



PROJECT OCEANOLOGY

Seal Watch Research Questions & Datasets



How has the seal population in Fishers Island Sound changed over time?

Unless otherwise directed by your instructor, investigate how the **mean (average)** number of seals has changed over time.

Number of Seals Seen per Trip in March					
Year	# Trips	Mean	Median	Maximum	Minimum
1996	7	84	66	175	26
1997	11	191	152	380	21
1998	15	121	110	246	49
1999	9	118	118	247	2
2000	11	81	64	174	39
2001	18	102	74	271	11
2002	14	121	110	261	19
2003	22	100	109	171	15
2004	18	120	104	230	16
2005	16	135	128	294	29
2006	26	141	129	318	6
2007	13	130	120	264	15
2008	13	164	188	311	32
2009	23	157	191	313	30
2010	17	201	182	382	56
2011	13	175	186	246	42
2012	20	203	194	370	81
2013	18	126	114	321	46
2014	18	120	108	295	8
2015	23	129	115	282	33
2016	11	240	247	345	143
2017	11	95	63	348	20
2018	7	162	137	284	15
2019	13	197	180	388	28



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How does the seal population in Fishers Island Sound change over the course of a year?

Month	# Trips	Air Temp (°C)	Water Temp (°C)	Wind Speed (m/s)	Mean # Seals Observed
September	3	19	19	4	1
October	52	15	16	5	27
November	94	11	13	5	81
December	102	6	9	5	91
January	6	4	5	5	92
February	85	3	4	6	106
March	379	5	4	6	135
April	148	9	7	5	137
May	14	14	10	5	110



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How does time of tide and location affect the number of seals observed?

Time from Low Tide (hrs)	West Clump	Middle Clump	East Clump	Hungry Point
0 to 1	16	15	7	105
1 to 2	14	13	7	103
2 to 3	11	11	5	87
3 to 4	9	11	3	93
4 to 5	7	9	4	82
5 to 6	5	10	3	69



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How does air temperature affect the number of seals observed?

Air Temp (°C)	Mean # Seals
-5	37
-4	72
-3	55
-2	76
-1	75
0	93
1	122
2	126
3	93
4	121
5	133
6	140
7	122
8	150
9	138
10	115
11	134
12	120
13	86
14	93
15	84
16	77
17	71
18	87
19	63
20	60



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How does water temperature affect the number of seals observed?

Water Temp (°C)	Mean # Seals
0	97
1	132
2	111
3	121
4	120
5	149
6	148
7	152
8	119
9	101
10	102
11	106
12	87
13	78
14	62
15	57
16	48
17	14
18	7
19	8
20	0



PROJECT OCEANOLOGY

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How does wind speed affect the number of seals observed?

Wind Speed (m/s)	Mean # Seals
0	143
1	146
2	150
3	149
4	132
5	95
6	109
7	106
8	92
9	79
10	88
11	112
12	67
13	39
14	70
15	48



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How does weather affect the number of seals observed?

The trips listed below are a randomly selected subsample of our larger dataset

	Sunny	Overcast	Rainy	Snow/Sleet
Number of Seals <i>Each number is an independent trip</i>	172	134	73	25
	84	63	80	104
	141	165	32	63
	144	135	127	157
	76	68	50	33
	178	154	56	42
	146	193	30	104
	183	149	161	67



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How does Beaufort Scale affect number of seals observed per trip?

The Beaufort Scale goes all the way up to 12, which would be a hurricane!

Beaufort Scale	Description	# Trips	Mean # Seals
Force 0	Wind < 0.5 m/s No waves Sea like a mirror	10	226
Force 1	Wind 0.5-1.5 m/s Waves less than ¼ ft Sea glassy, ripples	81	182
Force 2	Wind 2-3 m/s Waves 0.5-1 ft Small wavelets, no whitecaps	114	160
Force 3	Wind 4-5 m/s Waves 2-3 ft Scattered whitecaps	87	118
Force 4	Wind: 6-8 m/s Waves 4-5ft Numerous whitecaps	50	118
Force 5	Wind 9-11m/s Waves 6-8 ft Many whitecaps, some spray	8	93
Force 6	Wind 11-14 m/s Waves 9-13 ft Whitecaps everywhere, more spray	4	85