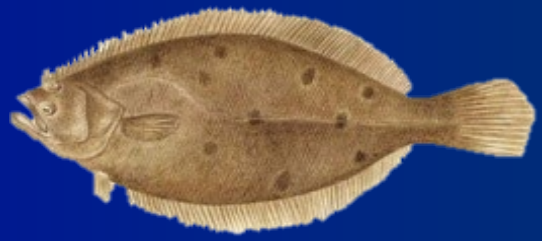
MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

Summer Flounder Commercial Minimum Mesh Size



Monitoring Committee Meeting

November 13, 2023

Minimum Mesh Background

- Current requirement for trawl gear: 5.5” diamond or 6.0” square
- Regulations have been in place since 1993
  - There was limited information about square mesh selectivity for summer flounder, but recognition that square mesh reg. should be larger than diamond
- 6.0” square based on three sources:
  - Amendment 4 to the NE Multispecies FMP
  - Selectivity study for winter flounder
  - Selectivity Experiment on square mesh cod-ends

Recent Mesh Size Selectivity Study

- Mesh size study (Hasbrouck et al. 2018) results indicate 5.5” diamond/6.0” square may not be equivalent
  - 6.0” square appears closer to 5.0” diamond
- The SFSBSB Monitoring Committee has expressed concern about retention of undersized summer flounder with 6.0” square
  - Recommendation to seek feedback from industry on use/need for square mesh nets and evaluate possible phase out or modification of 6.0” square option

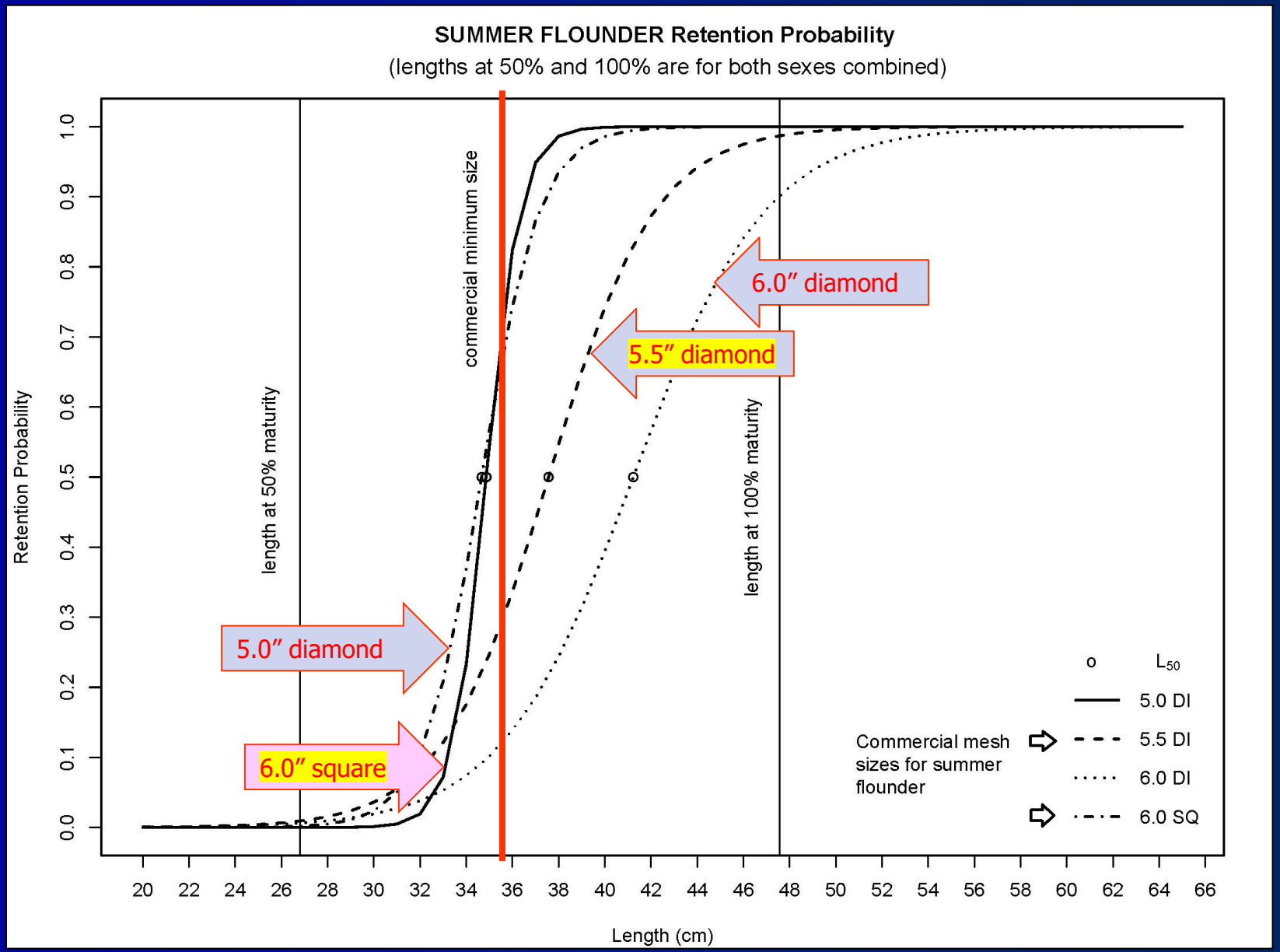


Figure 1: Logistic selective curve for summer flounder catches with 5 codends (4.5"diamond, 5" diamond, 5.5" diamond, 6" diamond, 6" square). Additional details can be found in the study report (Hasbrouck et al., 2018).

Table 1: Maximum likelihood fit of logistic selectivity curve parameters for 5 codend mesh sizes and SELECT model goodness-of-fit measures for summer flounder. Standard error is shown in parentheses. Coefficient of variation is shown in double parentheses. 5.5" Diamond and 6" Square are the current regulation minimum mesh sizes (Hasbrouck et al., 2018).

	4.5" Diamond	5" Diamond	5.5" Diamond	6" Diamond	6" Square
N tows (paired)	24	24	24	24	22
N length classes	55	50	51	47	57
Length class range (cm)	21-75	27-76	28-78	32-78	25-81
a	N/A	-47.78	-16.30	-14.42	-27.72
b	N/A	1.37	0.43	0.35	0.80
p - relative fishing efficiency	N/A	0.49 (0.02)	0.55 (0.02)	0.55 (0.03)	0.50 (0.02)
L_{25} (cm)	N/A	34.07 (0.72) ((0.021))	35.03 (1.19) ((0.034))	38.09 (1.05) ((0.028))	33.29 (1.51) ((0.045))
L_{50} (cm)	N/A	34.87 (0.67) ((0.019))	37.56 (0.87) ((0.023))	41.23 (1.22) ((0.030))	34.67 (1.16) ((0.034))
L_{75} (cm)	N/A	35.67 (1.04) ((0.029))	40.1 (1.39) ((0.035))	44.37 (2.00) ((0.045))	36.04 (1.66) ((0.046))
Selection range	N/A	1.6 (1.17)	5.06 (1.92)	6.28 (2.07)	2.75 (2.18)
Selection factor	N/A	6.94	6.83	6.87	5.78
Model deviance	N/A	144.45	230.77	133.48	92.49
df	N/A	113	178	93	73
p-value	N/A	0.0245	0.0047	.0038	0.0615

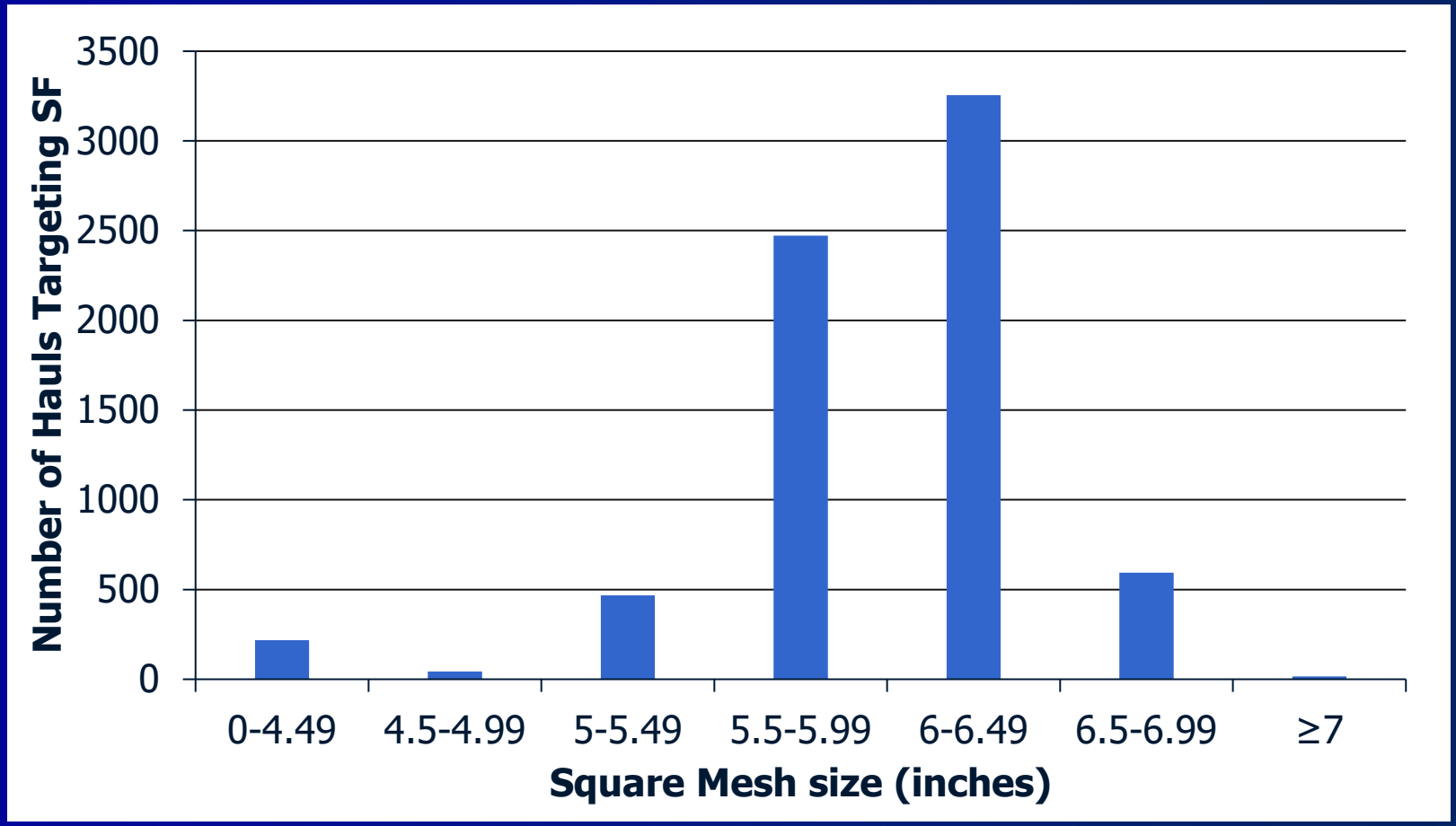
Diamond vs. Square Mesh

Observed Trawl Hauls, 2007-2022
Where Primary Target Species = Summer Flounder

Mesh Type	Proportion of Total Hauls	Total Hauls
Diamond	68.07%	17,423
Square	31.10%	7,961
Unknown	0.65%	167
Combination	0.10%	25
Square/ Wrapped	0.07%	18
Grand Total	100.00%	25,594

Square Mesh Sizes

Observed Trawl Hauls, 2007-2022
Where Primary Target Species = Summer Flounder



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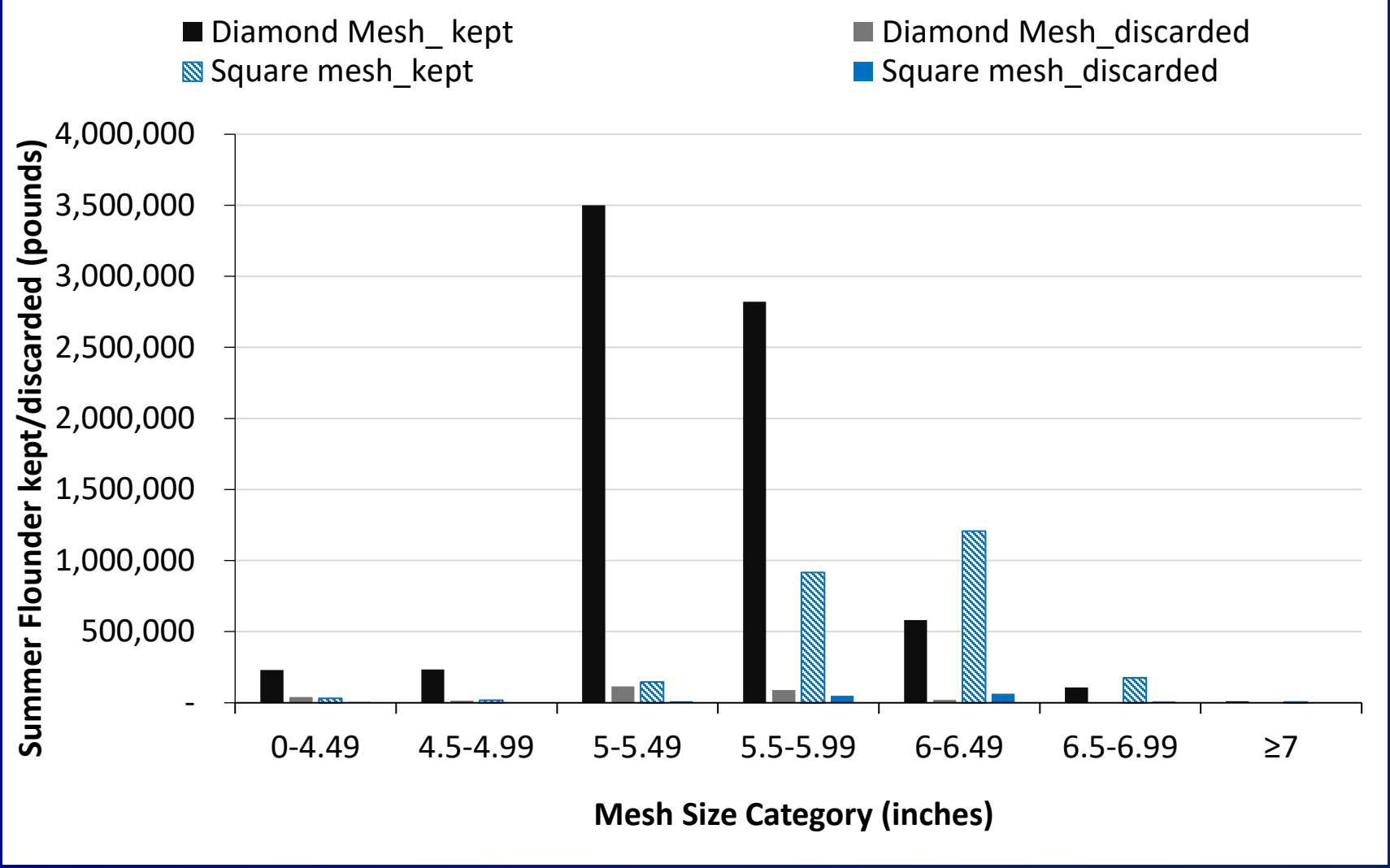
Summer Flounder Kept/Discarded by Mesh Type/Size

Observed Trawl Hauls, 2007-2022

Where Primary Target Species = Summer Flounder



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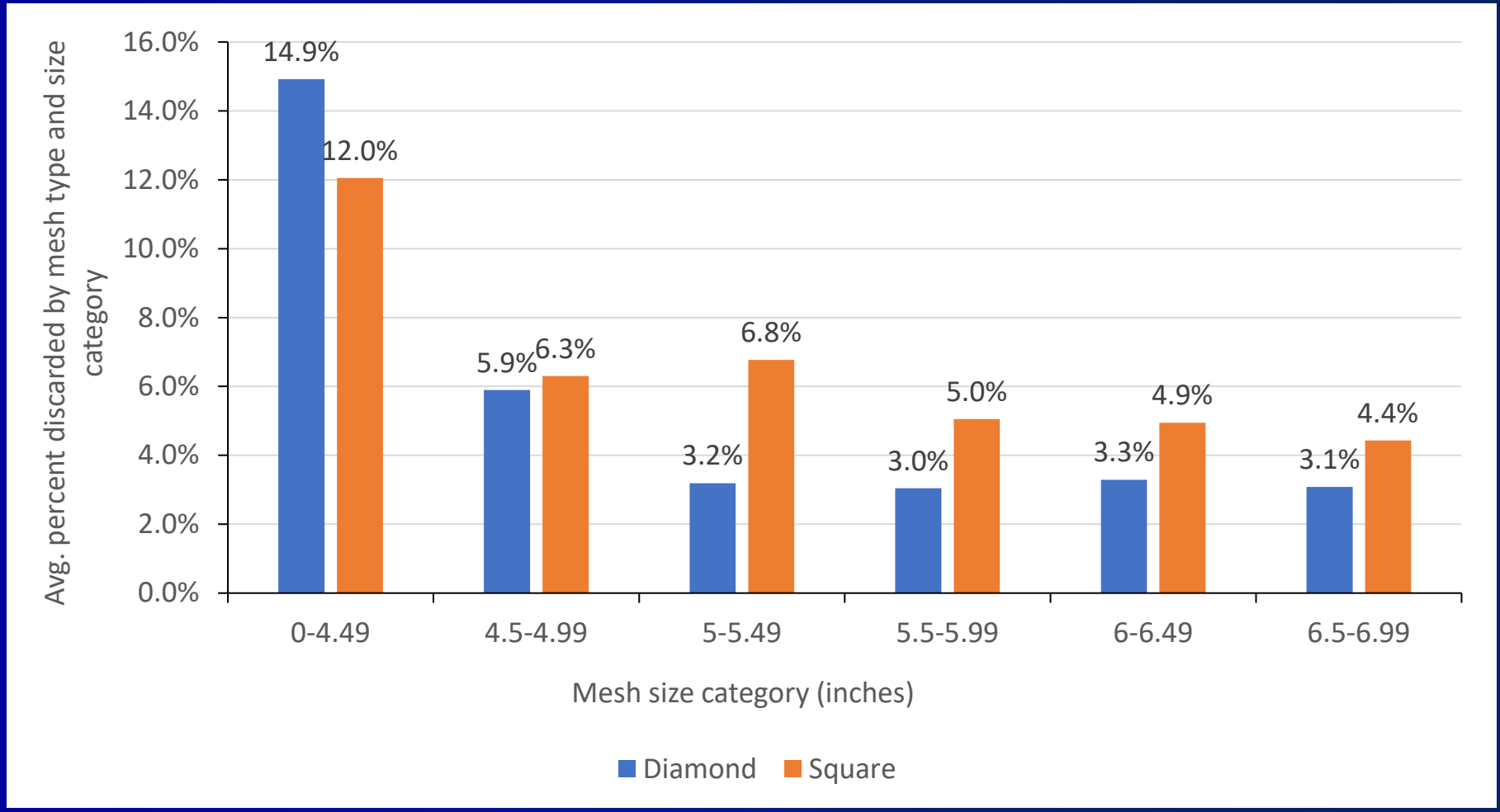
Summer Flounder Avg % Discarded by Mesh Type/Size

Observed Trawl Hauls, 2007-2022

Where Primary Target Species = Summer Flounder



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Public Feedback

Key Take-aways

- Concern about cost associated with change to mesh requirements
  - Codend mesh can cost 10s of thousands and full net replacement can cost up to $50,000
  - 6” square nets are still being ordered and a change would render any recent net investments obsolete
  - Change would result in significant financial burden
- Most support **no change**
  - One recommendation to investigate a larger square mesh
- Author of 2018 mesh selectivity report recommended examining the table on slide 5 to inform discussion

For MC Consideration

- Modifications to minimum mesh size can occur through specifications and would not require separate action
- Consider recommending one of:
  - No change to min. mesh size
  - Specific change and phase-in period
  - Identify additional analysis or research needs to further explore this issue

Preliminary Staff Rec

- Square mesh seems to be commonly used in this fishery; removal of square mesh option likely to pose challenges and would be costly for industry
- Limited data on which to base change/identify alternative square mesh size
- Consider recommending additional mesh size studies as research priority (including those exploring range of square mesh options)
- Additional evaluation of biological and economic impacts if changes are desired