

OCNMS exploratory plots

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This is a basic file for processing and providing basic plots for the 2015 Olympic Coast National Marine Sanctuary Dive Surveys.

The important data.frames and lists for 2015 data are these:

- “dat.quad” has all of the recent cover data associated with quadrat counts
- “dat.quad.count” has all of the count data of mobile and countable inverts from the quadrat surveys
- “dat.trans.algae” has all the transect observations for algae an
- “dat.trans.mammal.bird” has all the mammal and bird observations
- “dat.trans.fish” has all of the transect observations for fish species.
- “dat.trans.invert” has all of the transect observations for invertebrates. I made this into a list that has multiple entries for species folk are likely interested in

```
names(dat.trans.invert)
```

```
## [1] "All.invert" "Urchin"      "Cucumber"    "Sea.star"    "Crab"
## [6] "Chiton"     "Limpet"      "Gastropod"   "Bivalve"     "Nudi"
```

- “dat.kvitek” is a list with the historical data available from the 1987,1995, and 1999 surveys. There are a couple of different kinds of surveys.

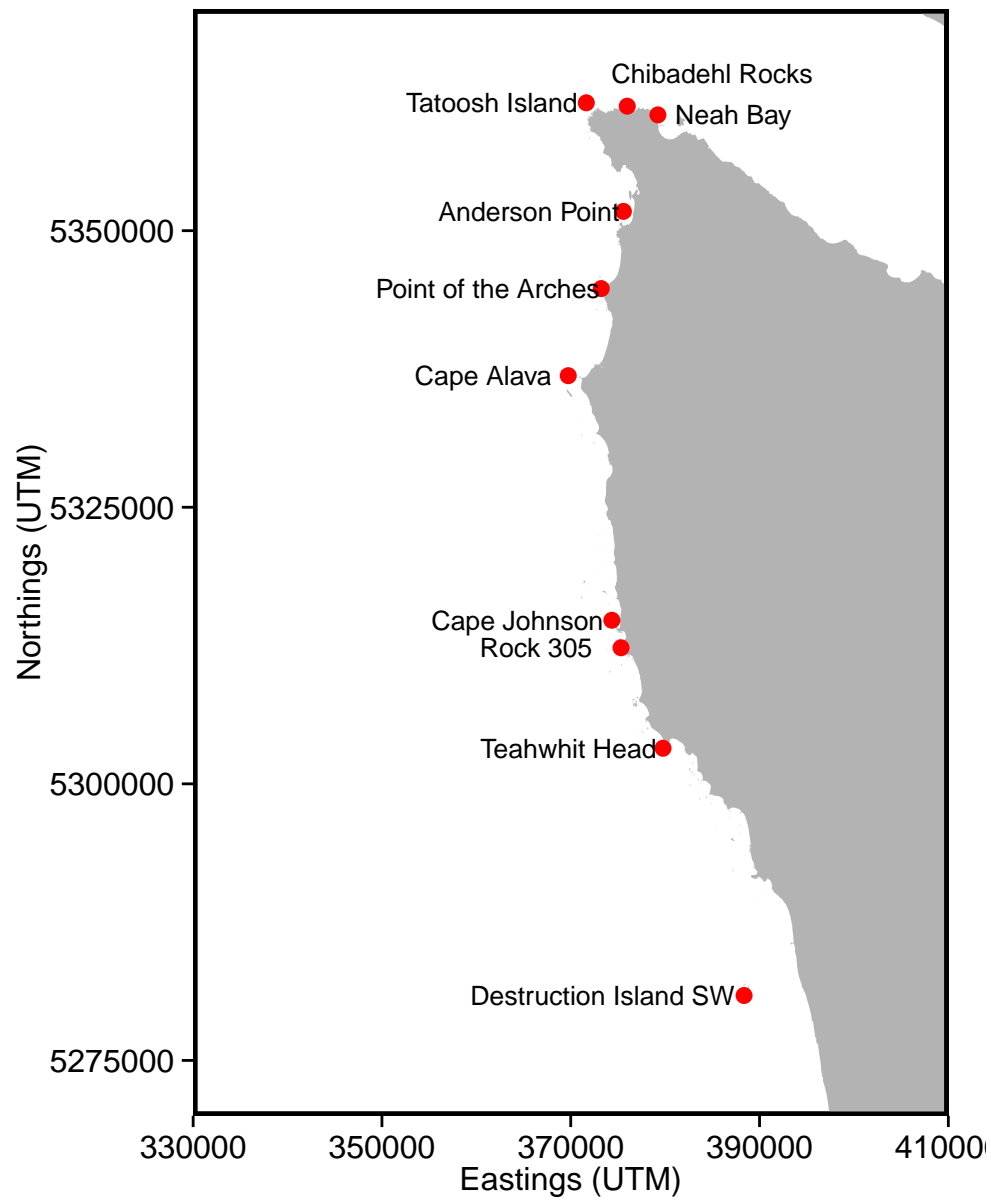
```
names(dat.kvitek)
```

```
## [1] "Invert.quad" "Invert.trans" "Veg"
```

All surveys were conducted on these dates:

```
## [1] "8/3/15" "8/4/15" "8/5/15" "8/6/15" "8/7/15"
```

Here is a map showing the approximate locations of the sites



Methods

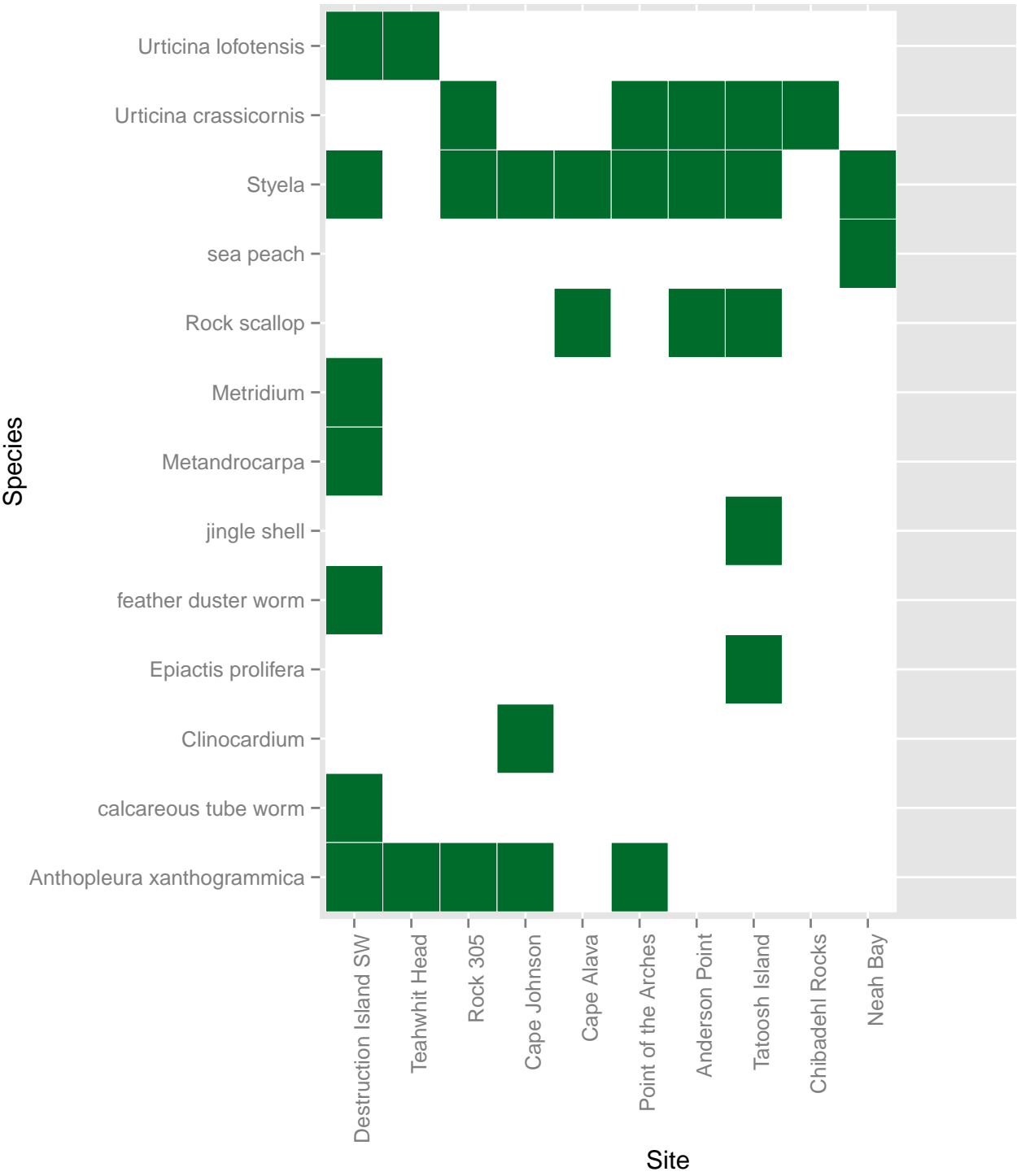
Four divers conducted dive surveys at each site (two teams of two). Each diver pair surveyed two 30m long transects. All dives in 2015 were conducted at about 6-8m depth.

I've focused on summarizing the species observed in at each site (for the quadrats, invertebrate transects, and fish transects)

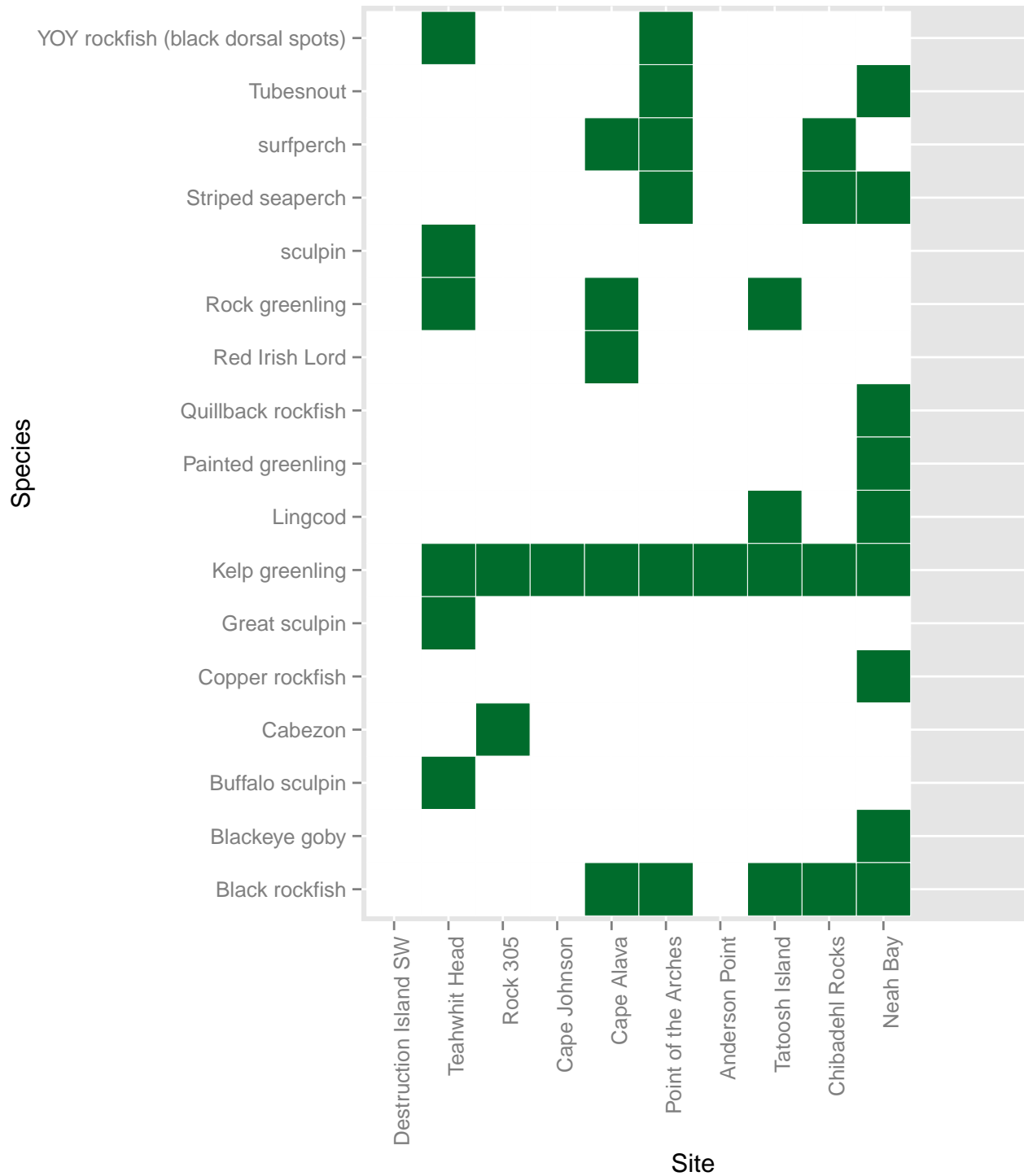
Sessile creatures (and some benthic categories) in quadrats



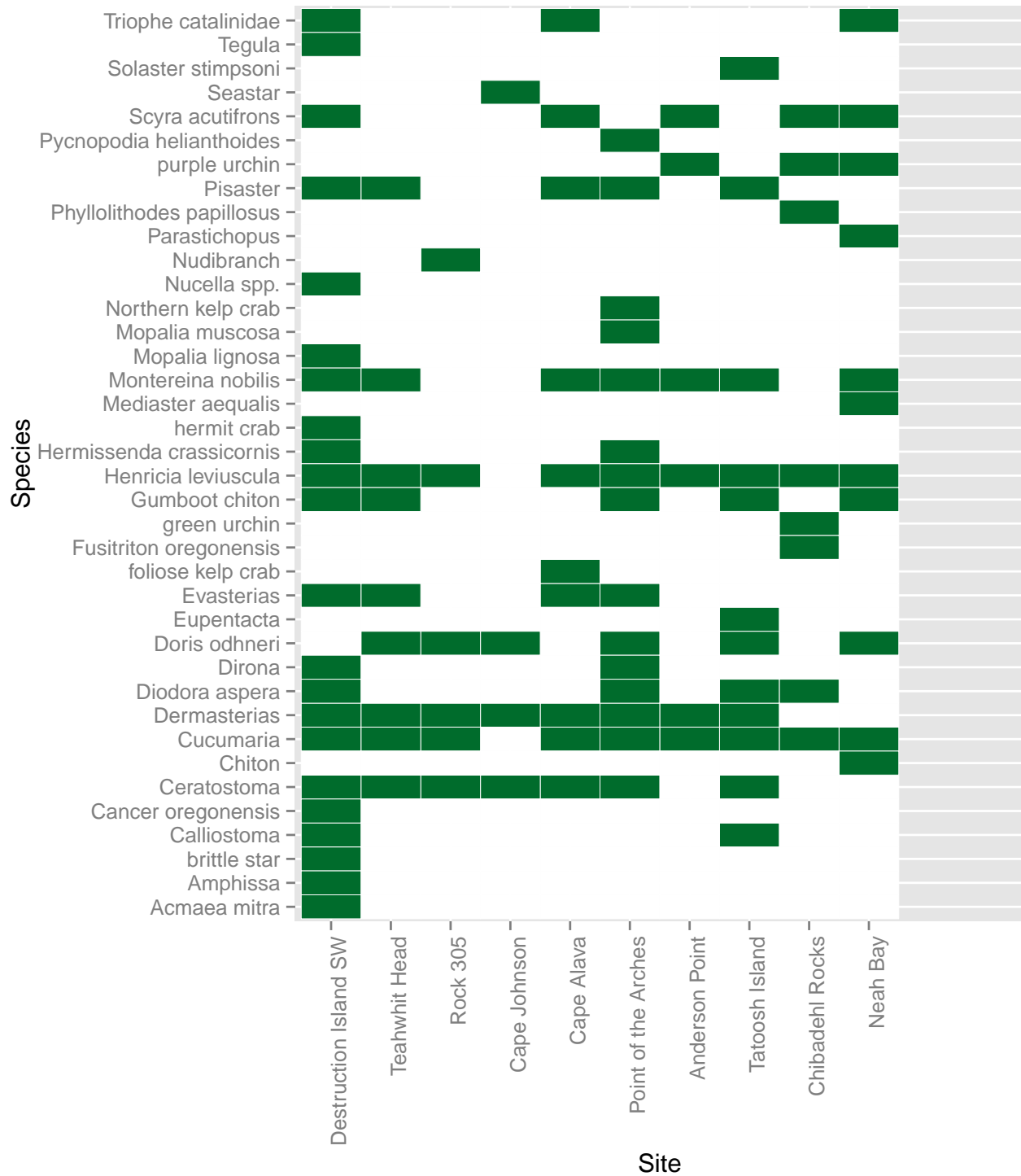
Sessile Invertebrates on Transects



Fish species on transects



Mobile invertebrate species on transects

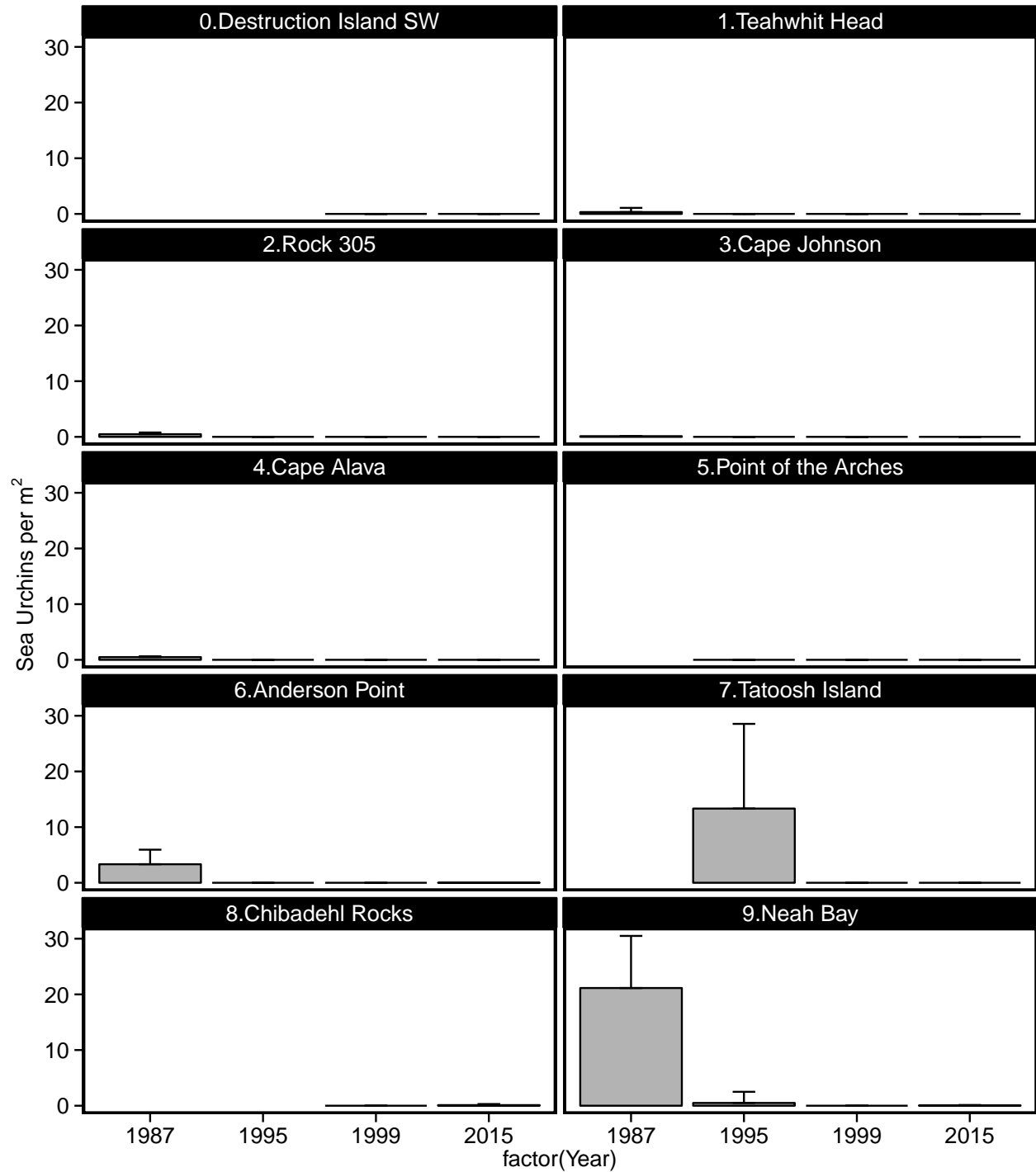


Comparing mobile invertebrates

Data from all sites in all years. I include only data from 6m and shallower from historical data.

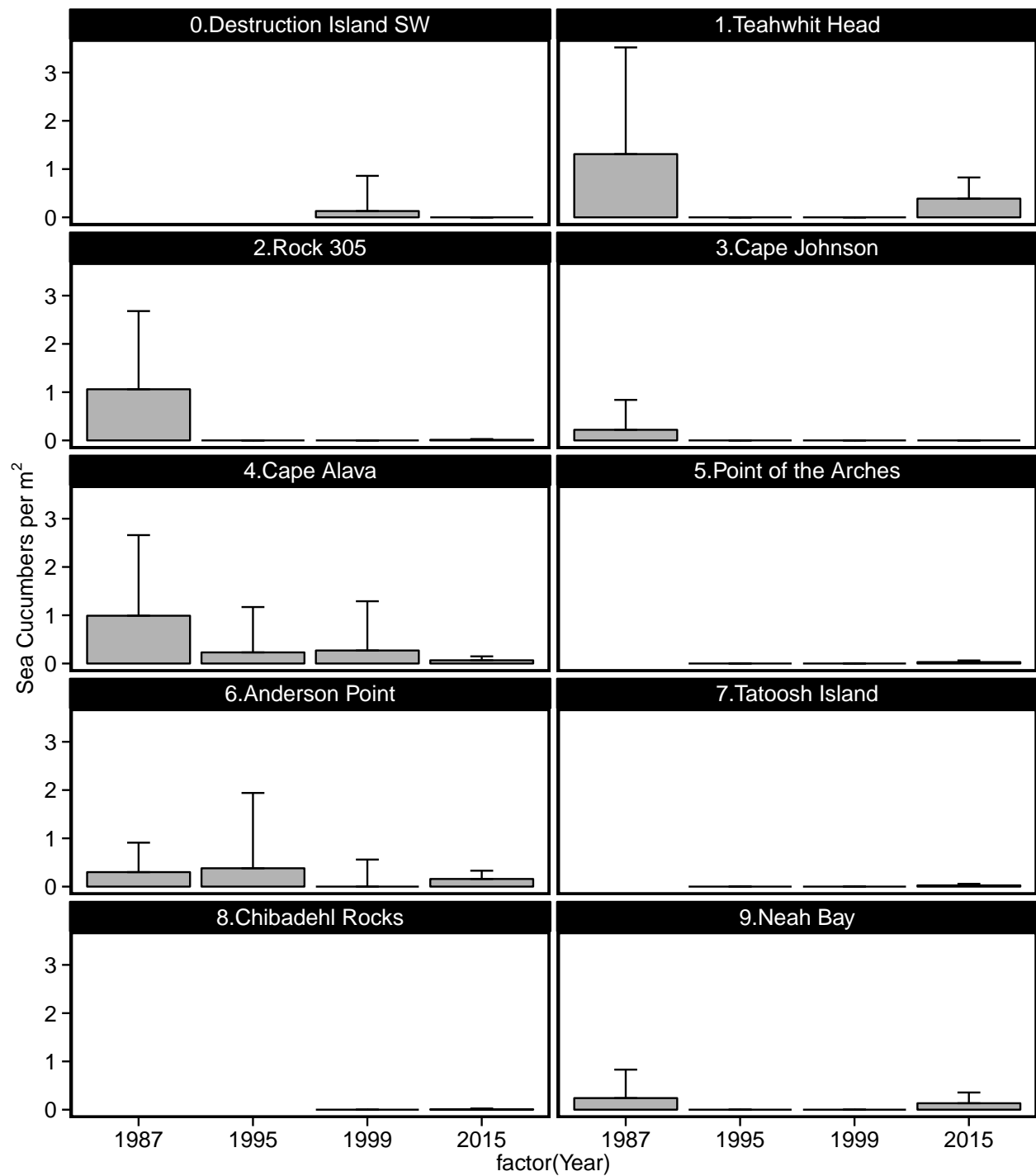
Urchins (Mean \pm SD).

Zeros shown as thin lines, missing data shown as blank



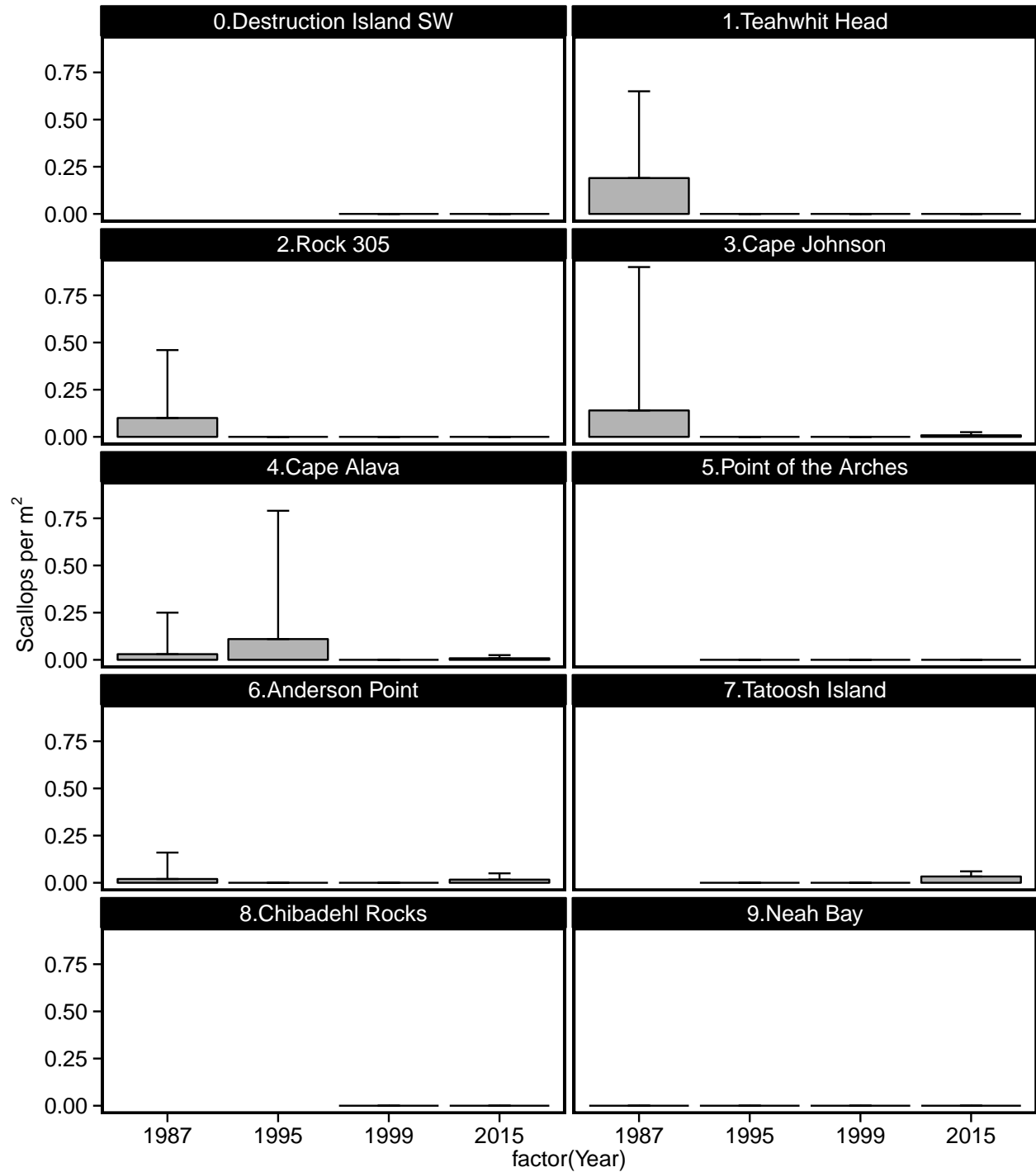
Sea Cucumbers (Mean +/- SD).

Zeros shown as thin lines, missing data shown as blank



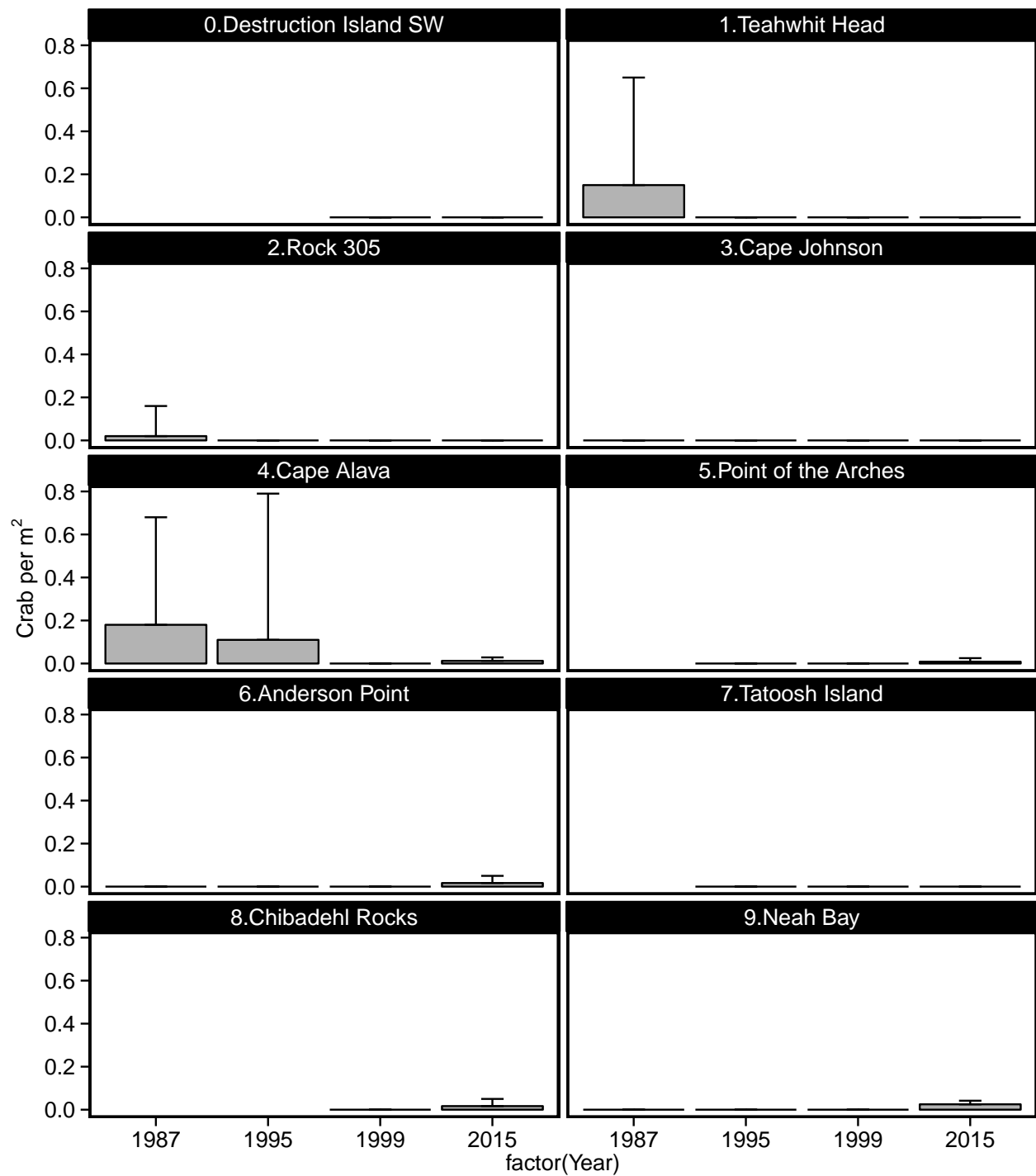
Scallops (Mean \pm SD).

Zeros shown as thin lines, missing data shown as blank



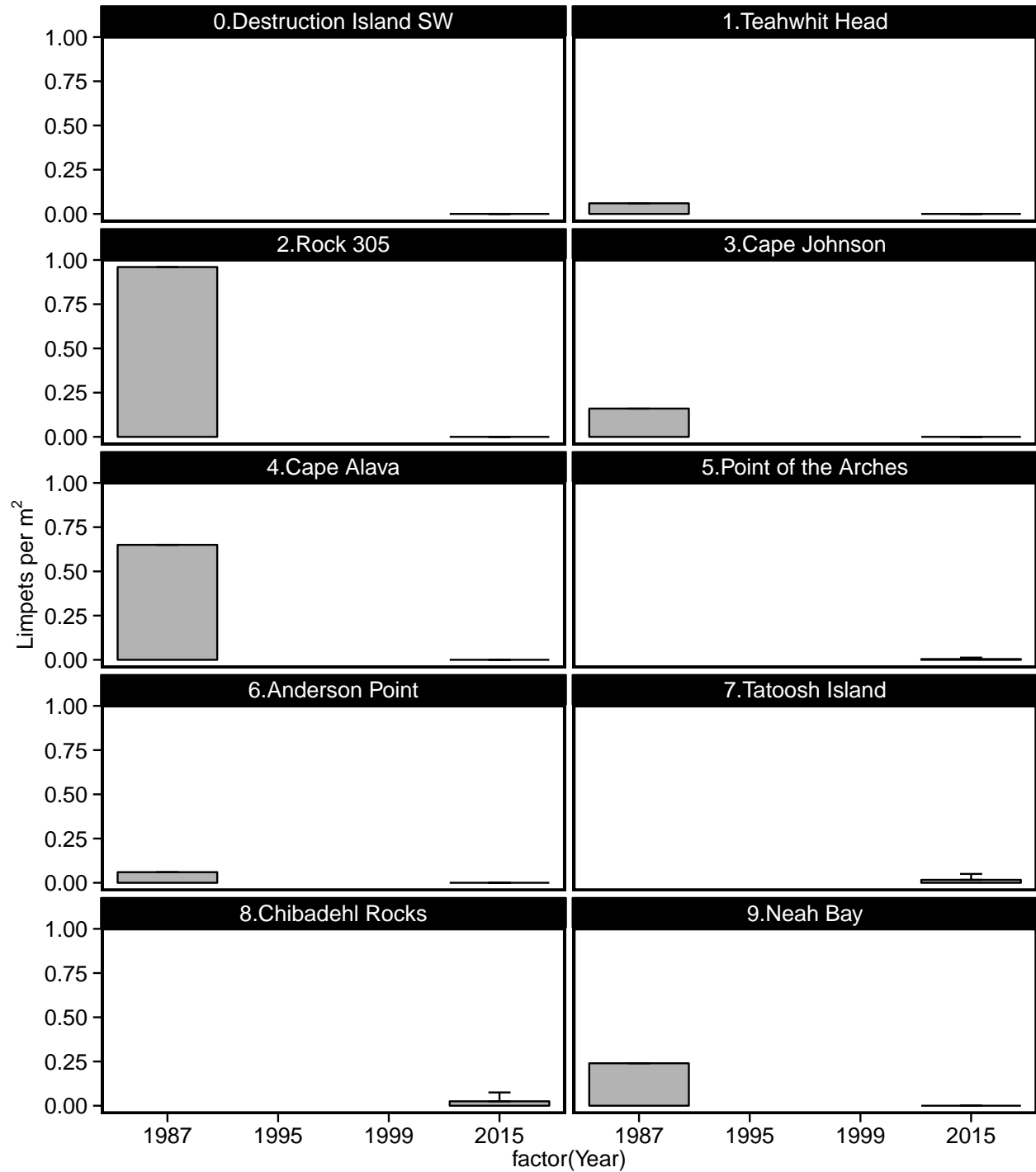
Crabs (Mean \pm SD).

Zeros shown as thin lines, missing data shown as blank



Limpets (Mean \pm SD).

Zeros shown as thin lines, missing data shown as blank



Non-Limpet Gastropods (Mean \pm SD).

Zeros shown as thin lines, missing data shown as blank

