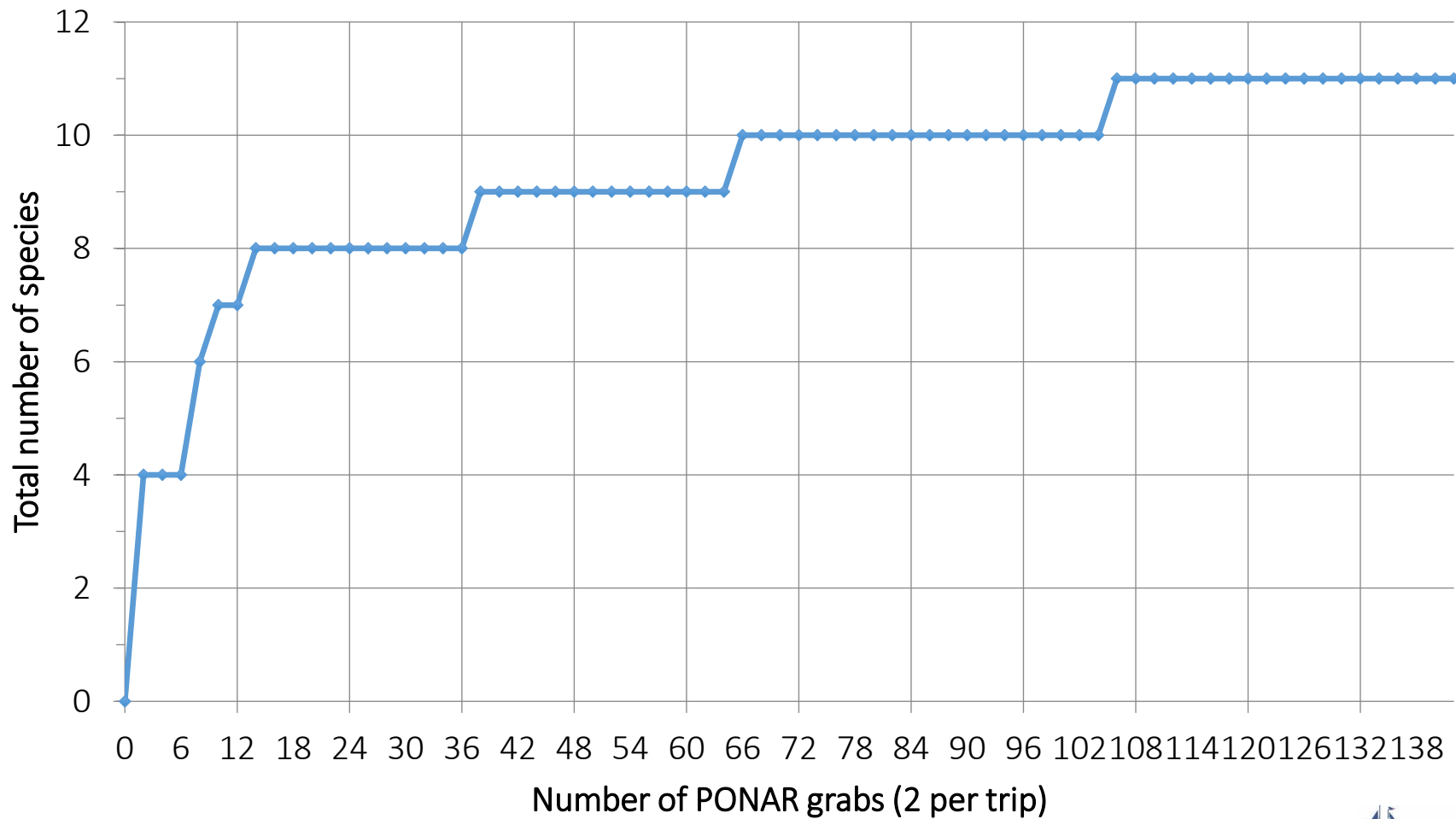


Benthos species accumulation curves

Species diversity is counted over time. If a new sample contains a species never before collected in that year, the total species count goes up by one. That count persists until a sample reveals another new species. Eventually new sampling will not find new species, all of the species will be found and the curve will flatten out.

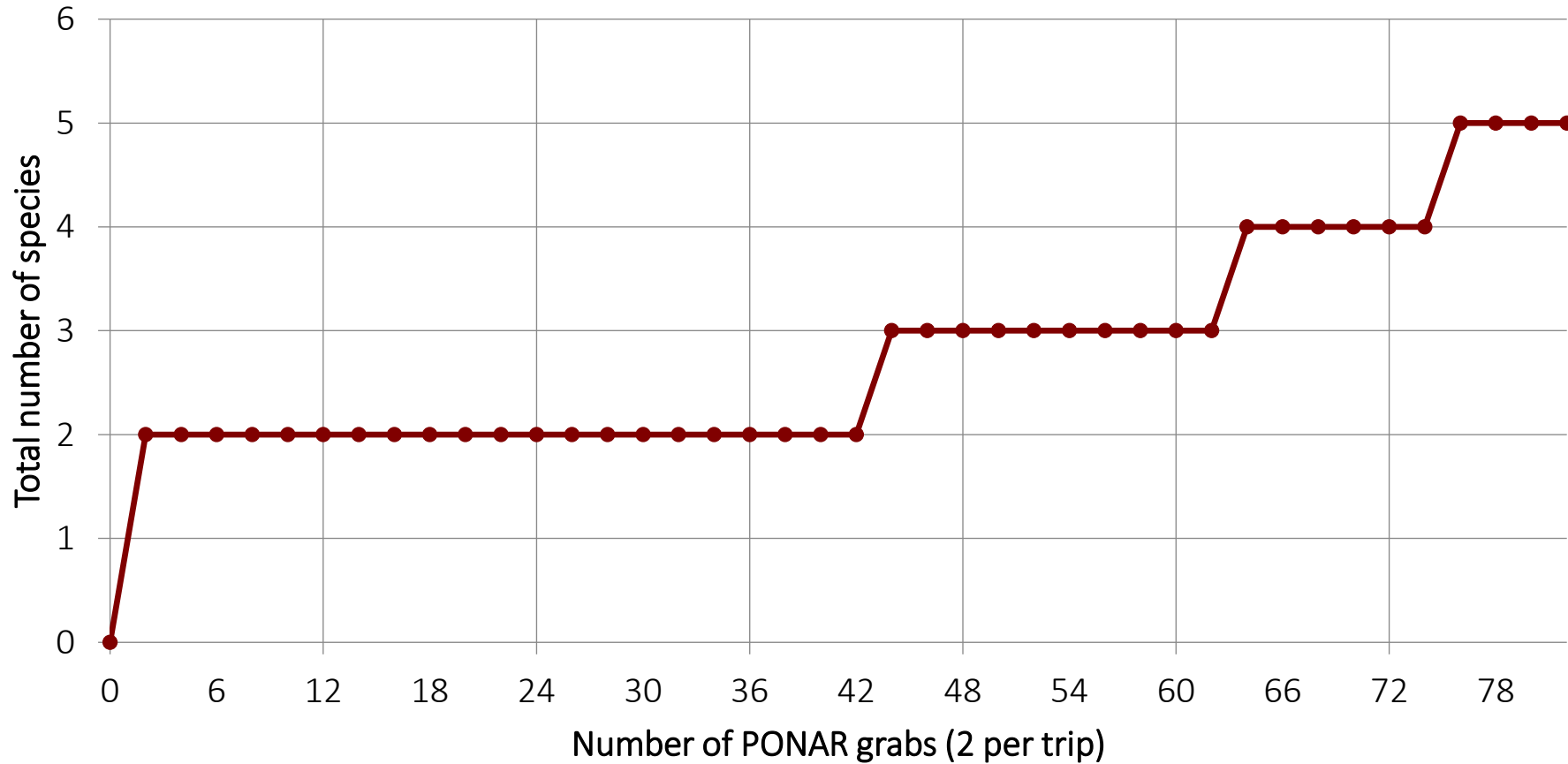
Suttons Bay, 2016



Benthos species accumulation curves

Species diversity is counted over time. If a new sample contains a species never before collected in that year, the total species count goes up by one. That count persists until a sample reveals another new species. Eventually new sampling will not find new species, all of the species will be found and the curve will flatten out.

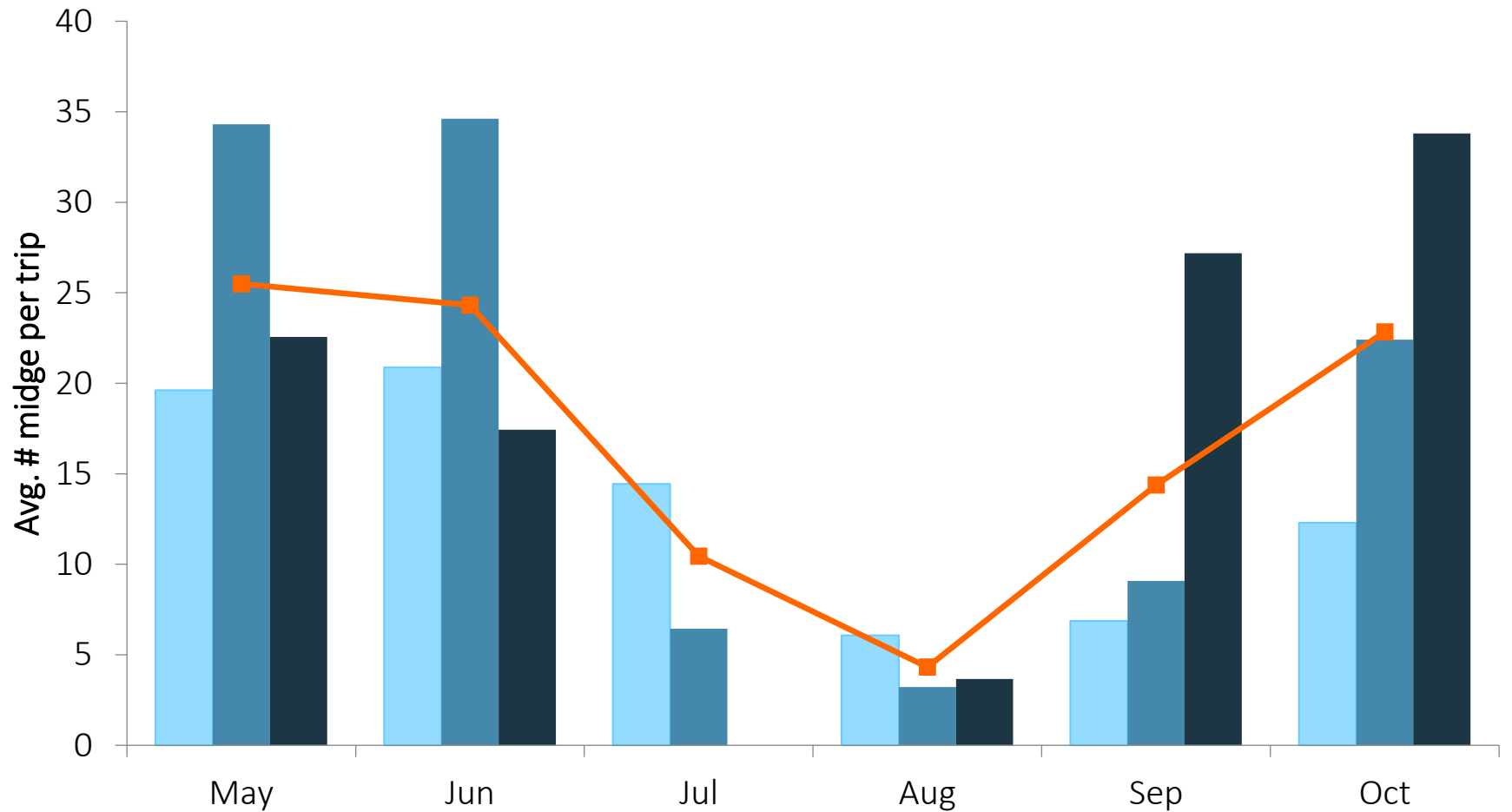
Lower West Grand Traverse Bay, 2016



Average number of midge larvae per trip in PONAR grabs

Suttons Bay (no trips July 2016)

2014 2015 2016 3 year avg

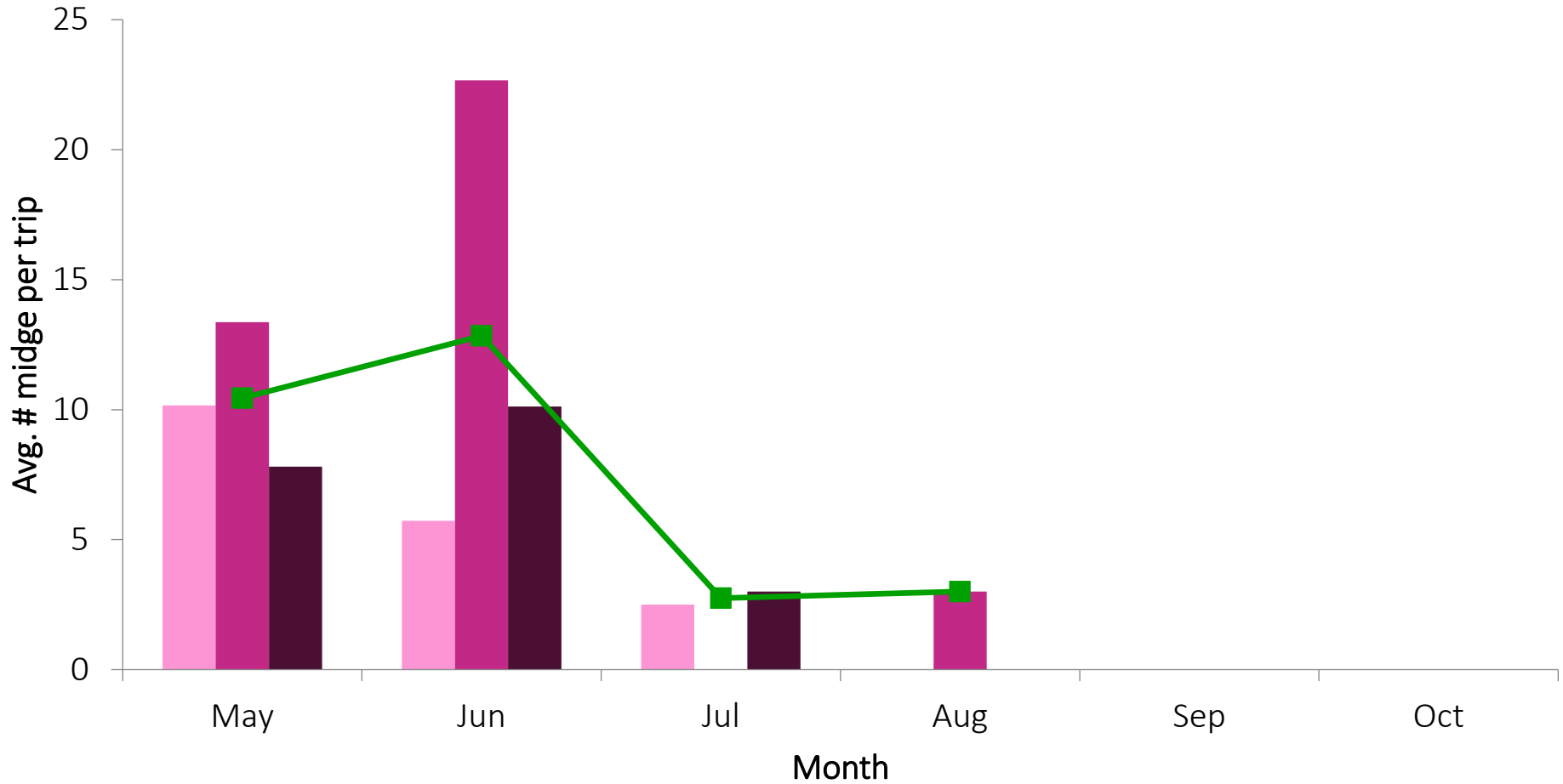


Average number of midge larvae per trip in PONAR grabs

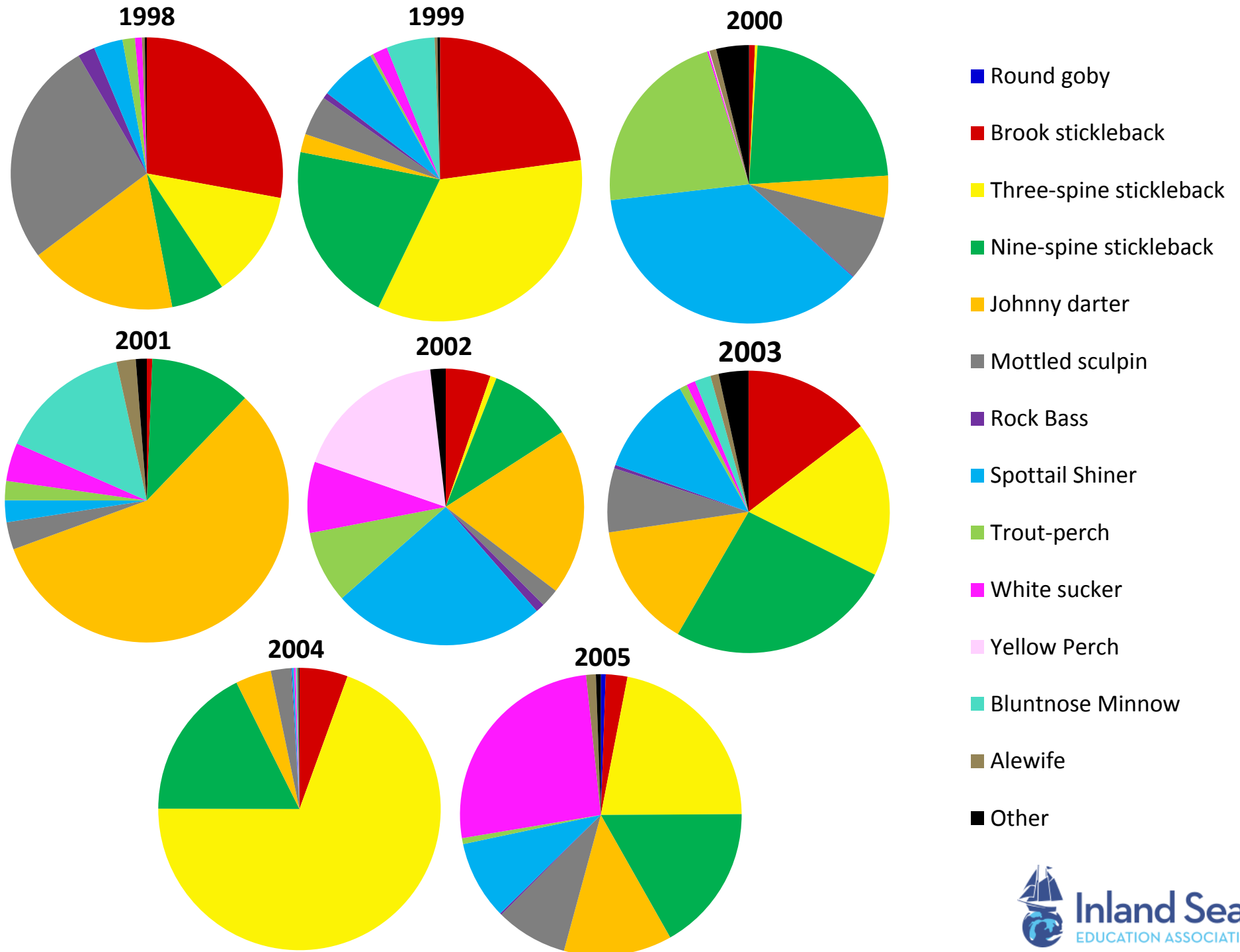
Lower West Grand Traverse Bay

(missing bars indicate no trips)

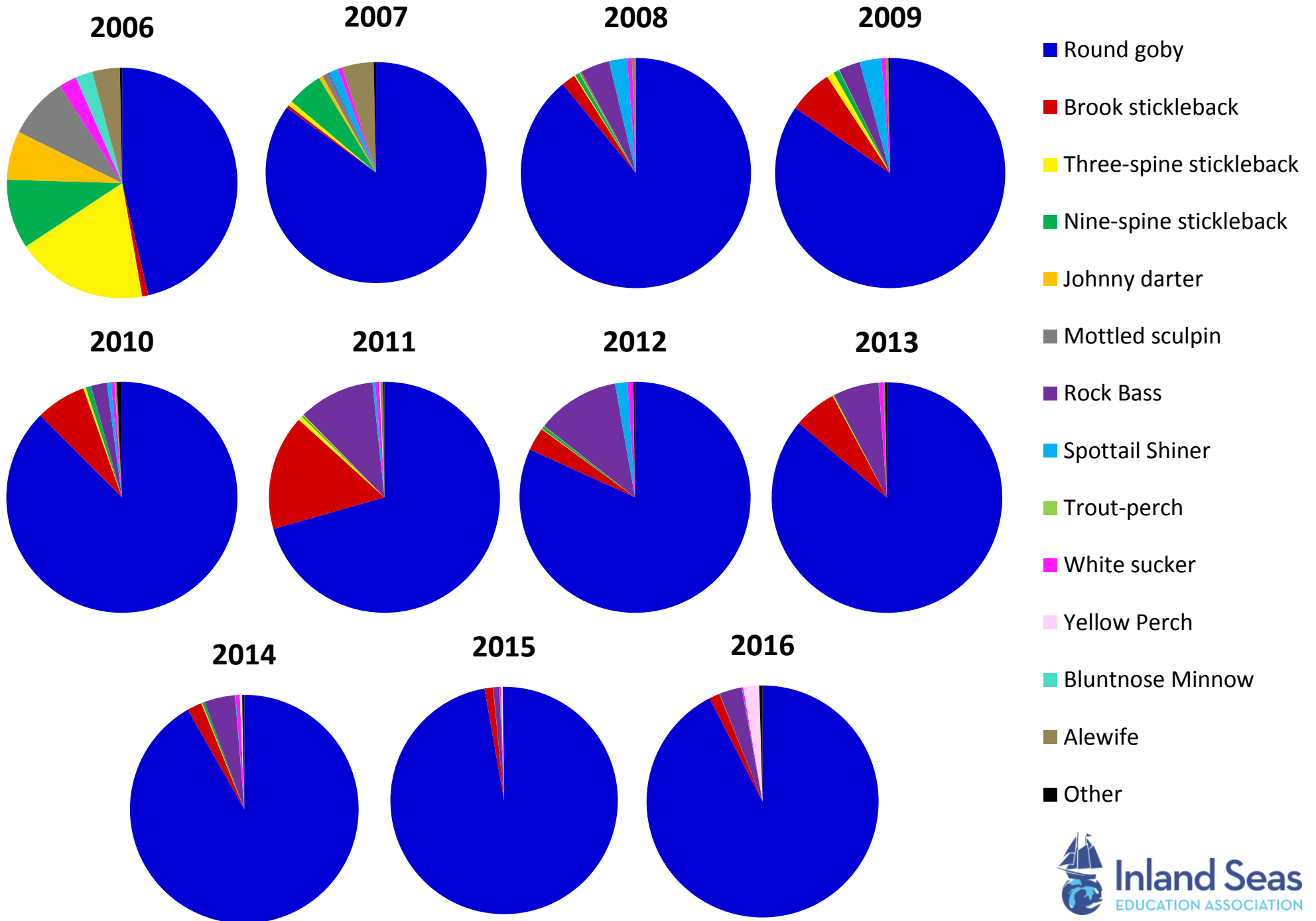
2014 2015 2016 3 year avg



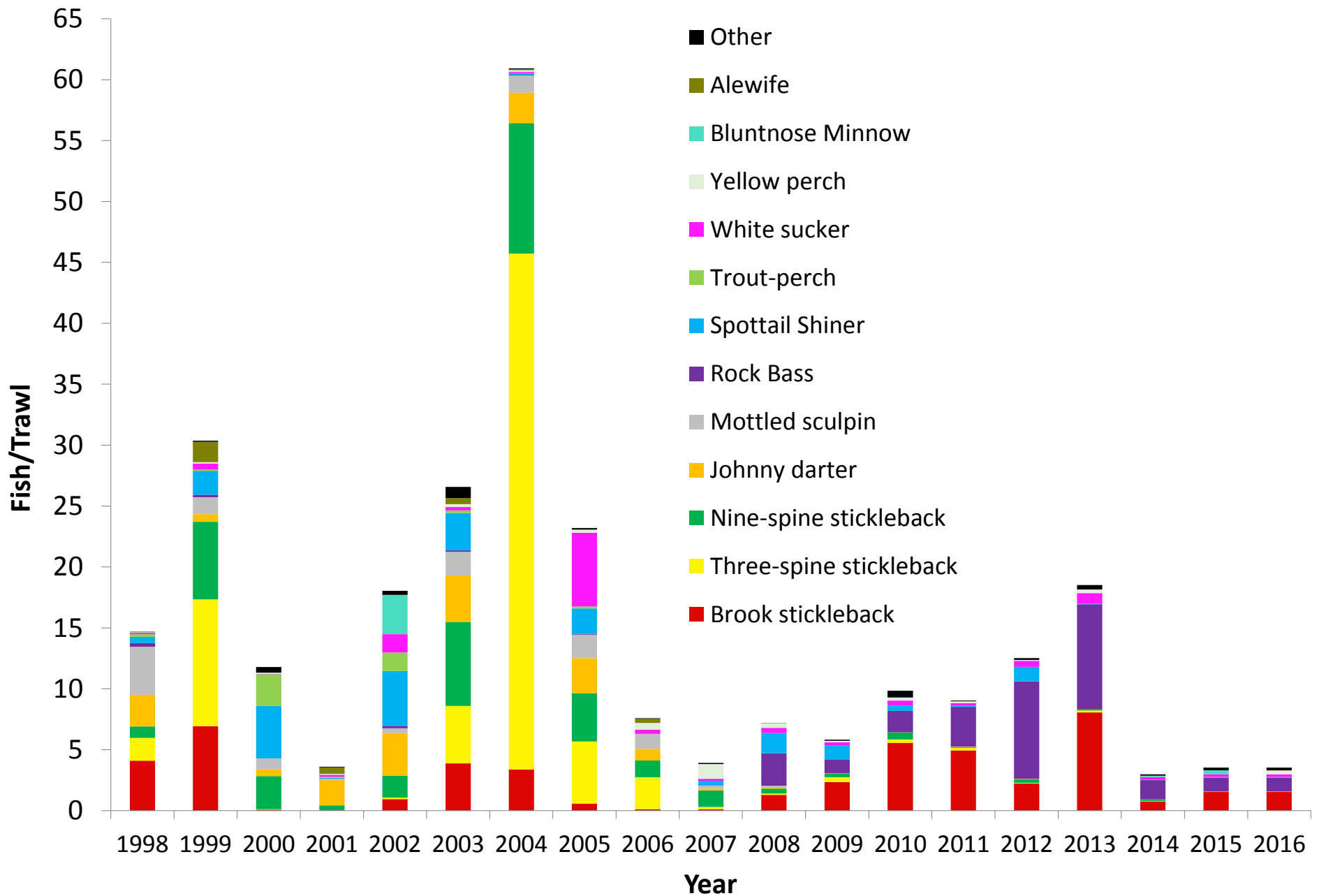
Suttons Bay Fish Catch per year, 1998-2005



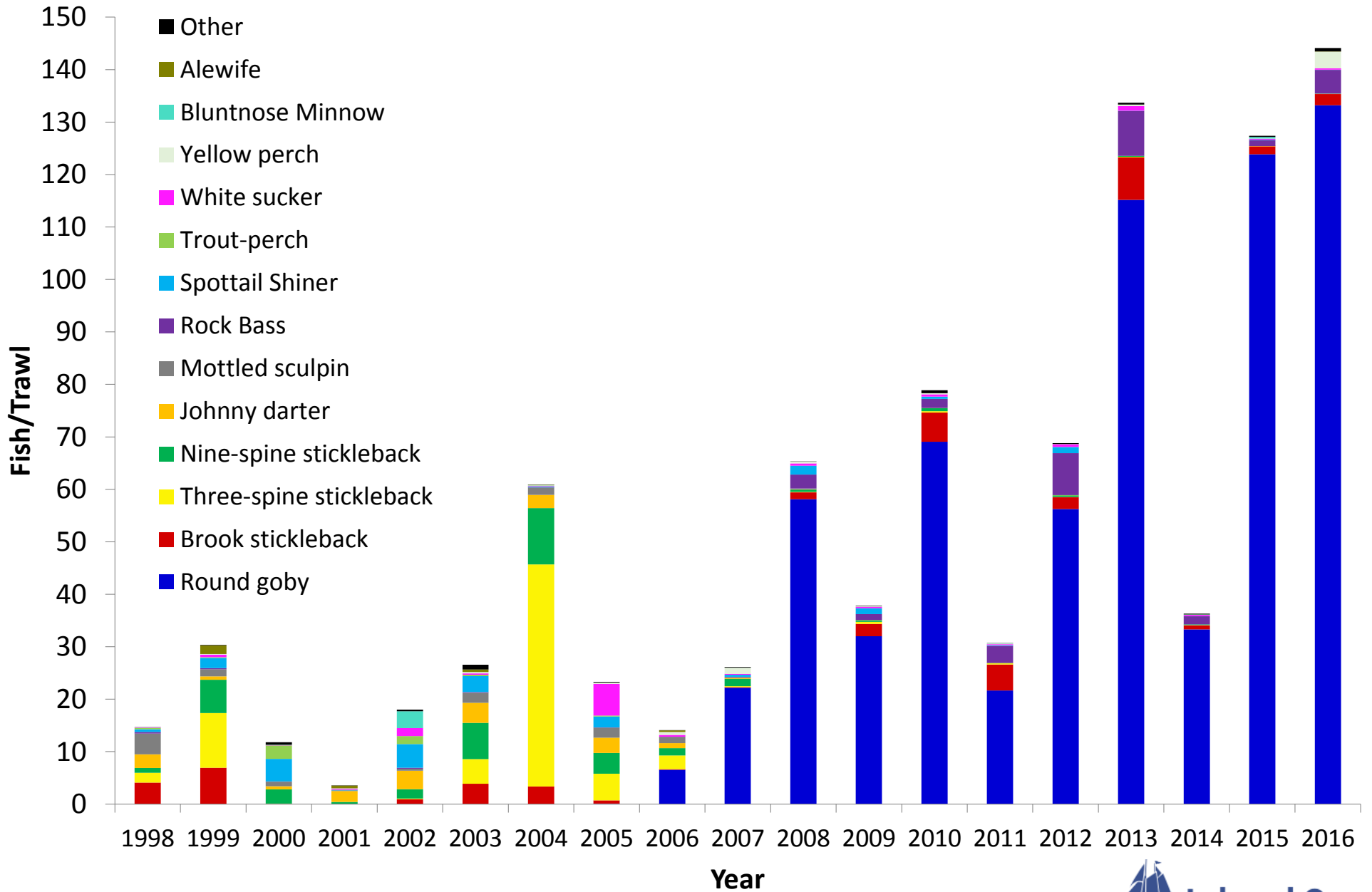
Suttons Bay Fish Catch per year, 2006-2016



Suttons Bay Fish Catch (fish per trawl) per year (without the Round Goby)

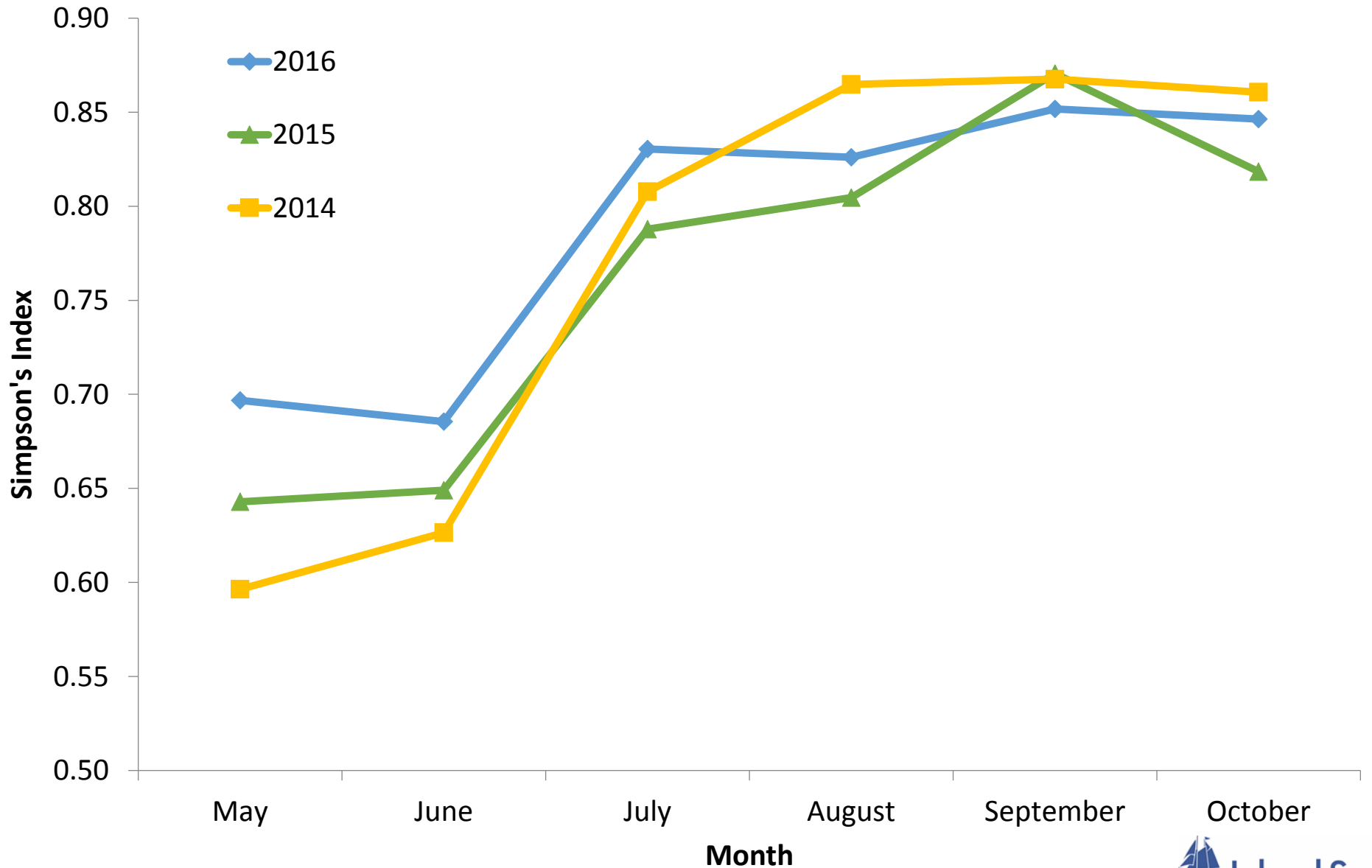


Suttons Bay Fish Catch (fish per trawl) per year (with the Round Goby)



Plankton Diversity in Suttons Bay, 2014 - 2016

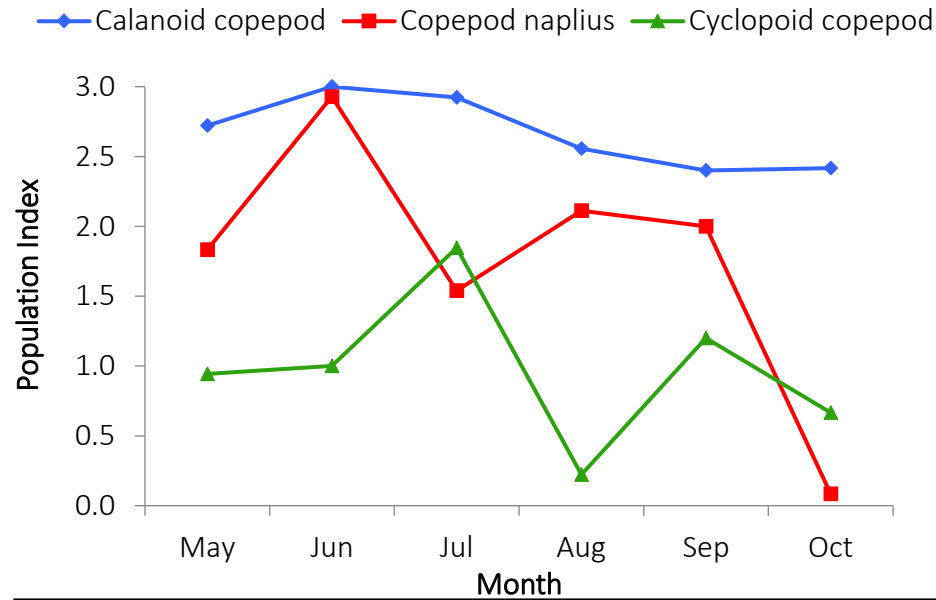
Each data point represents the probability that two individuals taken at random will be DIFFERENT types of plankton. Higher numbers = greater biodiversity.



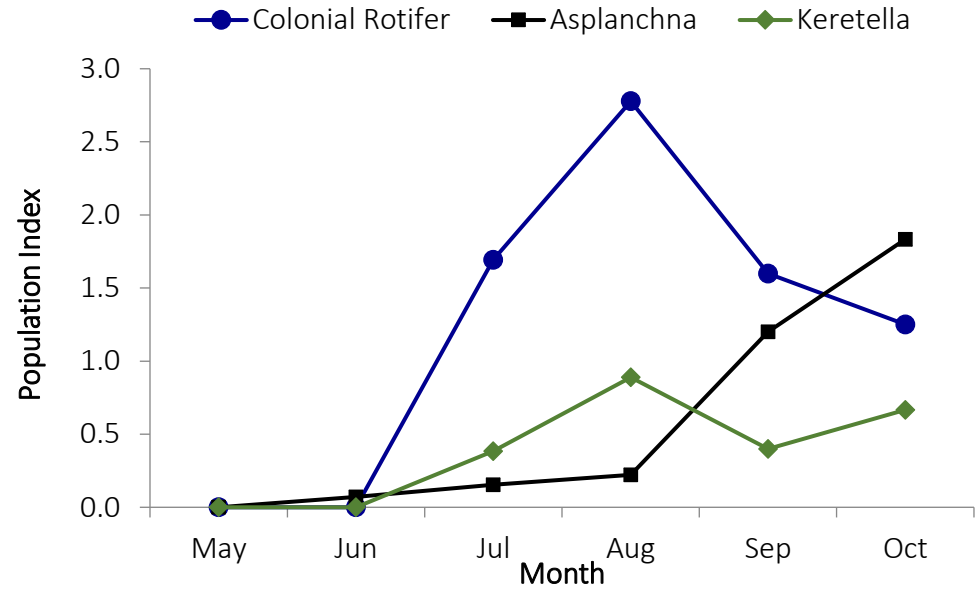
Plankton Population Index Suttons Bay, 2015

The population index accounts for how often the plankton type was found each month, and how abundant it was. Every plankton gets a number each trip: If Abundant (present in $\geq 85\%$ of drops) it gets a score of 3; if Common (present in 20-84% of drops) it gets a score of 2; if Rare (present in 1-19% of drops) it gets a score of 1. If not found it gets a score of 0. The numbers for each month are averaged to get the population index.

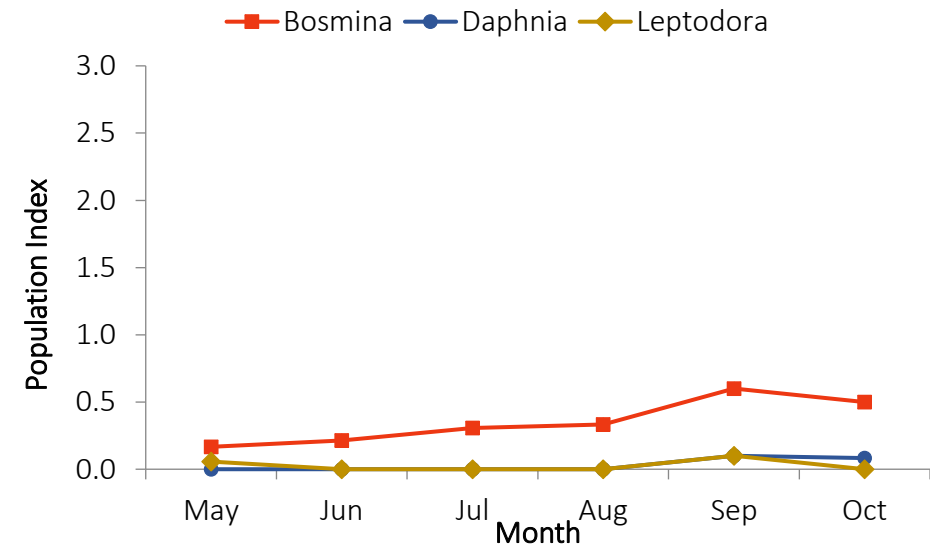
Copepods



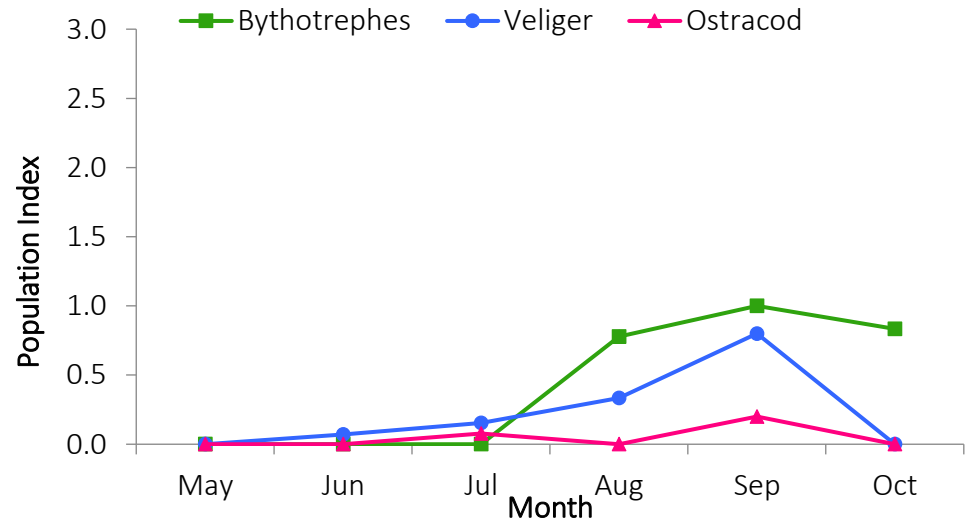
Rotifers



Cladocerans

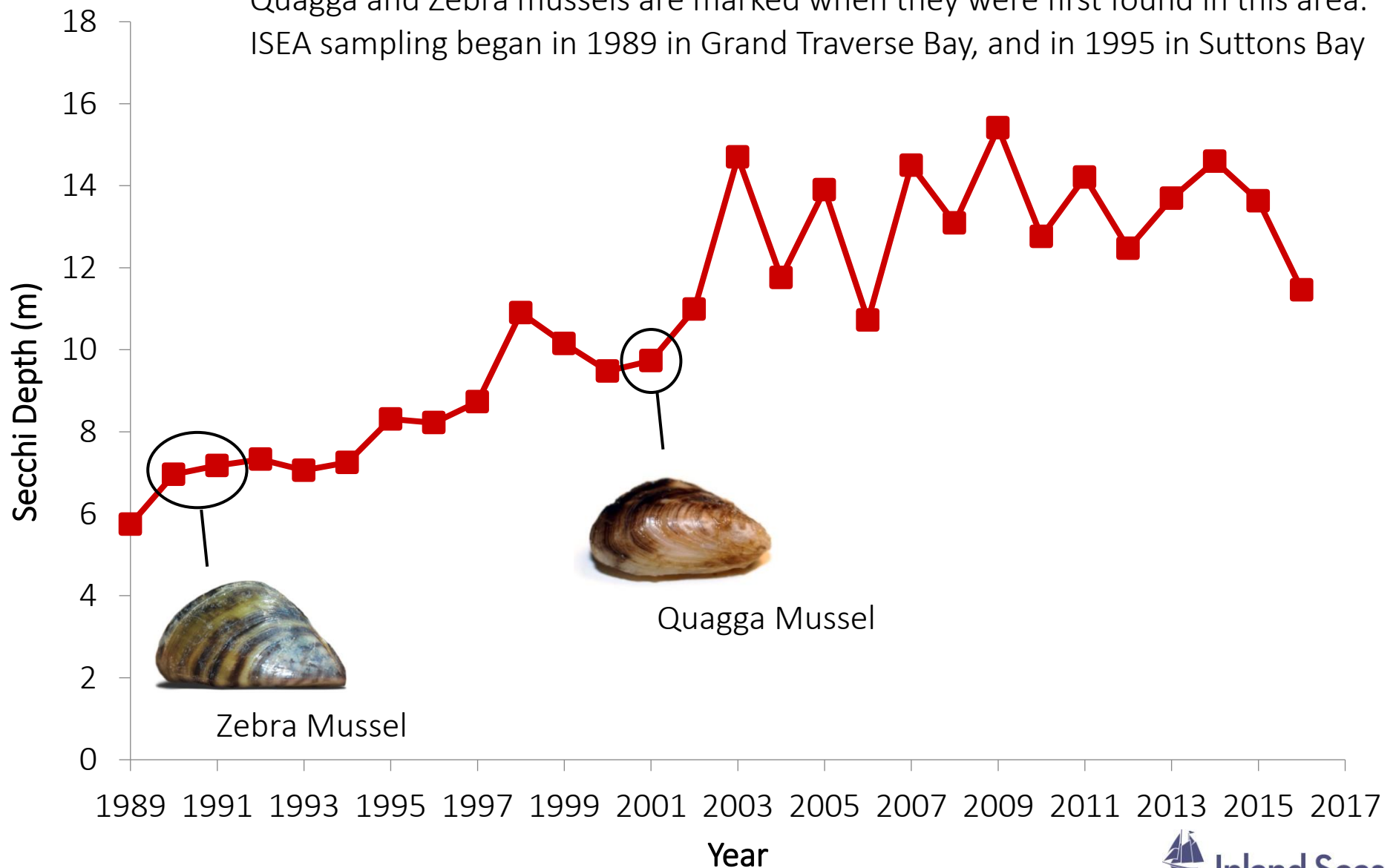


Other



Average Annual Secchi Depth in W Grand Traverse Bay 1989-2016, Spring only

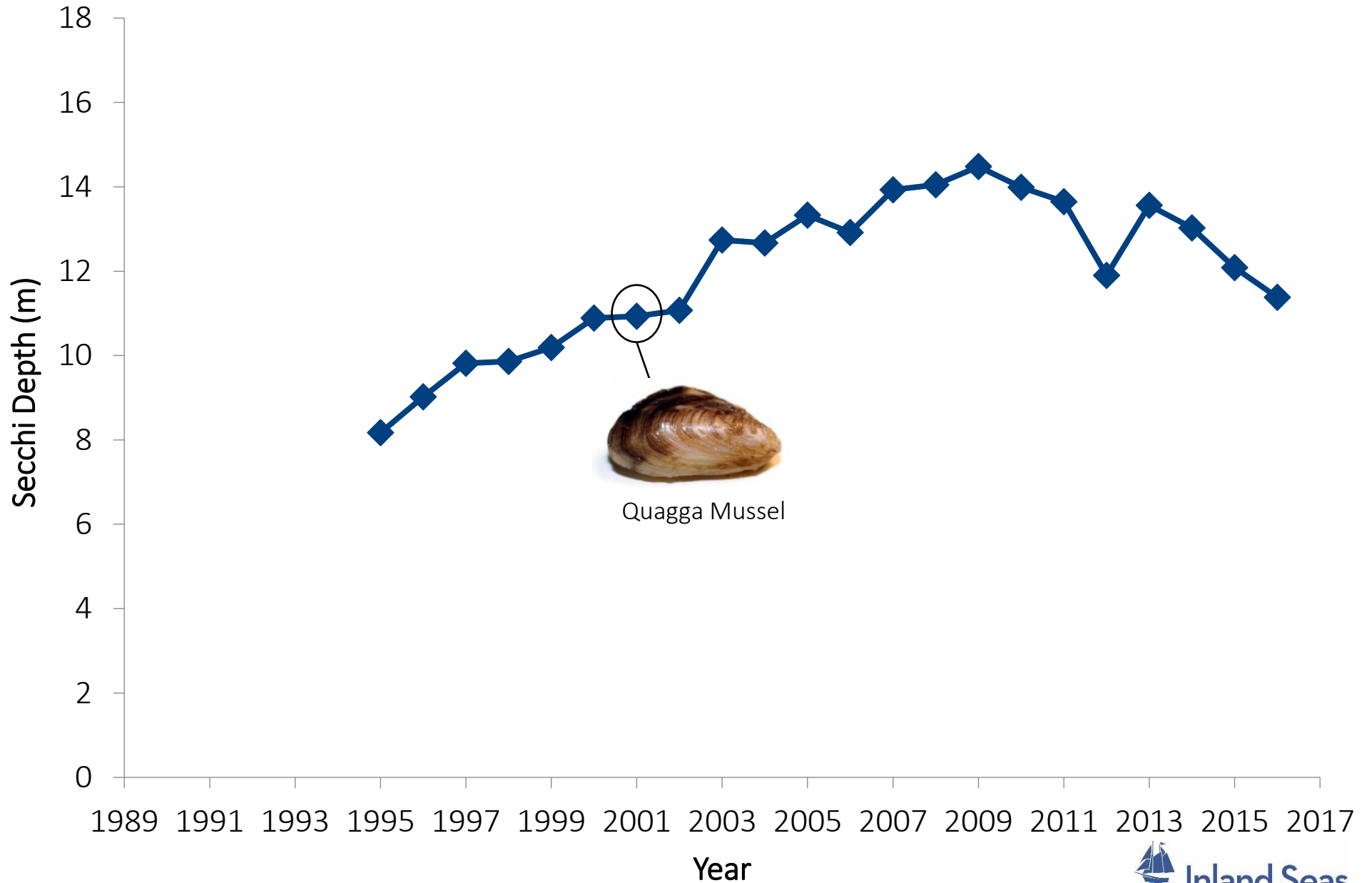
Quagga and Zebra mussels are marked when they were first found in this area. ISEA sampling began in 1989 in Grand Traverse Bay, and in 1995 in Suttons Bay



Average Secchi Depth in Suttons Bay, May-October, 1995-2016

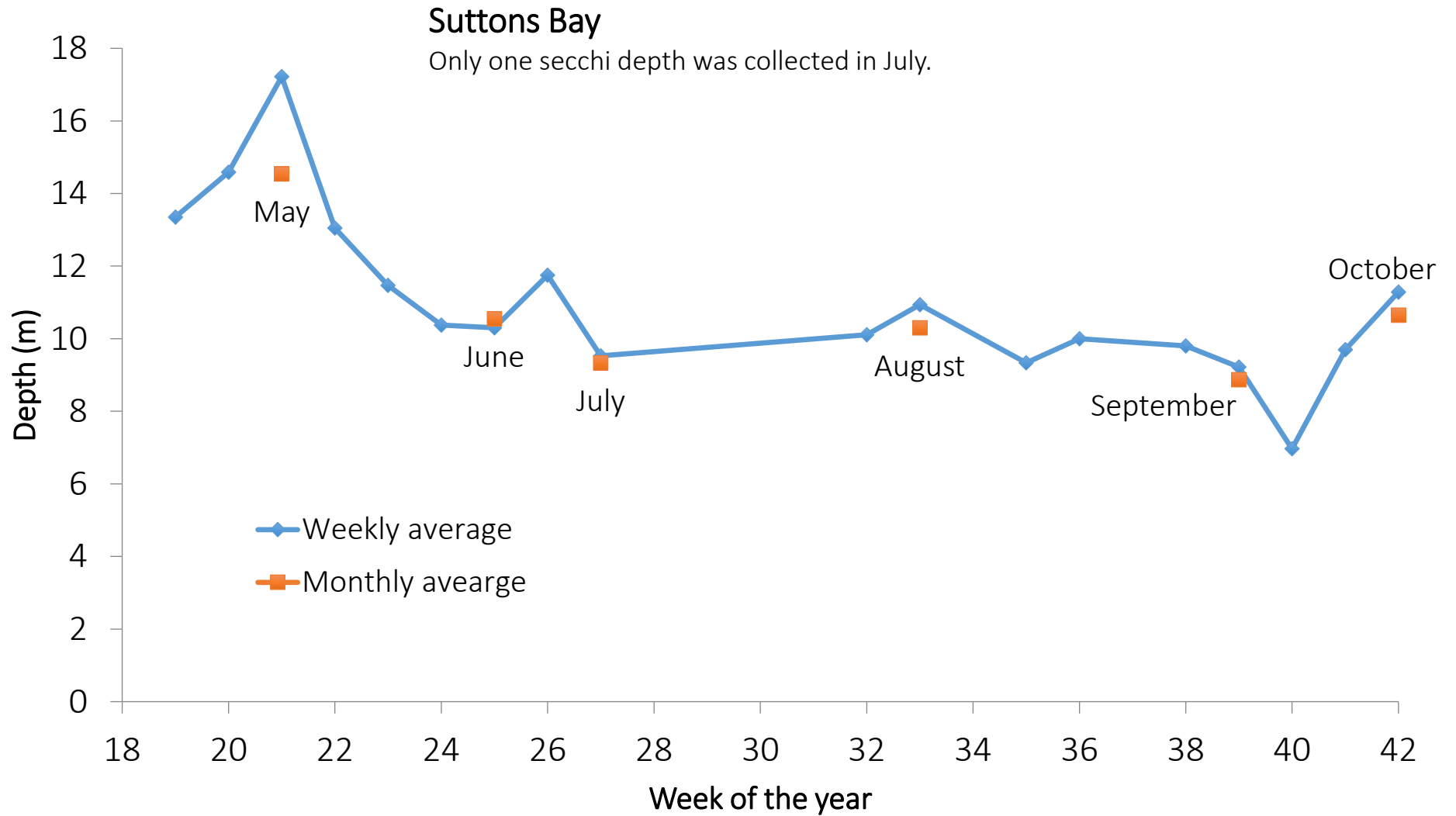
Quagga mussel is marked when it was first found in this area.

ISEA sampling began in 1989 in Grand Traverse Bay, and in 1995 in Suttons Bay



Weekly Average Secchi Depth, 2016

Month data is graphed on the "average week" data was collected.

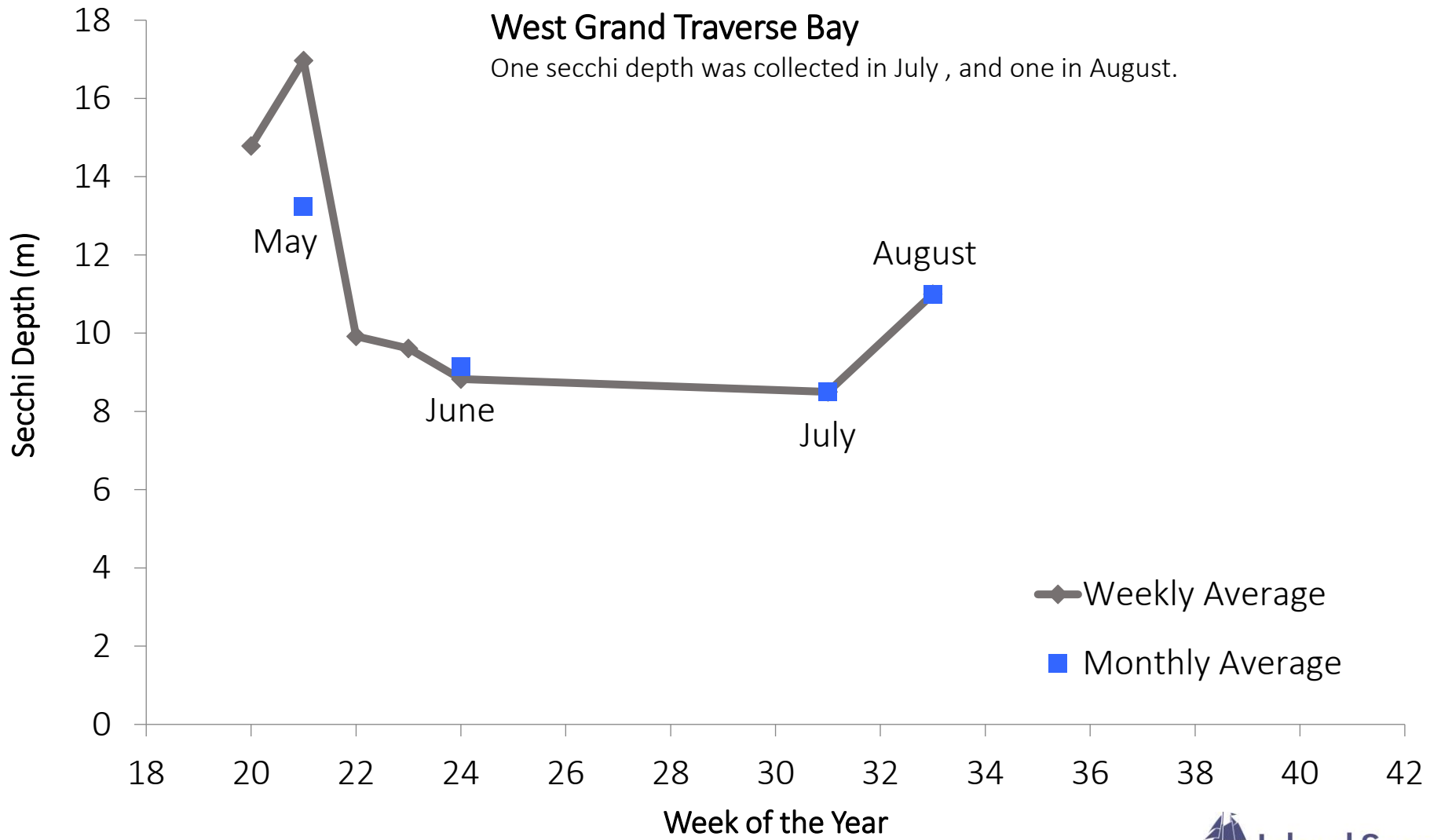


Weekly Average Secchi Depth, 2016

Month data is graphed on the "average week" data was collected

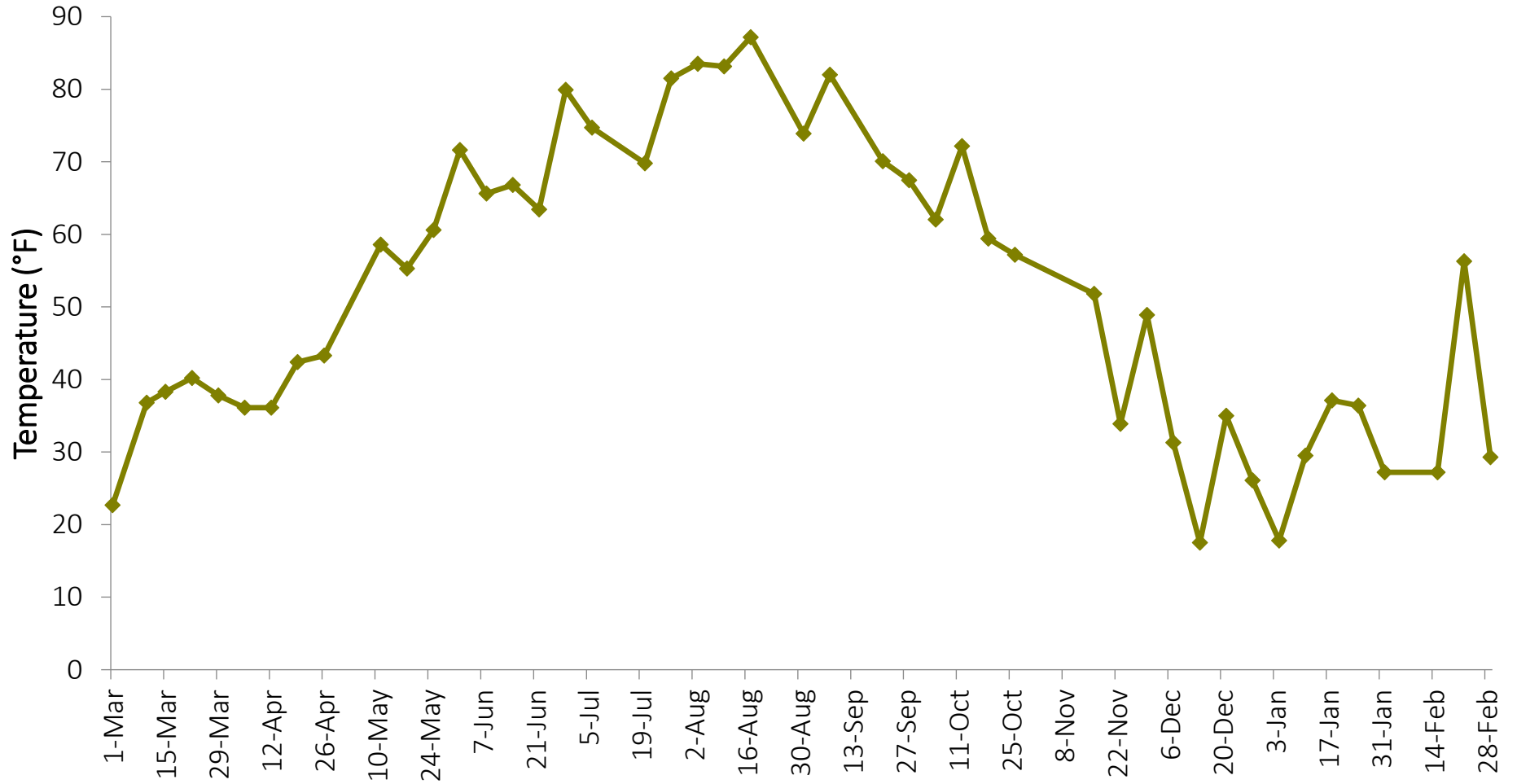
West Grand Traverse Bay

One secchi depth was collected in July , and one in August.

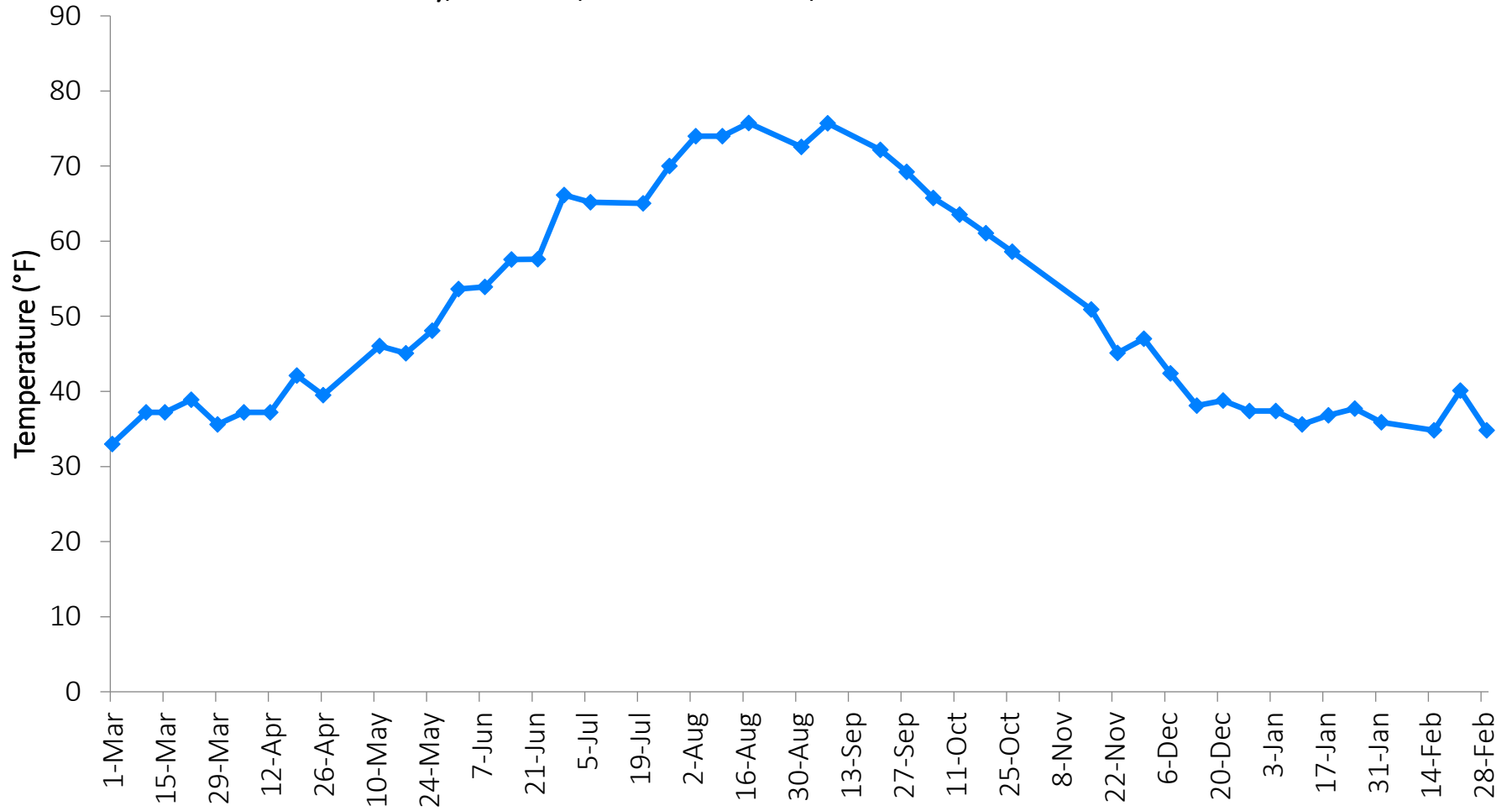


Weekly Air Temperature (°F)

Suttons Bay, March 1, 2016 - March 1, 2017



Weekly Surface Water Temperature (°F) Suttons Bay, March 1, 2016 - March 1, 2017



Weekly Temperature (°F), Surface Water, Air
Suttons Bay, March 1, 2016 - March 1, 2017

Date	Surface	Air	Date	Surface	Air	Date	Surface	Air
1-Mar	33.0	22.7	29-Jun	66.2	79.9	16-Nov	50.9	51.8
10-Mar	37.2	36.8	6-Jul	65.2	74.7	23-Nov	45.1	33.9
15-Mar	37.2	38.3	20-Jul	65.0	69.8	30-Nov	47.0	48.9
22-Mar	38.9	40.2	27-Jul	70.0	81.5	7-Dec	42.4	31.3
29-Mar	35.6	37.8	3-Aug	74.0	83.5	14-Dec	38.1	17.5
5-Apr	37.2	36.1	10-Aug	74.0	83.1	21-Dec	38.8	35.0
12-Apr	37.2	36.1	17-Aug	75.7	87.2	28-Dec	37.4	26.1
19-Apr	42.1	42.4	31-Aug	72.6	73.9	4-Jan	37.4	17.8
26-Apr	39.5	43.3	7-Sep	75.7	82.0	11-Jan	35.6	29.5
11-May	46.0	58.6	21-Sep	72.2	70.1	18-Jan	36.8	37.1
18-May	45.1	55.3	28-Sep	69.2	67.4	25-Jan	37.7	36.4
25-May	48.1	60.6	5-Oct	65.8	62.0	1-Feb	35.9	27.2
1-Jun	53.6	71.6	12-Oct	63.6	72.2	15-Feb	34.8	27.2
8-Jun	53.9	65.6	19-Oct	61.1	59.4	22-Feb	40.1	56.3
15-Jun	57.6	66.8	26-Oct	58.6	57.2	1-Mar	34.8	29.3
22-Jun	57.6	63.5						