

## Observers data

Trip_id	Set_id	Year	Quarter	Lon	Lat	T_catch	Bycatch
1	1	2015	2	-3.95	57.27	11.05	4.02
1	2	2015	2	-5.69	57.92	25.02	3.94
1	3	2015	2	-4.41	58.93	47.16	2.53
3	1	2015	4	-5.28	56.53	15.48	5.87
3	2	2015	4	-5.21	56.74	11.73	4.12
3	3	2015	4	-4.59	57.36	75.33	5.00
4	1	2016	3	-4.32	58.10	10.83	3.34
4	2	2016	3	-5.20	57.48	19.40	2.63
4	3	2016	3	-6.62	58.71	17.57	6.04
6	1	2016	1	-5.67	57.22	19.76	4.76
6	2	2016	1	-4.20	58.15	18.82	4.63
6	3	2016	1	-5.09	56.84	38.70	2.37

Repeat 100 times

Randomly subset  
trips (%)

## Sampled data

Trip_id	Set_id	Year	Quarter	Lon	Lat	T_catch	Bycatch
1	1	2015	2	-3.95	57.27	11.05	4.02
1	2	2015	2	-5.69	57.92	25.02	3.94
1	3	2015	2	-4.41	58.93	47.16	2.53
4	1	2016	3	-4.32	58.10	10.83	3.34
4	2	2016	3	-5.20	57.48	19.40	2.63
4	3	2016	3	-6.62	58.71	17.57	6.04

Model-based  
estimator

Ratio estimator