Compare qPCR and Catch Skagit

Ole Shelton

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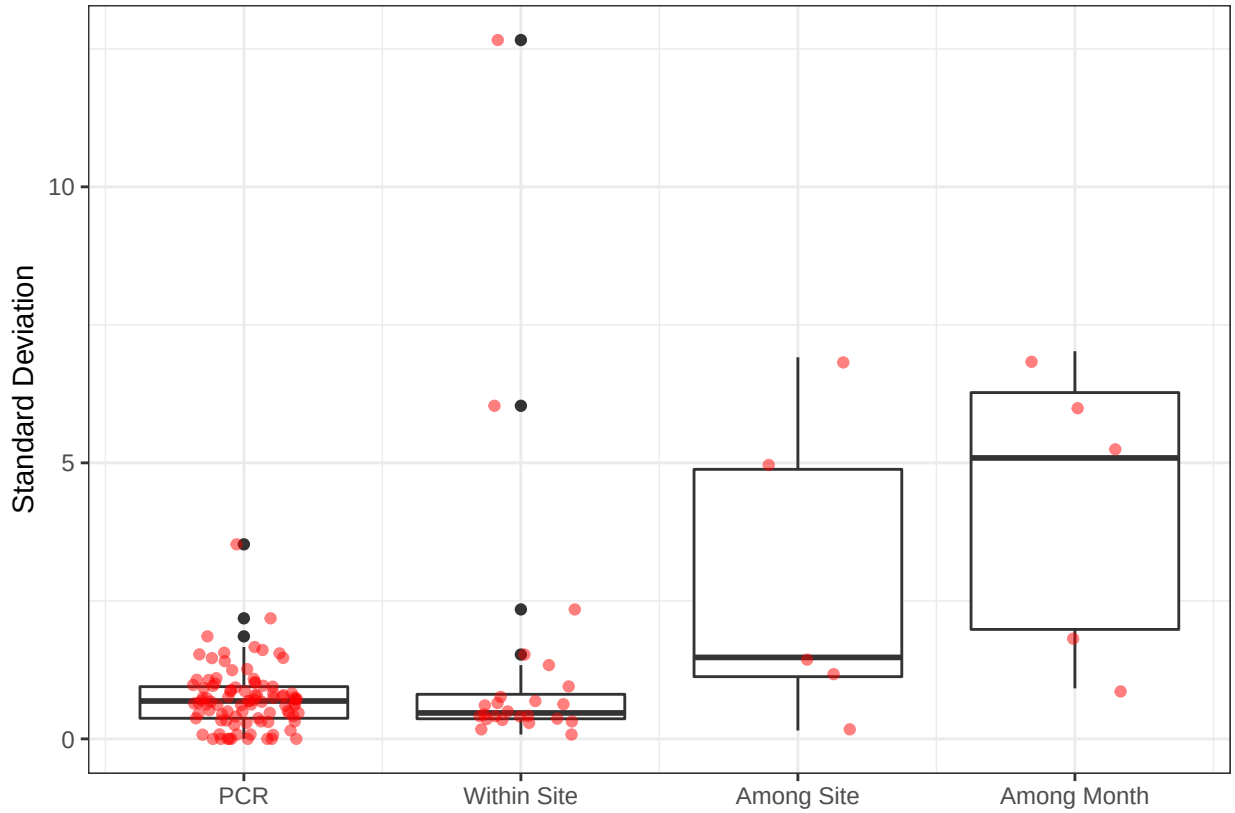
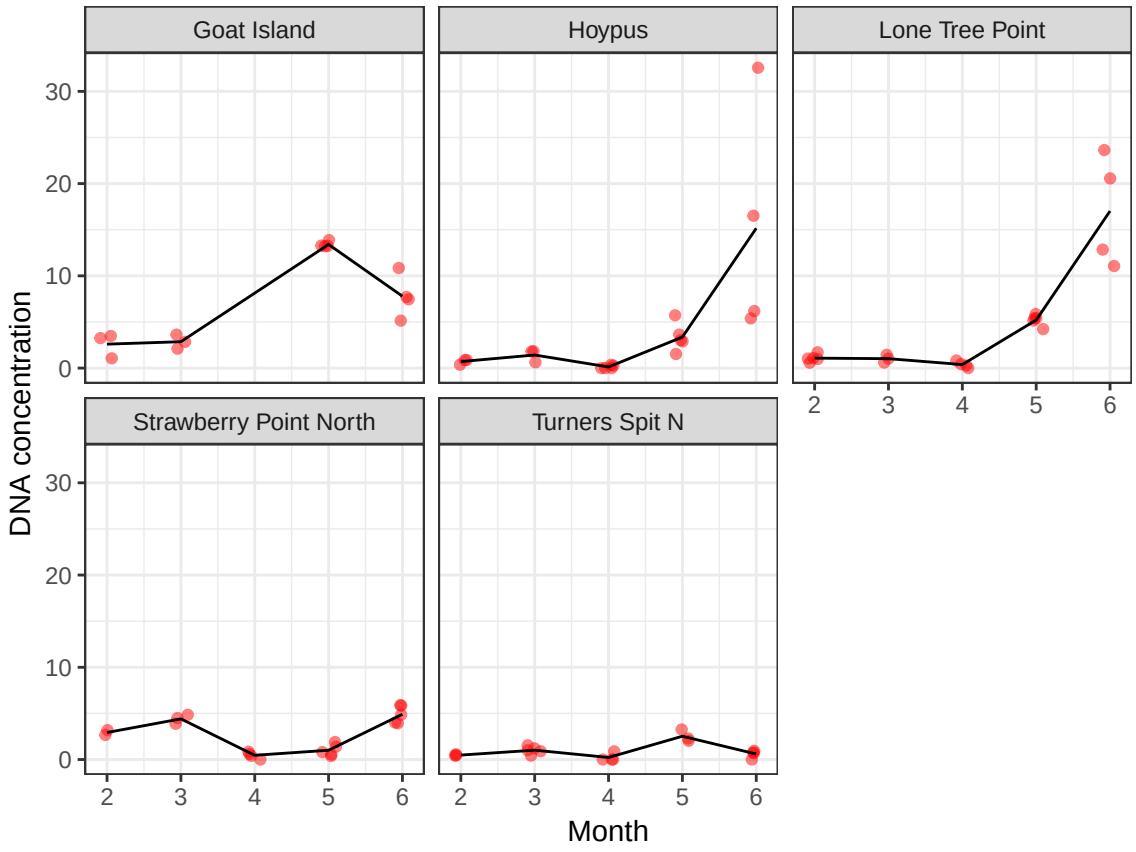
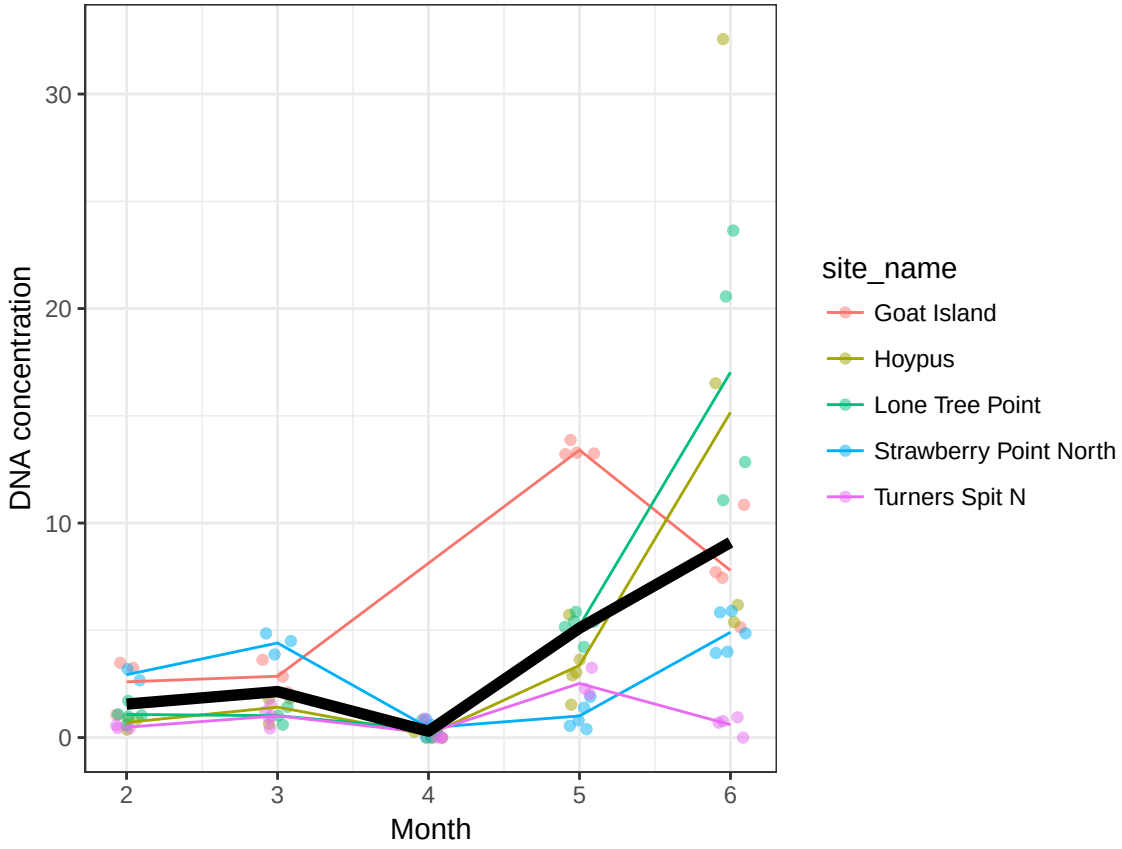
Compare qPCR and Catch data.

This is a plot of the variance at different scales



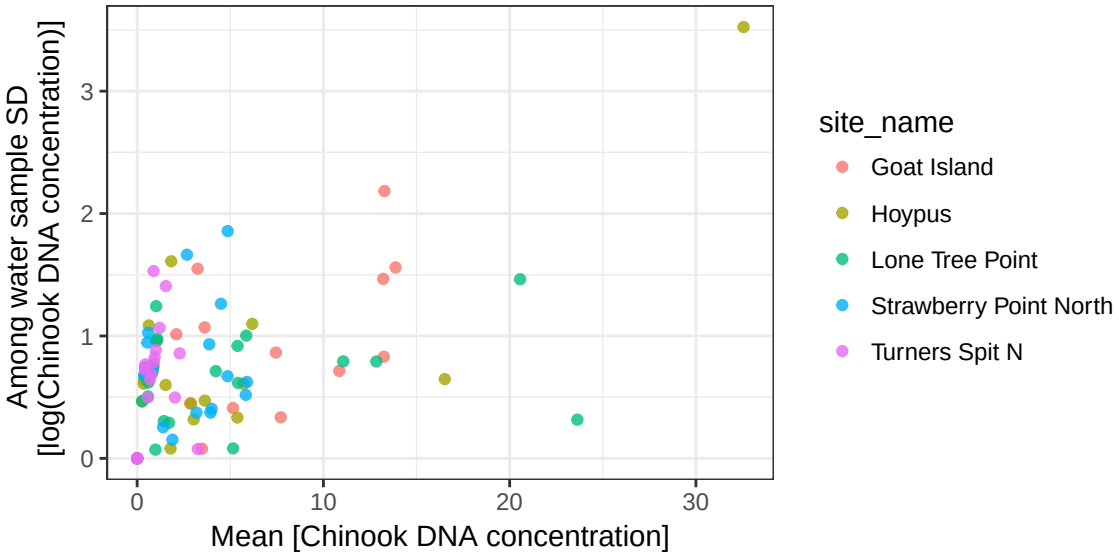
This is a plot of qPCR indexes by site and all together


Goat Island
Hoypus
Lone Tree Point
Strawberry Point North
Turners Spit N
DNA concentration
Month
0
10
20
30
2
3
4
5
6

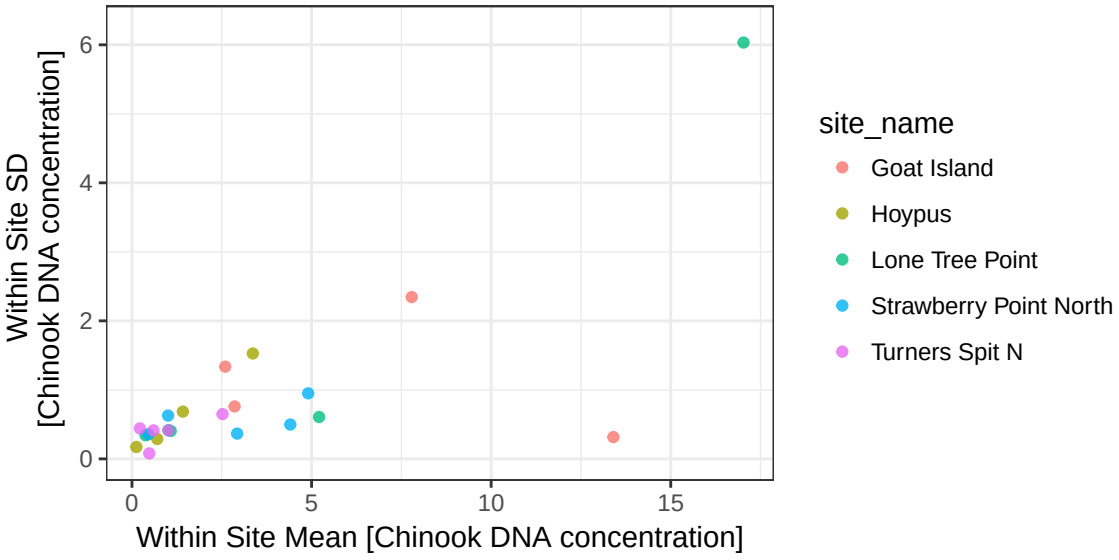

DNA concentration
Month
site_name
Goat Island
Hoypus
Lone Tree Point
Strawberry Point North
Turners Spit N
0
10
20
30
2
3
4
5
6

Plots of mean-sd relationships for various scales

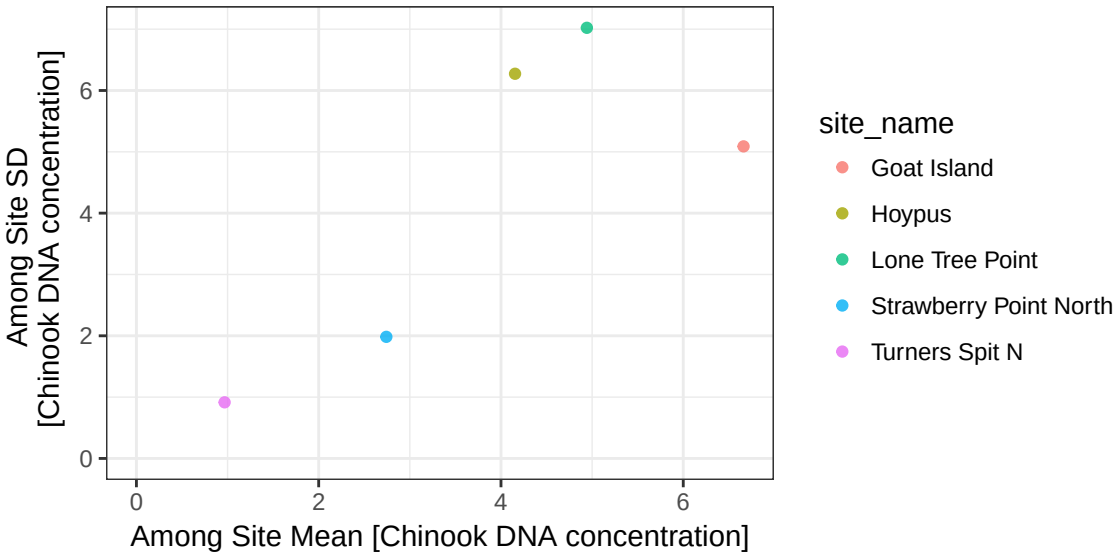
```
## [[1]]
```



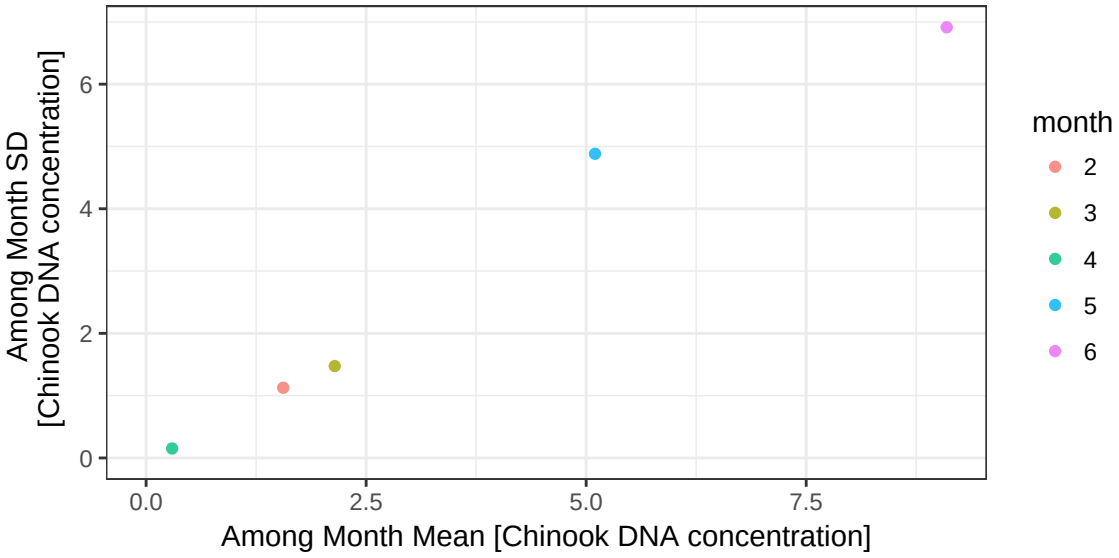

```
##
## [[2]]
```




```
##
## [[3]]
```

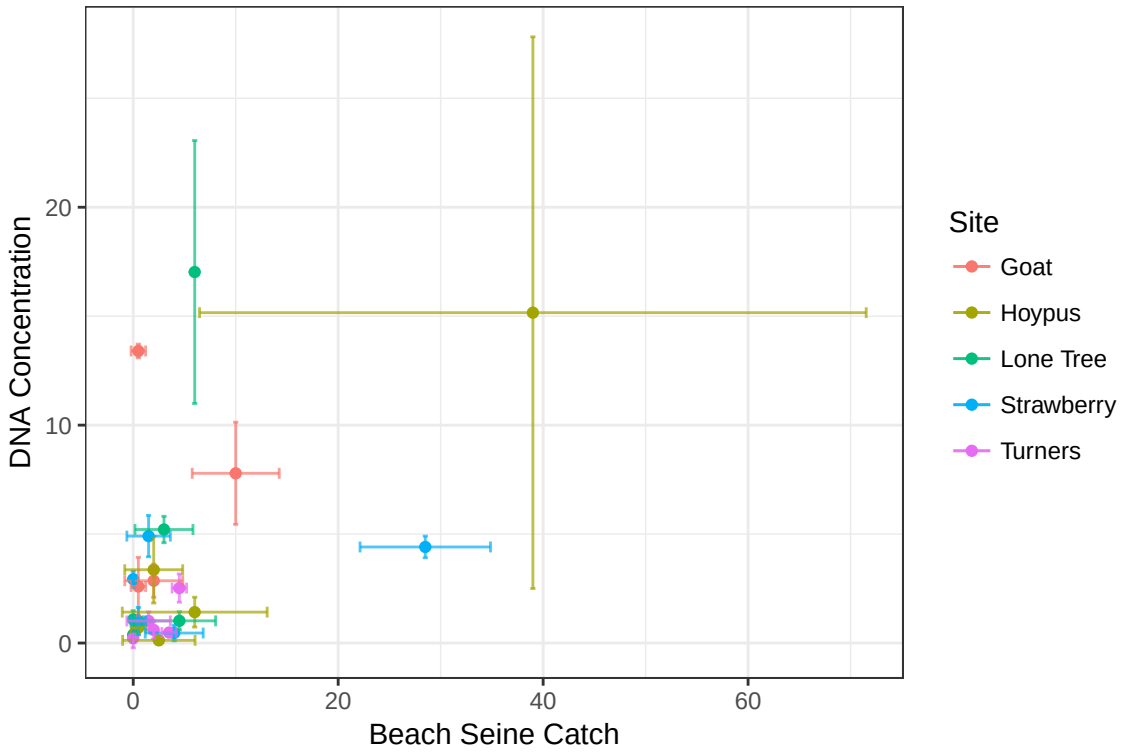



```
##
## [[4]]
```

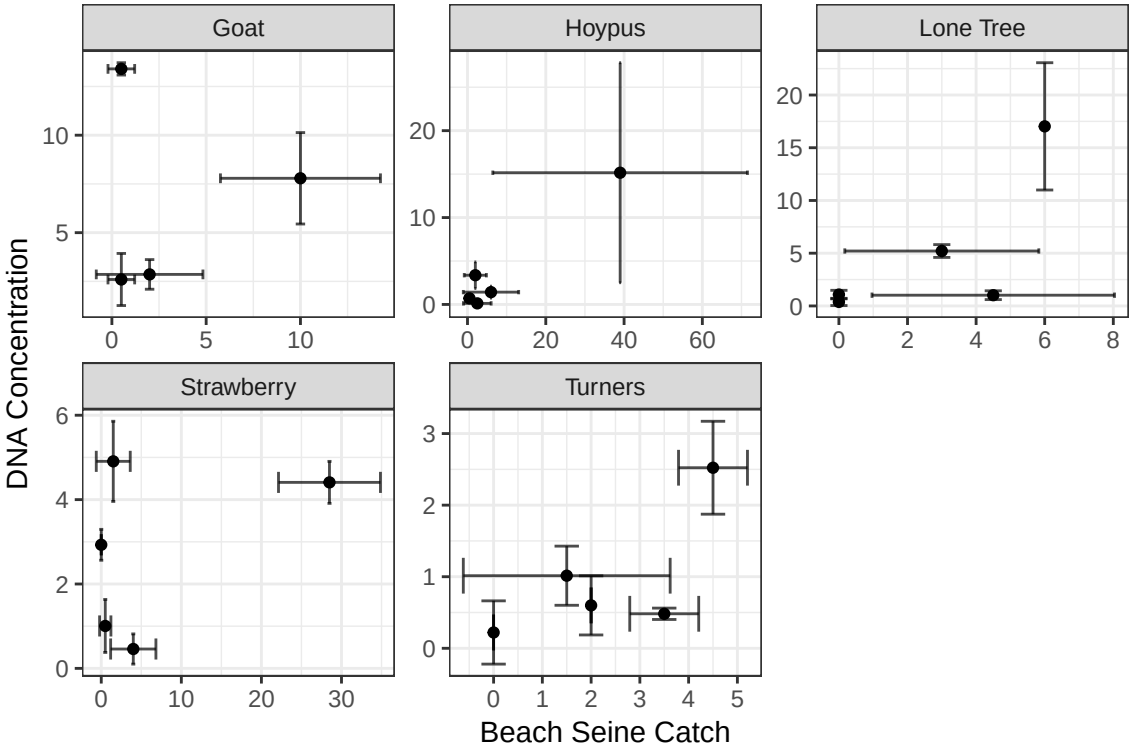


Plots of space by time comparison between beach seine calculations

```
## [[1]]
```




```
##
## [[2]]
```




```
##    year month   pcr.Mean      pcr.SD     pcr.SE site.merge catch.Mean
## 1  2017     2  2.5969034  1.33646276 0.44548759       Goat        0.5
## 2  2017     3  2.8581039  0.75984617 0.25328206       Goat        2.0
```

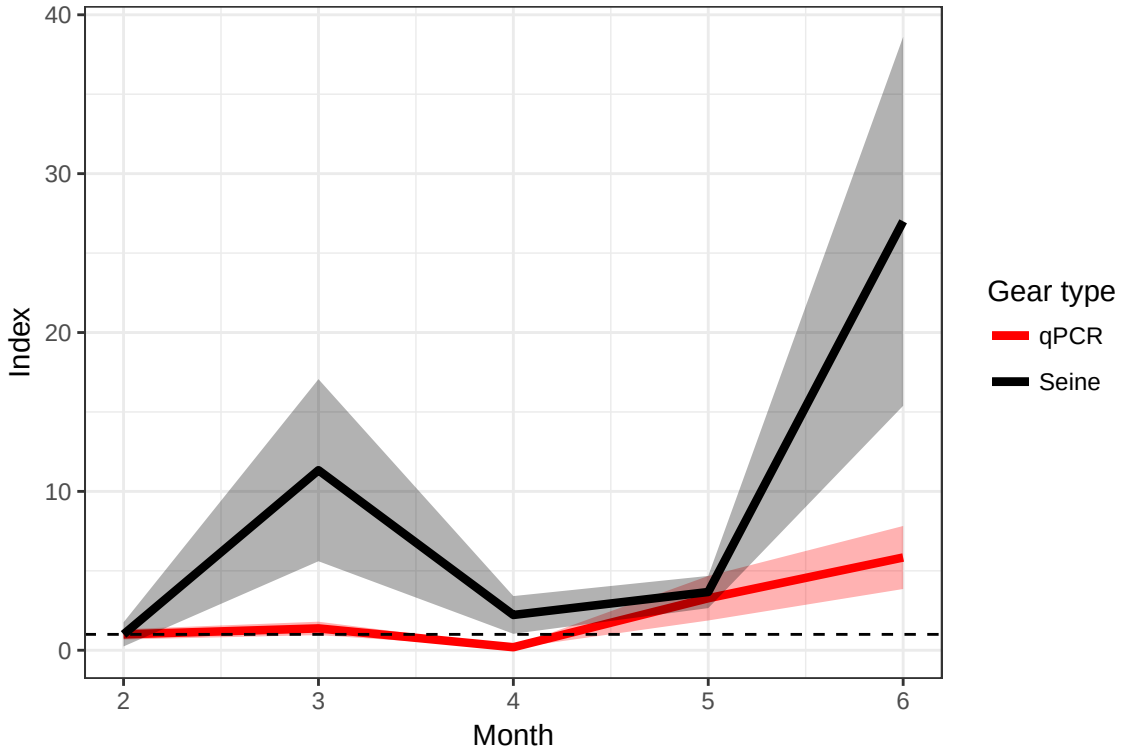
```
## 3  2017     5 13.4022221  0.31604453 0.07901113       Goat        0.5
## 4  2017     6  7.7893084  2.34476226 0.58619057       Goat       10.0
## 5  2017     2  0.7043649  0.28895021 0.09631674     Hoypus        0.5
## 6  2017     3  1.4180173  0.68493675 0.22831225     Hoypus        6.0
## 7  2017     4  0.1239844  0.17241052 0.03448210     Hoypus        2.5
## 8  2017     5  3.3648498  1.52736621 0.30547324     Hoypus        2.0
## 9  2017     6 15.1606387 12.65973324 3.16493331     Hoypus       39.0
## 10 2017     2  1.0777589  0.40473513 0.08094703  Lone Tree        0.0
## 11 2017     3  1.0186890  0.41681649 0.13893883  Lone Tree        4.5
## 12 2017     4  0.3796803  0.34229729 0.08557432  Lone Tree        0.0
## 13 2017     5  5.2092693  0.60678114 0.12135623  Lone Tree        3.0
## 14 2017     6 17.0269438  6.03347043 1.50836761  Lone Tree        6.0
## 15 2017     2  2.9293244  0.36610038 0.18305019 Strawberry        0.0
## 16 2017     3  4.4086610  0.49734909 0.16578303 Strawberry       28.5
## 17 2017     4  0.4592753  0.35780490 0.08945123 Strawberry        4.0
## 18 2017     5  1.0057071  0.62767249 0.12553450 Strawberry        0.5
## 19 2017     6  4.9071571  0.94959183 0.18991837 Strawberry        1.5
## 20 2017     2  0.4819908  0.07929726 0.02643242    Turners        3.5
## 21 2017     3  1.0141686  0.41305448 0.08261090    Turners        1.5
## 22 2017     4  0.2208869  0.44177379 0.11044345    Turners        0.0
## 23 2017     5  2.5225553  0.64902475 0.21634158    Turners        4.5
## 24 2017     6  0.5992356  0.41305685 0.10326421    Turners        2.0
##      catch.SD
## 1   0.7071068
## 2   2.8284271
## 3   0.7071068
## 4   4.2426407
## 5   0.7071068
## 6   7.0710678
## 7   3.5355339
## 8   2.8284271
## 9  32.5269119
## 10  0.0000000
## 11  3.5355339
## 12  0.0000000
## 13  2.8284271
## 14  0.0000000
## 15  0.0000000
## 16  6.3639610
## 17  2.8284271
## 18  0.7071068
## 19  2.1213203
## 20  0.7071068
## 21  2.1213203
## 22  0.0000000
## 23  0.7071068
## 24  0.0000000
```

```
##   year site.merge N.pcr  pcr.Mean    pcr.SD    pcr.SE N.catch catch.Mean
## 1 2017       Goat     4 6.6616345 5.0890750 1.2722688       5        2.7
## 2 2017     Hoypus     5 4.1543710 6.2728674 1.2545735       5       10.0
## 3 2017  Lone Tree     5 4.9424683 7.0224068 1.4044814       5        2.7
## 4 2017 Strawberry     5 2.7420250 1.9828199 0.3965640       5        6.9
## 5 2017    Turners     5 0.9677675 0.9150333 0.1830067       5        2.3
```

```
##    catch.SD  catch.SE
## 1  4.132191 1.8479719
## 2 16.336309 7.3058196
## 3  2.683282 1.2000000
## 4 12.172715 5.4438038
## 5  1.753568 0.7842194
```

```
##   year month N.pcr  pcr.Mean    pcr.SD     pcr.SE N.catch catch.Mean
## 1 2017     2     5 1.5580685 1.1266067 0.22532135       8     0.5625
## 2 2017     3     5 2.1435280 1.4755107 0.29510214       8     6.3750
## 3 2017     4     4 0.2959567 0.1515394 0.03788484       6     1.2500
## 4 2017     5     5 5.1009207 4.8825206 0.97650412       8     2.0625
## 5 2017     6     5 9.0966567 6.9124627 1.38249254       8    15.1875
##    catch.SD  catch.SE
## 1  1.208231 0.4271741
## 2  9.117291 3.2234492
## 3  1.635543 0.6677075
## 4  1.613282 0.5703813
## 5 18.473799 6.5314743
```

```
##   year month N.pcr  pcr.Mean    pcr.SD     pcr.SE N.catch catch.Mean
## 1 2017     2     5 1.5580685 1.1266067 0.22532135       8     0.5625
## 2 2017     3     5 2.1435280 1.4755107 0.29510214       8     6.3750
## 3 2017     4     4 0.2959567 0.1515394 0.03788484       6     1.2500
## 4 2017     5     5 5.1009207 4.8825206 0.97650412       8     2.0625
## 5 2017     6     5 9.0966567 6.9124627 1.38249254       8    15.1875
##    catch.SD  catch.SE  pcr.ref pcr.index pcr.index.sd pcr.index.se
## 1  1.208231 0.4271741 1.558068  1.000000   0.72307910   0.32337080
## 2  9.117291 3.2234492 1.558068  1.375760   0.94701273   0.42351697
## 3  1.635543 0.6677075 1.558068  0.189951   0.09726104   0.04863052
## 4  1.613282 0.5703813 1.558068  3.273875   3.13370091   1.40143365
## 5 18.473799 6.5314743 1.558068  5.838419   4.43655900   1.98408950
##   catch.ref catch.index catch.index.sd catch.index.se
## 1    0.5625    1.000000       2.147966      0.7594206
## 2    0.5625   11.333333      16.208518      5.7305764
## 3    0.5625    2.222222       2.907632      1.1870356
## 4    0.5625    3.666667       2.868057      1.0140112
## 5    0.5625   27.000000      32.842309     11.6115098
```


40
30
20
10
0
Index
2
3
4
5
6
Month
Gear type
qPCR
Seine