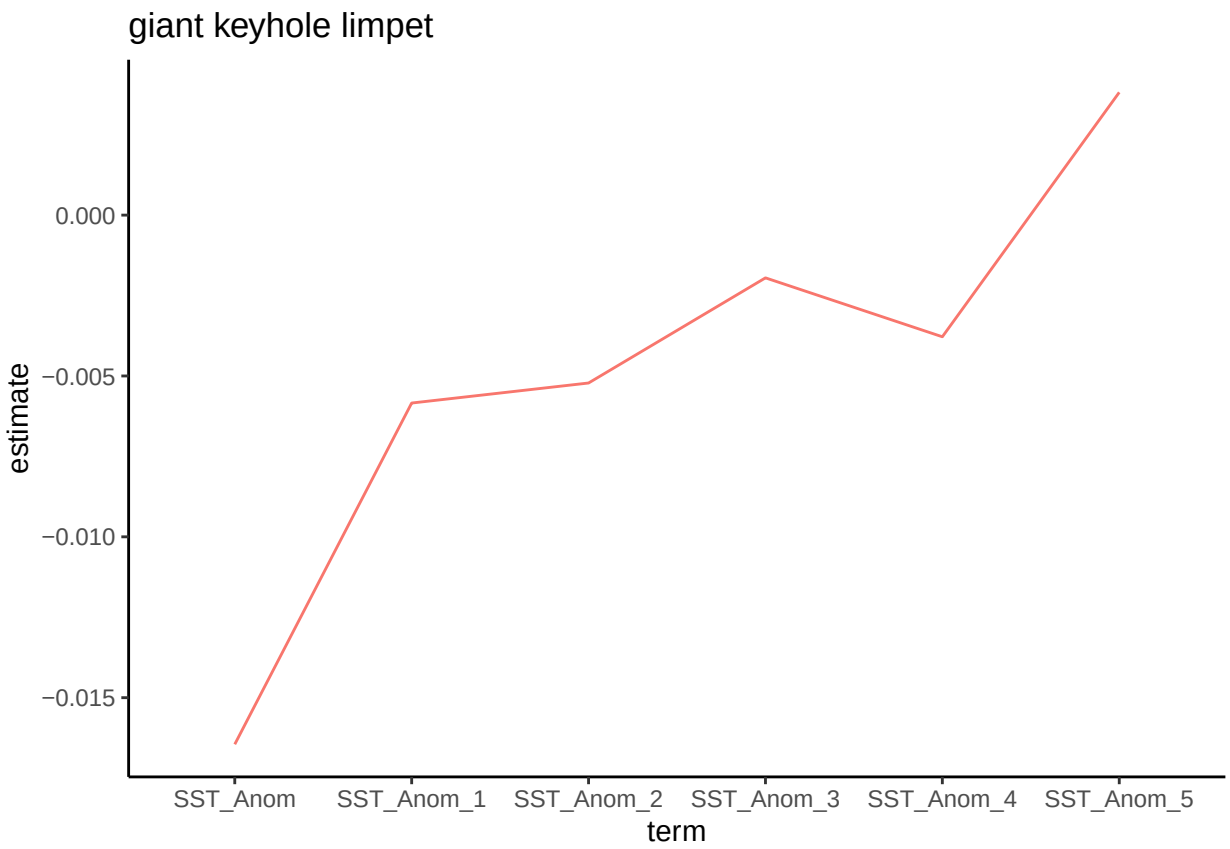

chestnut cowrie
0.00
−0.01
−0.02
−0.03
−0.04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

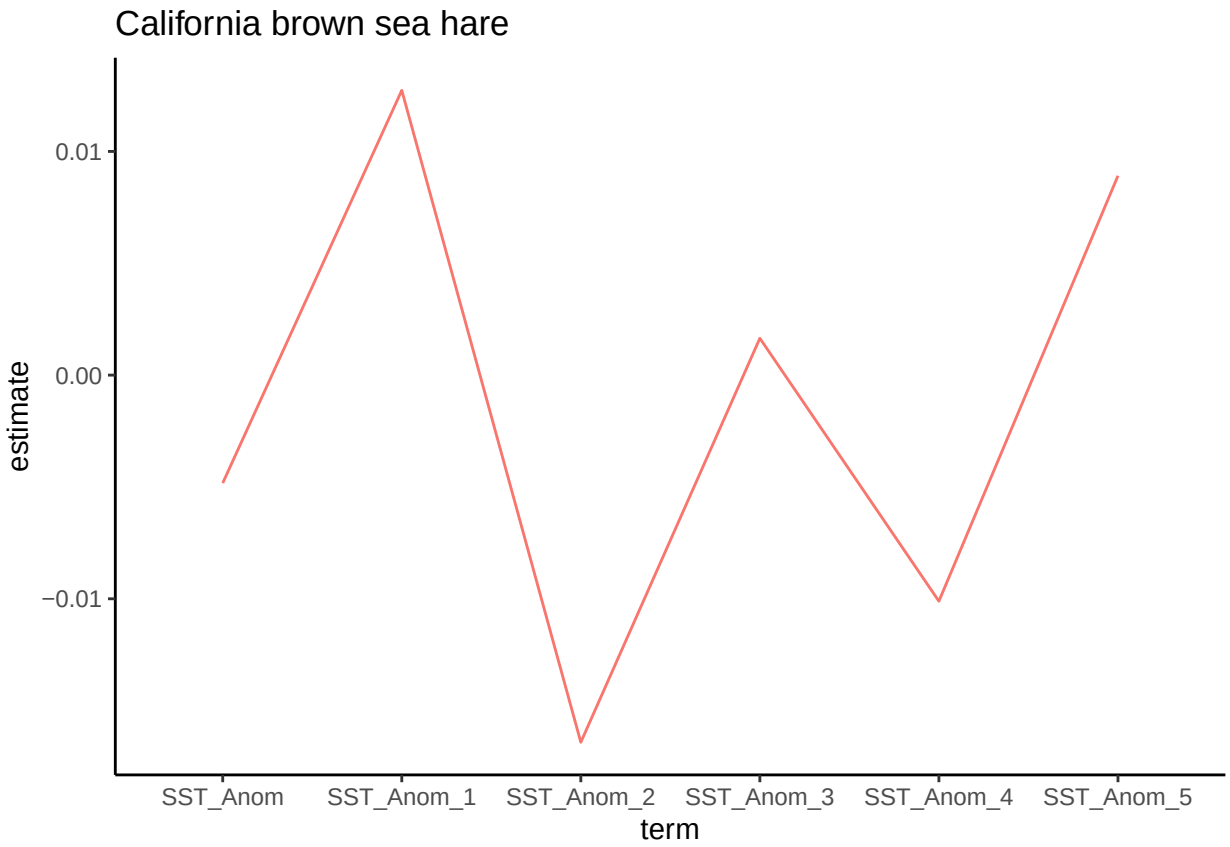

rockfish spp., juvenile
0.06
0.04
0.02
0.00
−0.02
−0.04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

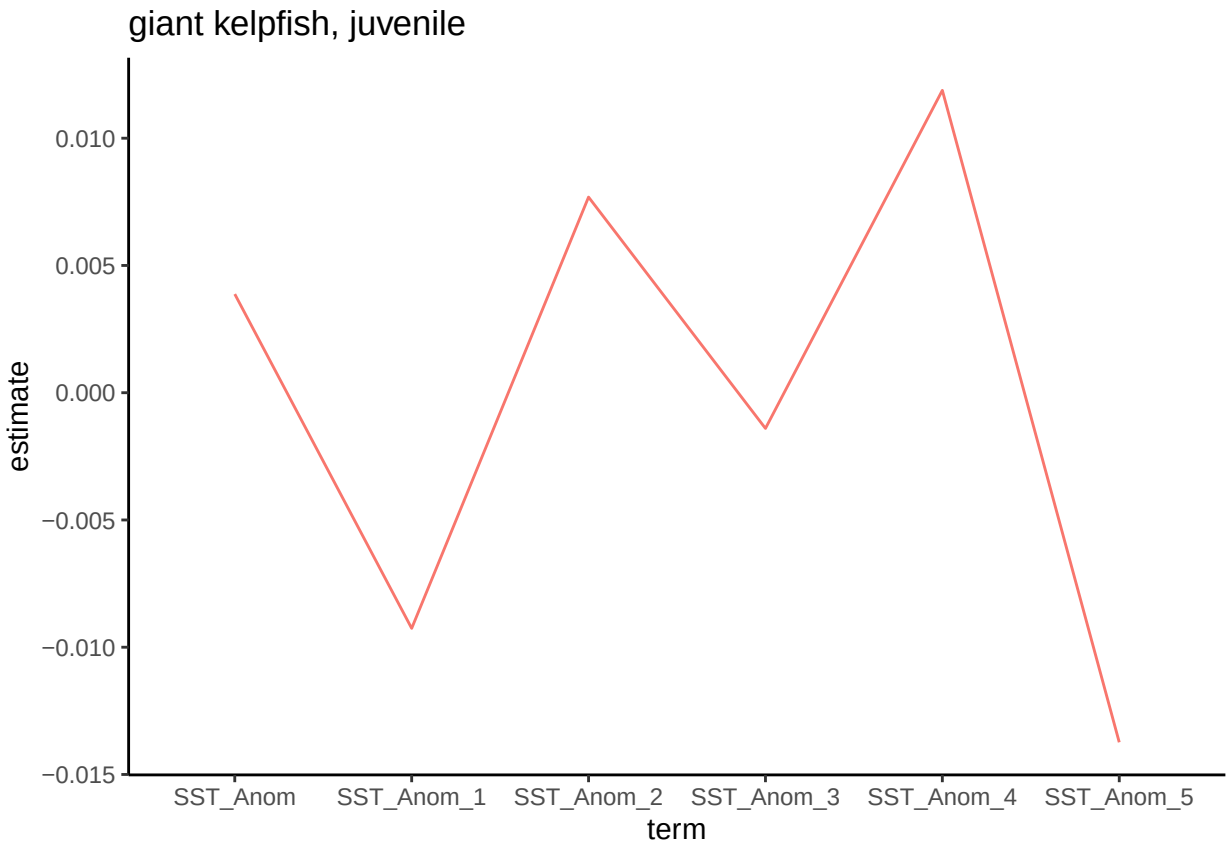

giant−spined sea star
estimate
−0.01
−0.02
−0.03
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

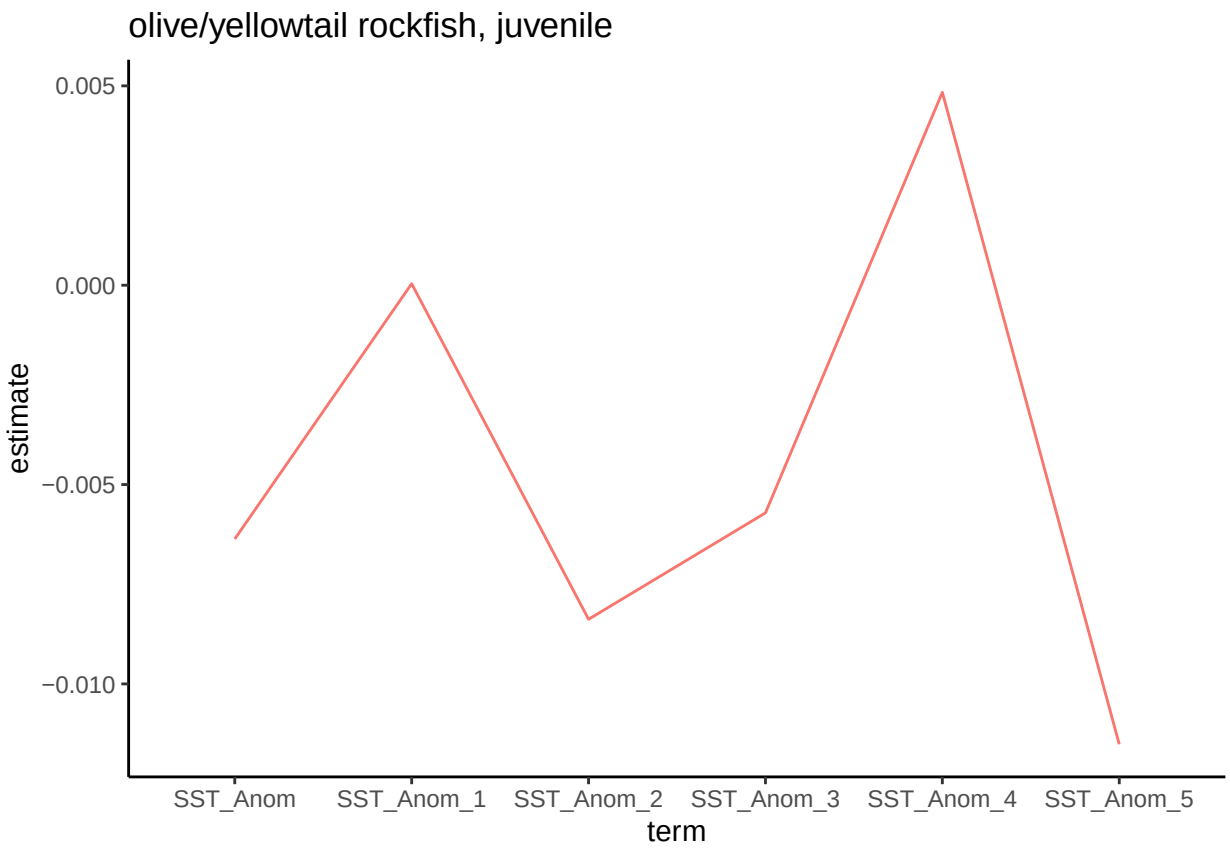

blacksmith, adult
0.04
0.02
0.00
−0.02
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

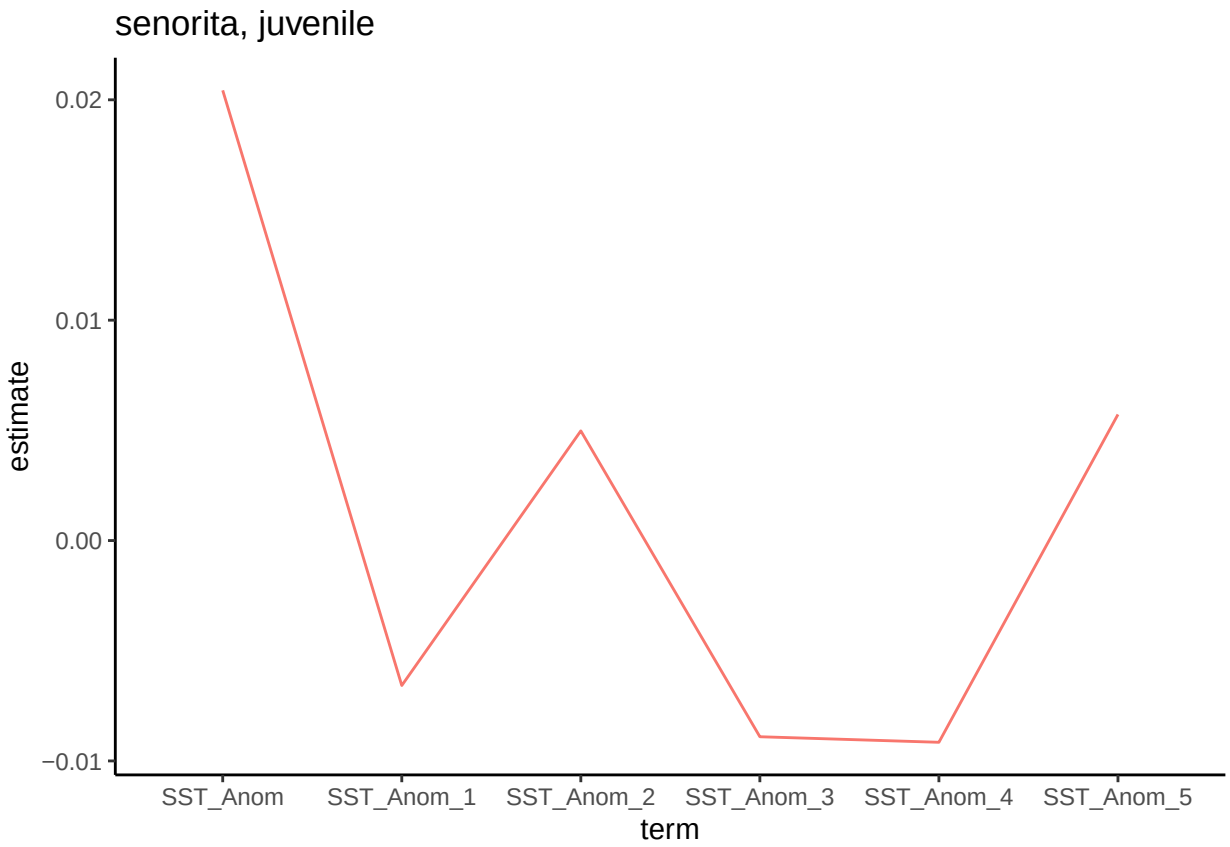

orange puffball sponge
−0.0125
−0.0150
−0.0175
−0.0200
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

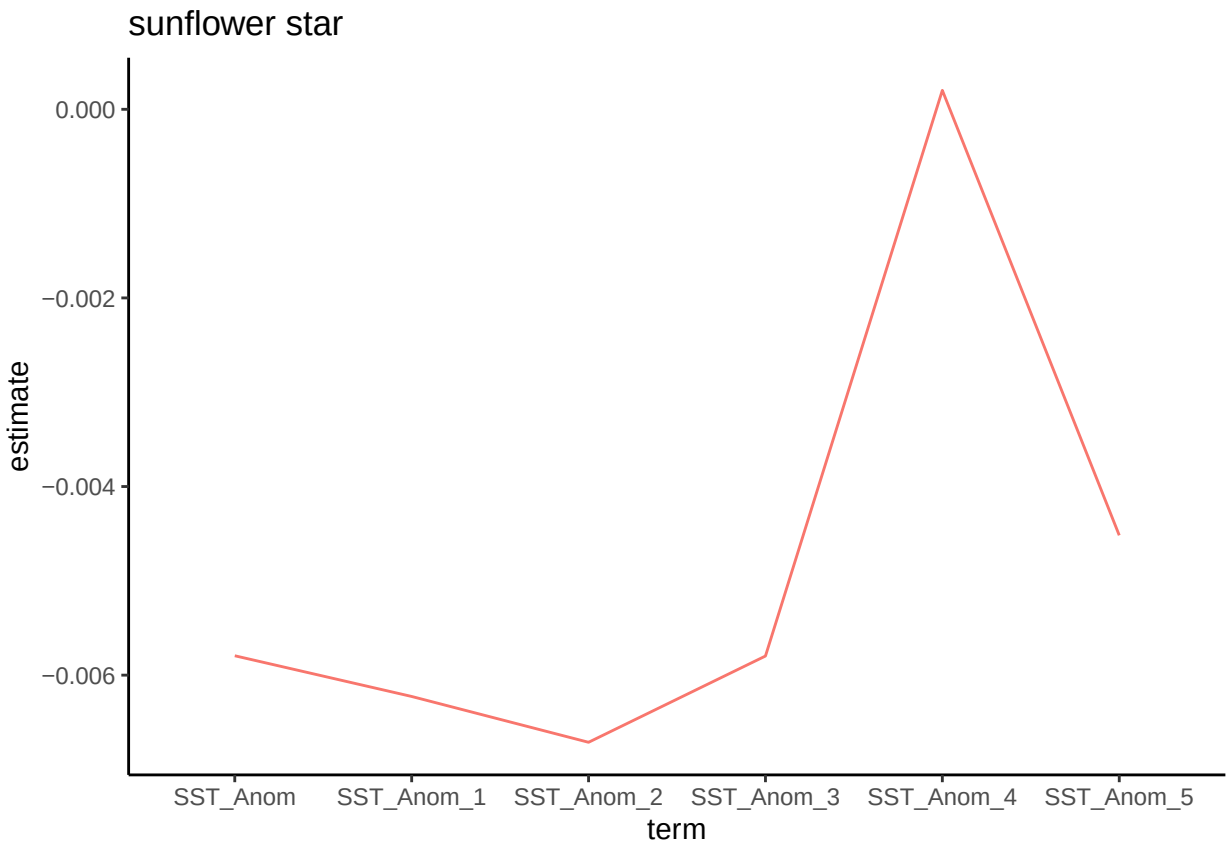

giant keyhole limpet
0.000
−0.005
−0.010
−0.015
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

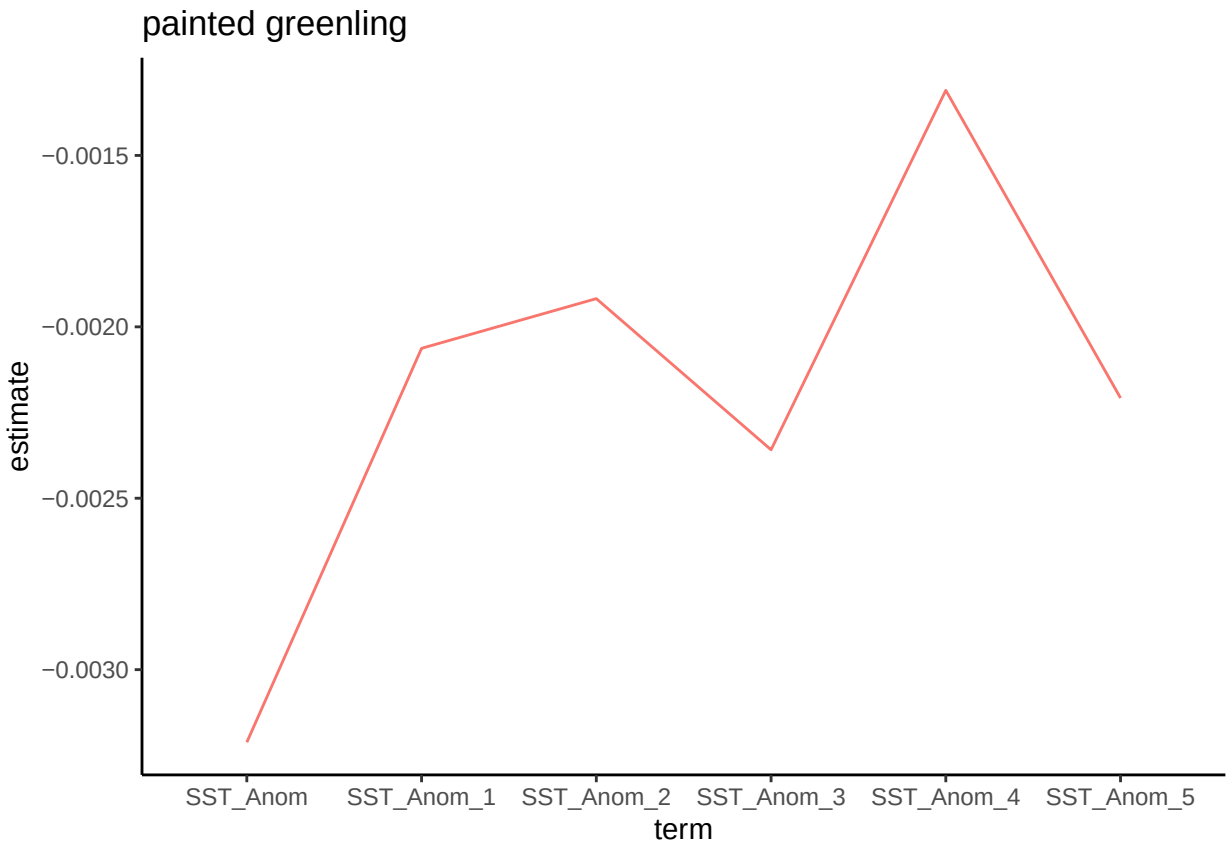

California brown sea hare
0.01
0.00
−0.01
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

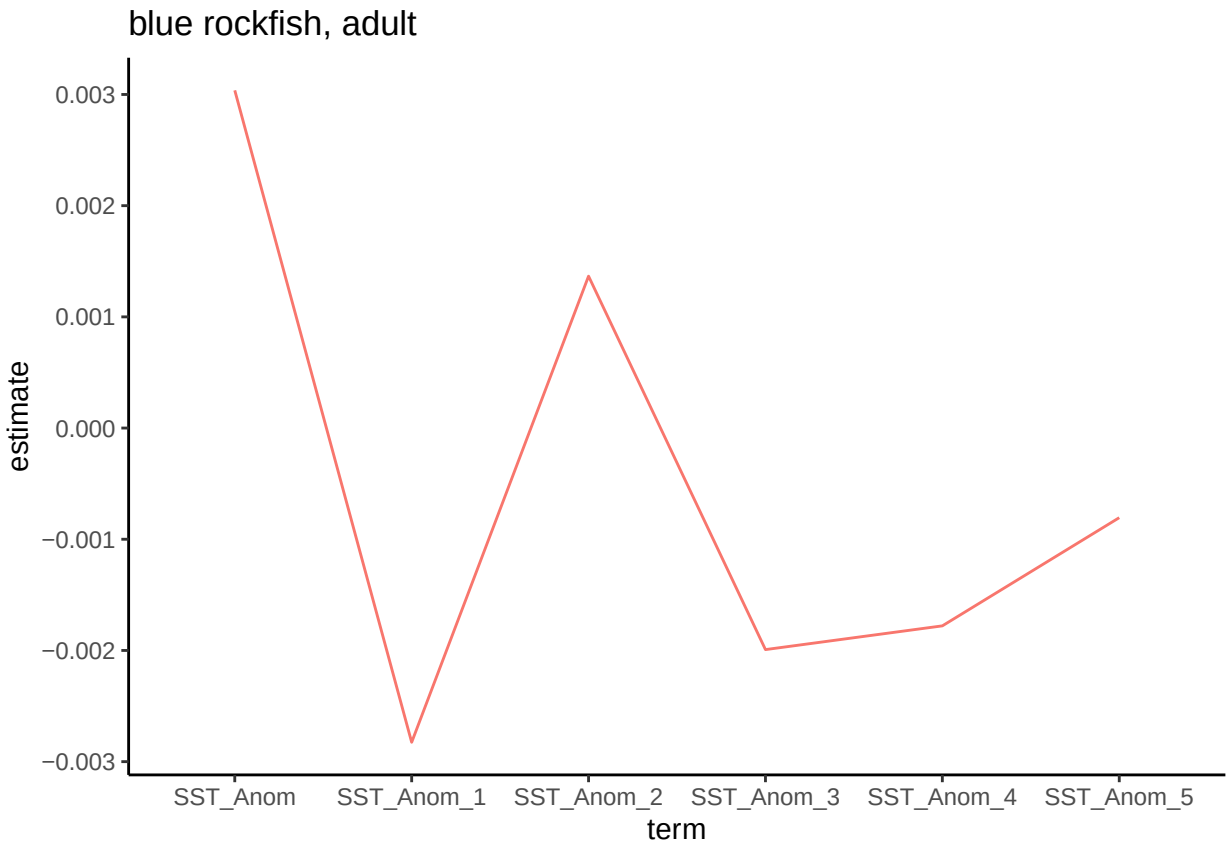

giant kelpfish, juvenile
0.010
0.005
0.000
−0.005
−0.010
−0.015
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

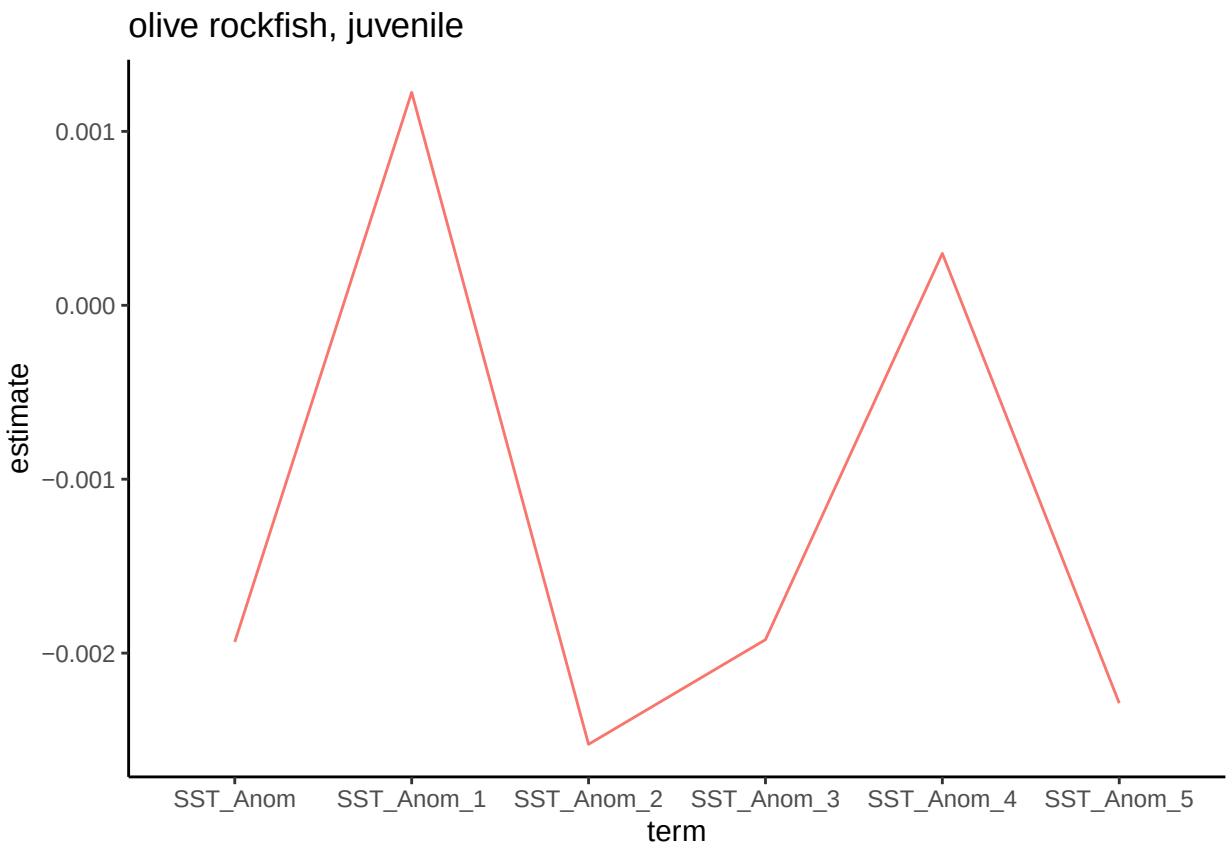

olive/yellowtail rockfish, juvenile
0.005
0.000
−0.005
−0.010
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

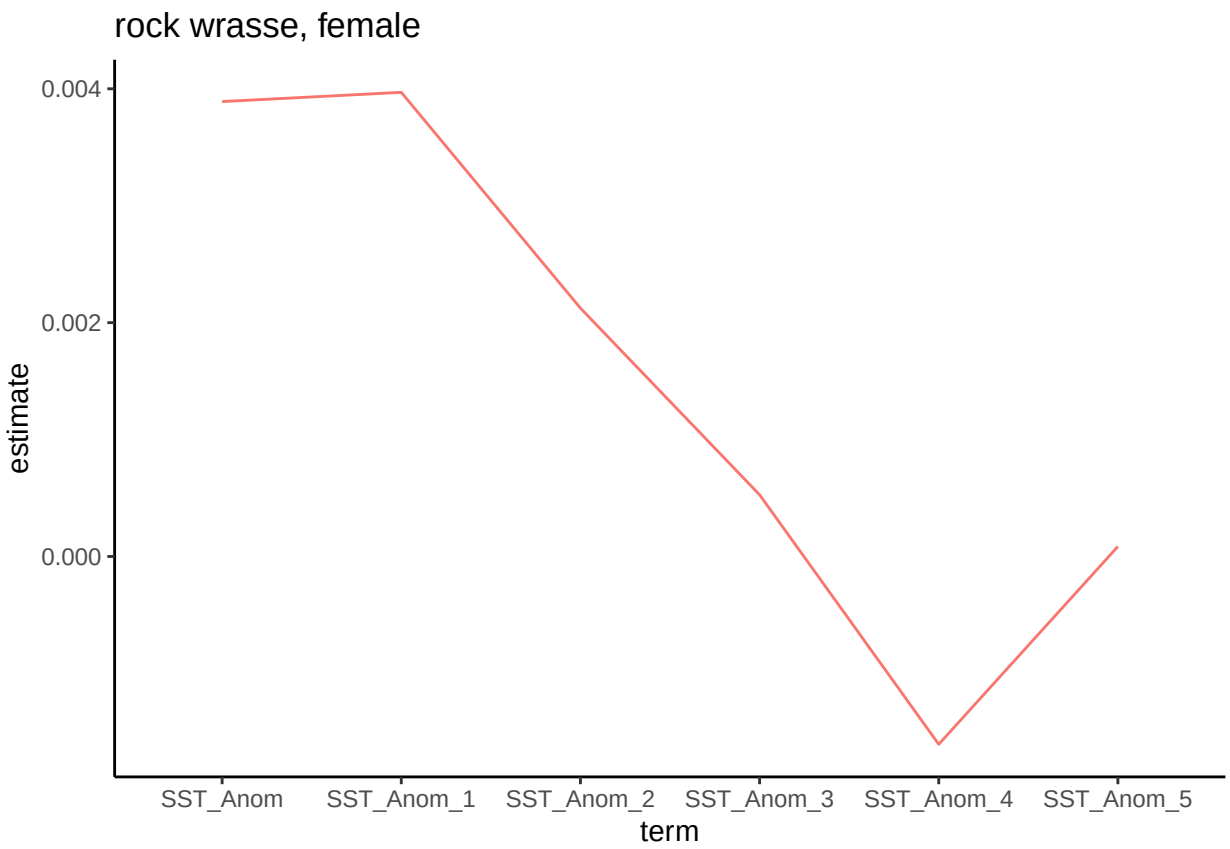

senorita, juvenile
0.02
0.01
0.00
−0.01
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

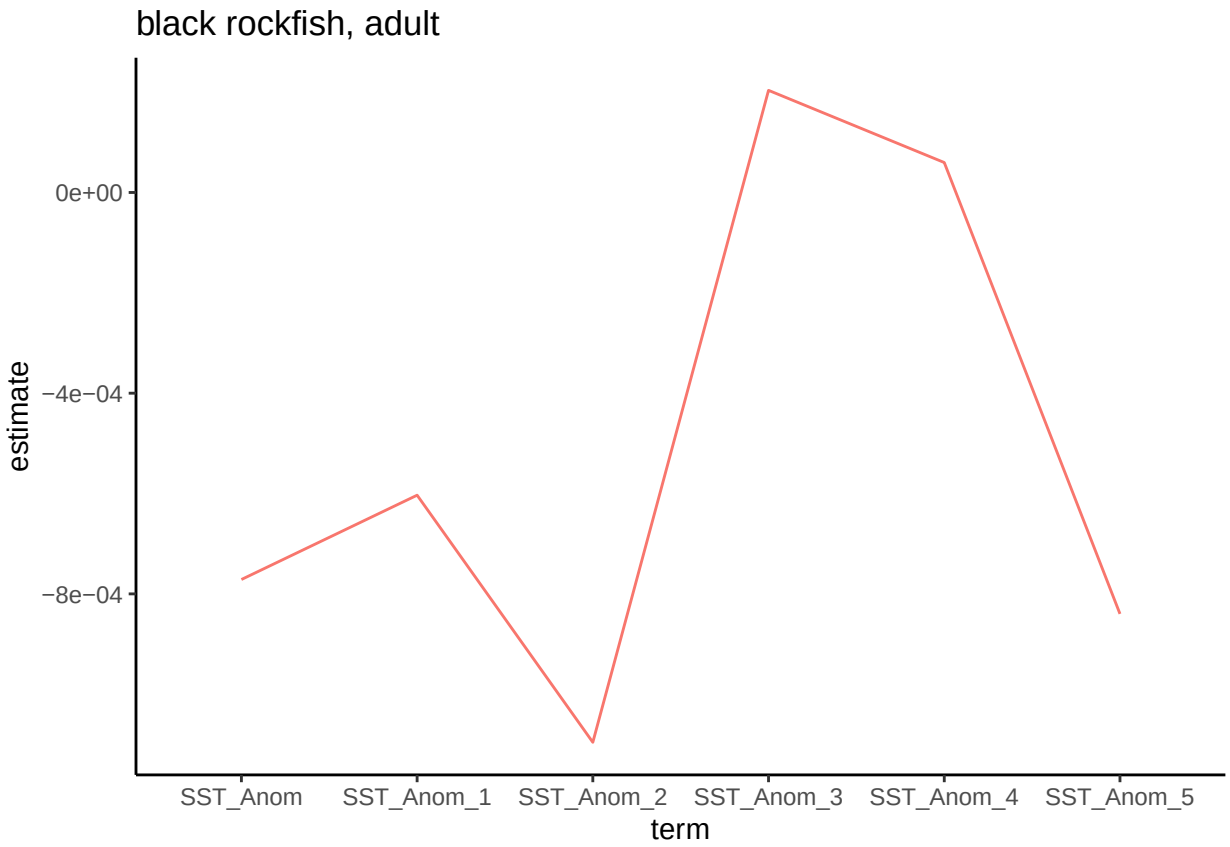

sunflower star
0.000
−0.002
−0.004
−0.006
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

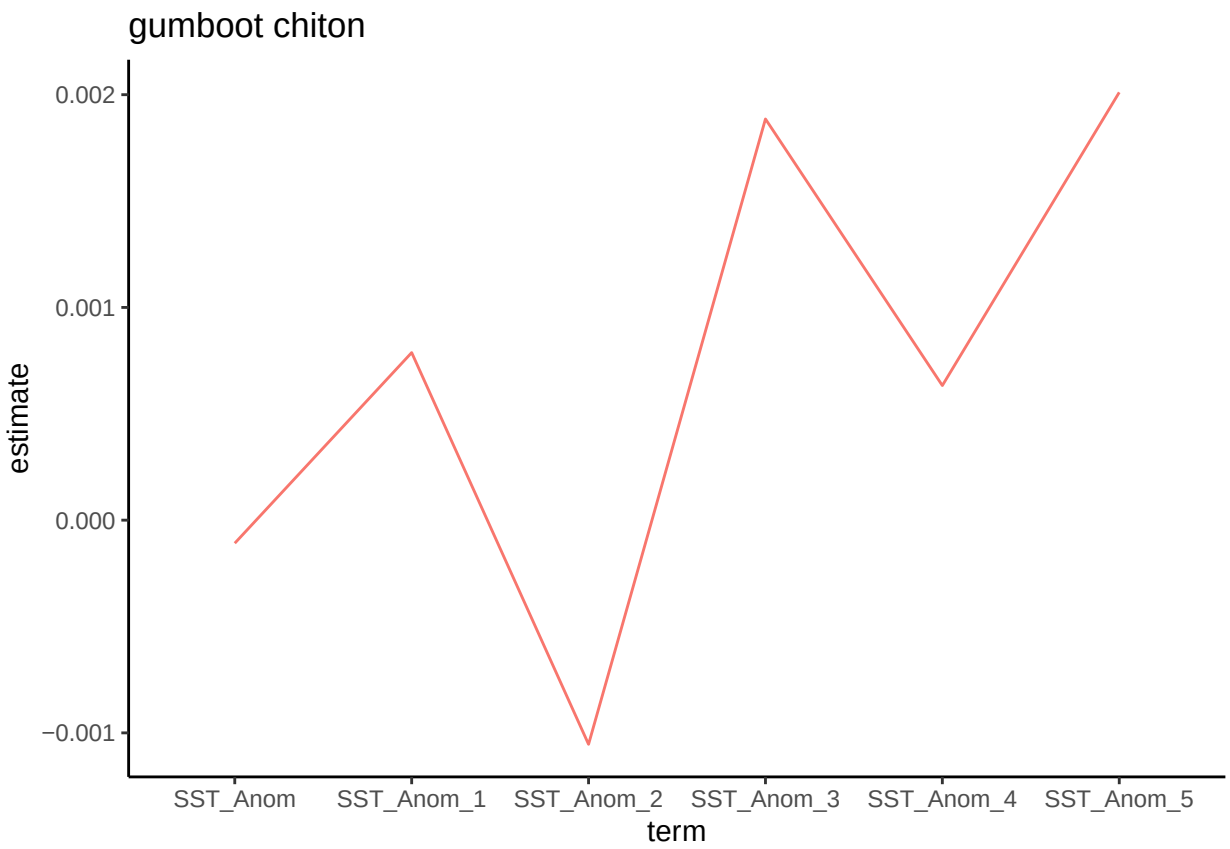

painted greenling
estimate
−0.0015
−0.0020
−0.0025
−0.0030
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

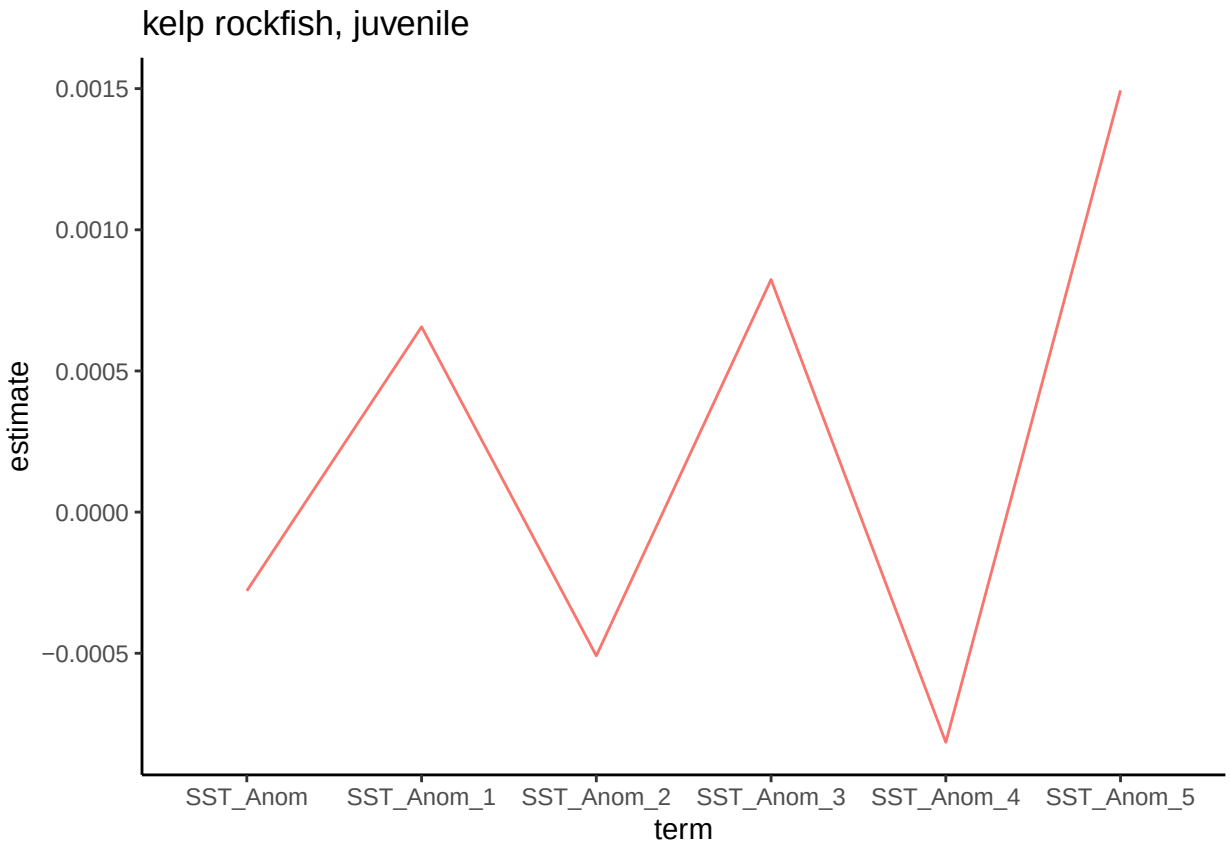

blue rockfish, adult
0.003
0.002
0.001
0.000
−0.001
−0.002
−0.003
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

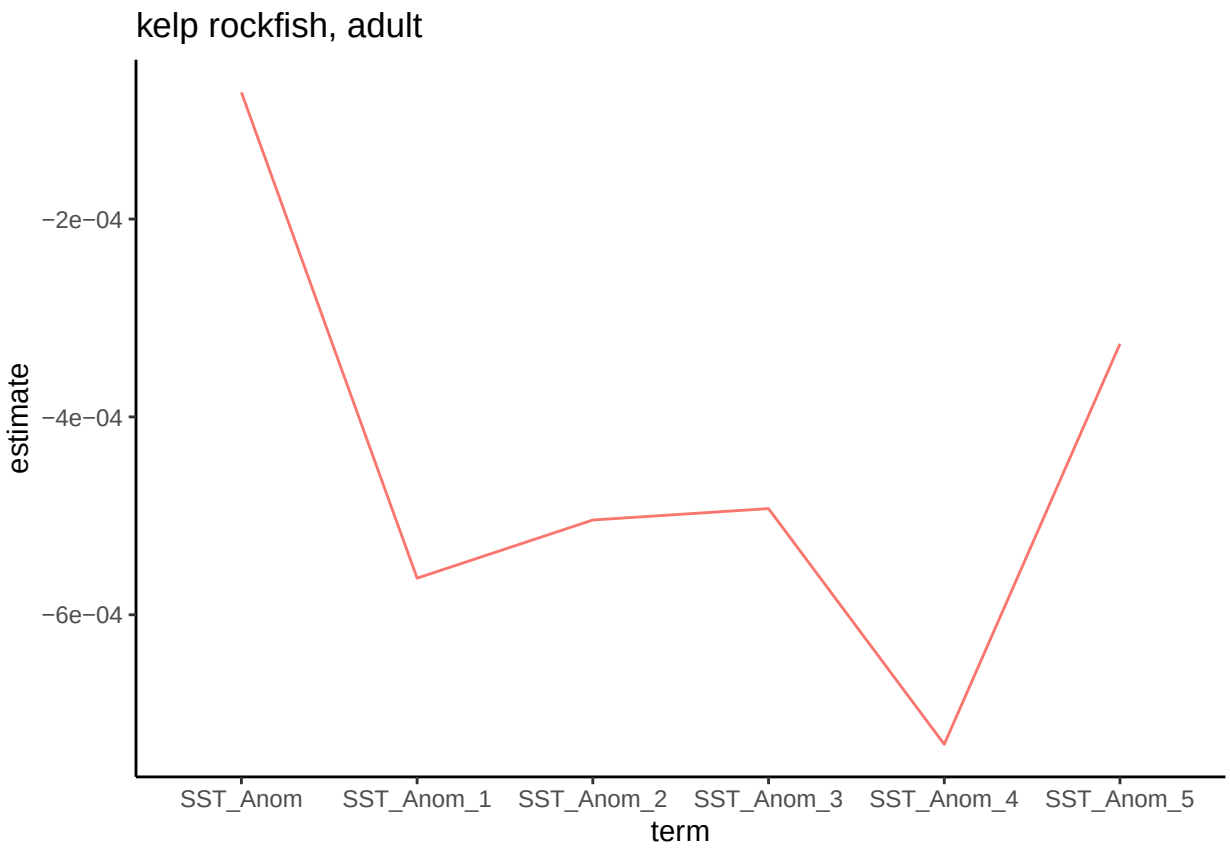

olive rockfish, juvenile
0.001
0.000
−0.001
−0.002
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

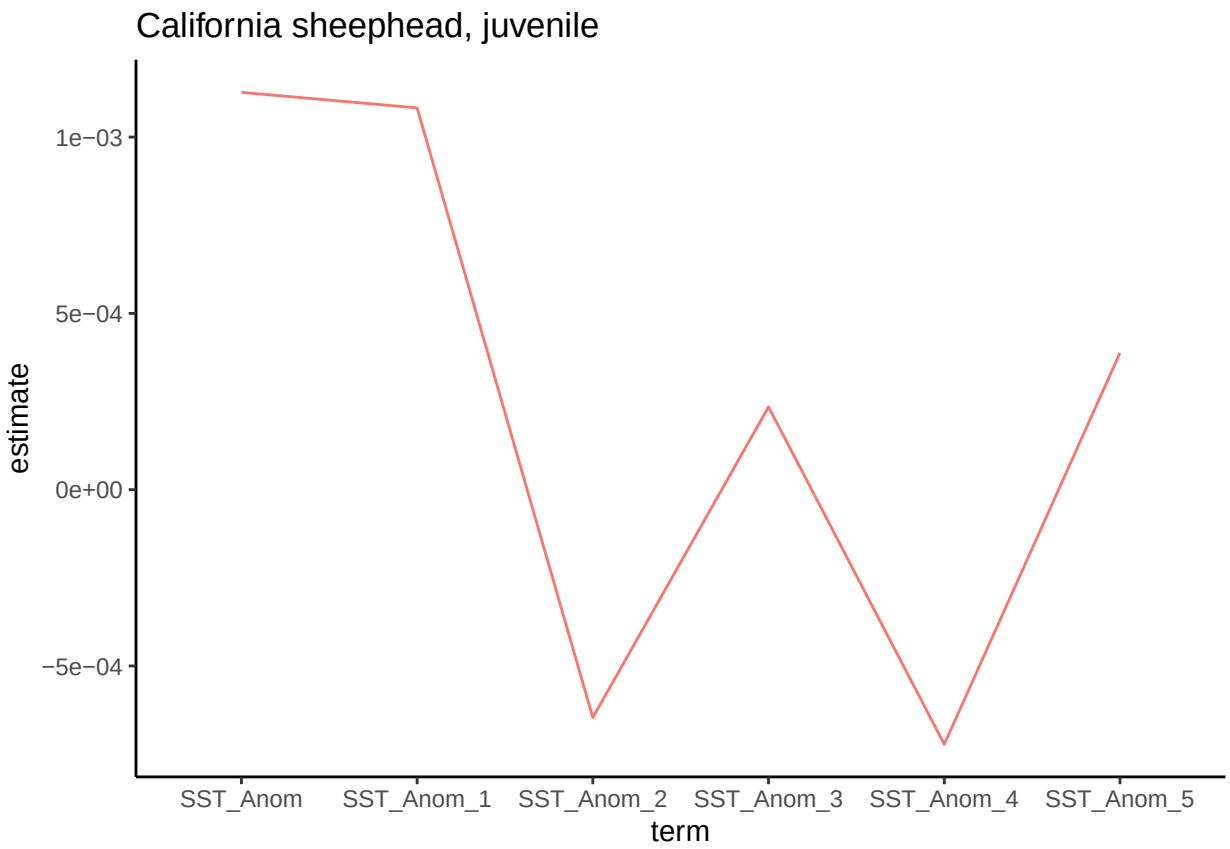

rock wrasse, female
0.004
0.002
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

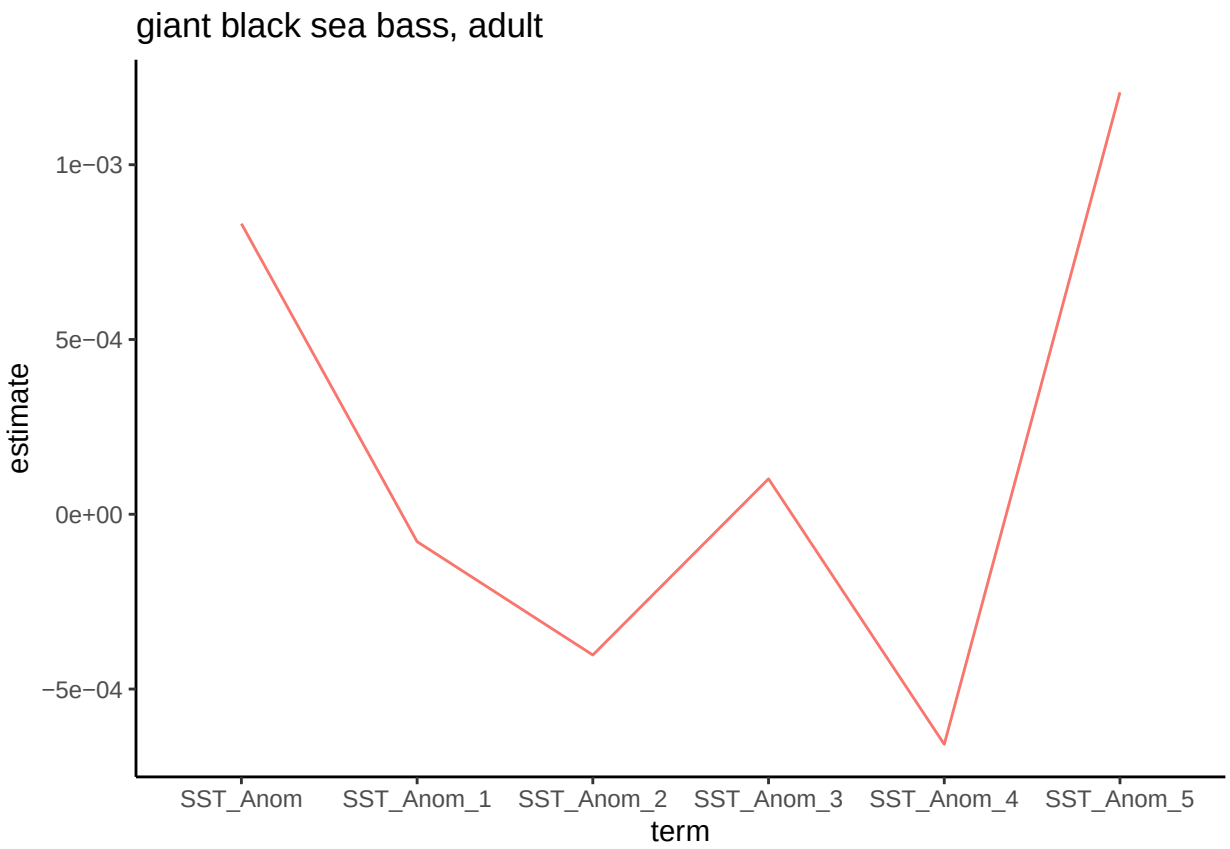

black rockfish, adult
0e+00
−4e−04
−8e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

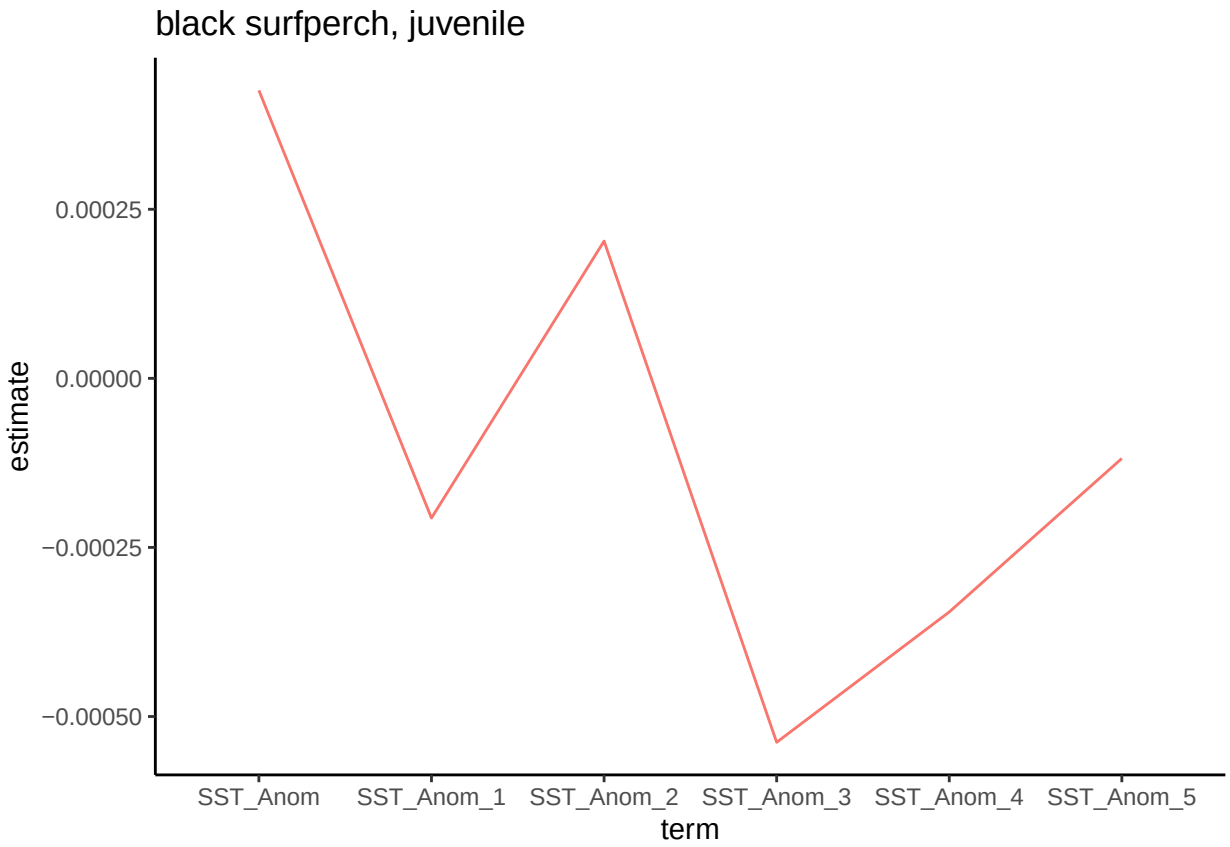

gumboot chiton
0.002
0.001
0.000
−0.001
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

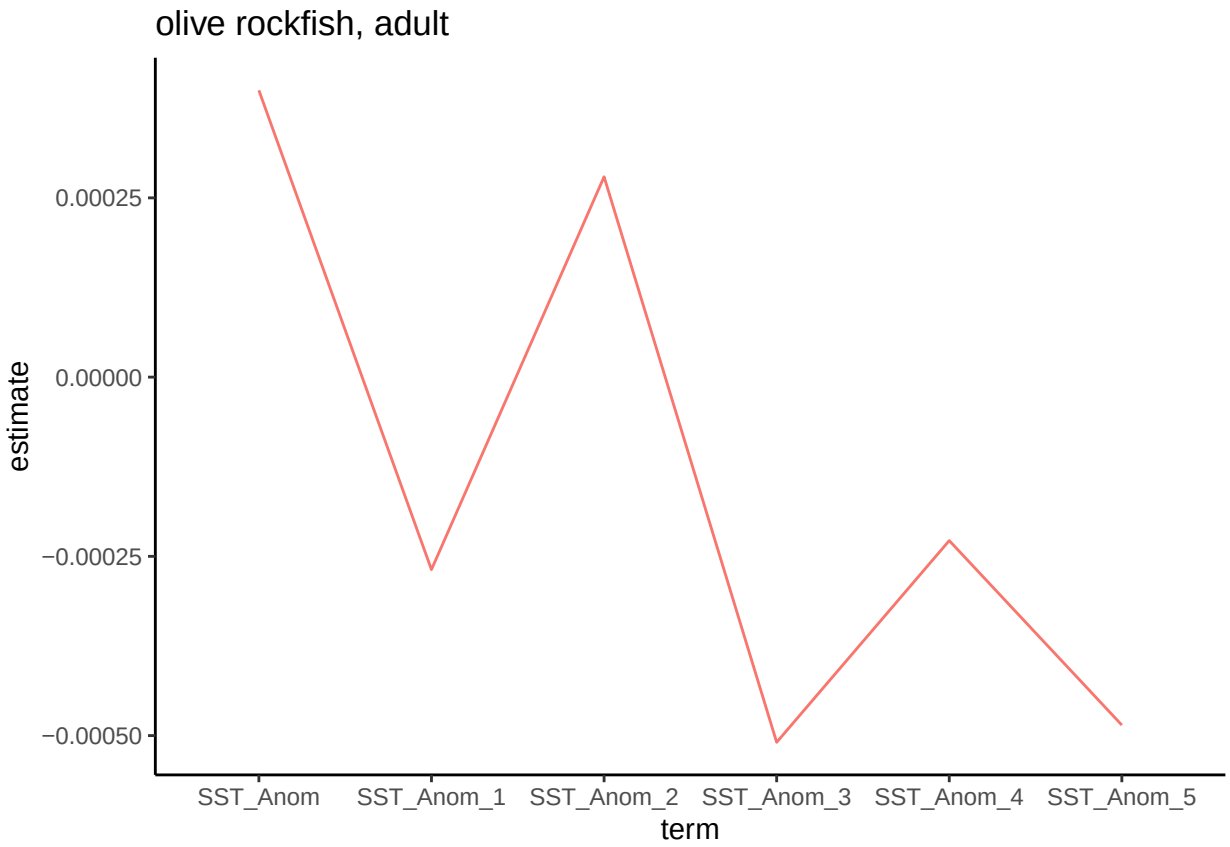

kelp rockfish, juvenile
0.0015
0.0010
0.0005
0.0000
−0.0005
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

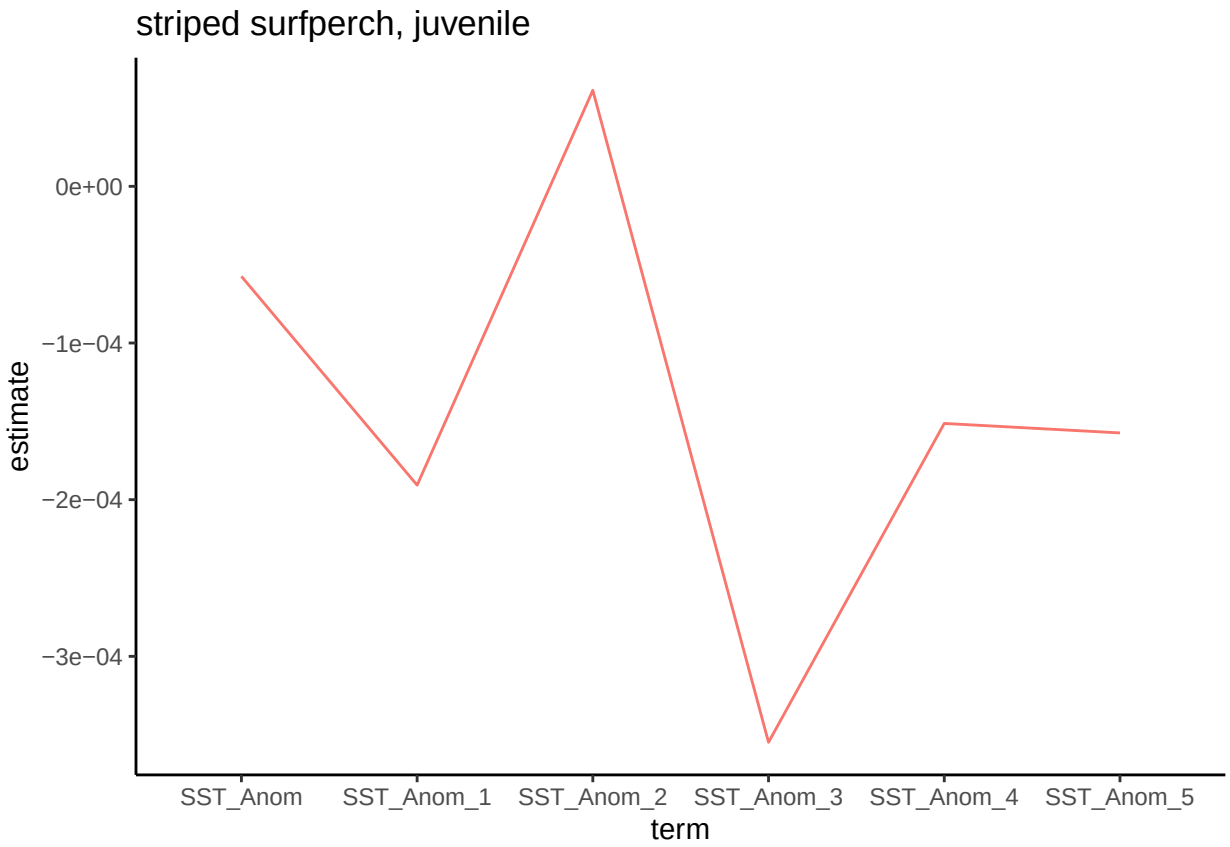

kelp rockfish, adult
estimate
−2e−04
−4e−04
−6e−04
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

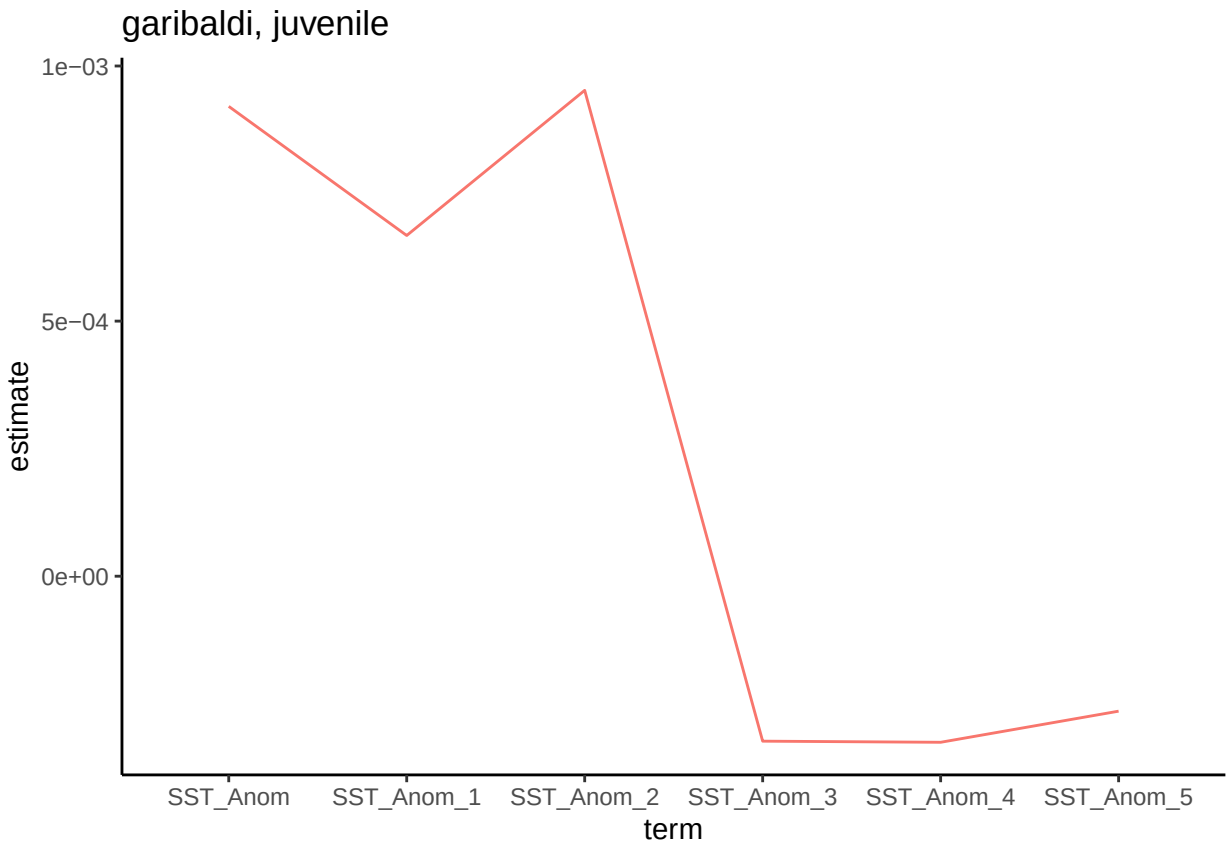

California sheephead, juvenile
estimate
1e−03
5e−04
0e+00
−5e−04
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

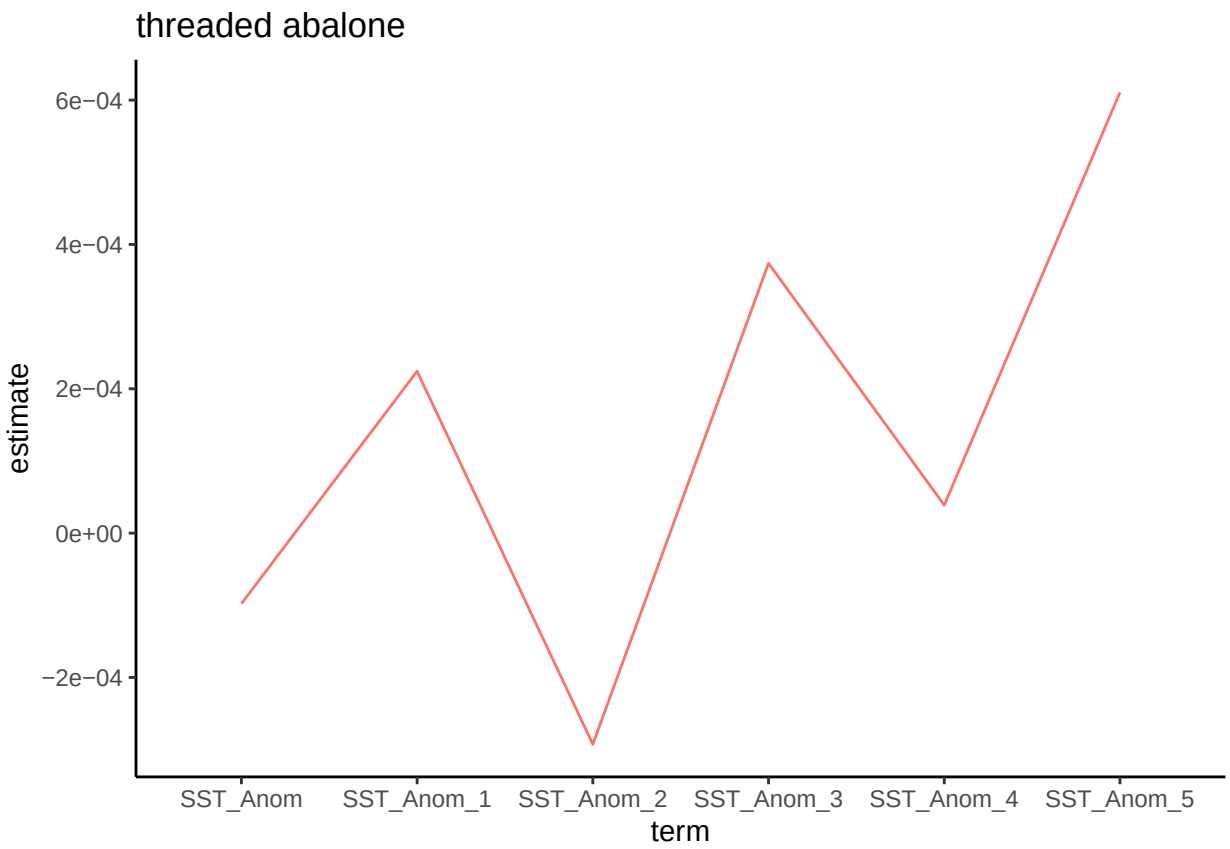

giant black sea bass, adult
1e−03
5e−04
0e+00
−5e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

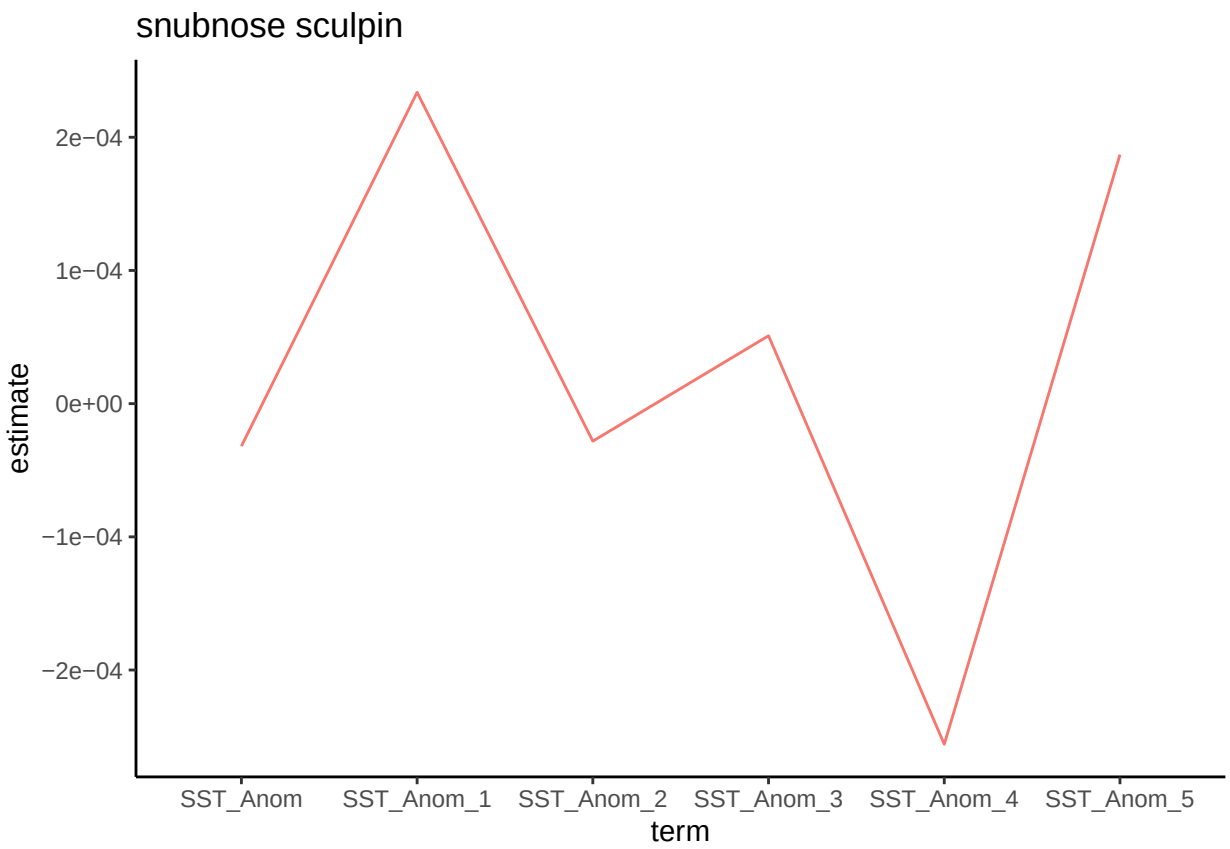

black surfperch, juvenile
estimate
0.00025
0.00000
−0.00025
−0.00050
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

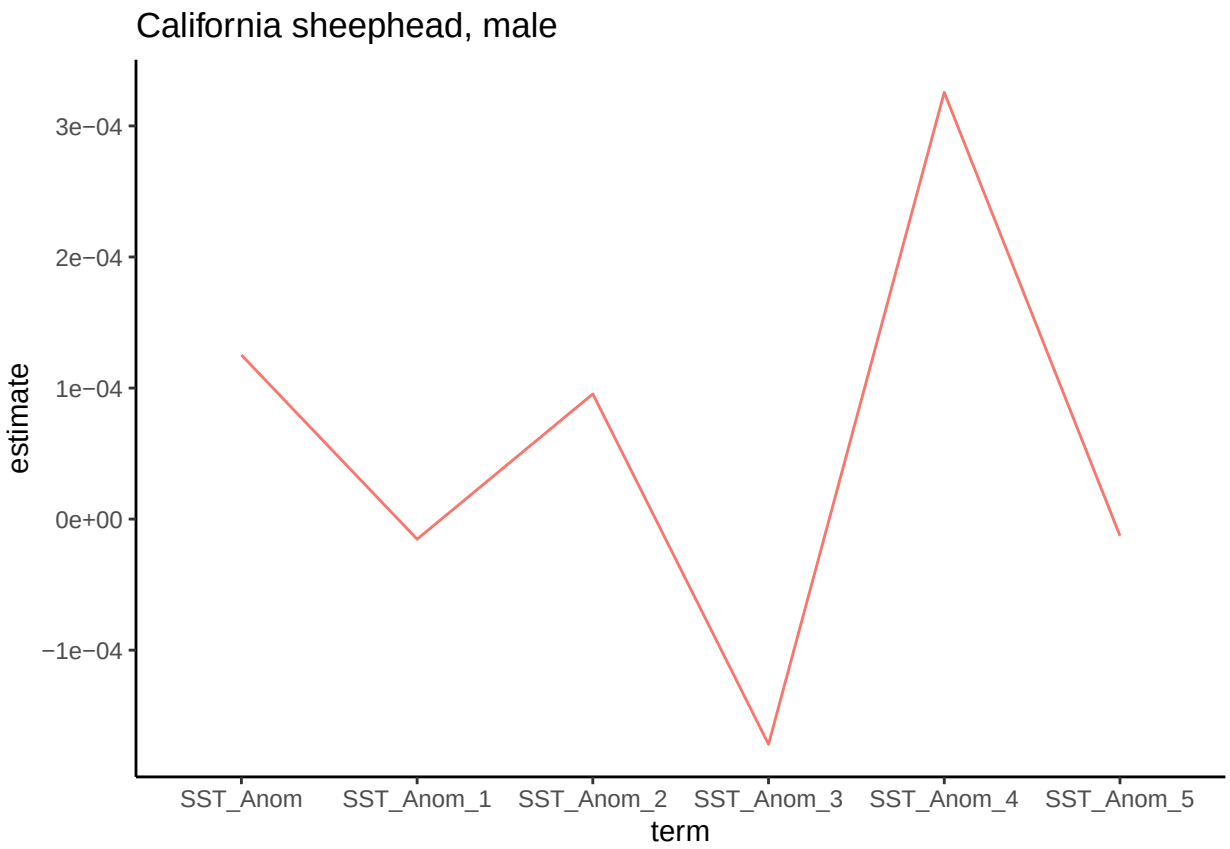

olive rockfish, adult
0.00025
0.00000
−0.00025
−0.00050
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

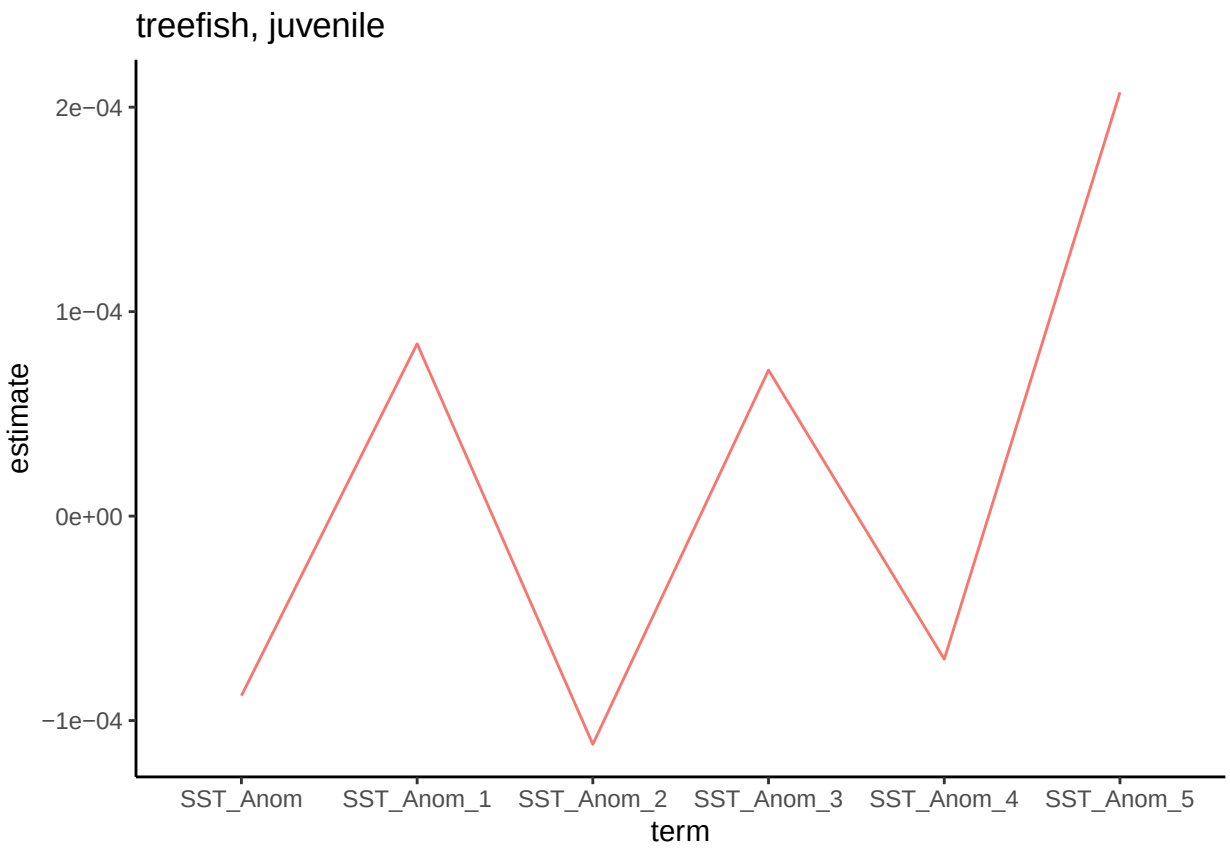

striped surfperch, juvenile
0e+00
−1e−04
−2e−04
−3e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

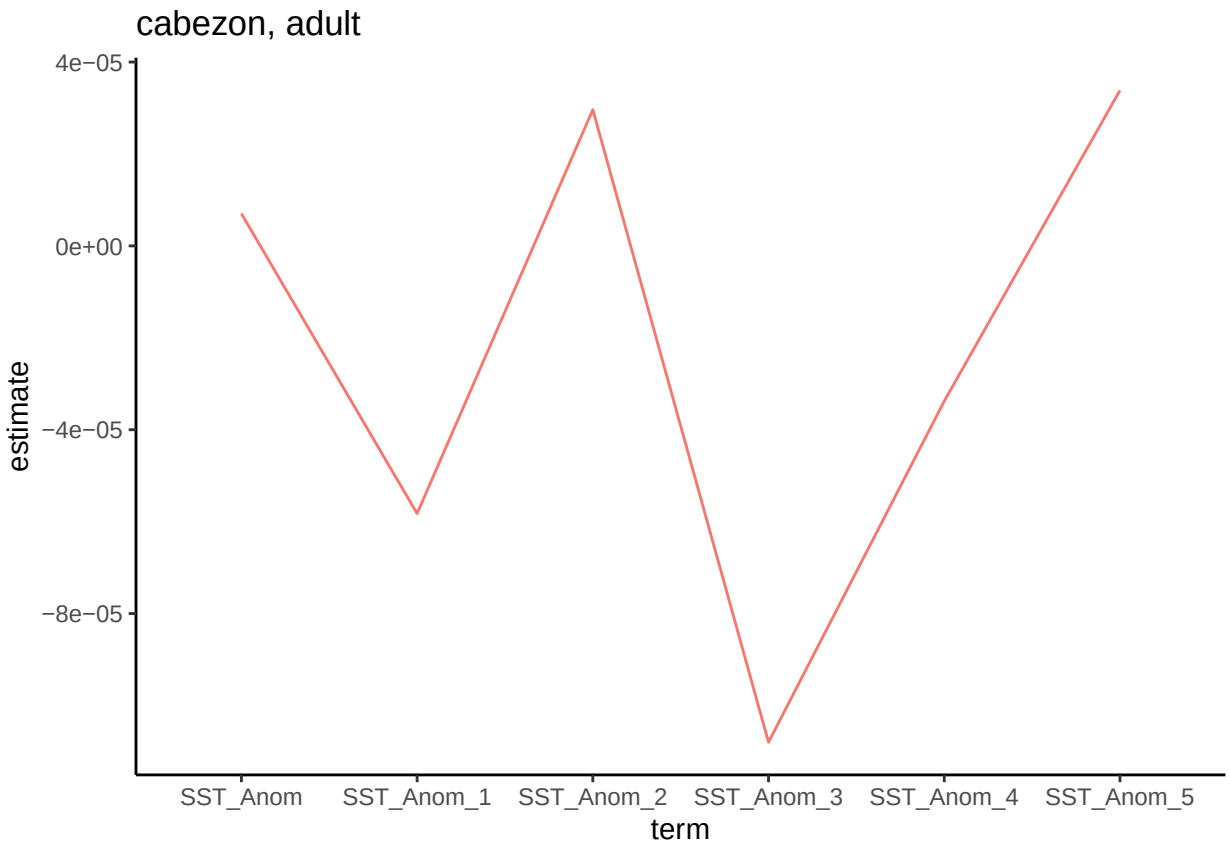

garibaldi, juvenile
1e−03
5e−04
0e+00
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

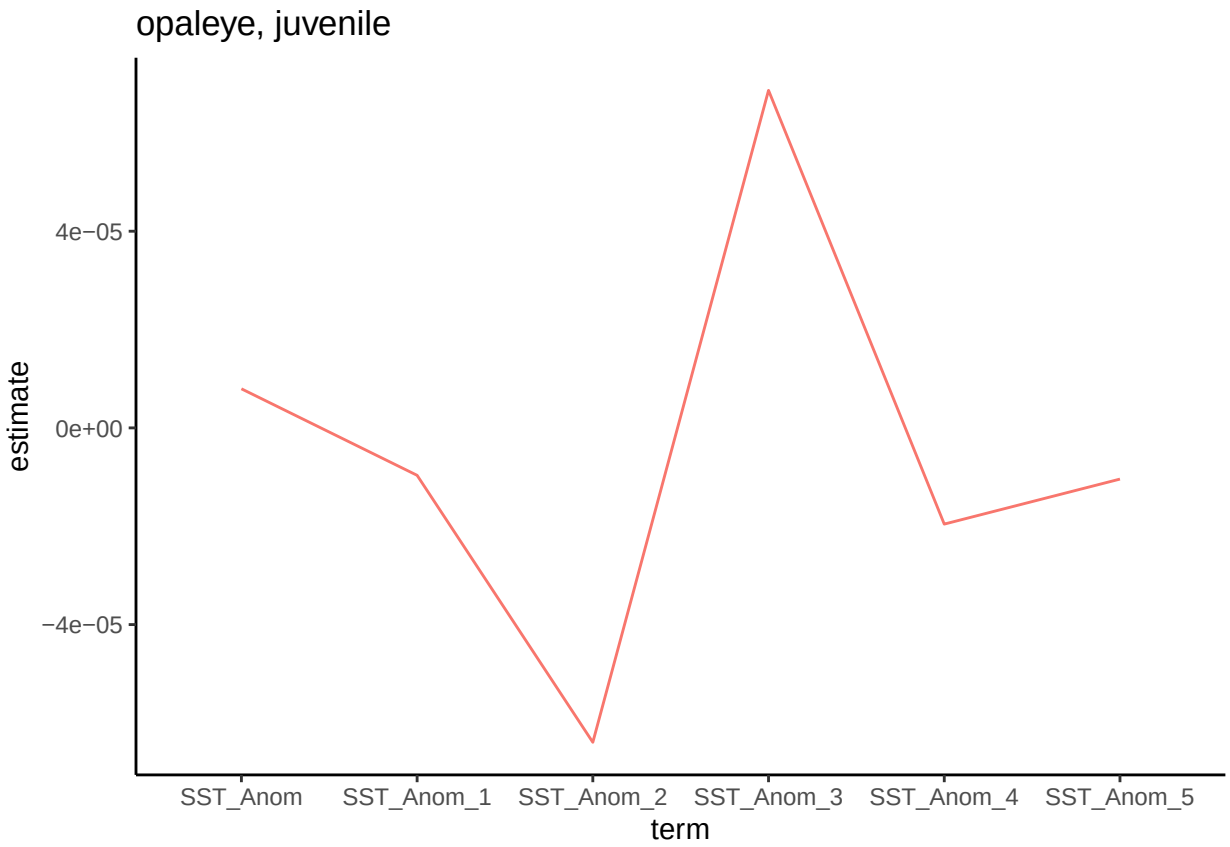

threaded abalone
6e−04
4e−04
2e−04
0e+00
−2e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

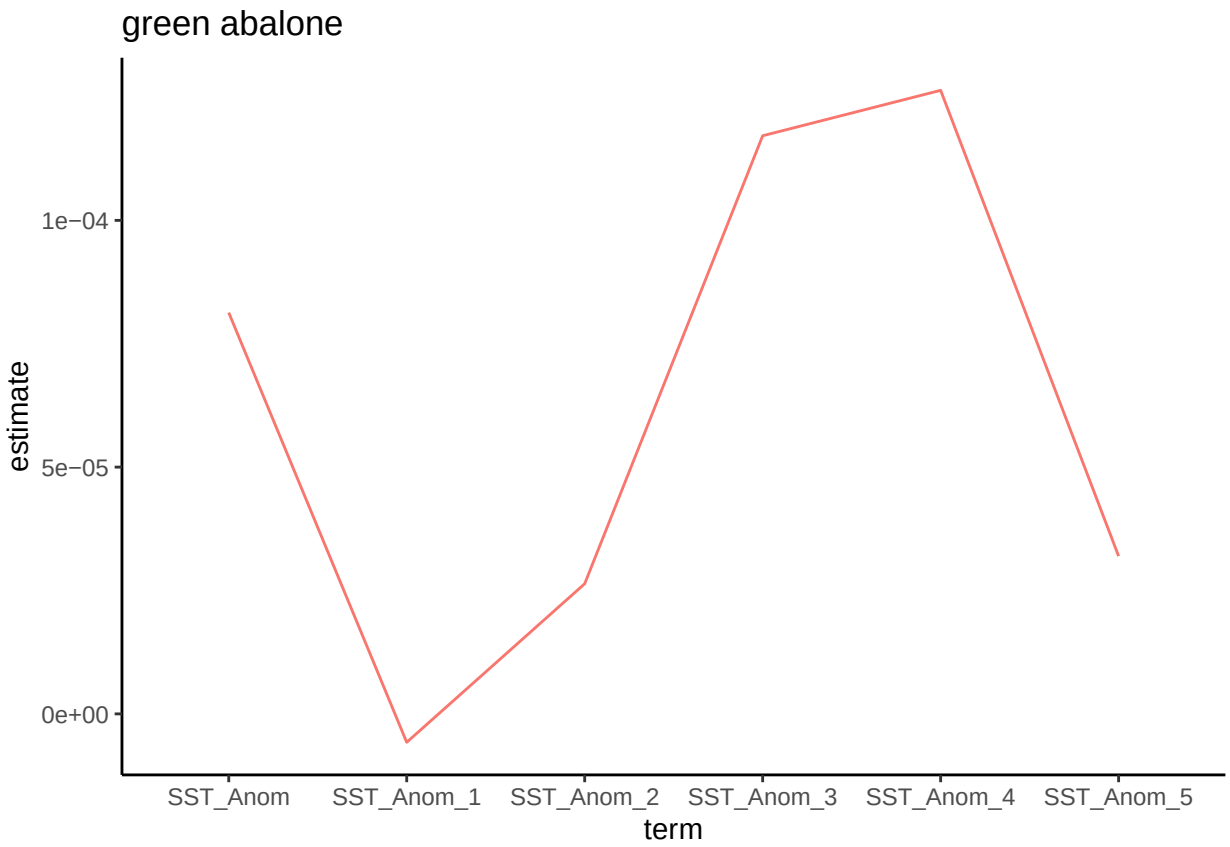

snubnose sculpin
2e−04
1e−04
0e+00
−1e−04
−2e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

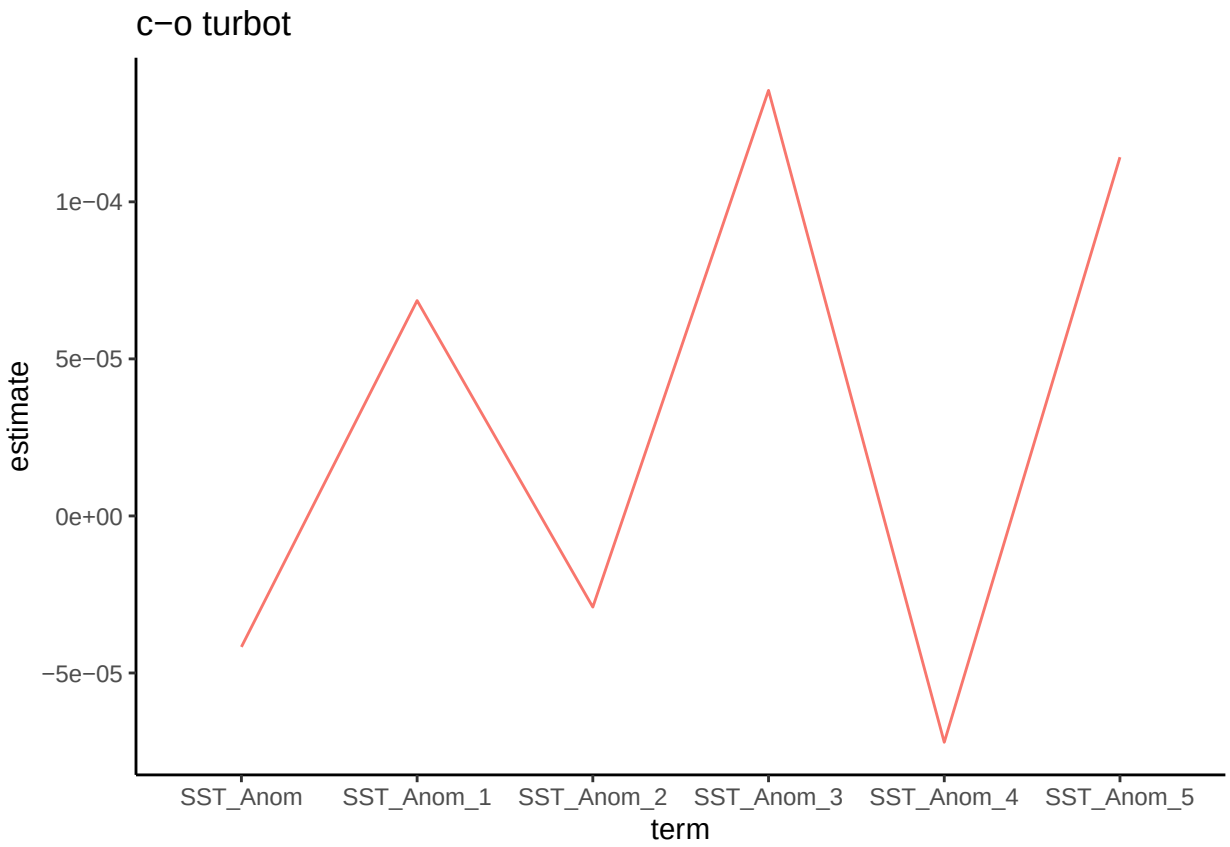

California sheephead, male
estimate
3e−04
2e−04
1e−04
0e+00
−1e−04
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

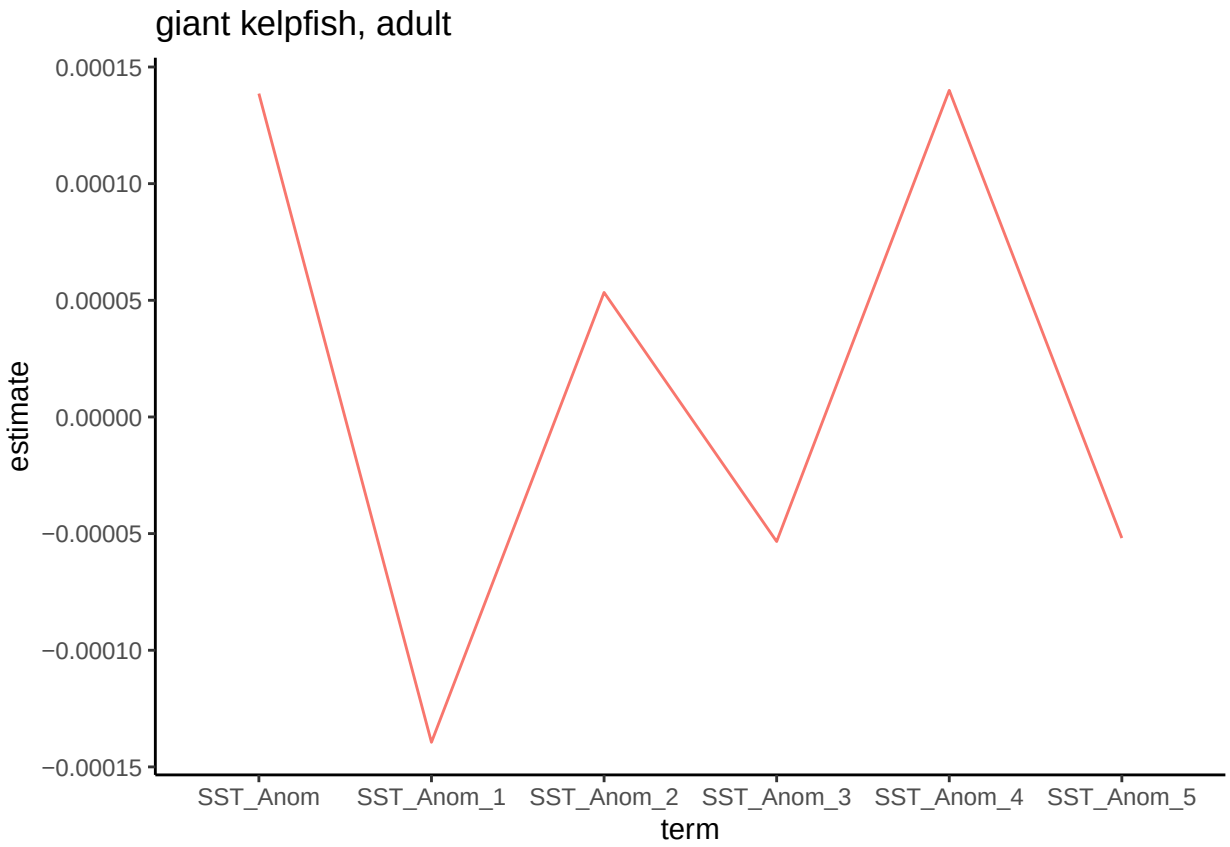

treefish, juvenile
2e−04
1e−04
0e+00
−1e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

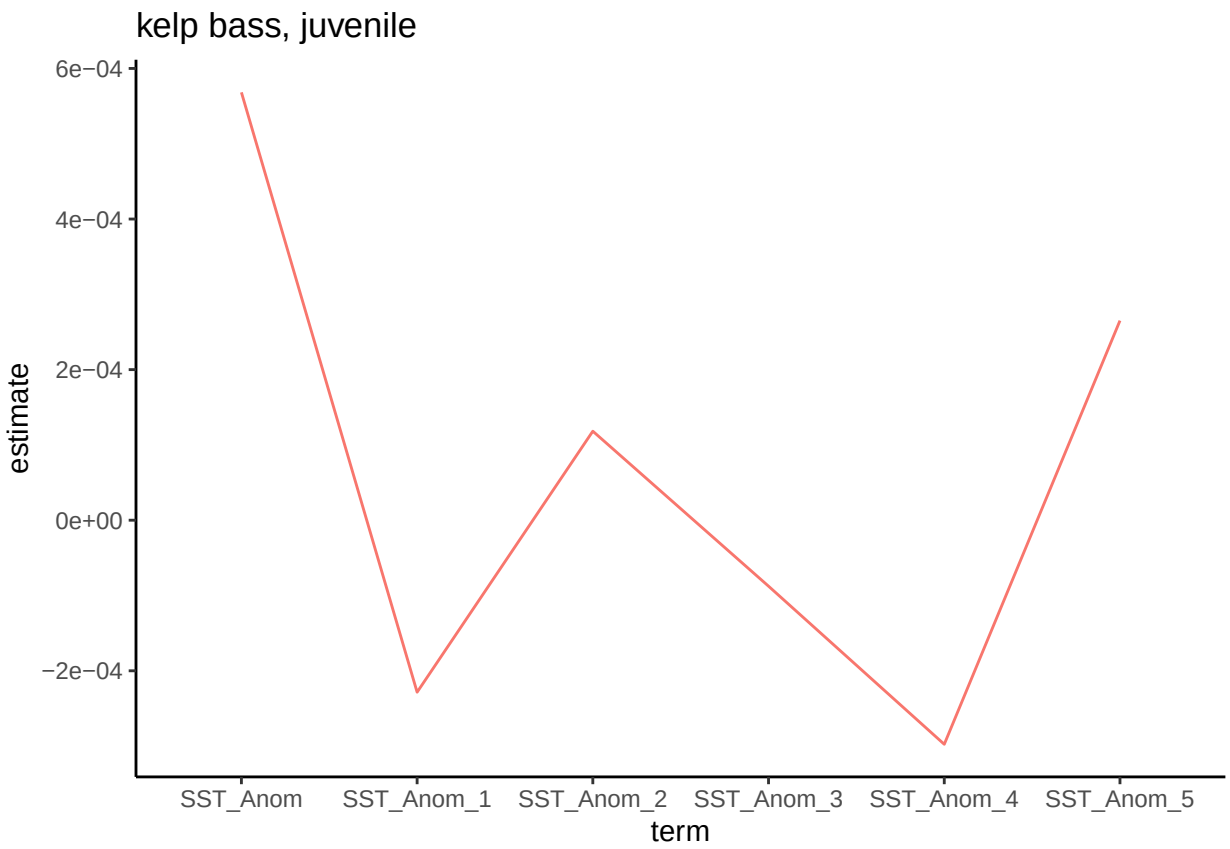

cabezon, adult
4e−05
0e+00
−4e−05
−8e−05
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

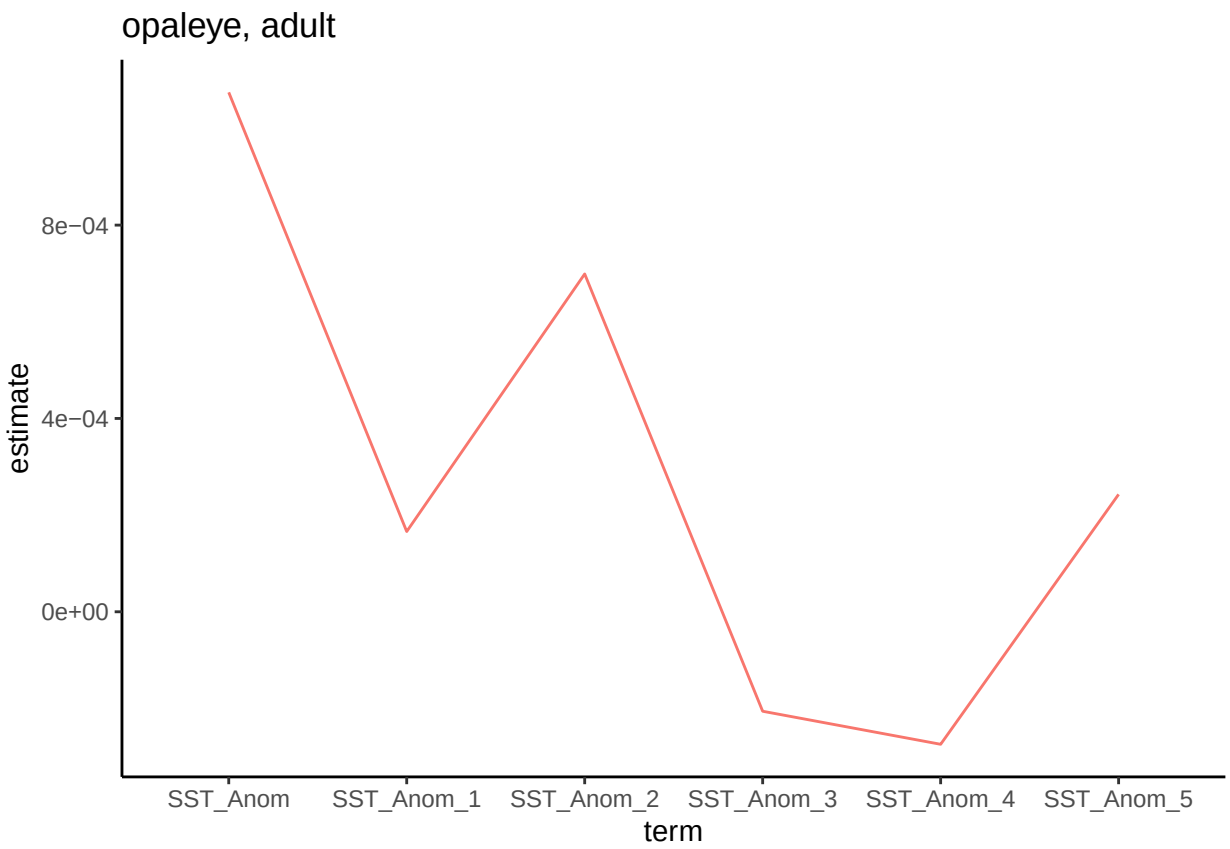

opaleye, juvenile
estimate
4e−05
0e+00
−4e−05
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

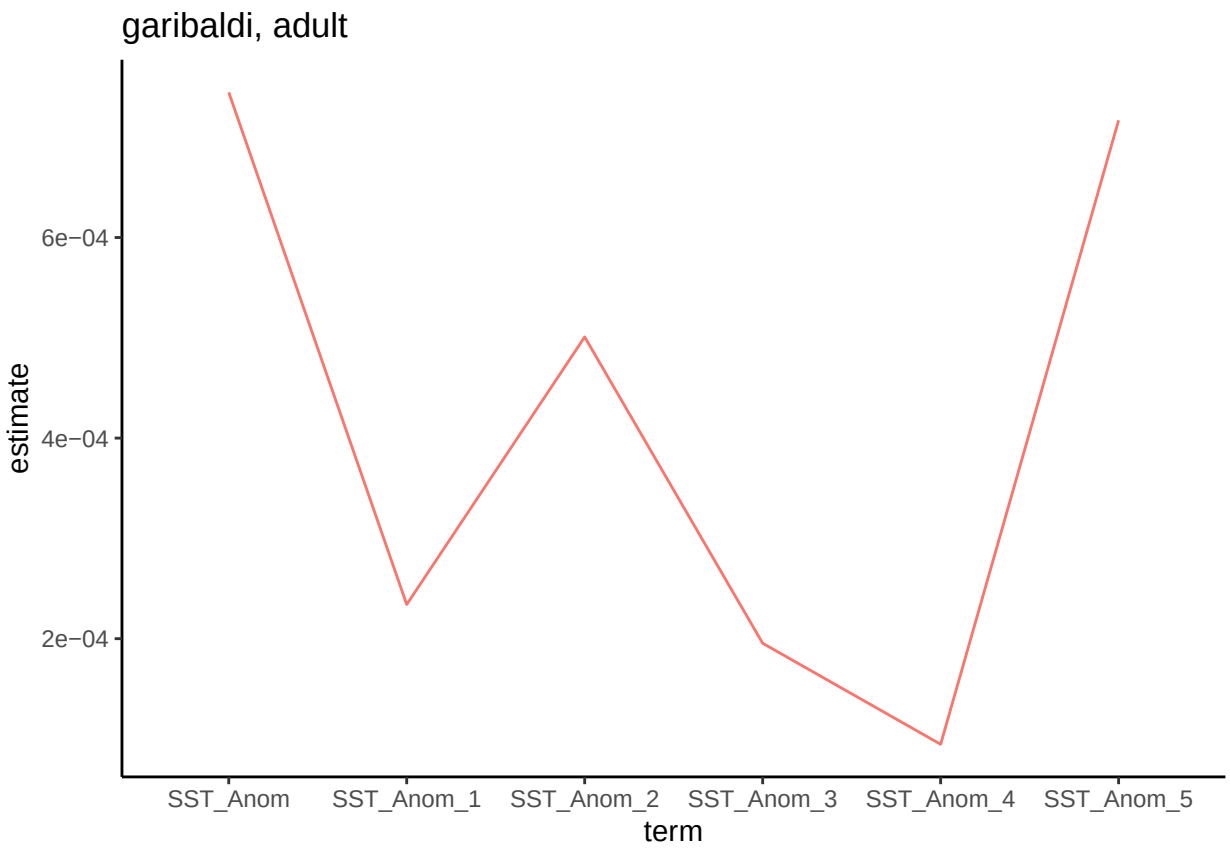

green abalone
estimate
1e−04
5e−05
0e+00
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

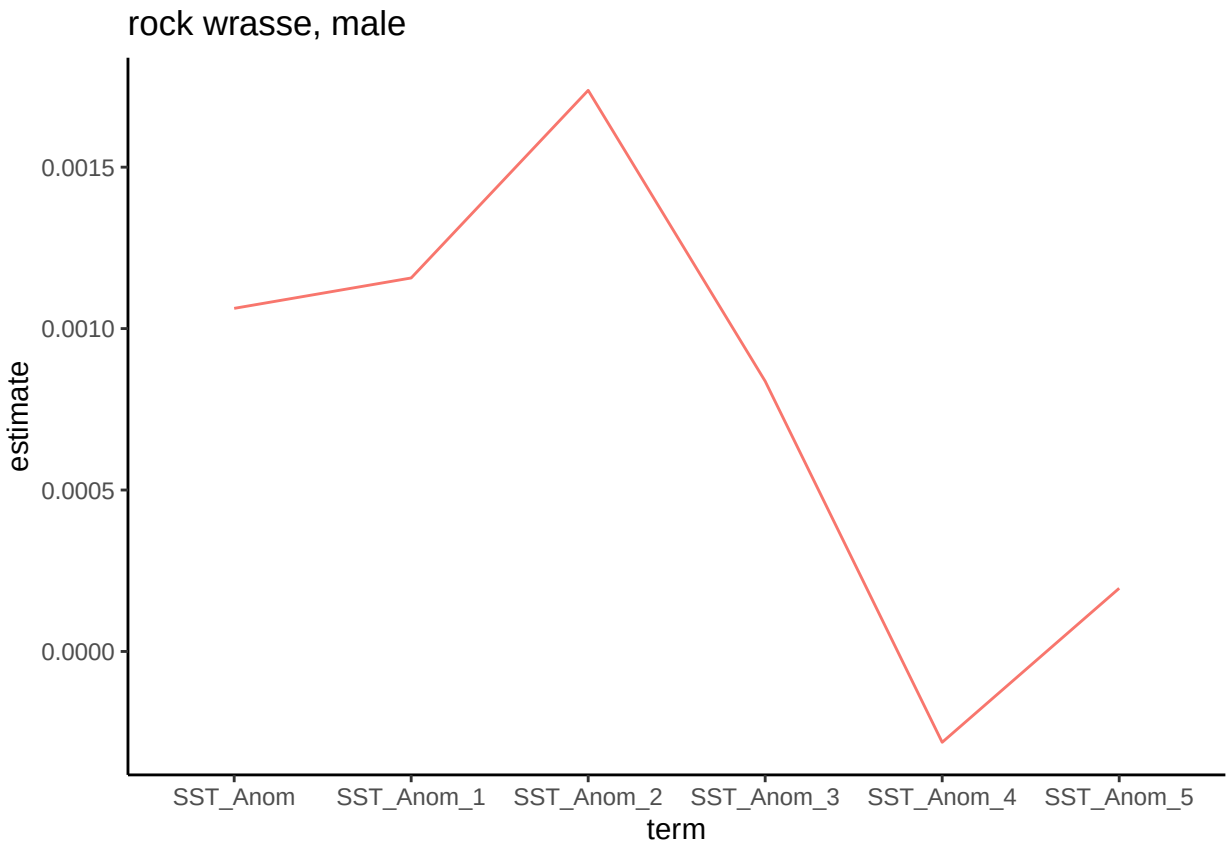

c−o turbot
estimate
1e−04
5e−05
0e+00
−5e−05
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

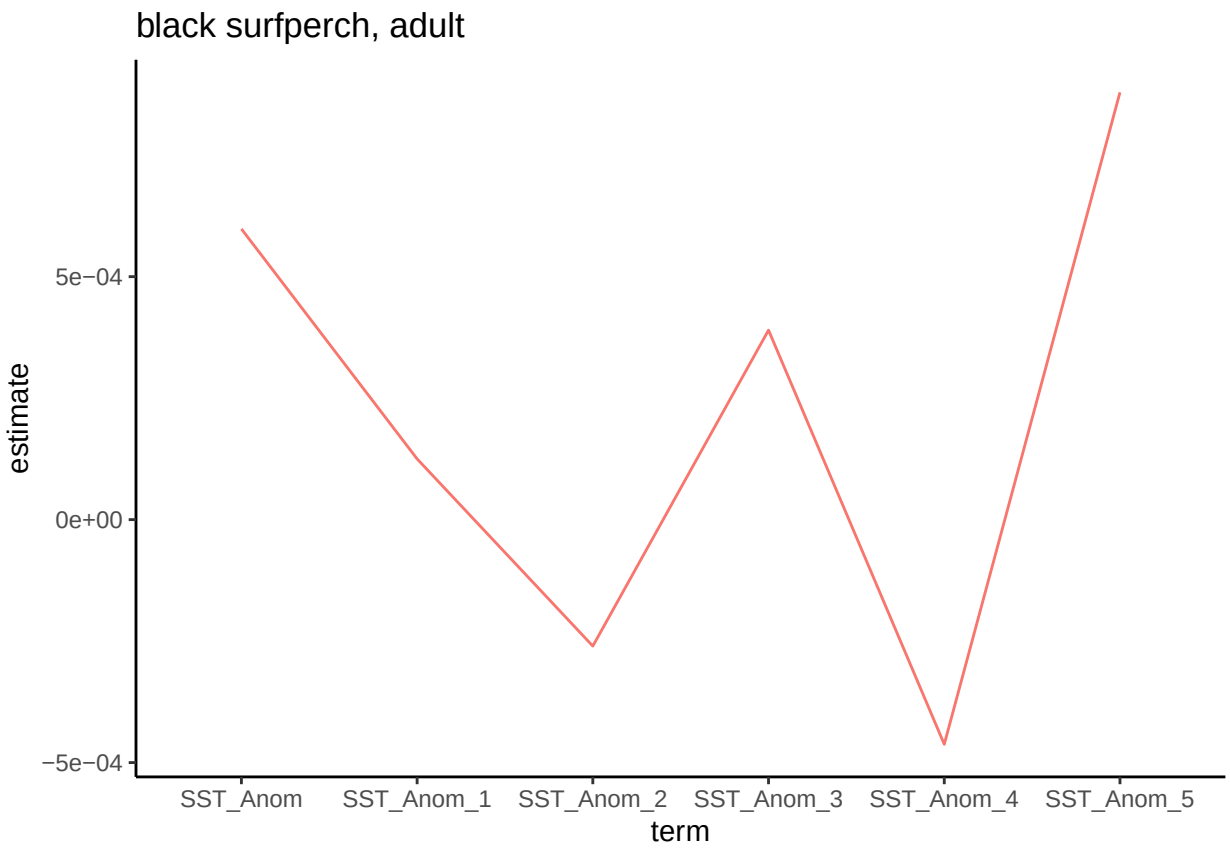

giant kelpfish, adult
0.00015
0.00010
0.00005
0.00000
−0.00005
−0.00010
−0.00015
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

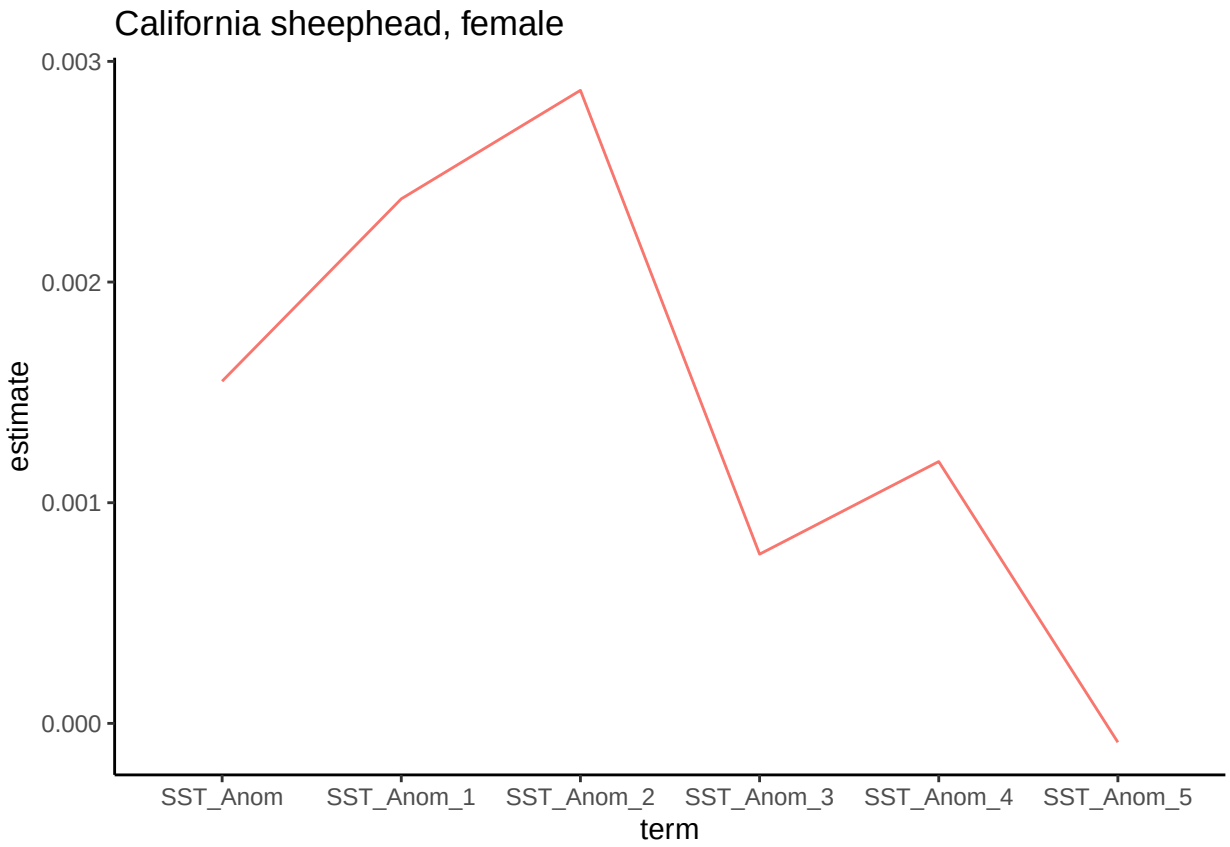

kelp bass, juvenile
6e−04
4e−04
2e−04
0e+00
−2e−04
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

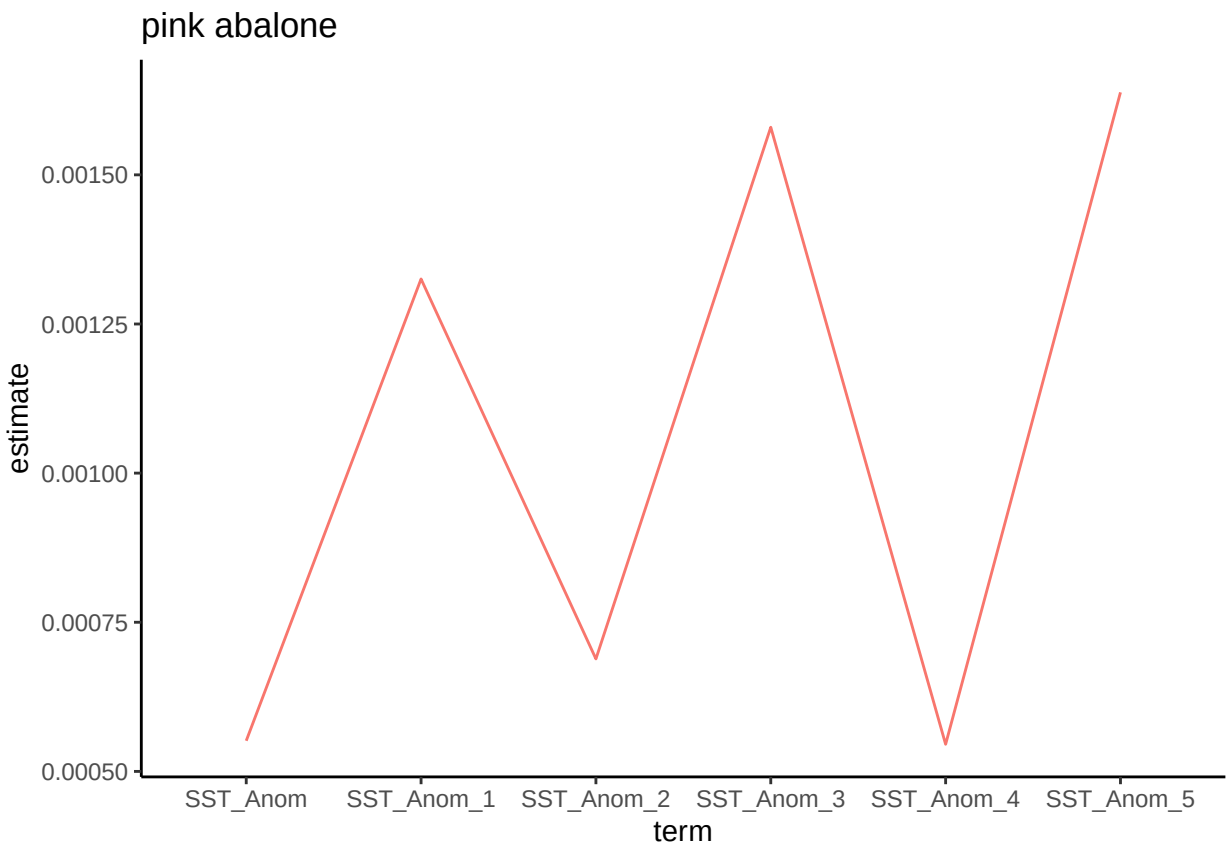

opaleye, adult
estimate
8e−04
4e−04
0e+00
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

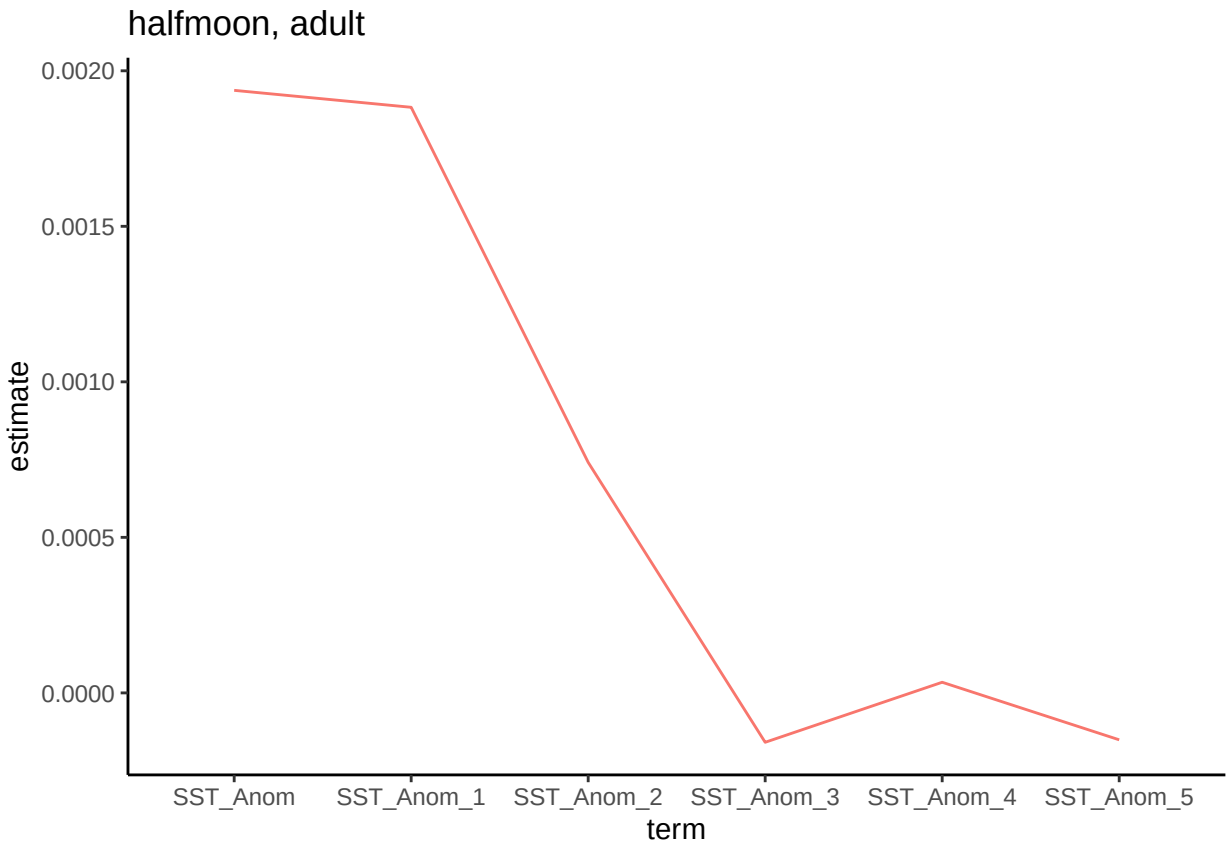

garibaldi, adult
estimate
6e−04
4e−04
2e−04
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

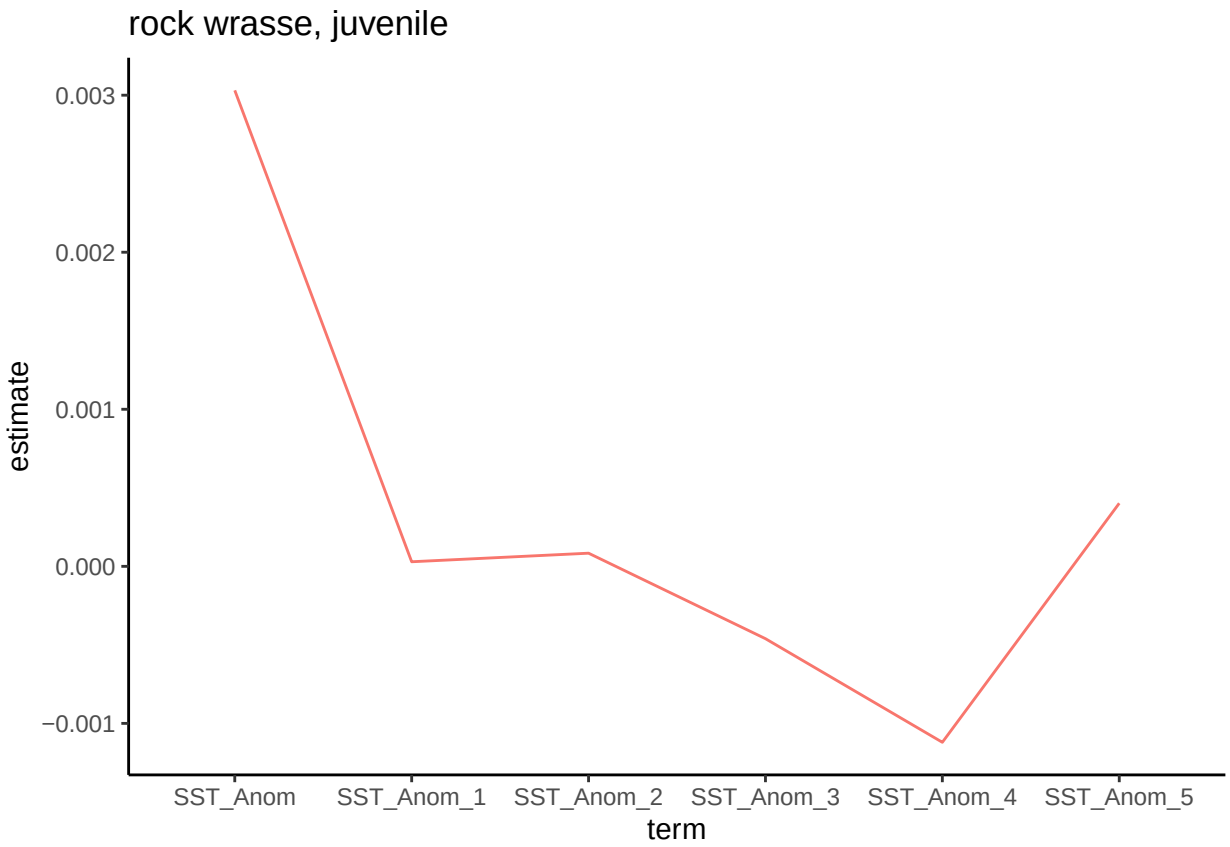

rock wrasse, male
estimate
0.0015
0.0010
0.0005
0.0000
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

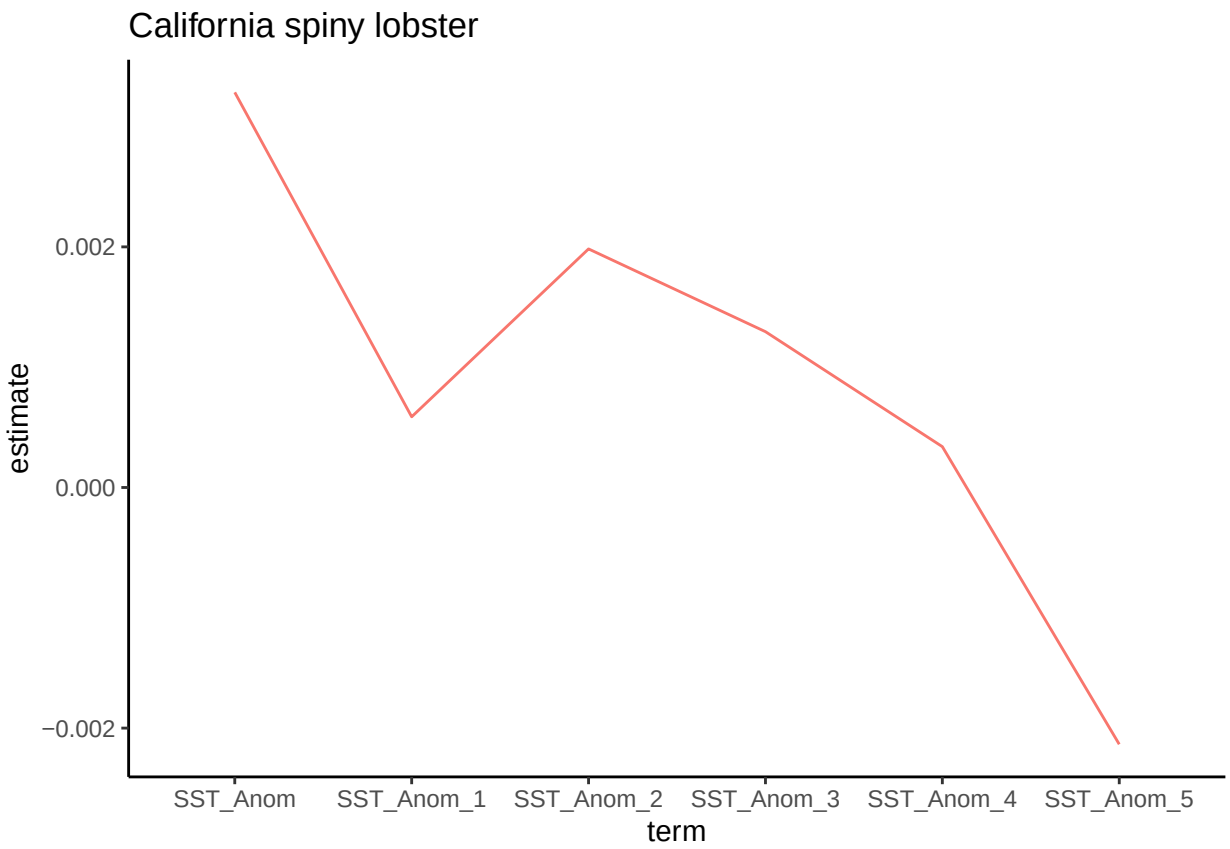

black surfperch, adult
estimate
5e−04
0e+00
−5e−04
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term


California sheephead, female
0.003
0.002
0.001
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

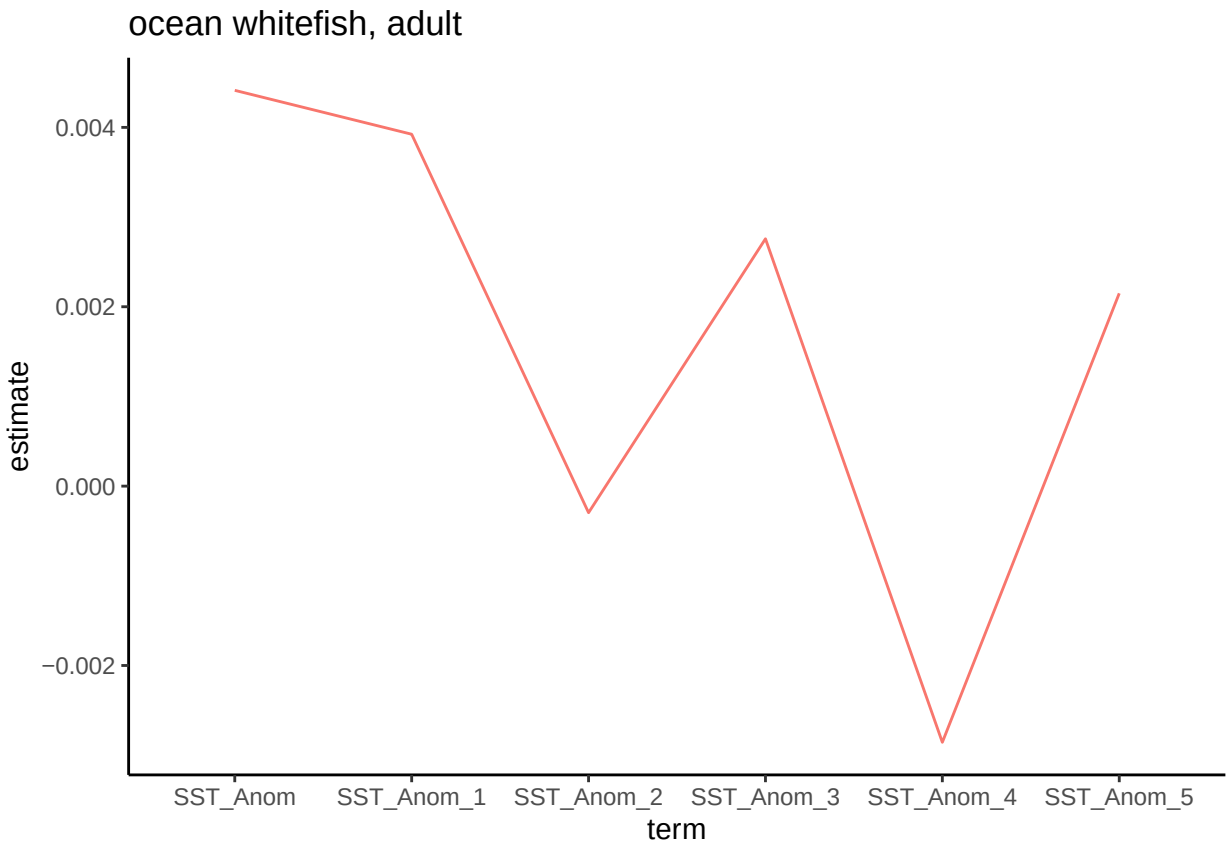

pink abalone
estimate
0.00150
0.00125
0.00100
0.00075
0.00050
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

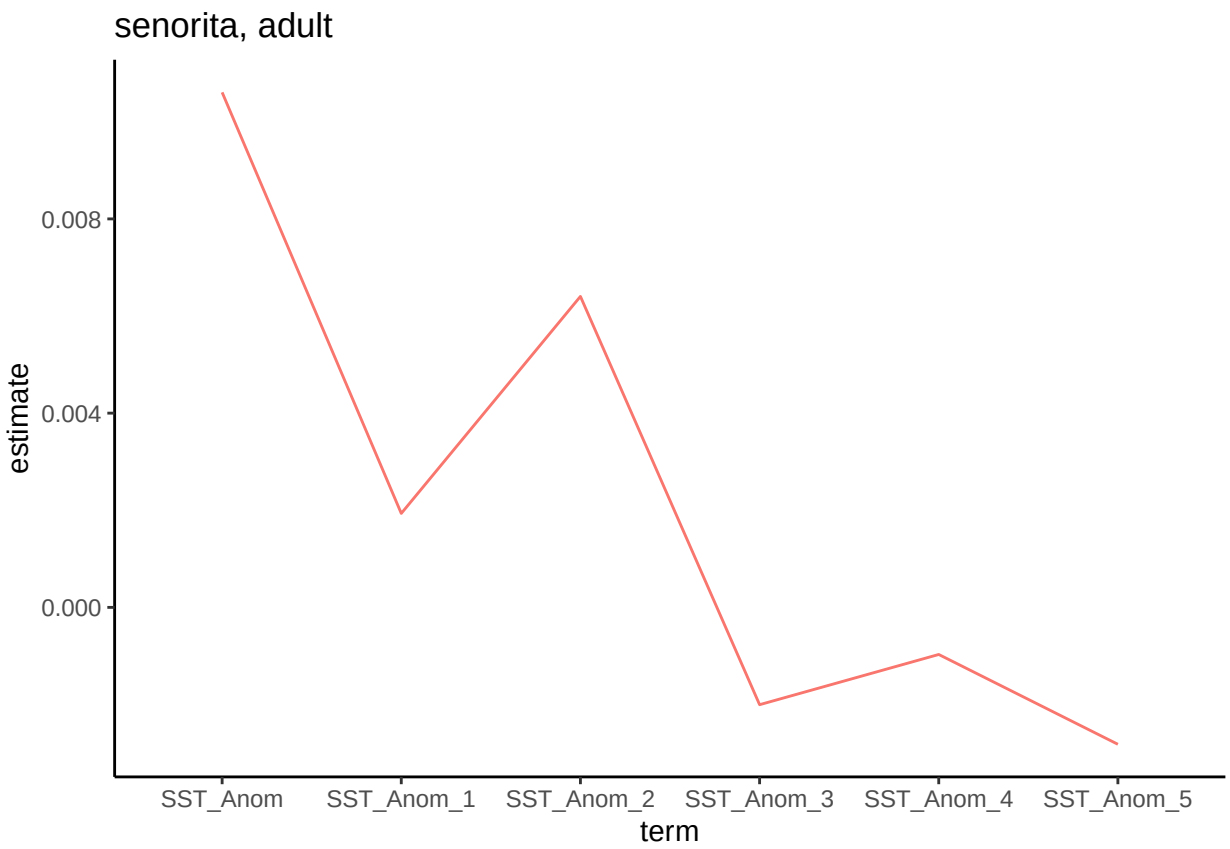

halfmoon, adult
0.0020
0.0015
0.0010
0.0005
0.0000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

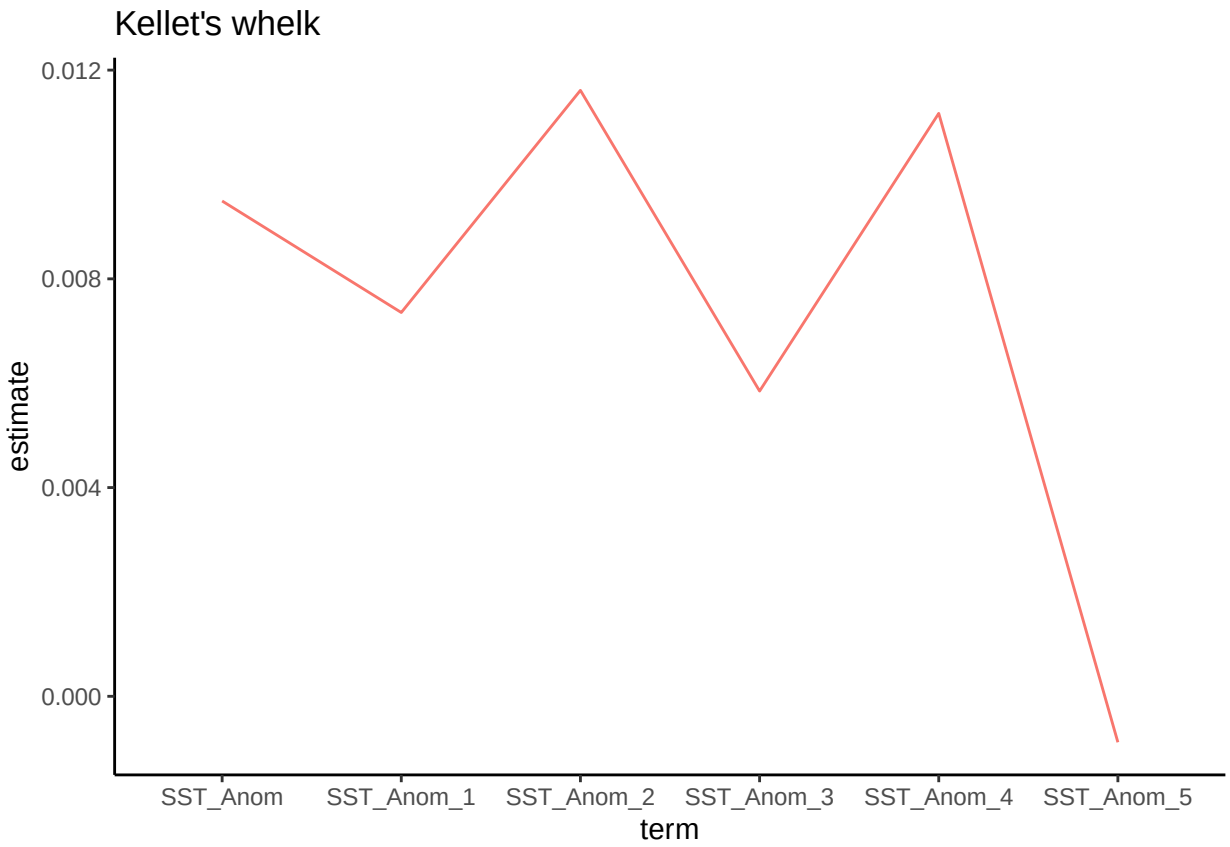

rock wrasse, juvenile
0.003
0.002
0.001
0.000
−0.001
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

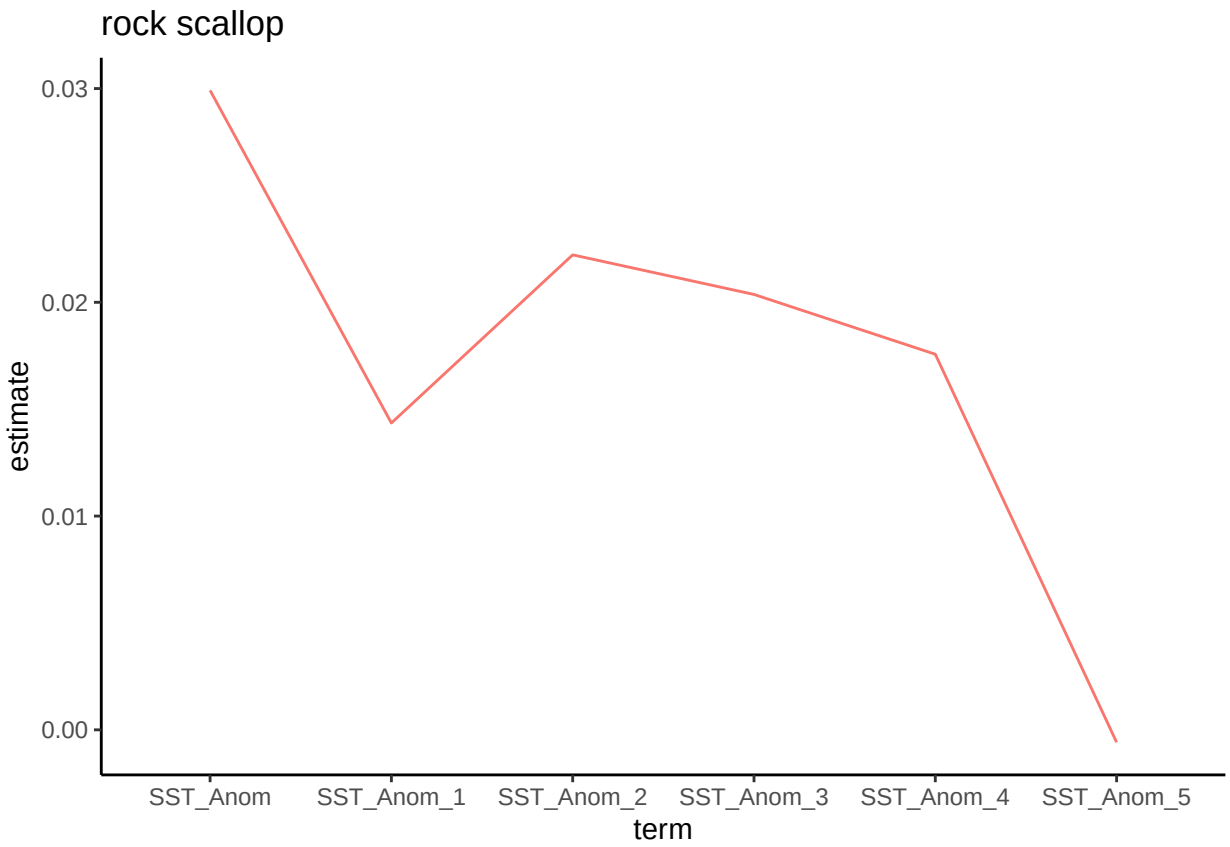

California spiny lobster
estimate
0.002
0.000
−0.002
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

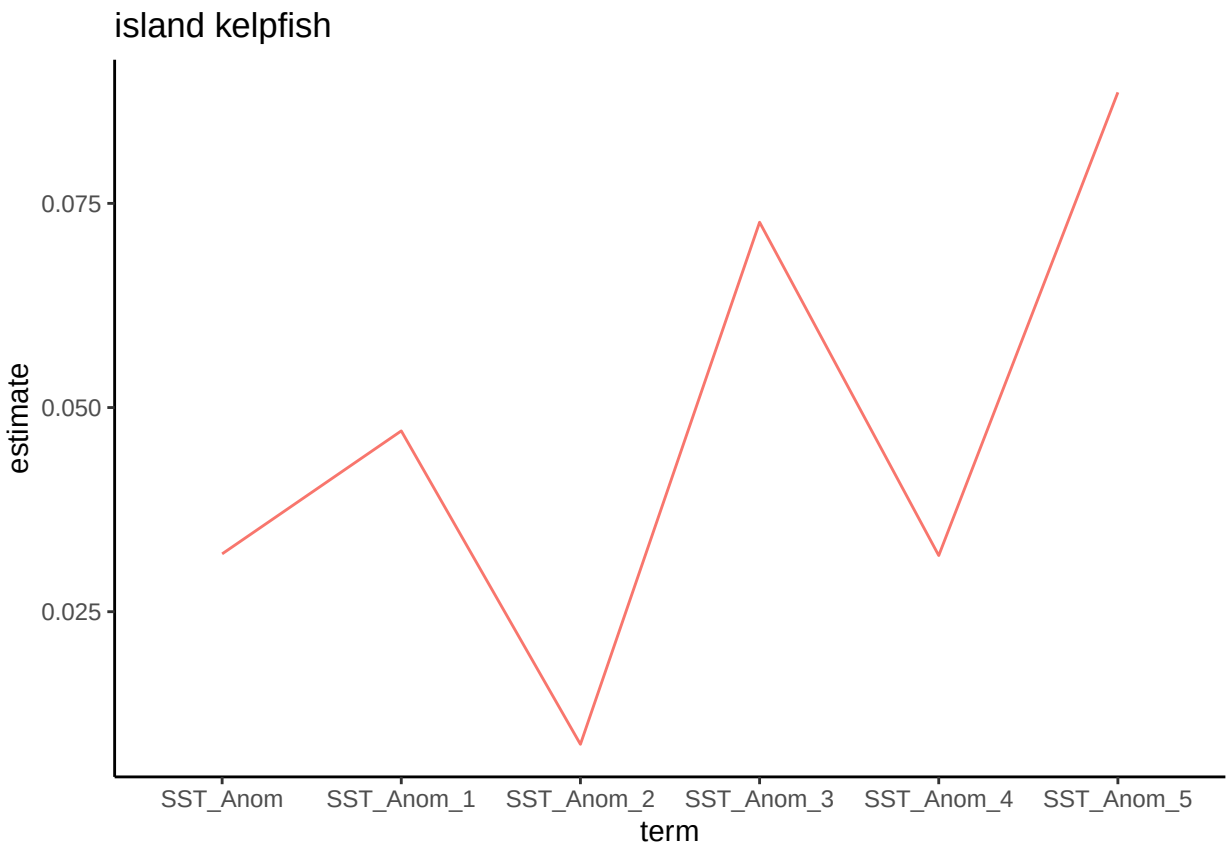
kelp bass, adult
0.006
0.004
0.002
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

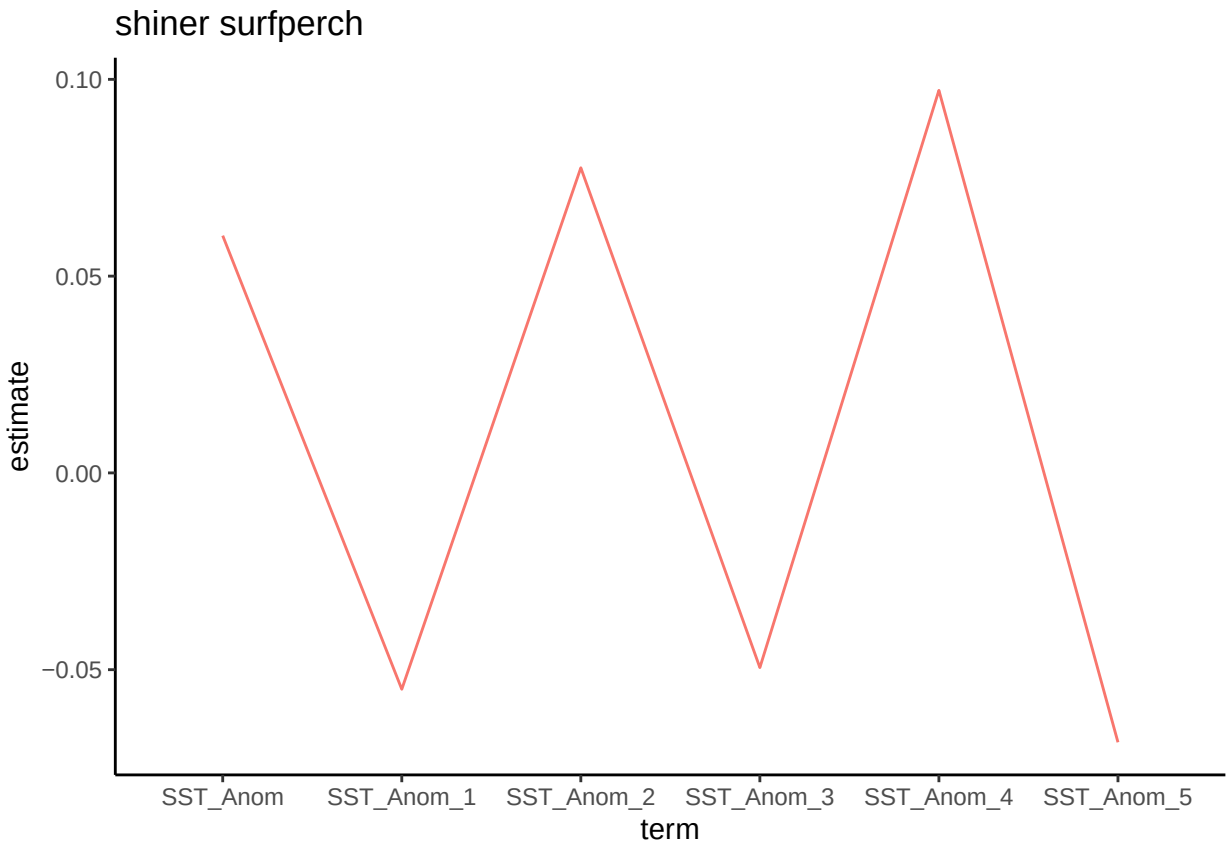

ocean whitefish, adult
0.004
0.002
0.000
−0.002
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

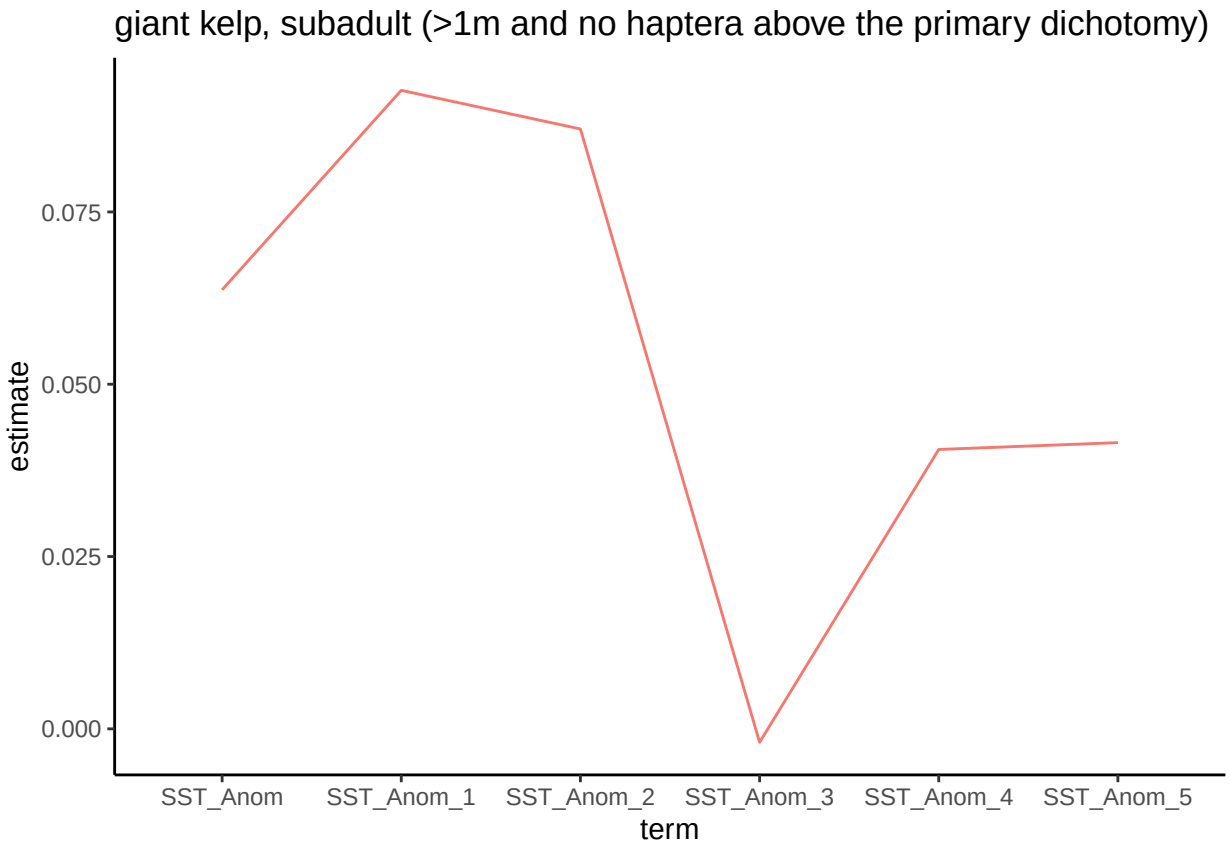

senorita, adult
0.008
0.004
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

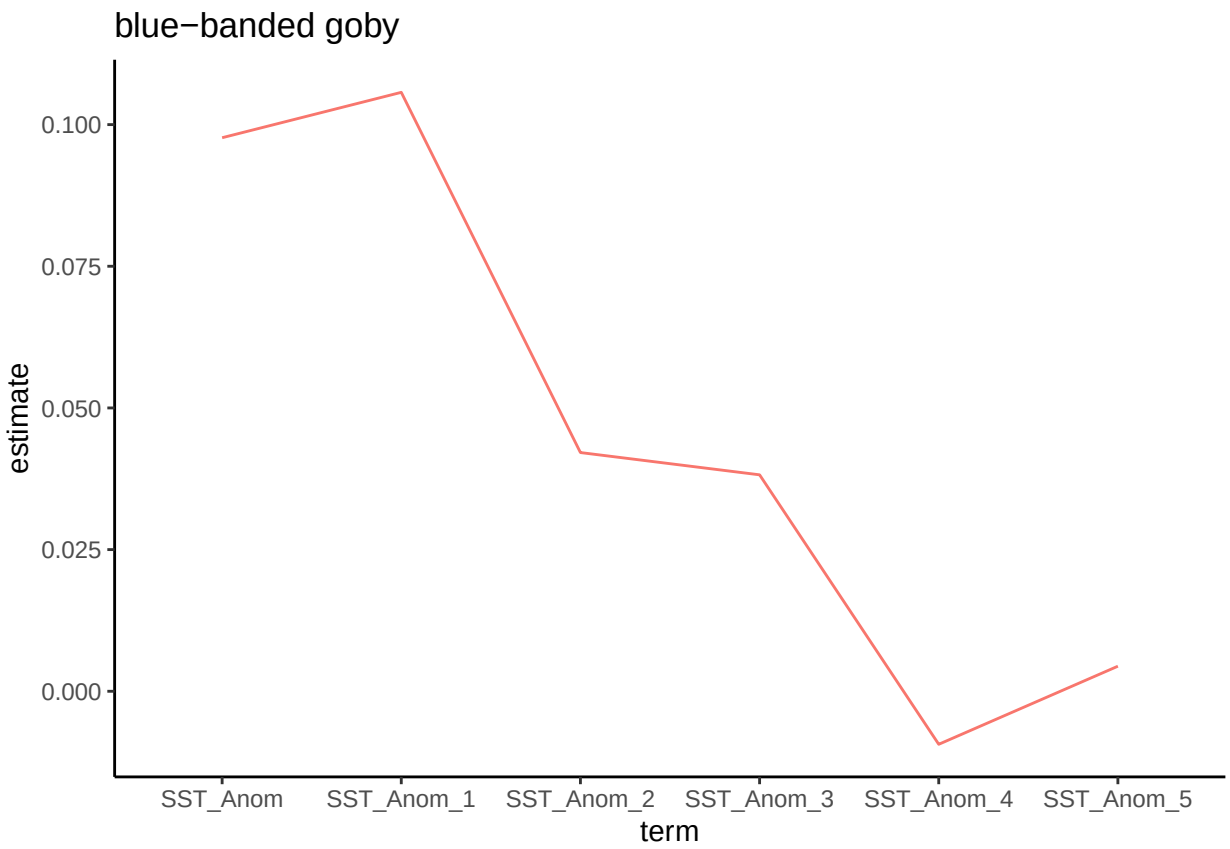

Kellet's whelk
0.012
0.008
0.004
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

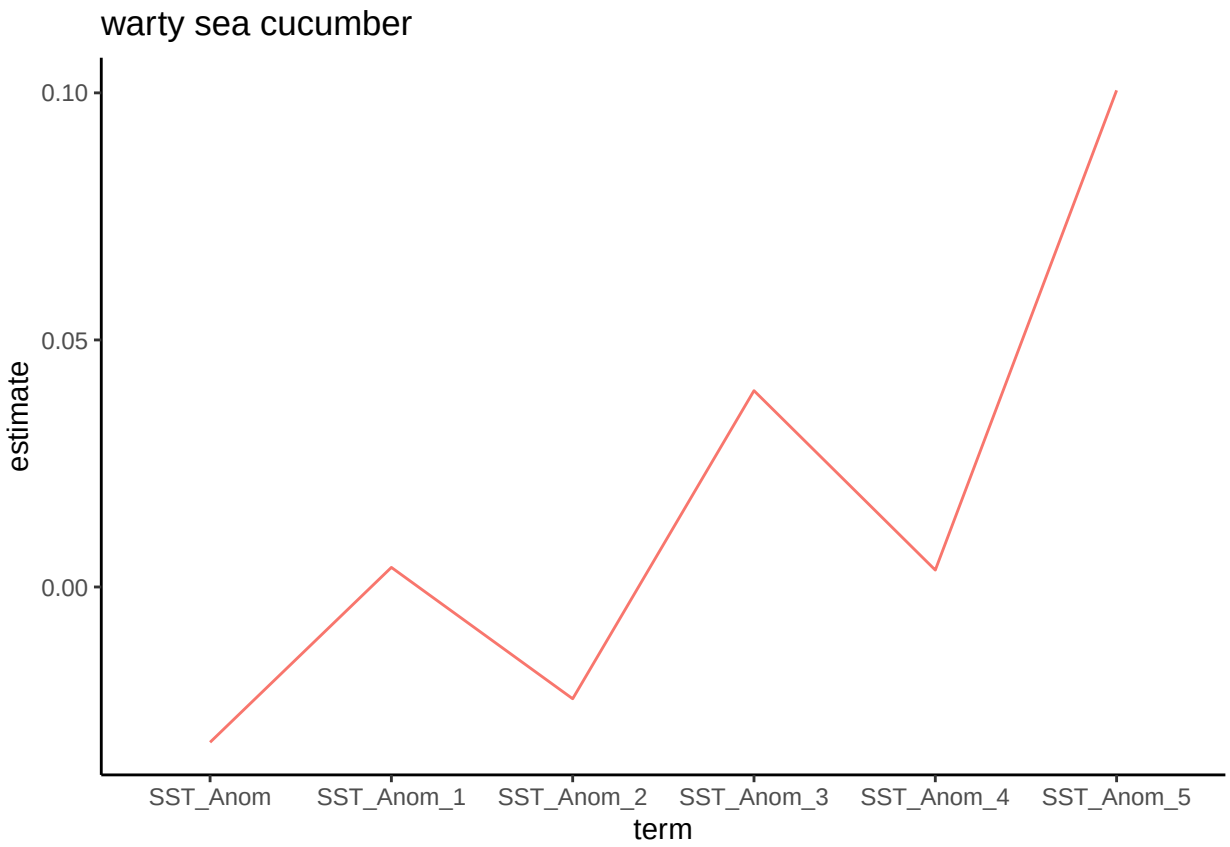

rock scallop
0.03
0.02
0.01
0.00
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

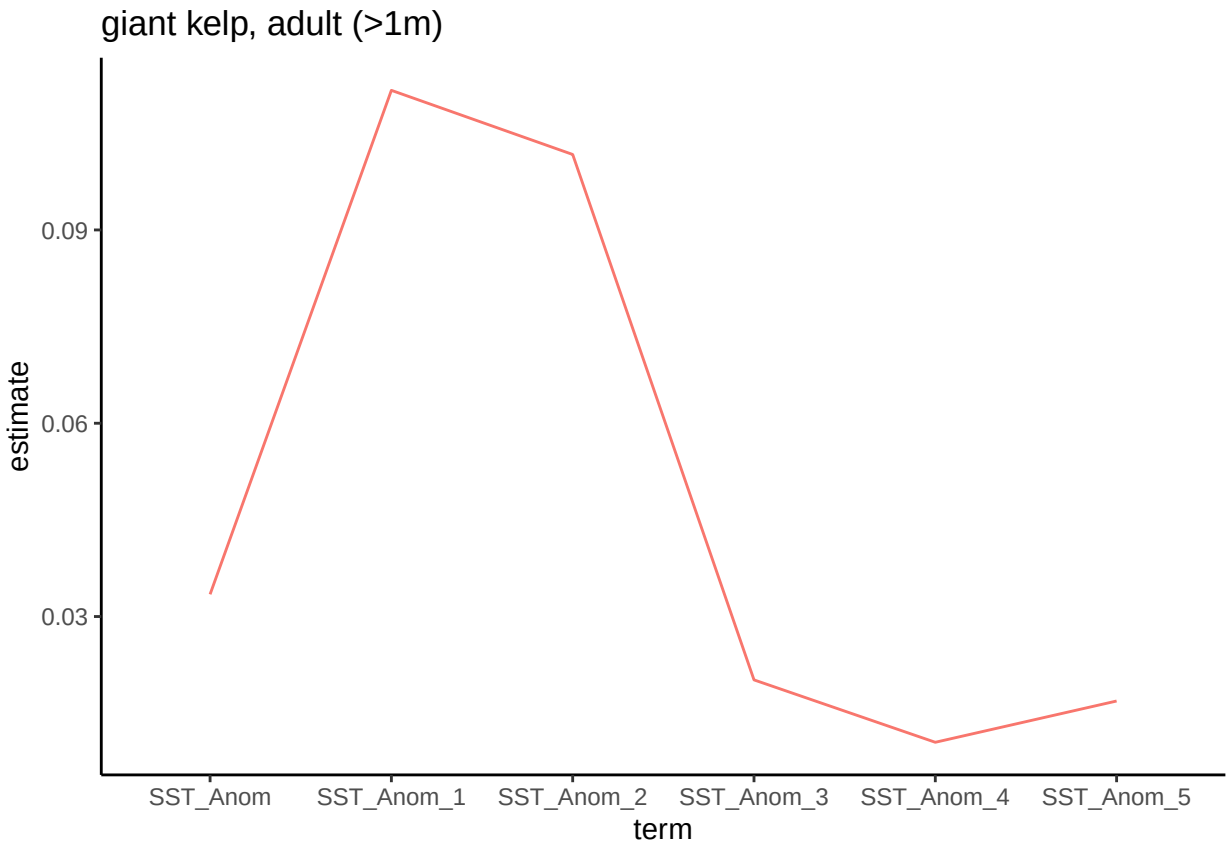

island kelpfish
estimate
0.075
0.050
0.025
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

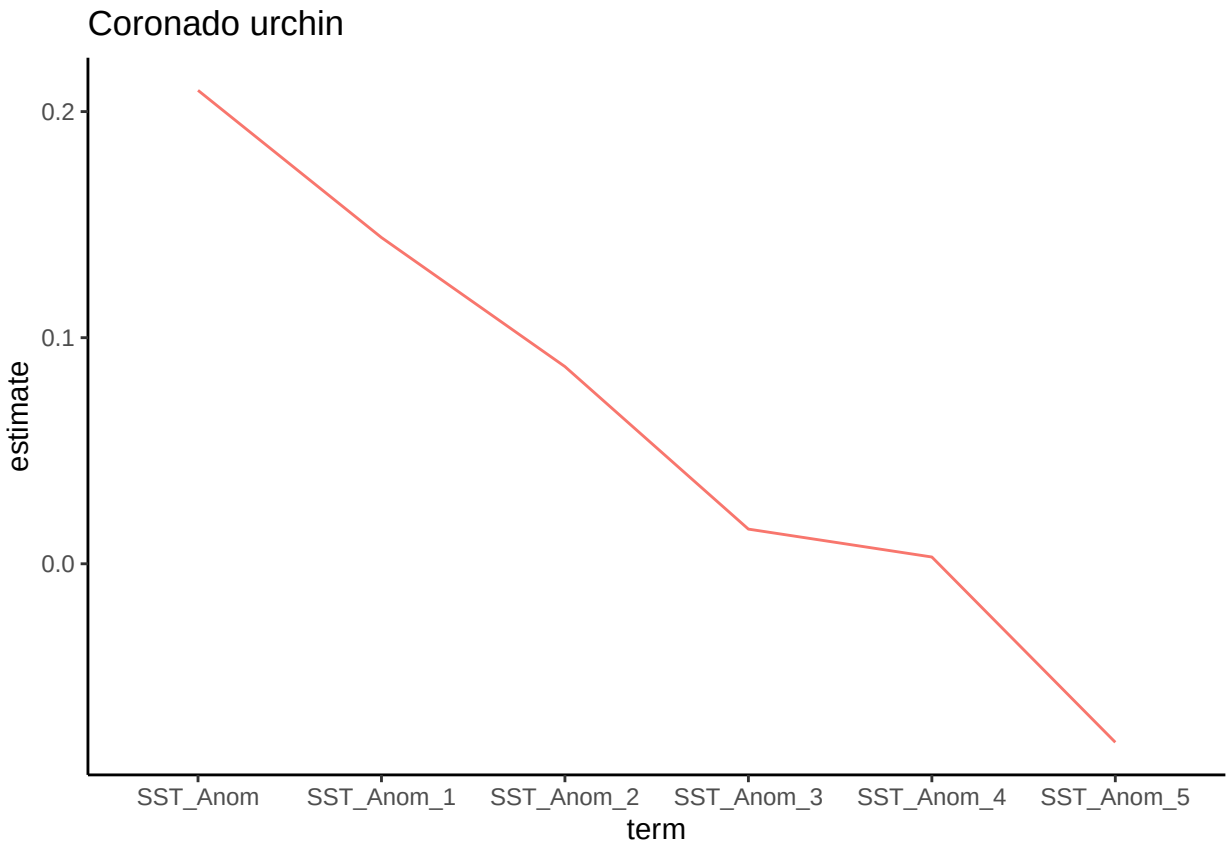

shiner surfperch
0.10
0.05
0.00
−0.05
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

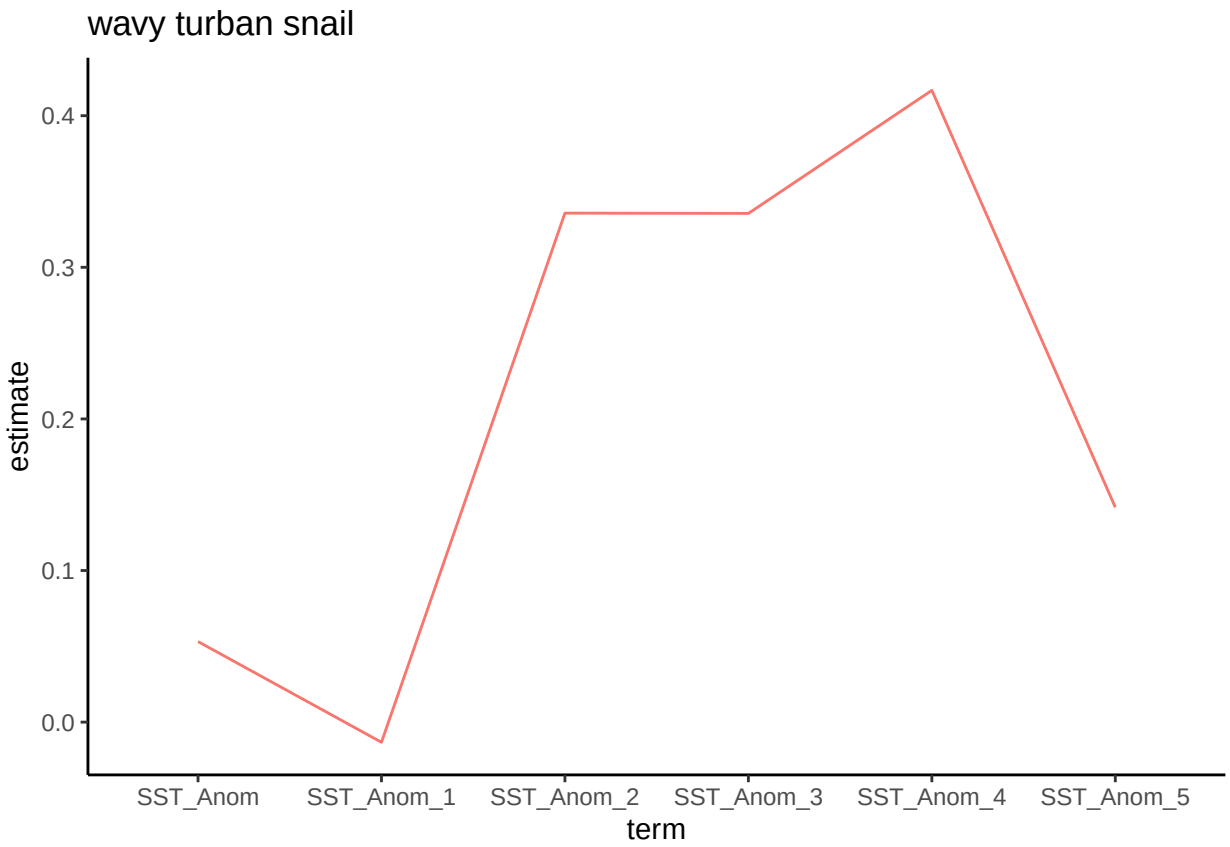

giant kelp, subadult (>1m and no haptera above the primary dichotomy)
estimate
0.075
0.050
0.025
0.000
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

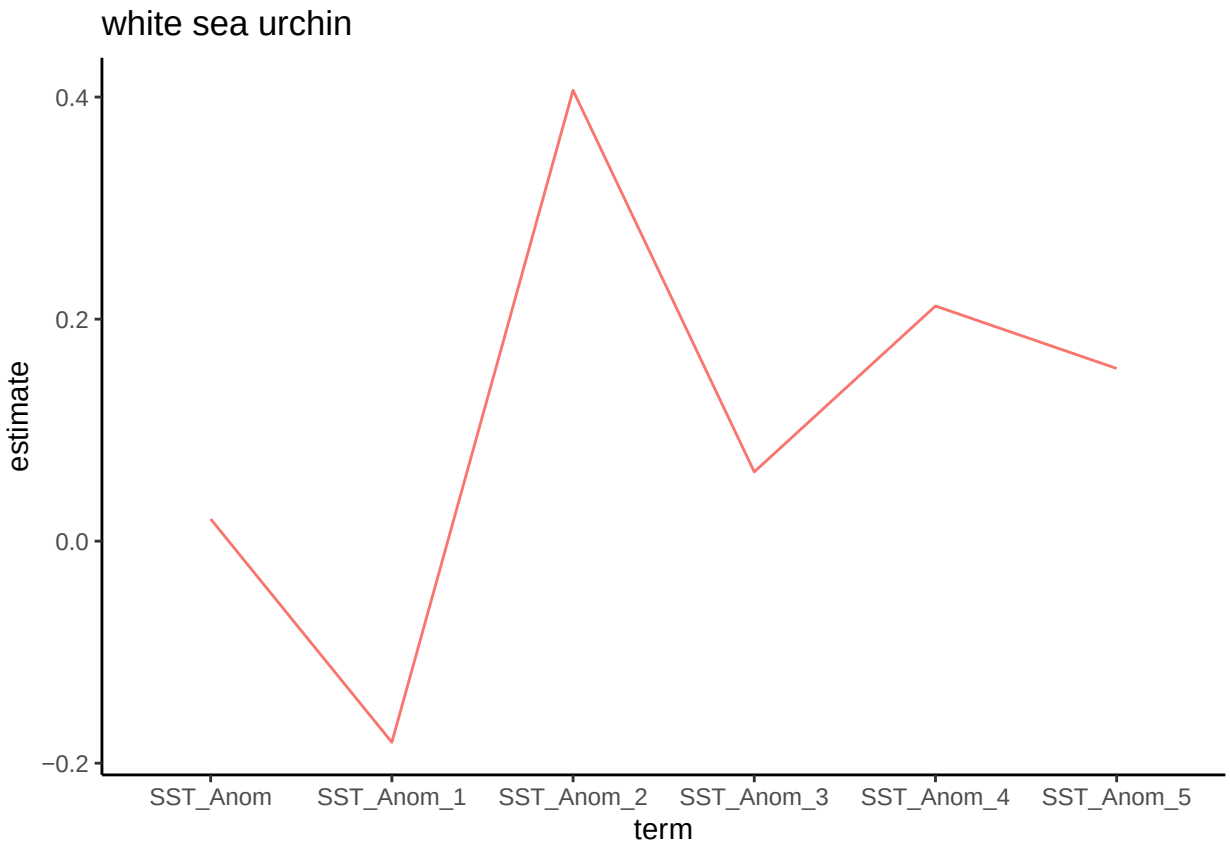

blue−banded goby
0.100
0.075
0.050
0.025
0.000
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

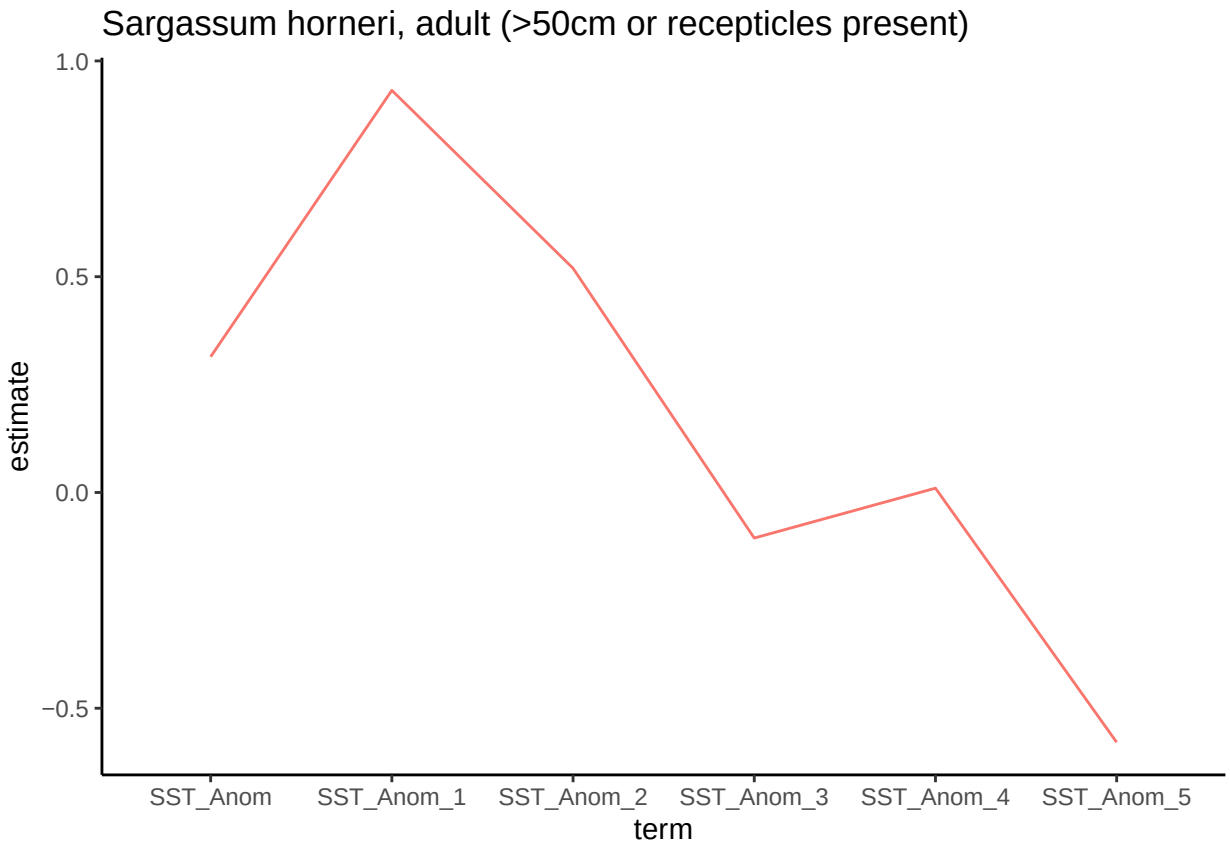

warty sea cucumber
0.10
0.05
0.00
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term


giant kelp, adult (>1m)
estimate
0.09
0.06
0.03
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

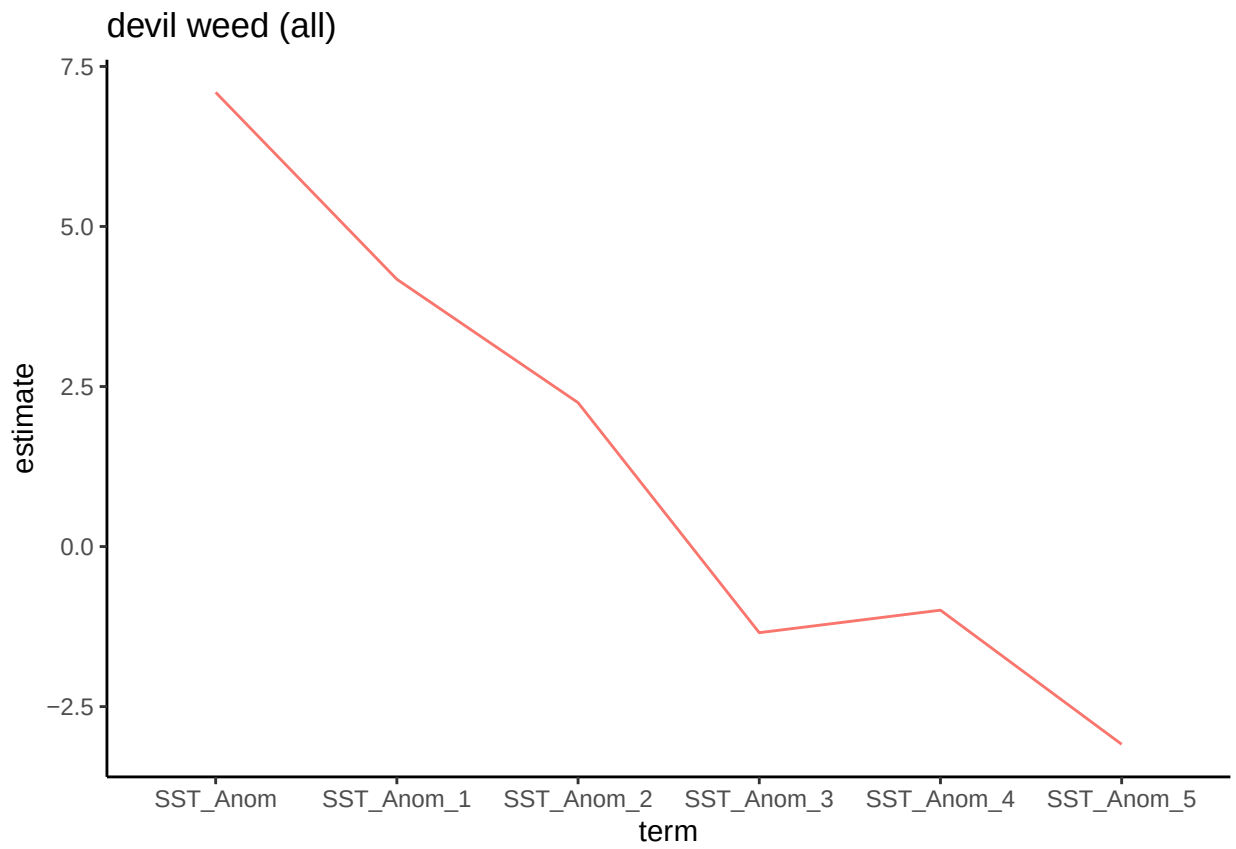

Coronado urchin
0.2
0.1
0.0
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term


wavy turban snail
estimate
0.4
0.3
0.2
0.1
0.0
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

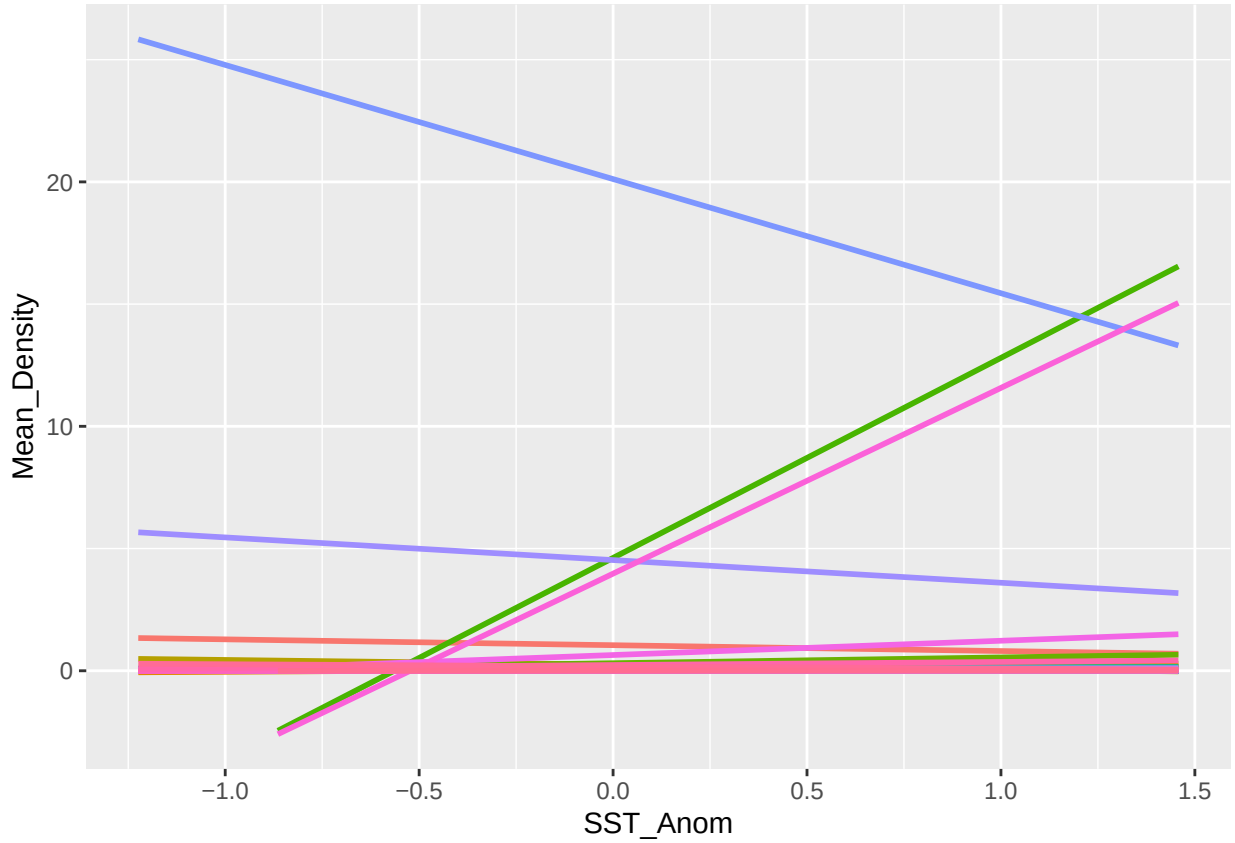

white sea urchin
0.4
0.2
0.0
−0.2
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term


Sargassum horneri, adult (>50cm or recepticles present)
1.0
0.5
0.0
−0.5
estimate
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term

Sargassum horneri, juvenile (<50cm and no recepticles)
estimate
5.0
2.5
0.0
−2.5
SST_Anom
SST_Anom_1
SST_Anom_2
SST_Anom_3
SST_Anom_4
SST_Anom_5
term




```
plt <- density %>%
  filter(CommonName %in% unique(Results$`Response Variable`))

ggplot(data = plt, aes(y = Mean_Density, x = SST_Anom, color = CommonName)) +
  geom_smooth(method = lm, formula = "y~x", show.legend = F, se = FALSE)
```




```
for (sp in unique(Results_lag$`Response Variable`)) {
  p <- density %>%
    filter(CommonName == sp) %>%
    ggplot(aes(y = Mean_Density, x = SST_Anom)) +
    geom_point() +
    geom_smooth(method = lm, formula = "y~x") +
    labs(title = sp) +
    theme_classic()

  print(p)
}
```

```
## Warning: Unknown or uninitialised column: ‘Response Variable‘.
```