

Pigeon Guillemot

Breeding Season 2016

Guillemot Research Group
Whidbey Island, Washington
Research Intern: Emily Terao



- Pigeon Guillemot (PIGU) Background Information
- Why do we study PIGUs?
- Methods
 - Volunteers
 - Intern
- Results
 - Pratt's Bluff
 - Mutiny Sands
 - Whidbey Island



What are Pigeon Guillemots?



<http://www.seattleaquarium.org/pigeon-guillemot>



- *Cepphus columba*
- Alcidae – puffins, murrelets, auklets
- Endemic to the North Pacific
- Feed on fish and invertebrates
- Nest in burrows or rocky cavities
- Chicks stay in burrow for ~30 days



<https://en.wikipedia.org/wiki/Auk>

Why do we study them?

- 12 years of research
- Indicator species
 - High on the food chain
 - One of the few seabirds that regularly nests on Whidbey Island
 - 471 breeding colonies in the Puget Sound (Evenson et al. 2003)
- Finding “normal” – Baseline Data

Volunteers and Intern observe and record...

- Population size
- Burrow occupancy
- Chick diet composition
- Prey delivery rates



Photo by Dave Schoen





Citizen Science

- 55 – 60 Volunteers on Average
- 26 Colonies across Whidbey Island
- 1 hour observation per week
- Over 1500 volunteer hours in 2016
- Studies also in South Sound and Sequim... Camano is next!



Research Intern



- Monday - Friday
- Hours of observation: 6:00 – 9:00 am
- Adult population
- Burrow Numbers
- Prey deliveries
 - Sculpin
 - Gunnel
 - Other
- Mutiny Sands and Pratt's Bluff





Results: Pratt's Bluff

- 25 Days of Observation
- Jun 6 – Aug 11

Adult Population	39
Active Burrows	13
Gunnels Observed	147
Sculpins Observed	124
Others Observed	43
Total Prey Deliveries Observed	314



Results: Mutiny Sands

- 27 Days of Observation
- Jun 7 – Aug 18



Adult Population	53
Active Burrows	11
Gunnels Observed	79
Sculpins Observed	154
Others Observed	26
Total Prey Deliveries Observed	259

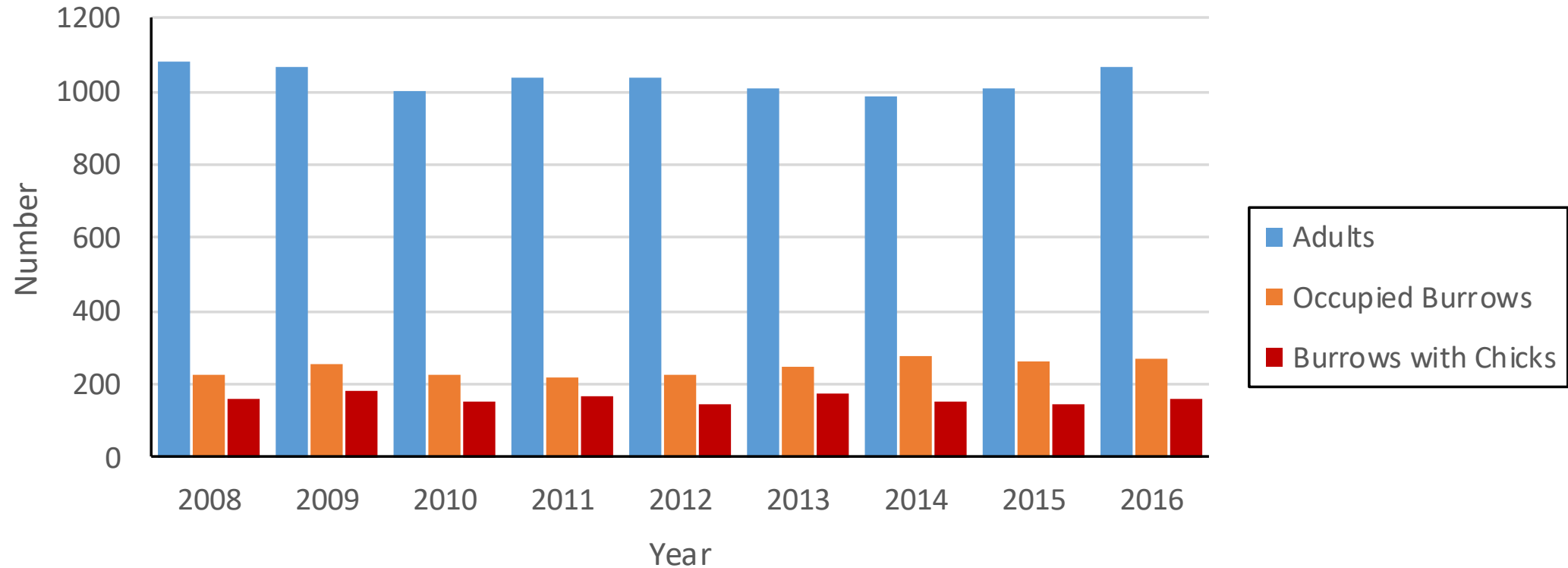
Results: Whidbey Island

(Volunteer + Intern Data)

Adult Population	1067
Active Burrows	266
Total Gunnels Observed	539
Total Sculpins Observed	456
Total Other Observed	171
Total Prey Deliveries Observed	1166

Whidbey Island Results

Number of Pigeon Guillemots and Burrows 2008-2016 Volunteer Data



Possible Fledging: Pratt's Bluff

Burrow Numbers

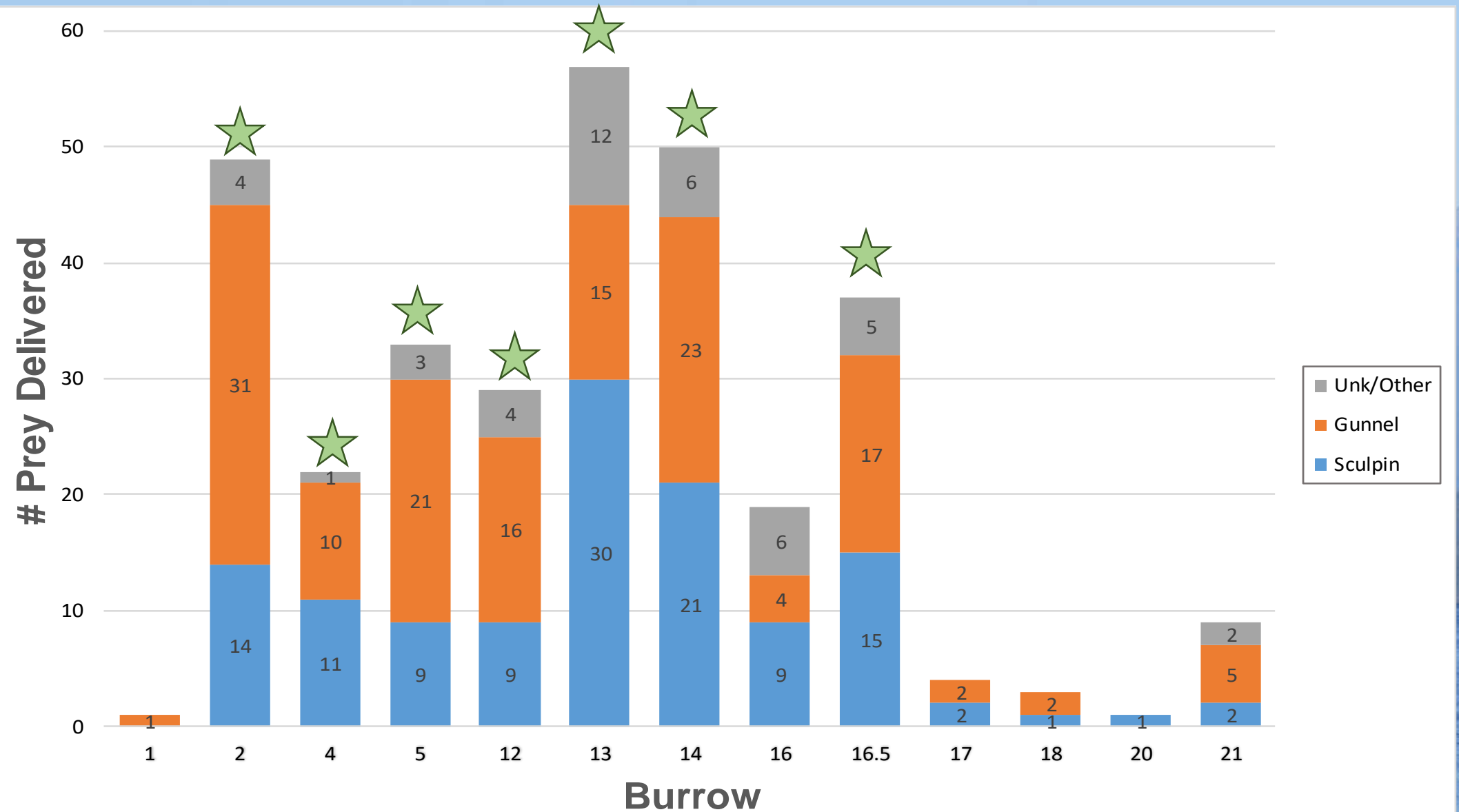
Date	1	2	4	5	12	13	14	16	16.5	17	18	20	21
Jun 6	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun 8	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun 10	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun 14	-	-	-	-	-	-	2	-	-	-	-	-	-
Jun 16	-	-	2	3	-	3	3	-	-	-	-	-	-
Jun 20	1	-	2	3	-	6	1	-	-	1	-	-	1
Jun 22	-	1	-	3	1	3	2	-	-	1	1	-	-
Jun 24	-	2	1	3	-	5	4	-	2	-	1	-	2
Jun 28	-	3	4	2	1	4	6	1	2	-	-	1	-
Jun 30	-	5	2	1	2	8	7	2	3	2	1	-	-
Jul 4	-	2	3	2	2	3	2	2	3	-	-	-	1
Jul 6	-	2	-	4	4	5	3	2	3	-	-	-	2
Jul 8	-	2	2	6	3	4	2	5	3	-	-	-	-
Jul 12	-	4	1	3	3	5	3	1	4	-	-	-	1
Jul 14	-	6	-	2	2	5	6	5	9	-	-	-	-
Jul 18	-	2	1	1	3	3	5	1	3	-	-	-	-
Jul 20	-	5	2	-	2	1	3	-	1	-	-	-	2
Jul 23	-	4	2	-	1	-	1	-	2	-	-	-	-
Jul 26	-	-	-	-	2	-	-	-	2	-	-	-	-
Jul 28	-	4	-	-	3	-	-	-	-	-	-	-	-
Aug 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Prey:	1	42	22	33	29	55	50	19	37	4	3	1	9
Duration (Days)	1	36	37	32	36	34	39	20	32	10	8	1	30

Possible Fledging: Mutiny Sands

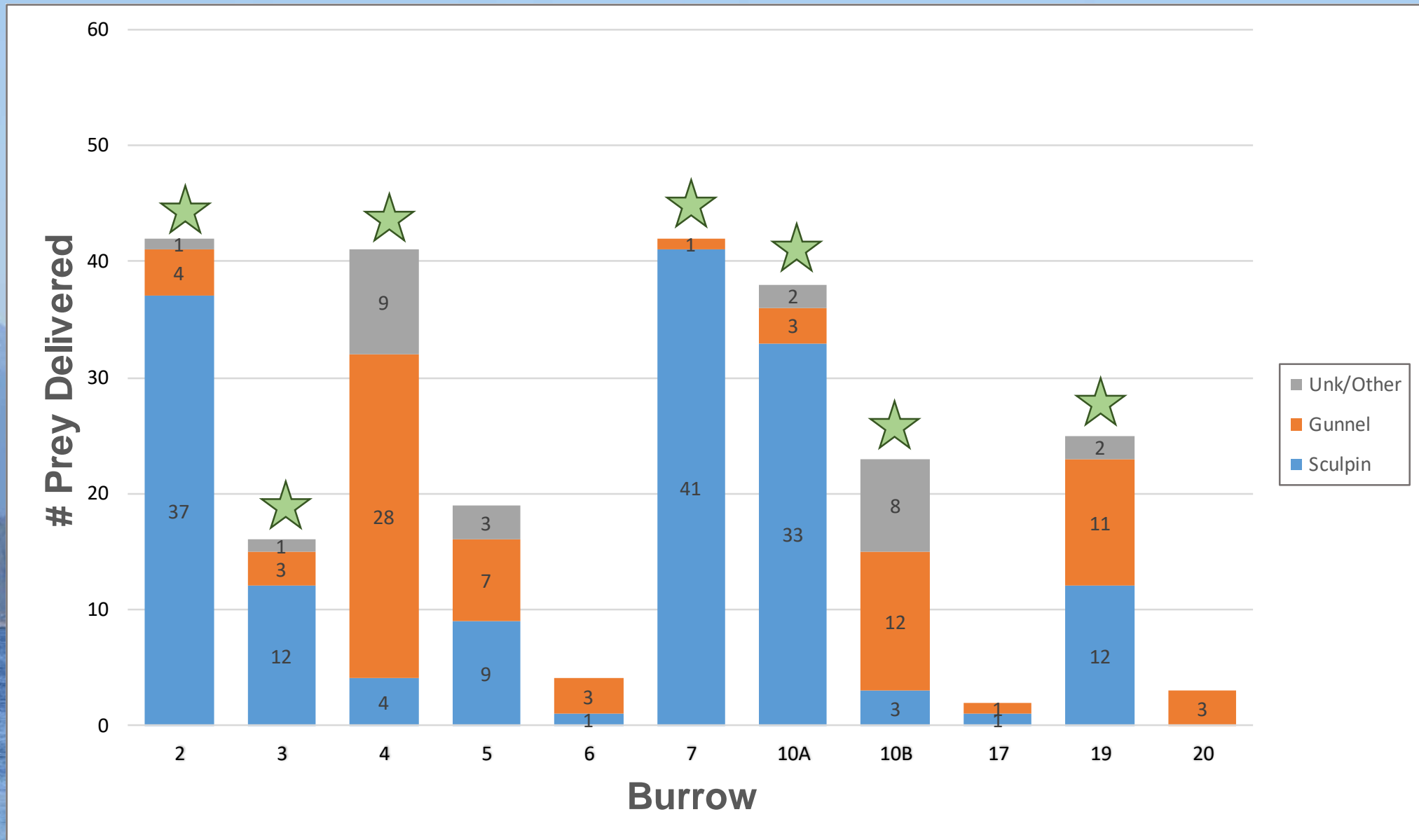
Burrow Numbers

Date	2	3	4	5	6	7	10A	10B	17	19	20
Jun 7	-	-	-	-	-	-	-	-	-	-	-
Jun 9	-	-	-	-	-	-	-	-	-	-	-
Jun 13	-	-	-	-	-	-	-	-	-	-	-
Jun 15	-	-	-	-	-	-	-	-	-	-	-
Jun 17	-	-	-	-	-	-	-	-	-	-	-
Jun 21	-	-	-	-	2	-	-	-	-	-	-
Jun 23	-	-	1	-	-	-	-	-	-	-	-
Jun 27	3	-	-	3	-	-	4	3	-	3	-
Jun 29	-	-	1	3	-	-	3	1	-	-	-
Jul 1	2	-	4	1	-	-	1	1	-	1	1
Jul 5	4	-	7	-	-	-	6	2	-	6	-
Jul 7	4	-	2	-	-	-	3	2	-	1	-
Jul 11	3	1	4	-	-	2	3	1	-	1	-
Jul 13	2	-	5	3	-	2	4	2	-	2	-
Jul 15	4	1	5	3	-	2	3	3	-	-	-
Jul 19	4	-	4	1	-	6	2	3	-	1	2
Jul 21	3	2	4	3	-	4	4	2	1	2	-
Jul 25	5	1	2	2	-	4	4	2	1	2	-
Jul 27	4	2	-	-	-	3	1	1	-	1	-
Jul 29	3	1	-	-	-	1	-	-	1	-	-
Aug 2	-	2	-	-	2	5	-	-	-	2	-
Aug 4	-	2	-	-	-	4	-	-	-	3	-
Aug 8	-	2	-	-	-	8	-	-	-	-	-
Aug 10	-	1	-	-	-	2	-	-	-	-	-
Aug 12	-	1	-	-	-	1	-	-	-	-	-
Aug 16	-	-	-	-	-	-	-	-	-	-	-
Aug 18	-	-	-	-	-	-	-	-	-	-	-
Total Prey:	41	16	39	19	4	44	38	23	3	25	3
Duration (Days):	32	32	32	28	42	32	30	30	8	38	18

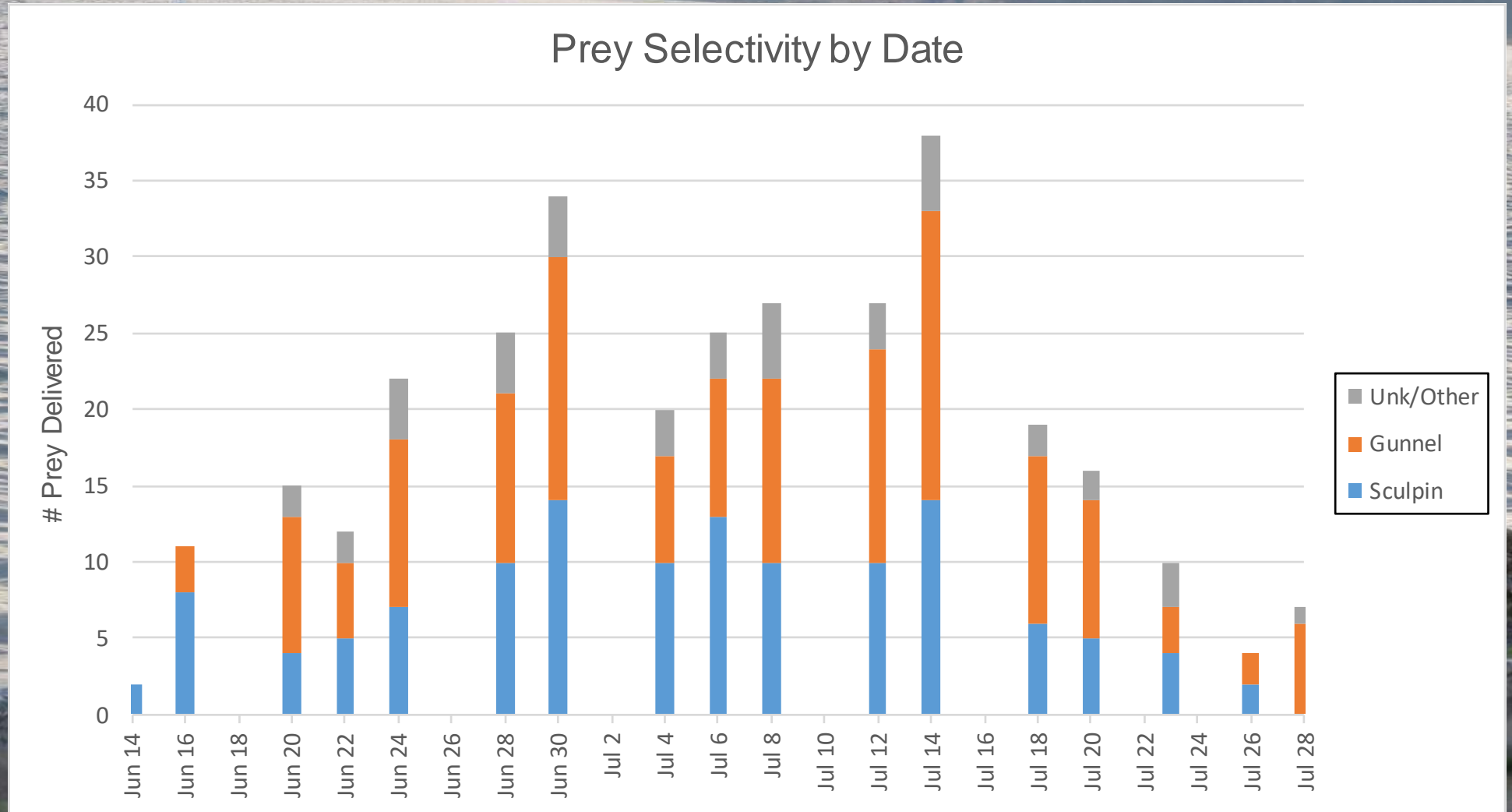
Prey Selectivity by Burrow: Pratt's Bluff



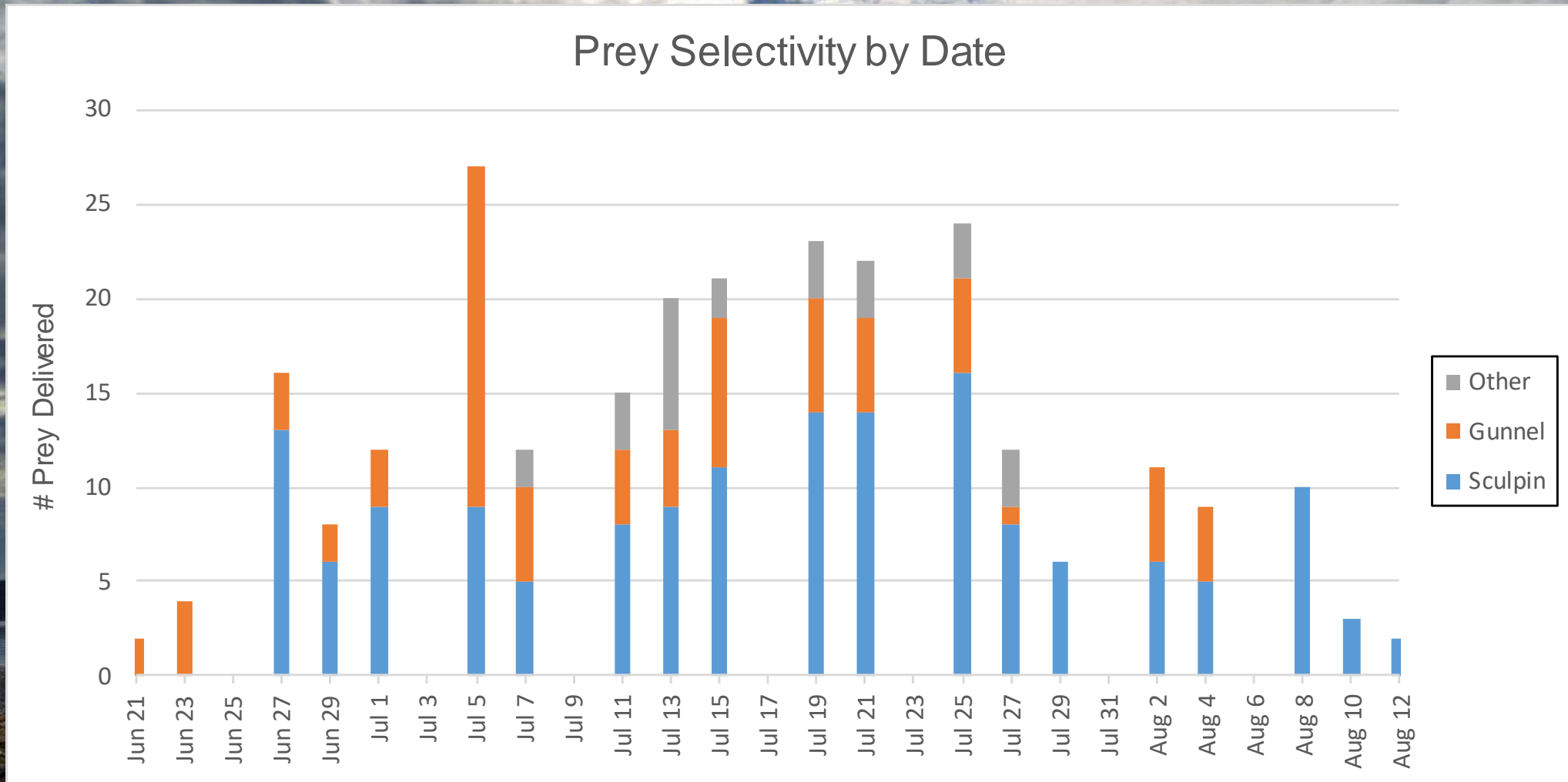
Prey Selectivity by Burrow: Mutiny Sands



Prey Selectivity by Date: Pratt's Bluff

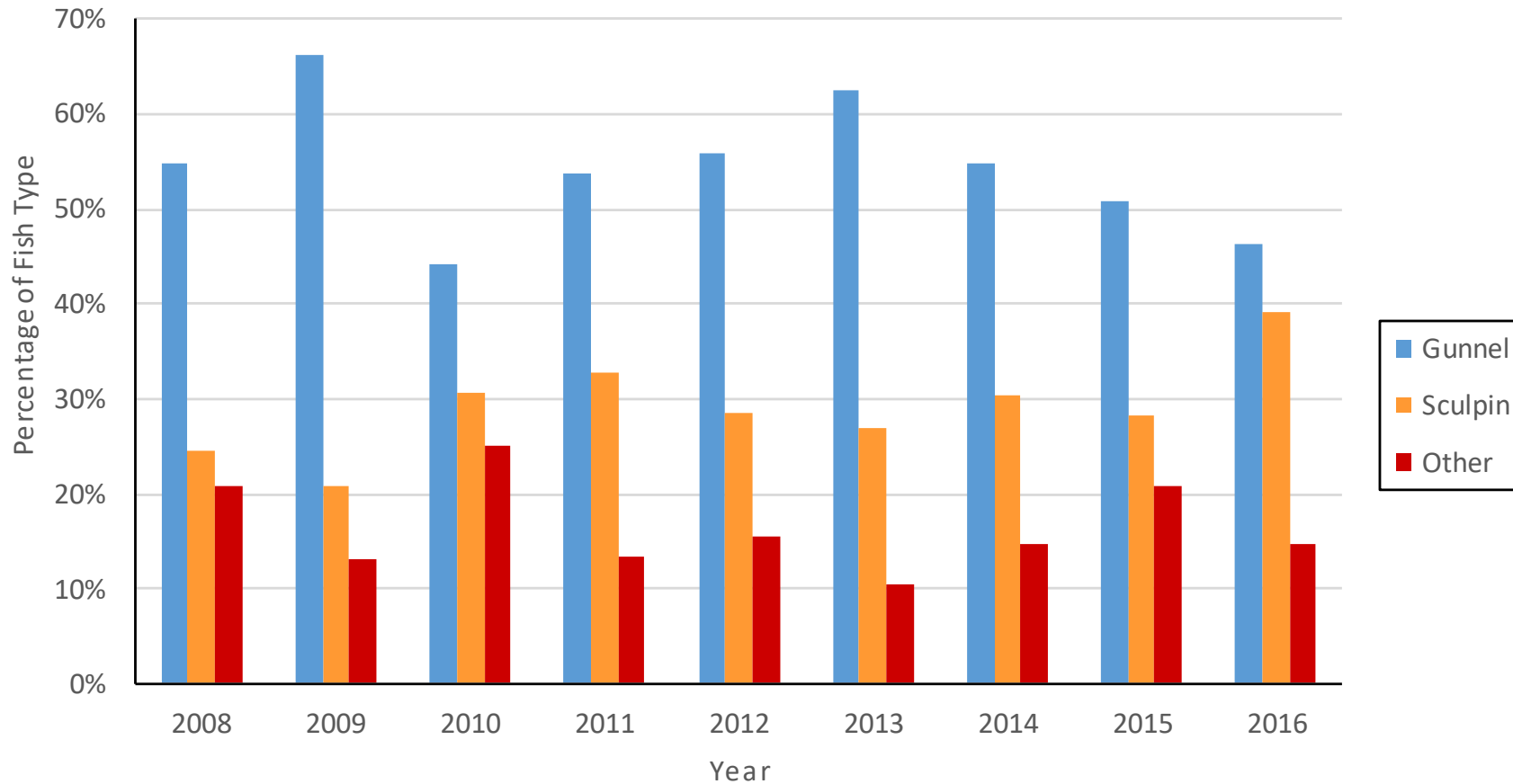


Prey Selectivity by Date: Mutiny Sands



Prey Selectivity: Whidbey Island

Prey Deliveries by Fish Type
2008-2016 Volunteer and Intern Data



- Stable population
- Slight decrease in gunnel delivery and increase in sculpin

- 54% fledging success at Pratt's Bluff
- 64% fledging success at Mutiny Sands



THANK YOU!

- All of our volunteers!
- Private residents providing parking
- Guillemot Research Group: Frances, Phyllis, Govinda, Ann
- Island County Marine Resources Committee
- Northwest Straits Initiative
- Whidbey Audubon Society
- Washington Audubon





Questions?



Photo by Jill Hein