



Mitigating Sea Turtle
Bycatch in
New England &
Mid-Atlantic
Trawl Fisheries

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Evaluation of a modified Turtle Excluder Device in the North Carolina summer flounder winter trawl fishery

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Background

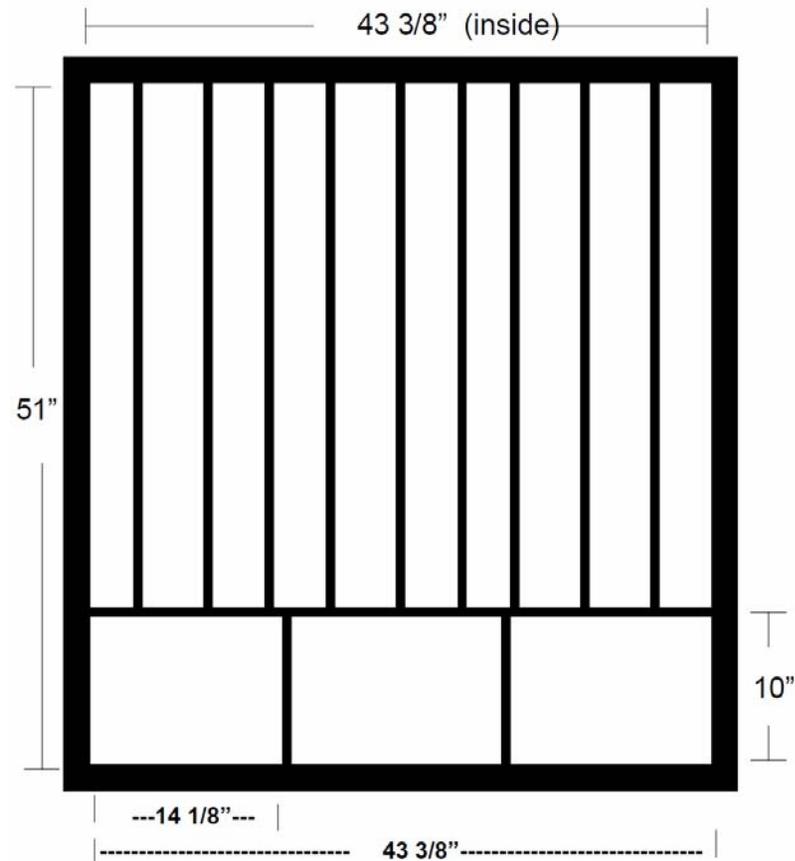
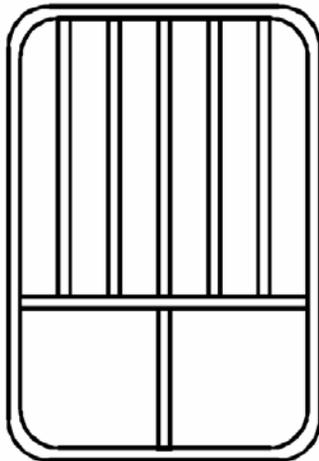
Methods

Results

Discussion

Questions

Large-frame Flounder TED



Source: Federal Register, Vol. 75 / No. 170, 2010.

Background

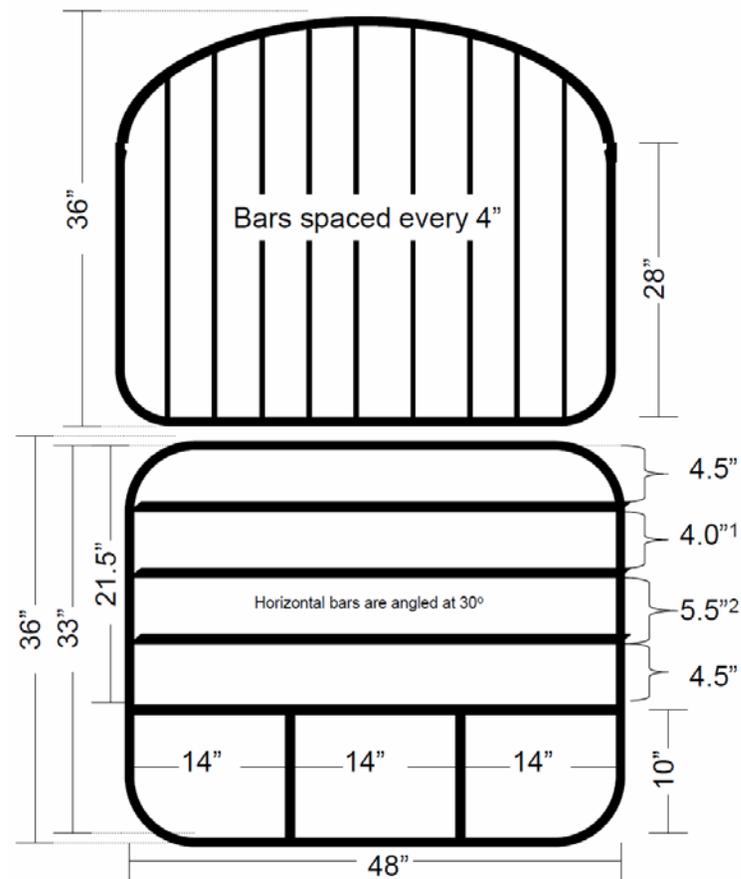
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“Northeast Modified” TED



Sea Turtle Protection Area

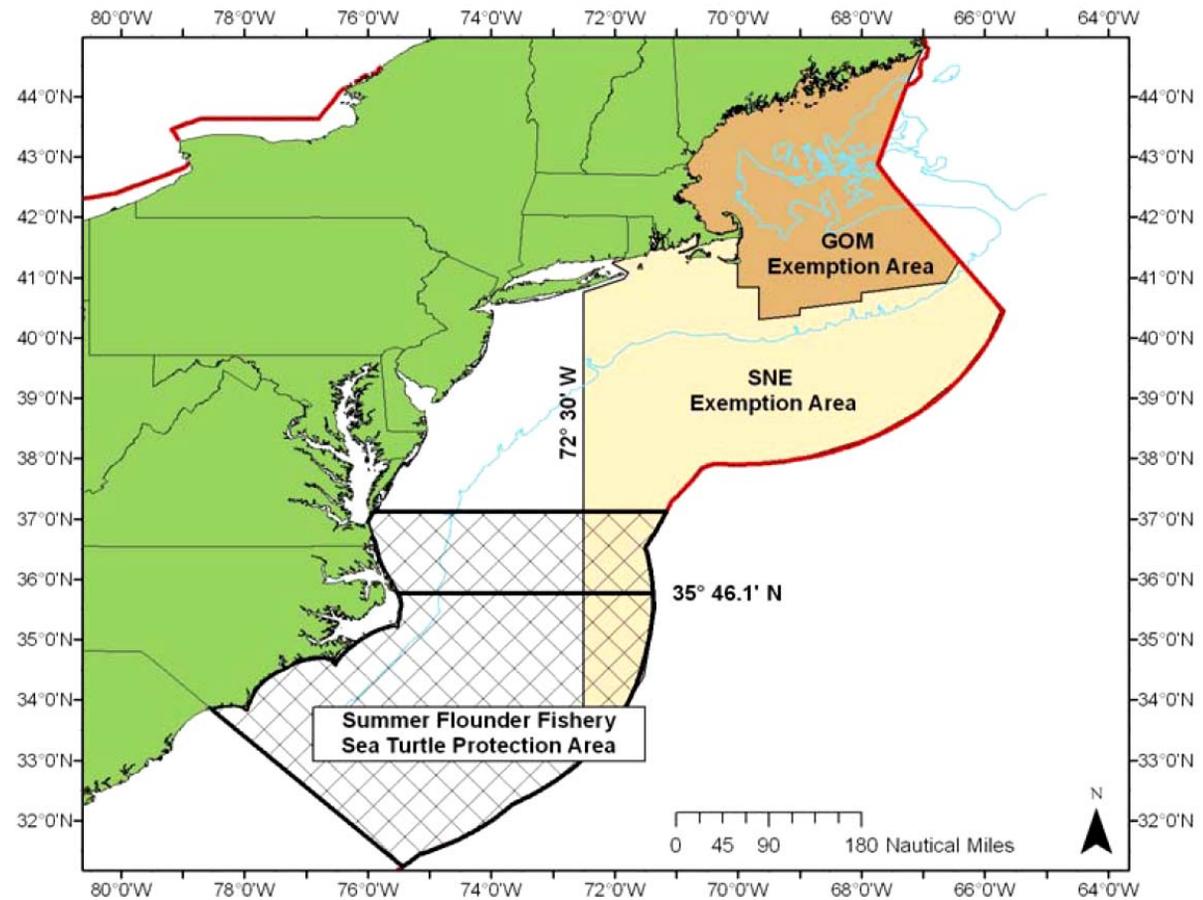
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Source: NMFS Northeast Region Summer Flounder Information Sheet, 2008.

Background

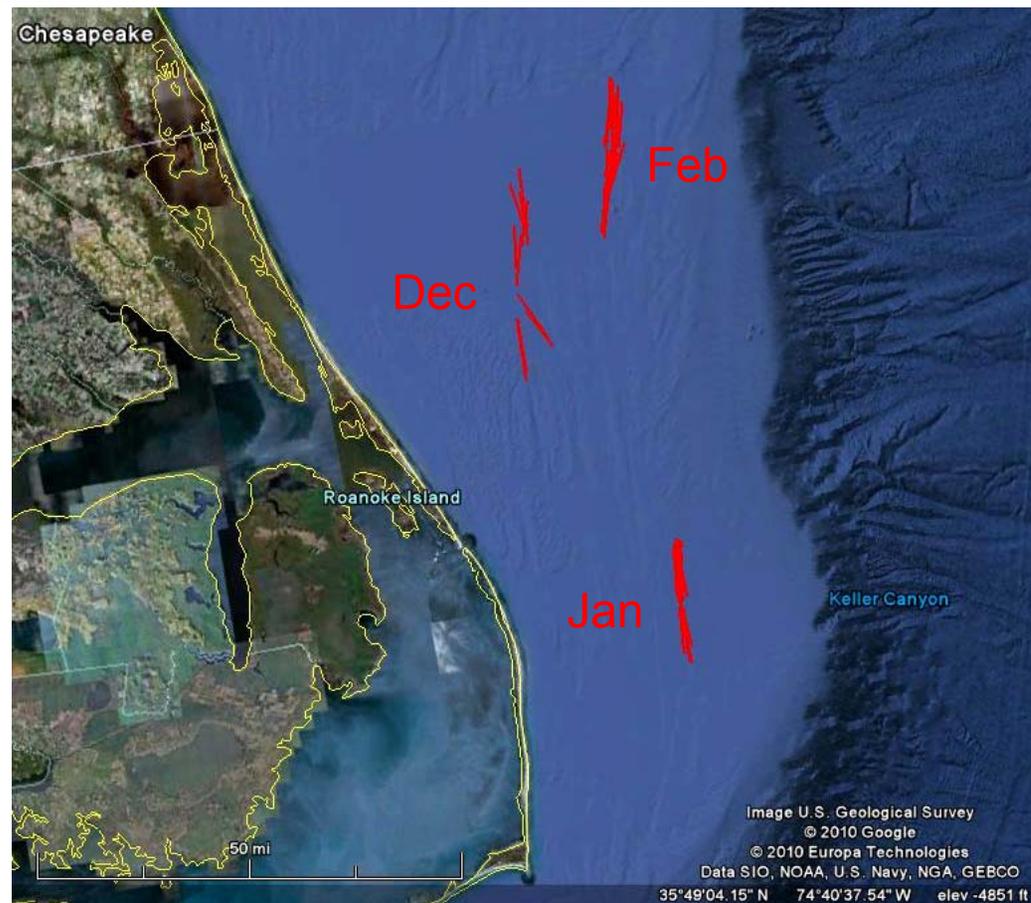
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Sampling Locations



Background

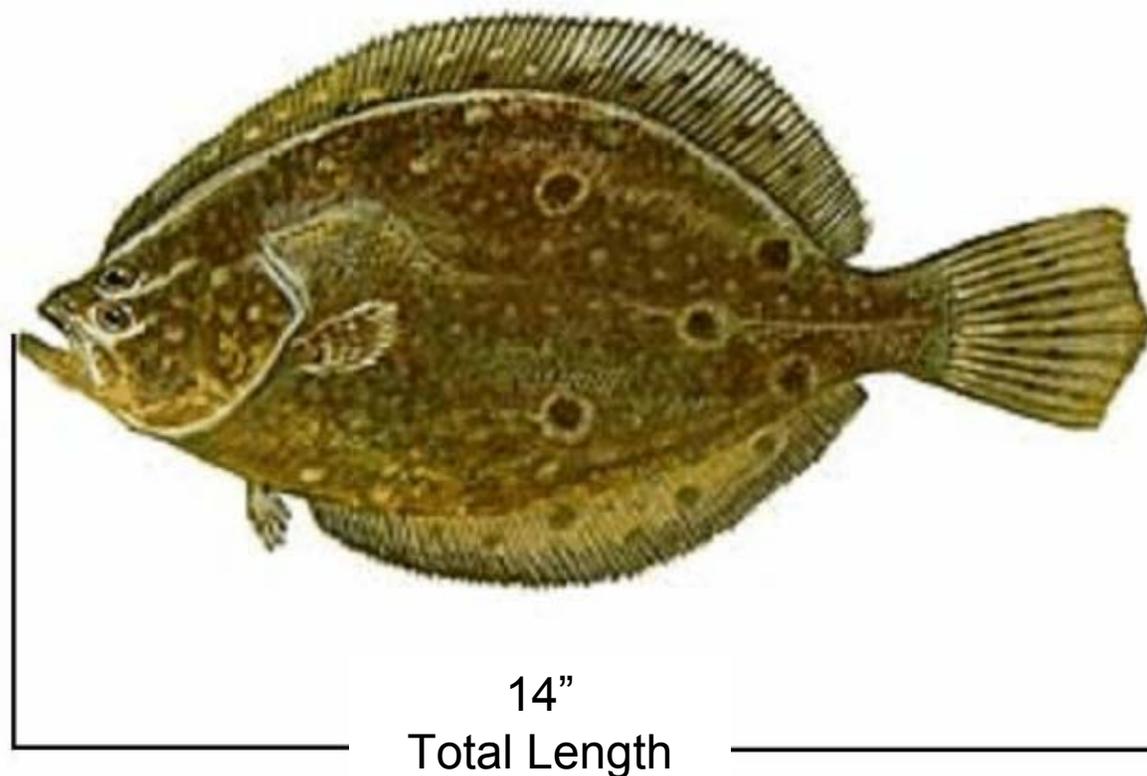
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Flounder Size-Frequencies



Paralichthys dentatus



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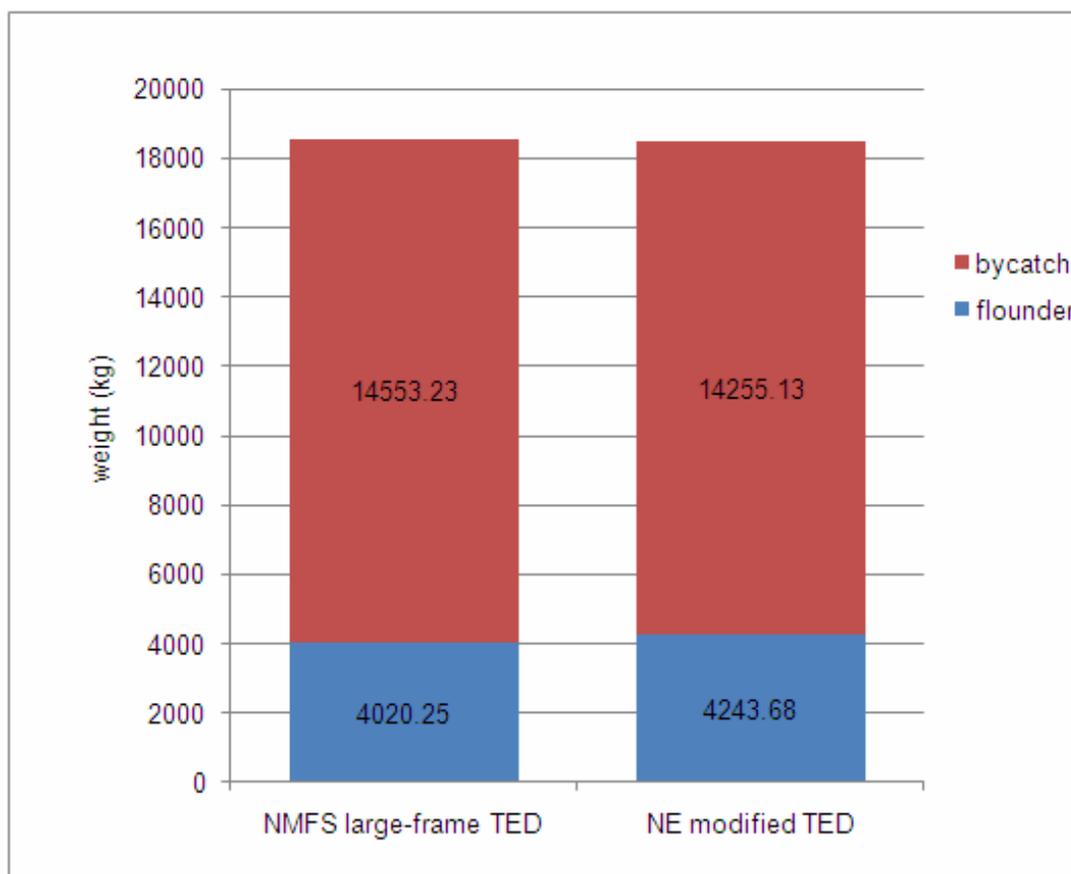
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How much was caught?

Overall ratio NE modified TED to large-frame TED:

- flounder 1.06 (p=0.47)
- bycatch 0.98 (p=0.85)





Your link to research & resources for a healthier coast.

Taking a closer look at catch....

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Pair	Large-frame TED Catch (kg)	Northeast modified TED Catch (kg)	Catch Difference (%)	Large-frame TED Bycatch (kg)	Northeast modified TED Bycatch (kg)	Bycatch Difference (%)
ND1001/2	181.61	177.30	2.37	509.21	176.06	65.42
ND1003/4	151.07	186.97	-35.90	144.07	237.26	-64.69
.....						
.....						
VF1029/30	76.19	45.02	40.92	264.20	336.44	-27.34
VF1031/32	66.39	67.85	-2.20	569.74	297.48	47.79
Average	125.63	132.61	-16.46	454.79	445.47	-5.80
Std. Dev.	80.01	67.00	50.05	383.99	393.39	61.89



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Taking a closer look at bycatch....

- Background
- Methods
- Results
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- Questions

alewife/blueback herring
 Atlantic deep-sea red crab
 Atlantic horsehoe crab
 black drum
 black sea bass
 American butterfish
 channeled whelk
 hard clam
 clearnose skate
 northern sea robin
 common sea star
 Ctenophora sp.
 knobbed whelk
 lady crab
 lightning whelk
 margined sea star
 monkfish
 Octopoda sp.
 northern puffer
 common sand dollar
 scup
 sea mullet
 Tunicata sp.
 silver hake
 slender-armed sea star
 smooth dogfish
 spider crab
 spiny dogfish
 spotted dogfish
 spotted hake
 Loligo sp.
 striped seatrout
 tongue bass
 purple sea urchin
 windowpane flounder
 winter skate

large-frame	6	0	41	3	13	25	3	0	100	47	53	6	19	25	9	19	34	3	3	9	6	3	13	72	13	6	88	44	0	69	3	6	6	41	56	
NE modified	0	3	38	3	19	34	9	3	94	50	50	9	16	25	0	25	19	6	0	6	6	3	3	9	75	13	13	88	19	3	78	0	0	0	47	56

- Species richness averaged the same across the category of TED type – 8 species (SD = 2).
- Two species dominated – clearnose skate & spiny dogfish shark.

Numbers reported are percentage presence in 32 tows.

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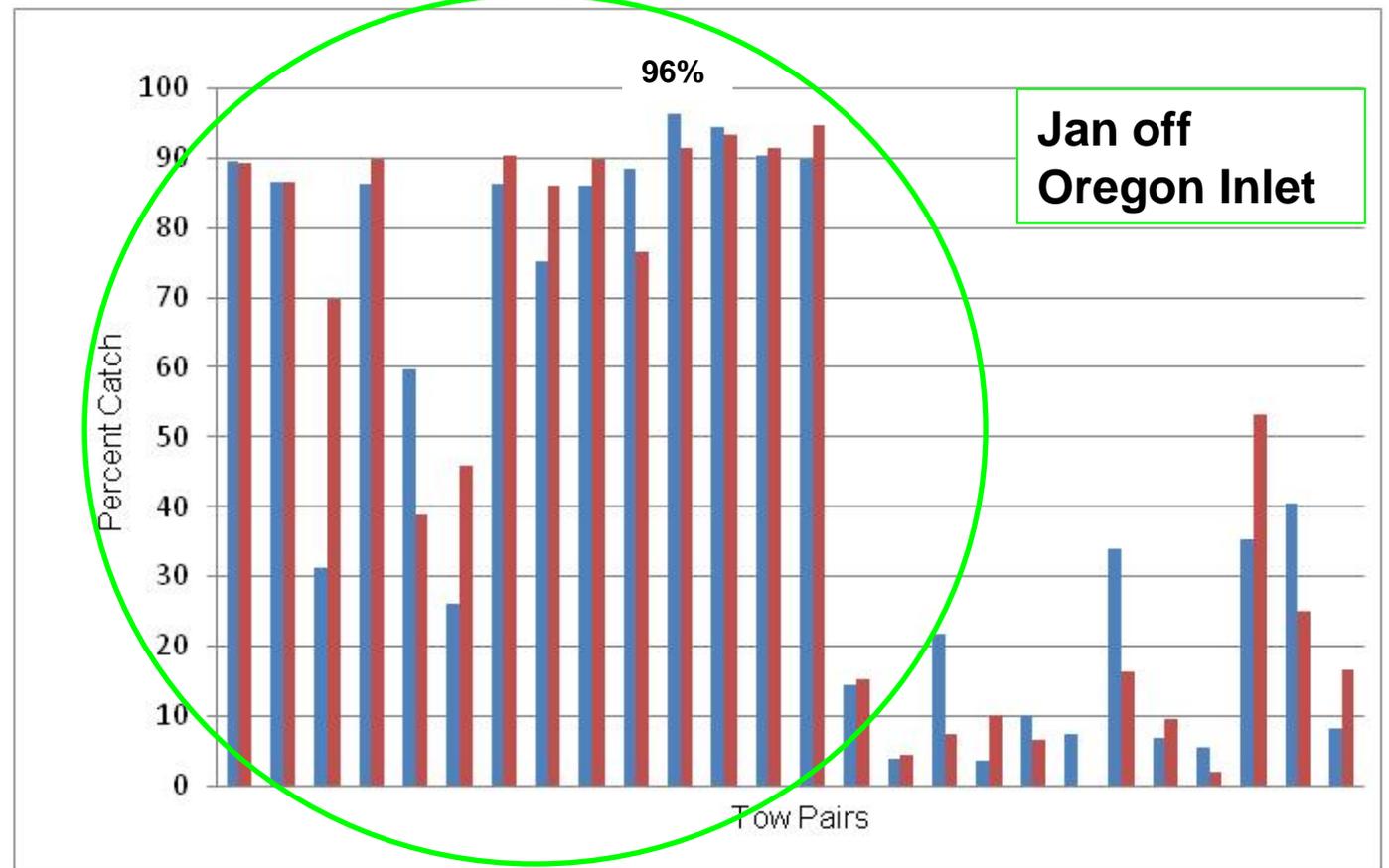
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Spiny dogfish dominated catches at times & were the same across the category of TED type.

Can we say dogfish!



I once caught a fish this big....

Background

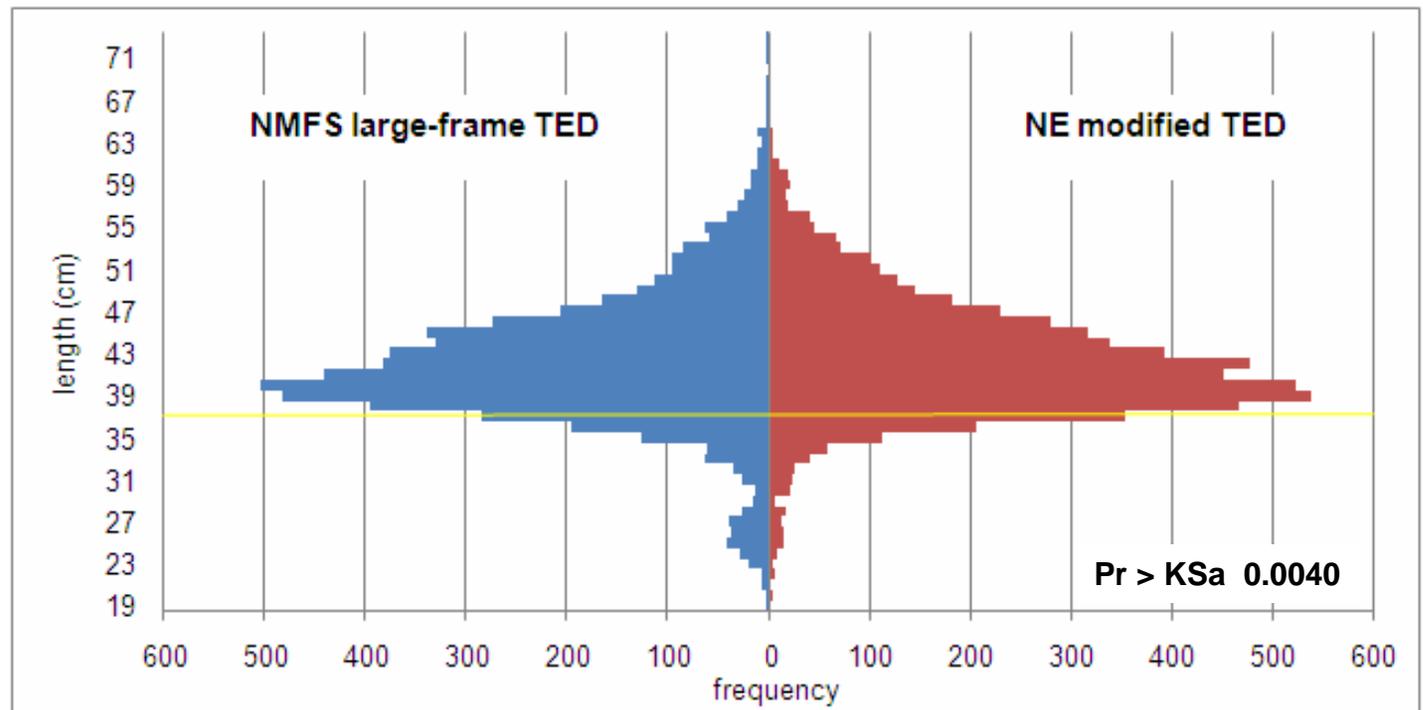
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The distribution of length is NOT the same across the category of TED type!





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Which do you choose?

- Overall, it *appears* the NE modified flounder TED results in improved catch retention for flounder & in decreased bycatch.
 - Results *appear* to remain consistent throughout the study regardless of whether smaller or larger amounts of flounder are caught.
 - It is worth noting that nearly all (>83%) summer flounder measured during the study were legal market size.
 - Catch retention still could be related to the volume of bycatch. Video observations of dogfish might indicate that while individuals can fit through grid openings, they get hung up due to their snake-like body motions.
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