Setting Charter Halibut Size Limits Under the Catch Sharing Plan (revisited)

For the North Pacific Fishery Management Council
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Background

- CSP regulations may include maximum size limits
- Method for calculating average weight associated with size limits must be defined in federal rule.
- Two methods (A and B) presented in February 2009 viewed as extremes by the SSC. The SSC recommended an “intermediate value” or installing a buffer to account for uncertainty.

Purpose

- Review methods A and B
- Present hybrid method
- Compare with examples.

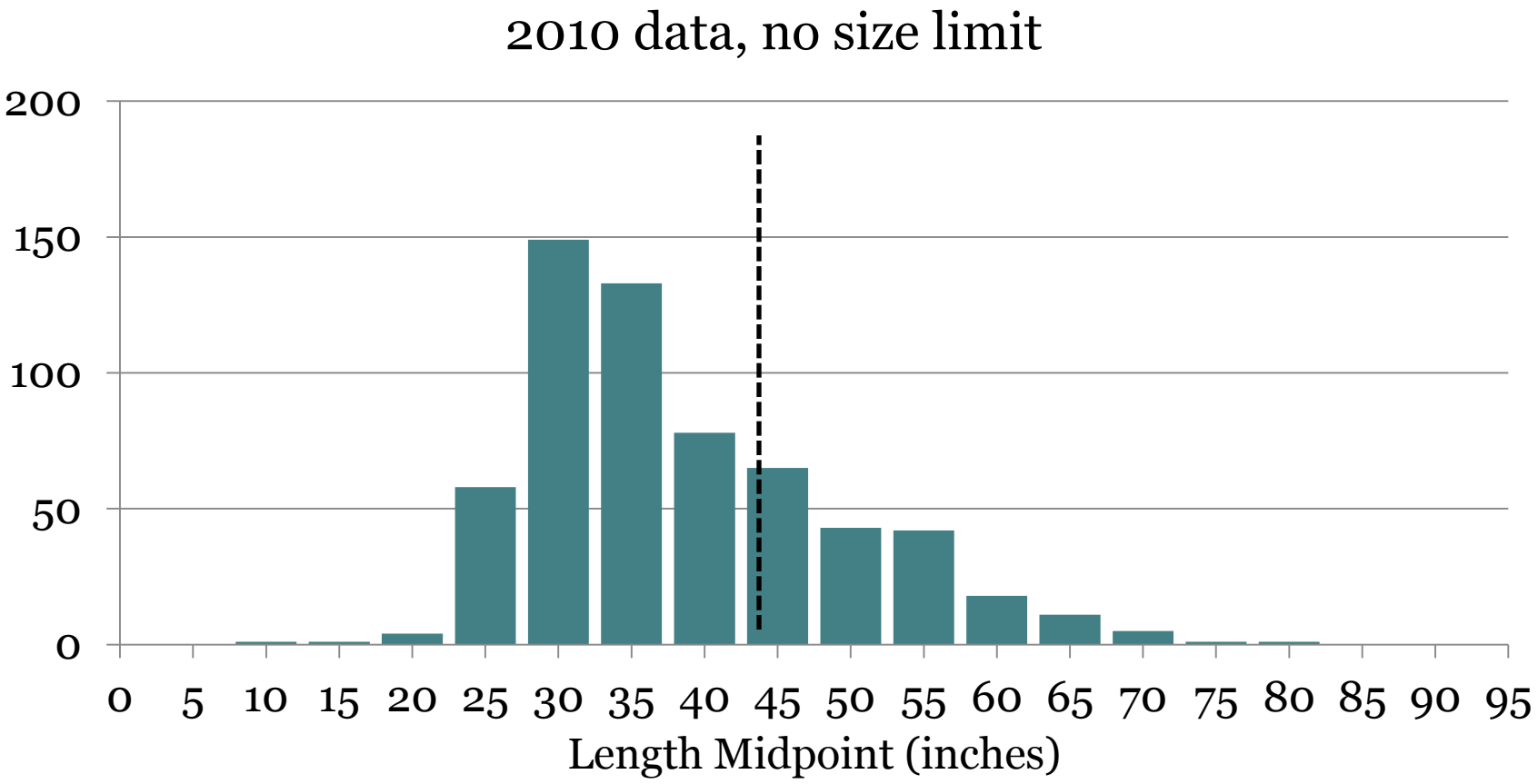
High-grading

- Anglers commonly release small halibut in hopes of catching a larger one.
- Charter anglers released 43% in 2C, 46% in 3A.
- Success unknown.

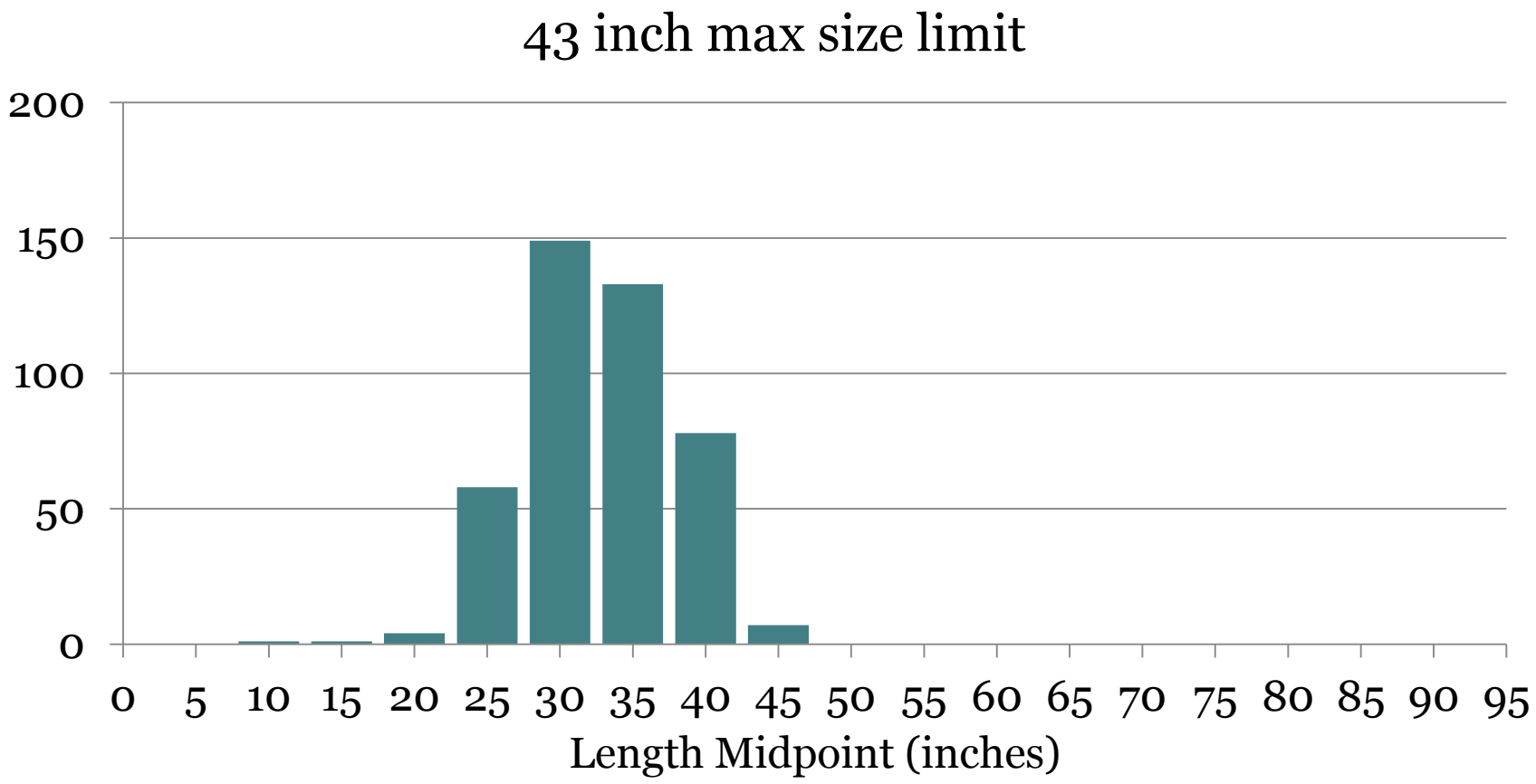
Example

- Compare size distributions and average weights associated with each method.
- 43 inch size limit, Sitka 2010 charter data (n=610).

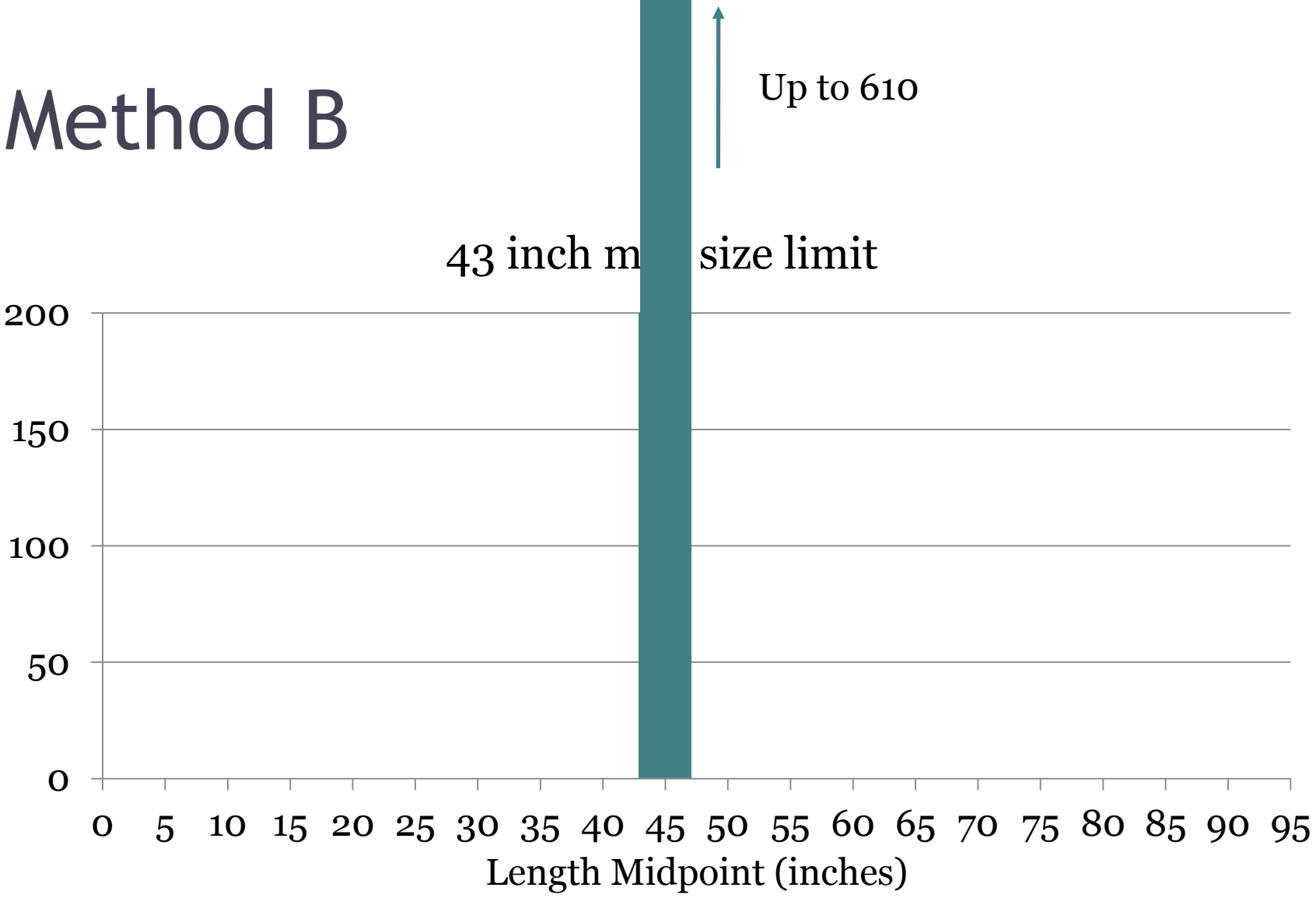
Method A


2010 data, no size limit
200
150
100
50
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Length Midpoint (inches)

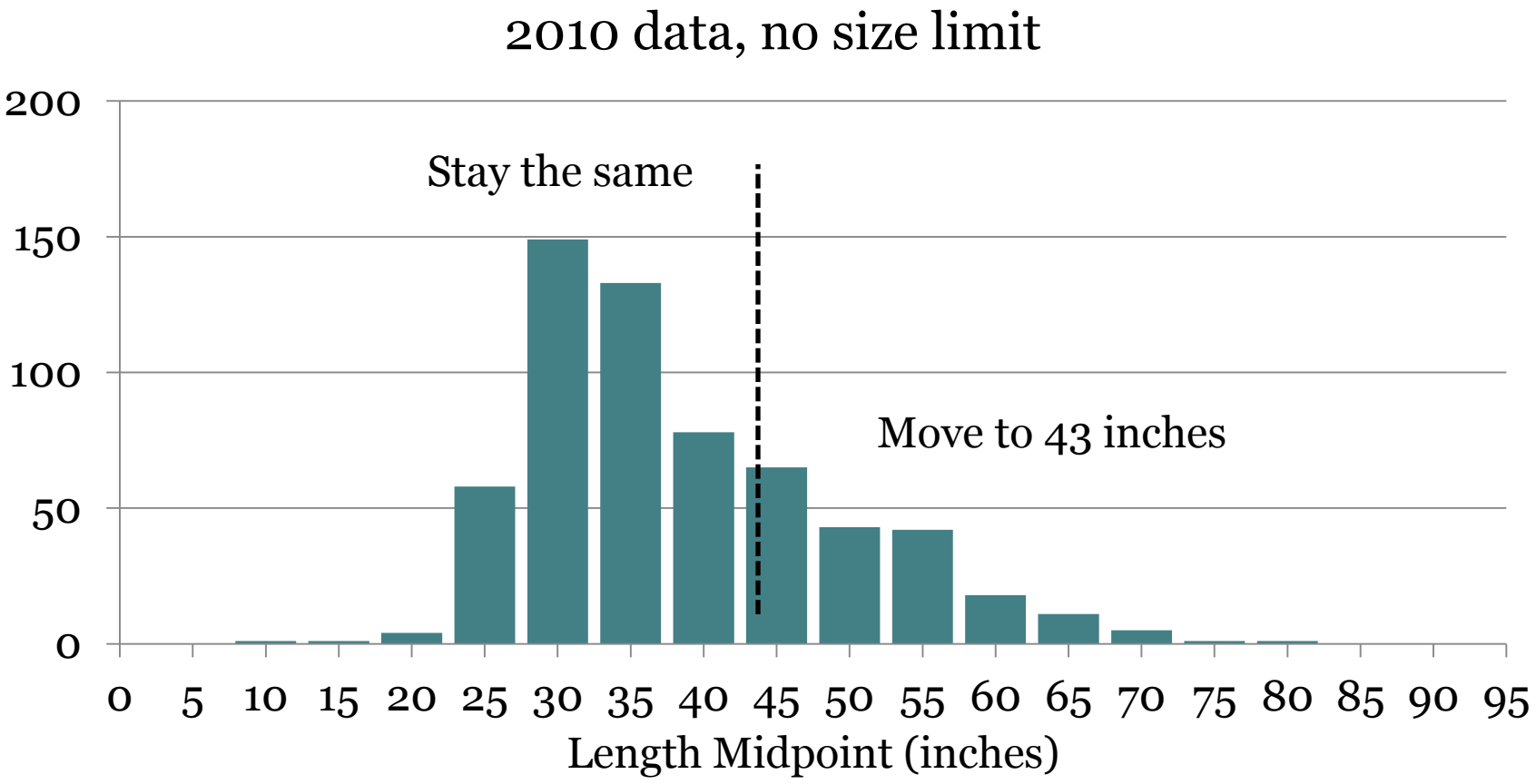
Method A


43 inch max size limit
200
150
100
50
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Length Midpoint (inches)

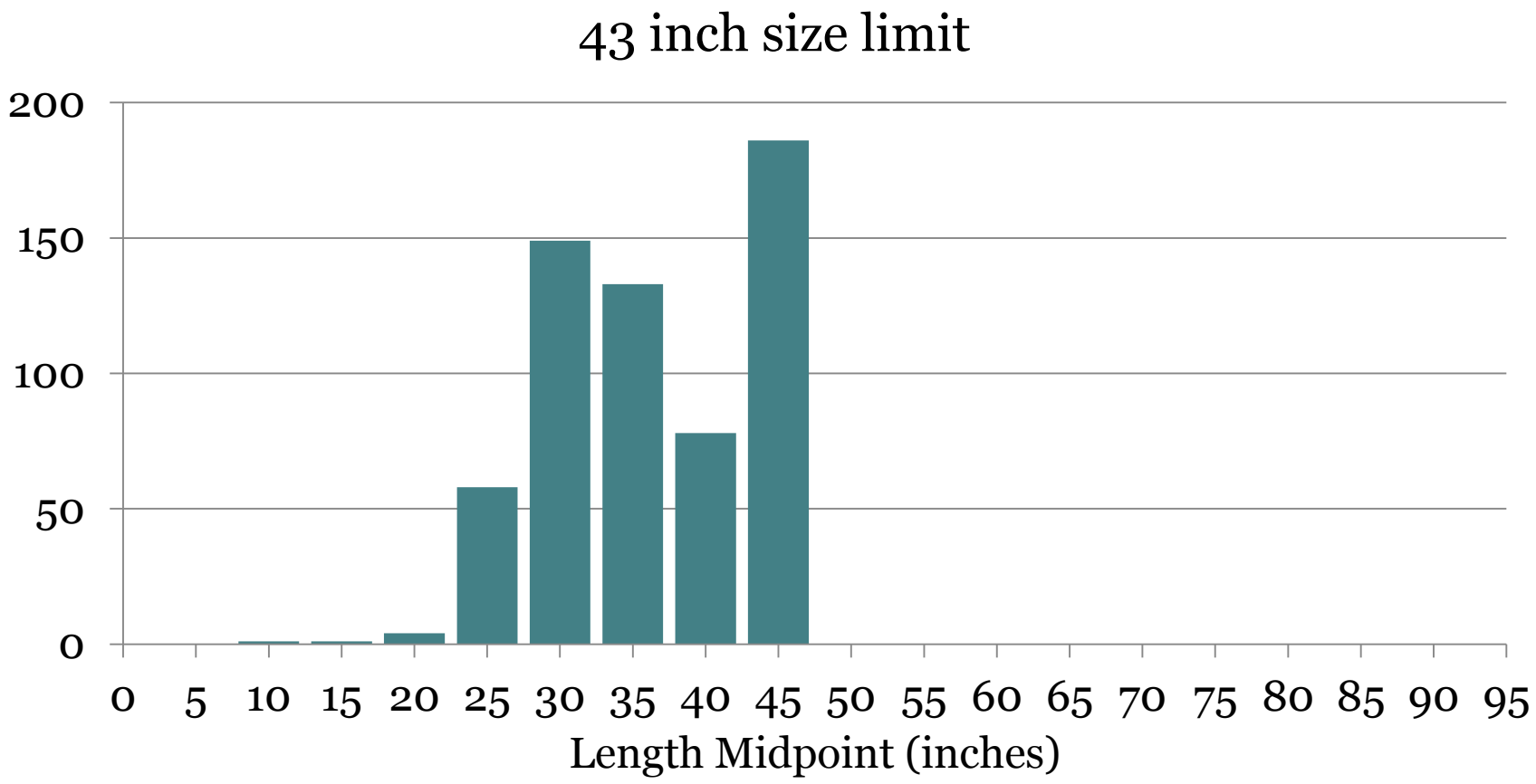
Method B

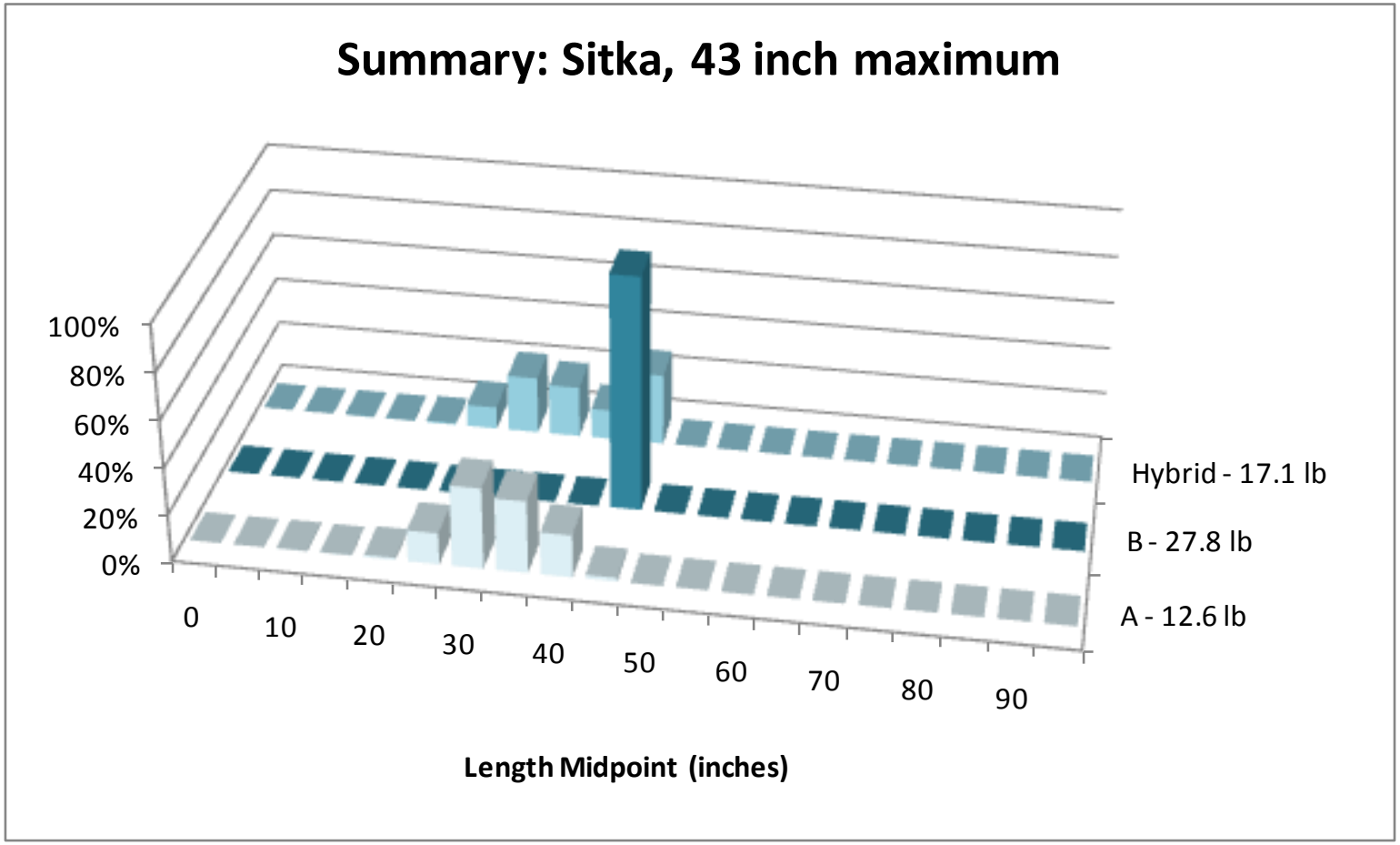

Up to 610
43 inch m size limit
200
150
100
50
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Length Midpoint (inches)

Hybrid

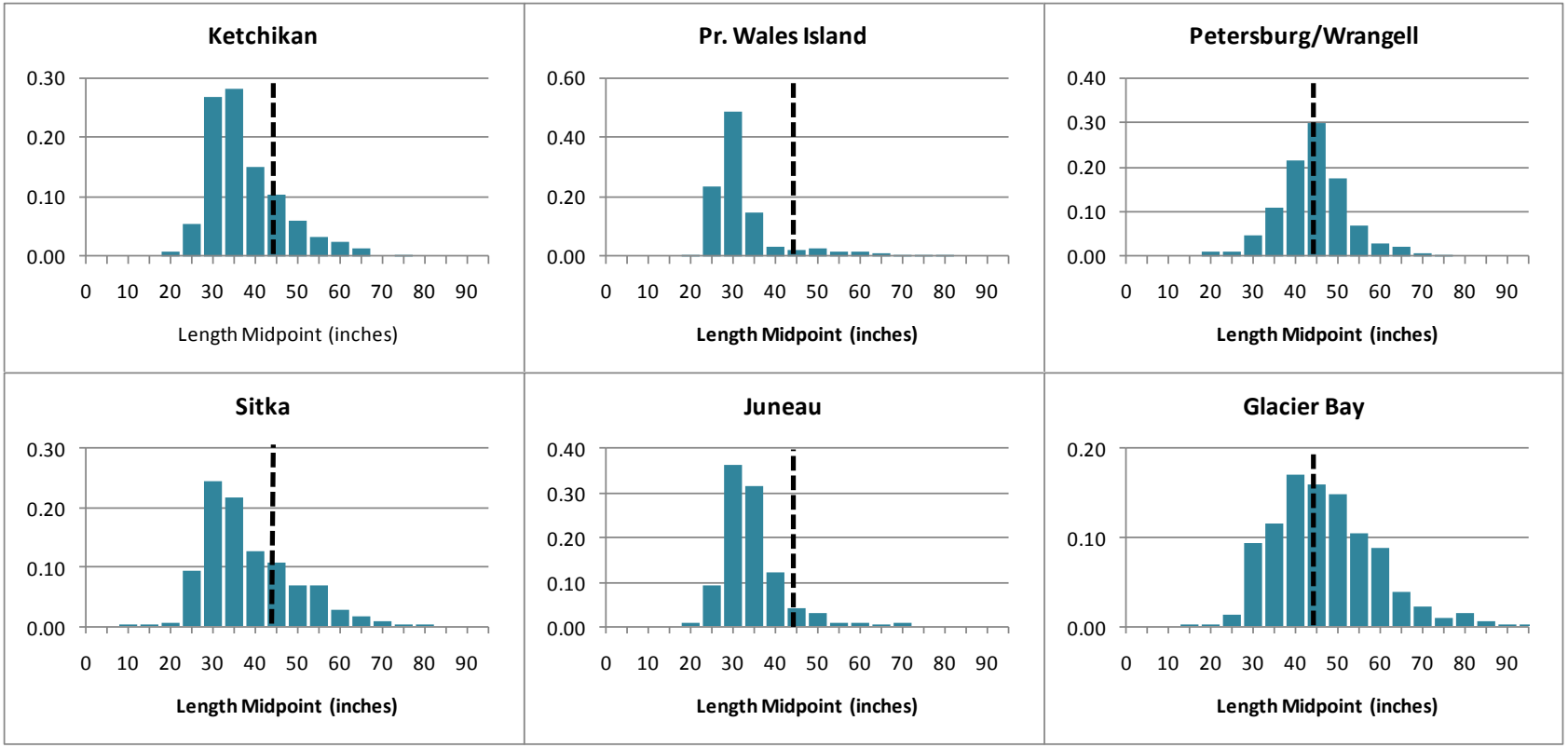

2010 data, no size limit
200
150
100
50
0
Stay the same
Move to 43 inches
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Length Midpoint (inches)

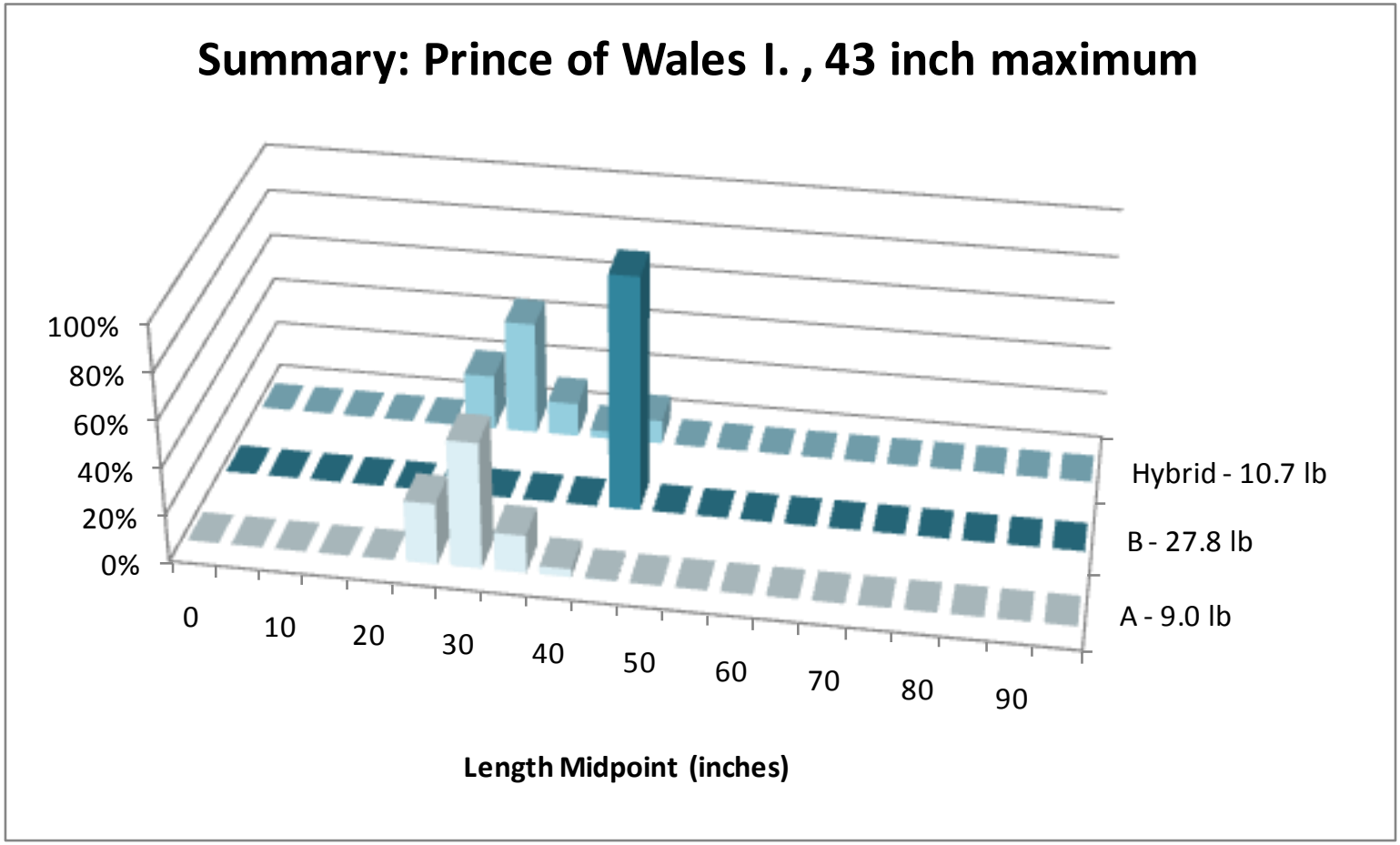
Hybrid


43 inch size limit
200
150
100
50
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
Length Midpoint (inches)

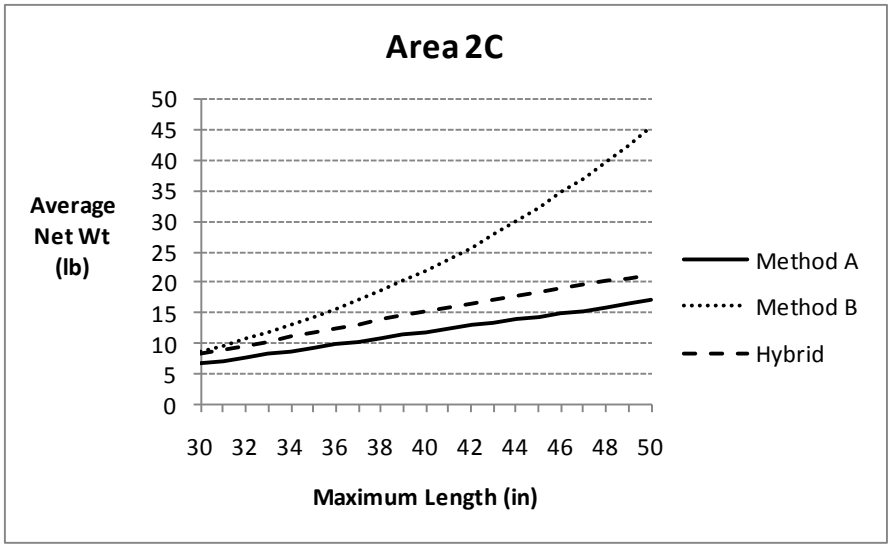

Summary: Sitka, 43 inch maximum
100%
80%
60%
40%
20%
0%
0
10
20
30
40
50
60
70
80
90
Hybrid - 17.1 lb
B - 27.8 lb
A - 12.6 lb
Length Midpoint (inches)

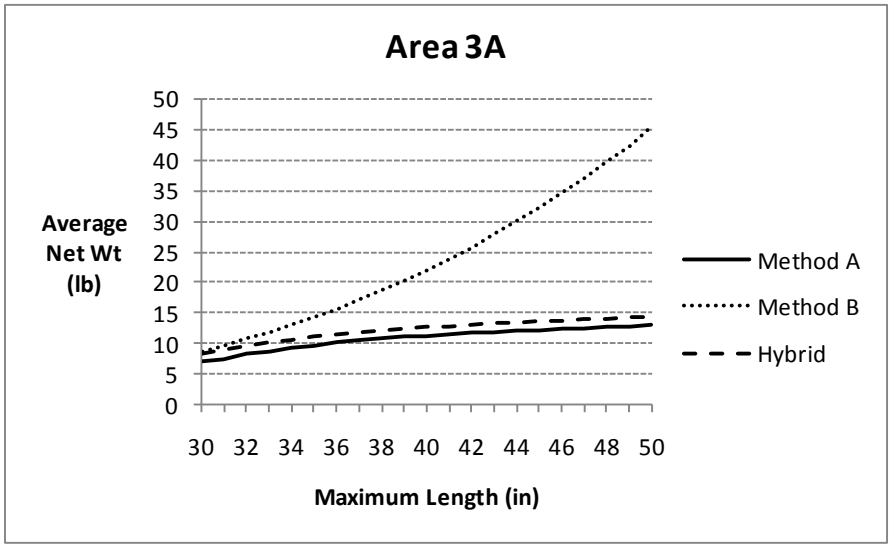
Effects vary by area




Summary: Prince of Wales I. , 43 inch maximum
100%
80%
60%
40%
20%
0%
0
10
20
30
40
50
60
70
80
90
Hybrid - 10.7 lb
B - 27.8 lb
A - 9.0 lb
Length Midpoint (inches)

Comparison of average weights[a]



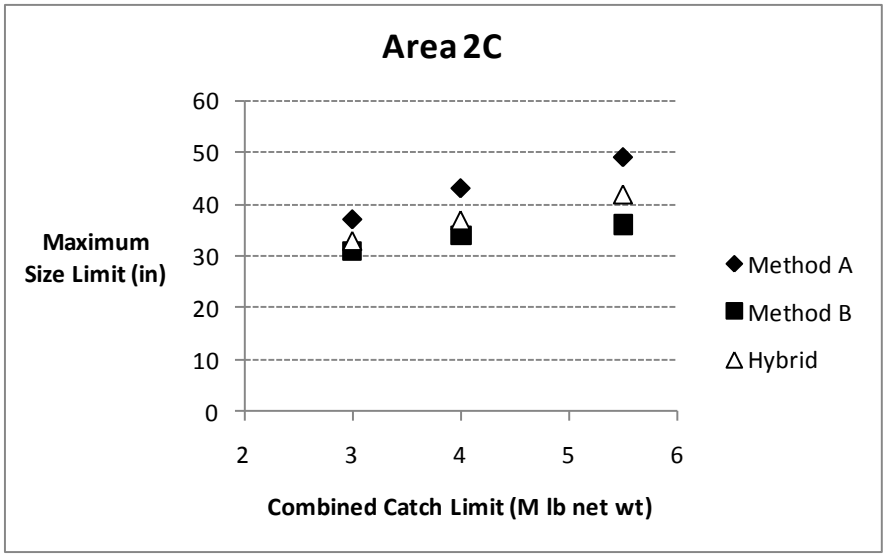


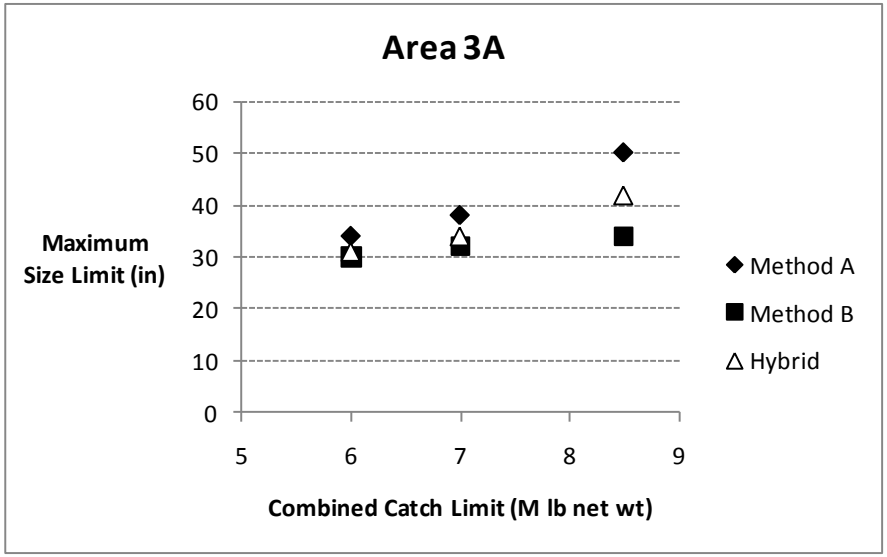
[a] Calculations based on 2010 length data.

Size limit scenarios

IPHC area	CCL (M lb)	Charter Allocation	Charter Catch Limit (M lb)	Projected Harvest	Target Average Weight (lb)	Maximum Size Limit (inches)		
						A	B	Hybrid
2C	3	17.3%	0.519	50,000	10.38	37	31	33
	4	17.3%	0.692	50,000	13.84	43	34	37
	5	15.1%	0.831	50,000	16.61	49	36	42
3A	6	15.4%	0.924	100,000	9.24	34	30	31
	7	15.4%	1.078	100,000	10.78	38	32	34
	8.5	15.4%	1.309	100,000	13.09	50	34	42

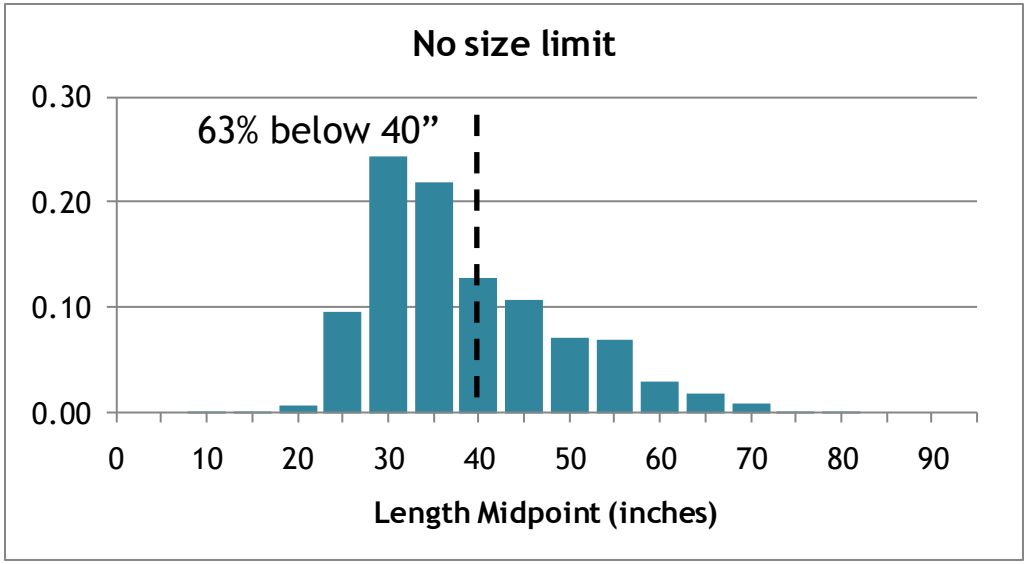
Size limit scenarios



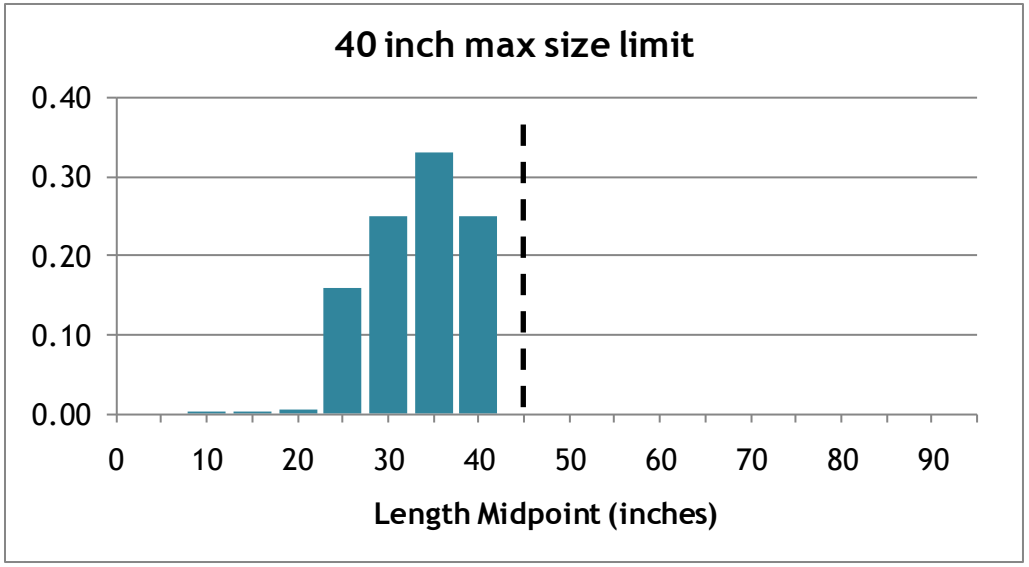


Using hybrid method when size limit increased.

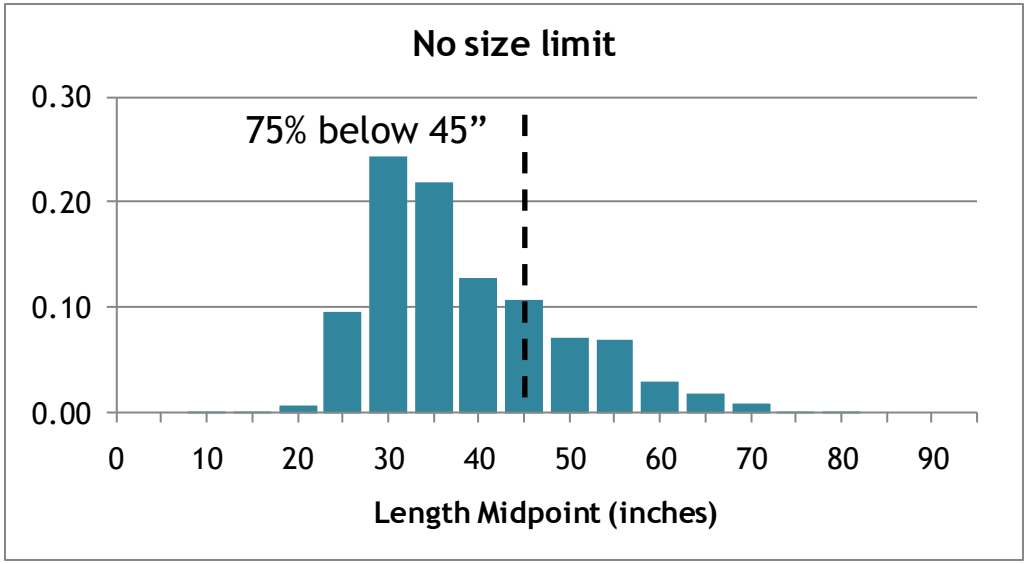
- Estimate proportion under size limit from most recent year with unrestricted size data.



Using hybrid method when size limit increased.



Using hybrid method when size limit increased.



Summary

- Only discussed calculating average weight.
- Method A uses data, assumes no additional high-grading.
- Method B uses no data, assumes maximum high-grading.
- Hybrid method is mixture of assumptions combined in a weighted average.
- Hybrid method produces an intermediate result.

Considerations in choice

- Choice of method a policy decision.
- Are data from previous year applicable?
- Sampling error & bias?
- Assumed no change in demand (effort) from size limit.