

OBSERVER DATA ANALYSIS WORK GROUP

False Killer Whale Take Reduction Team Meeting

Maui, Hawaii, 6-9 April 2010

- Summary of analyses completed since last meeting (March 8 and March 23 Teleconference summaries)
- Conclusions (Andy)
- New analyses since last work group call
 - Individual vessel effects
 - Distance traveled vs. repeat depredation
 - Distribution of inter-set times and mainline lengths
 - Plots of depredation and false killer whale /blackfish sightings on observed longline trips (Marsik)
- Discussion

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False Killer Whale Take Reduction Team Meeting

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- Updated table with depredation and bycatch rates for false killer whales and unidentified 'blackfish' only
- Examine hook types and mixed/pure trips
- Examine catch & depredation records of sets with false killer whale takes in detail.
- Generalized additive model updates (inc. vessel effects and catch information)
- Plot geographic distribution of catch species, depredation, and false killer whale takes

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Depredation & bycatch data for false killer whales
and false killer whales/unidentified 'blackfish' only

(Aug 2003 - Dec 2009, excluding vessels during/after experiments)

	DEEP-SET				SHALLOW-SET			
	# Sets	%	Sets with Takes		# Sets	%	Sets with Takes	
False Killer Whales								
With depredation	1179	6%	19	1.61%	183	3%	0	0.00%
Without depredation	19545	94%	9	0.05%	6045	97%	1	0.02%
TOTAL	20724		28	0.14%	6228		1	0.02%
False Killer Whales and Unid. Blackfish								
With depredation	1179	6%	22	1.87%	183	3%	0	0.00%
Without depredation	19545	94%	11	0.06%	6045	97%	2	0.03%
TOTAL	20724		33	0.16%	6228		2	0.03%

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Hook type evaluation (Jamie Marchetti, PIRO)

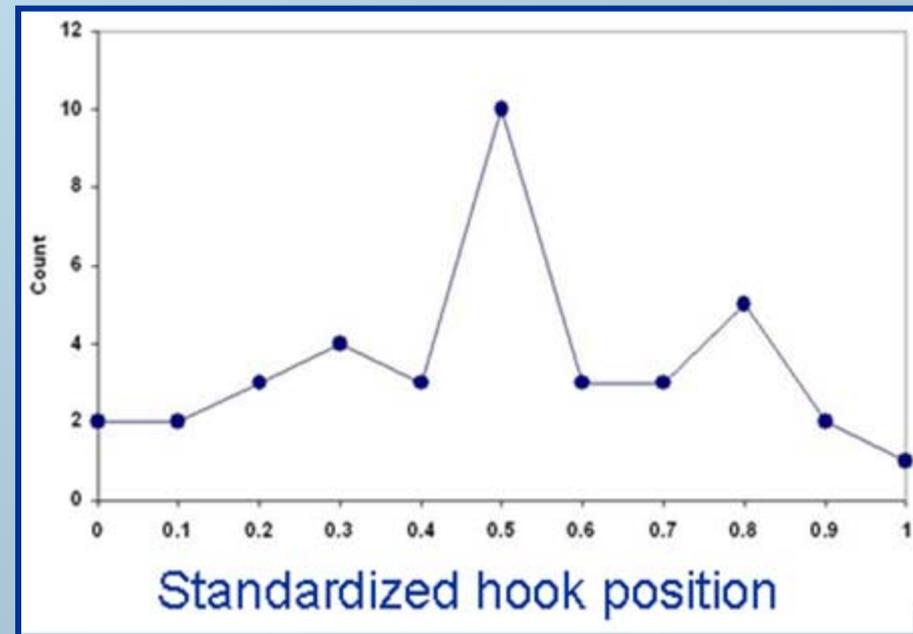
- Changes in observer protocols
- For 2003-2009, 4 reliable hook types:
 - J-hook, Tuna hook, Large circle, Small circle
- May 2005: Offset vs. non-offset circle
- Early 2006:
 - Offset vs. non-offset tuna
 - Mixed vs. single hook types
 - ~70% of observed ~900 trips used a single hook type



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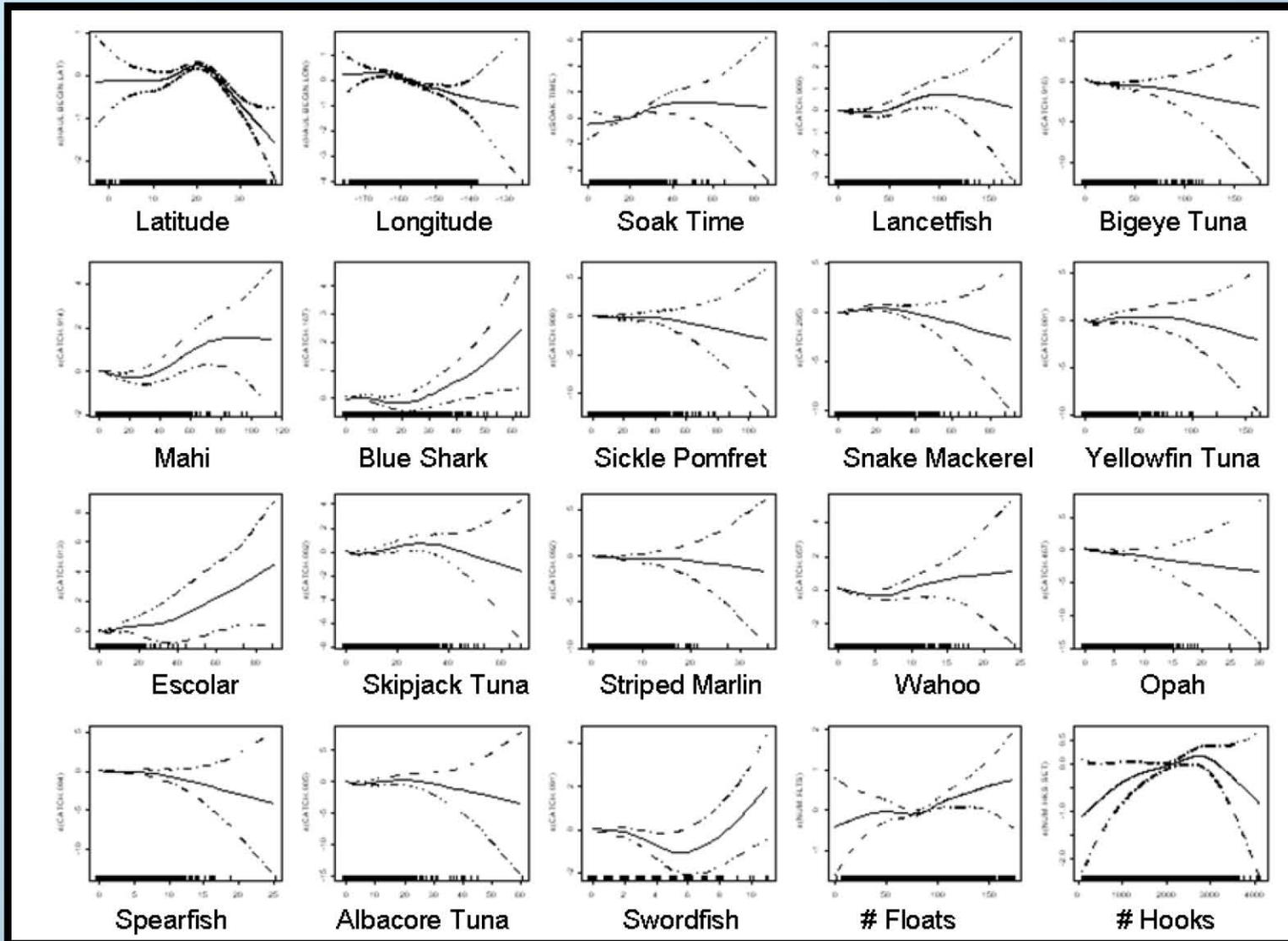
Examination of catch records for 42 false killer whale takes

- Large spreadsheet sent to TRT
- Variety of fish species depredated
- Depredation along large sections of line
- Tendency for fewer false killer whale takes at either end of mainline
- Greater # false killer whales caught in middle of basket



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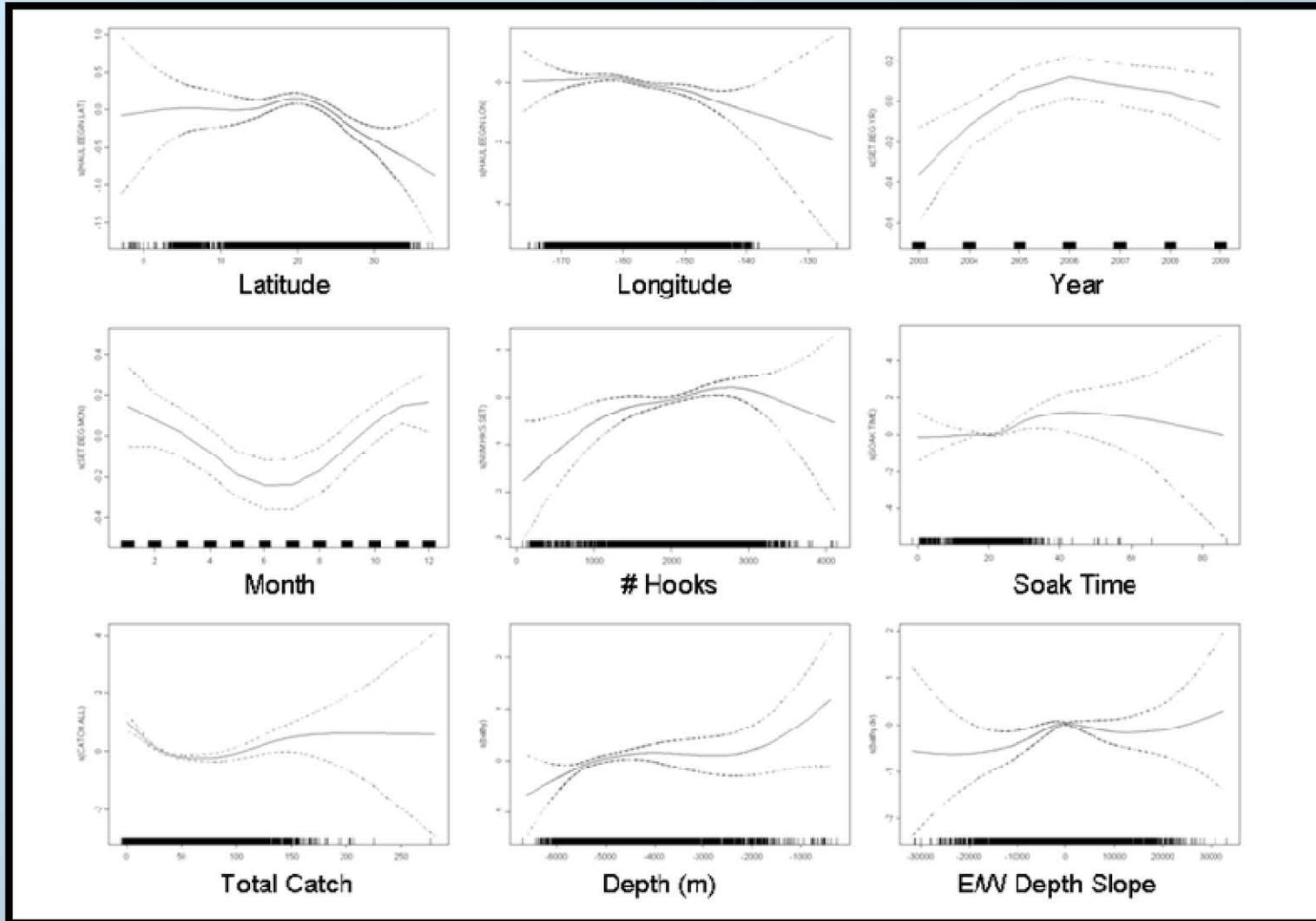
Generalized Additive Model (GAM): Depredation ~ catch



Including
15 most
common
catch
species:
~5% of
variance
Explained

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GAM: Depredation, best fit model (stepwise selection)

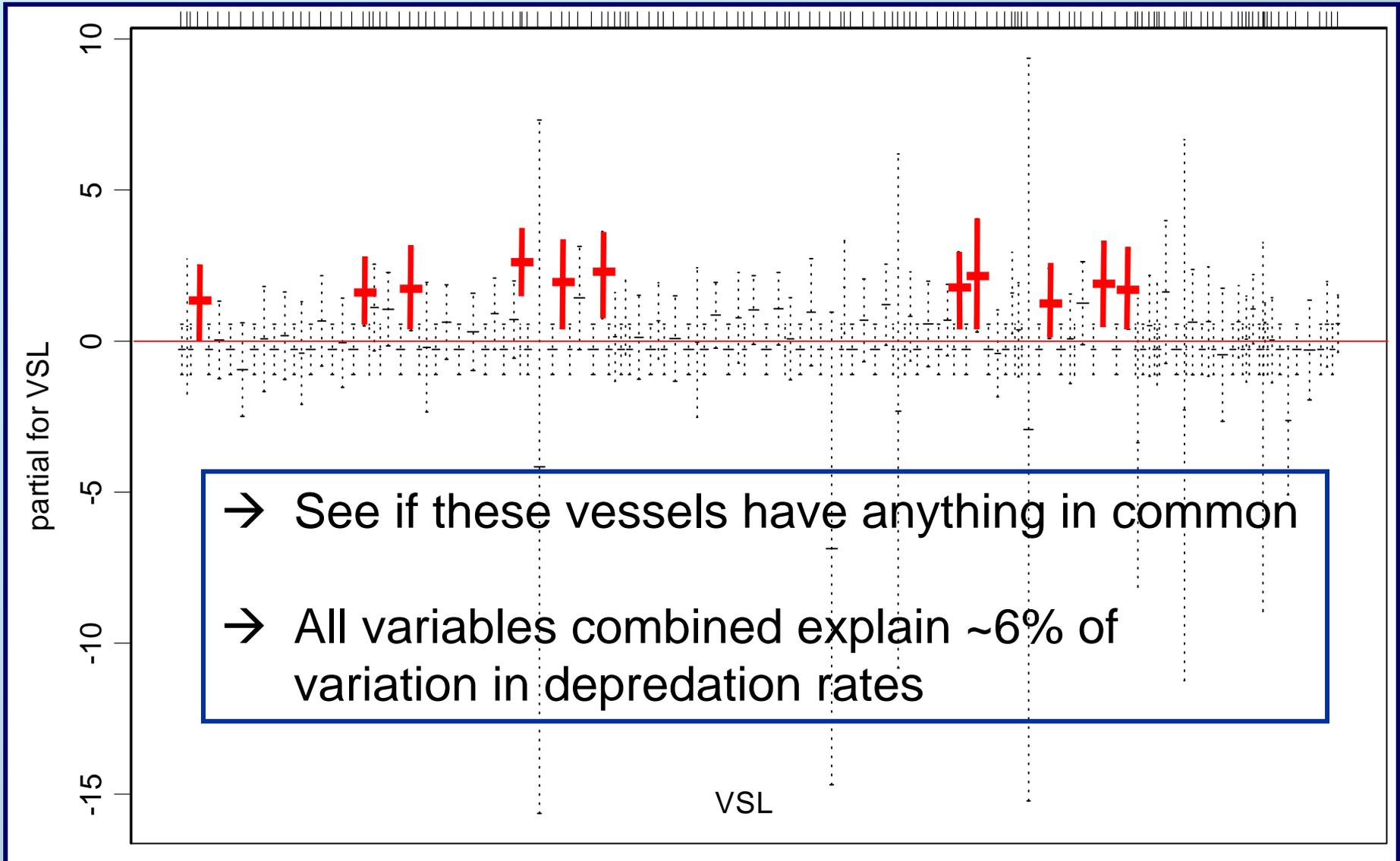


And individual vessel effects...

Individual Vessel Effects

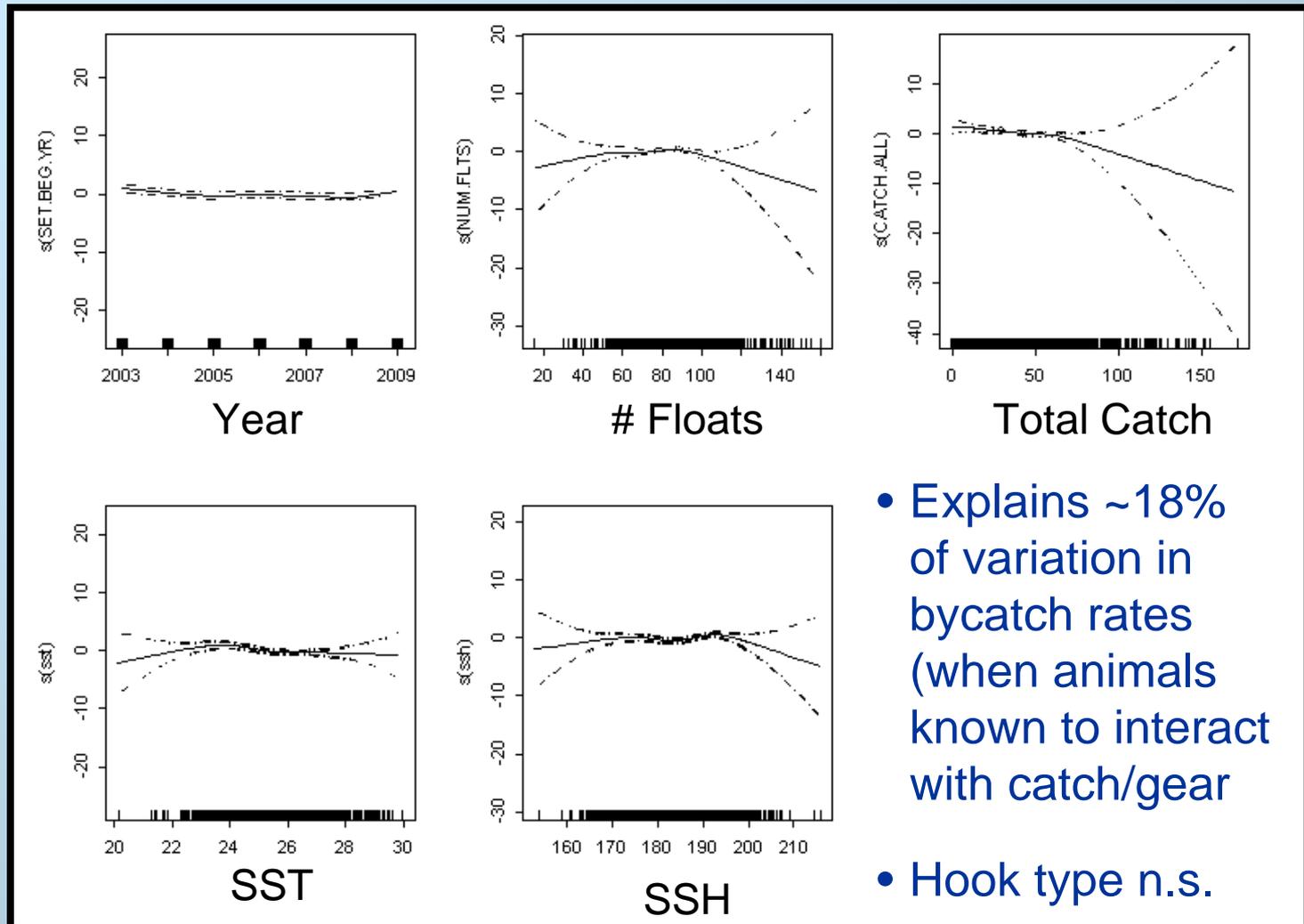
Generalized Additive Model including:

Lat, long, year, month, # hooks, soak time, total catch, water depth, slope



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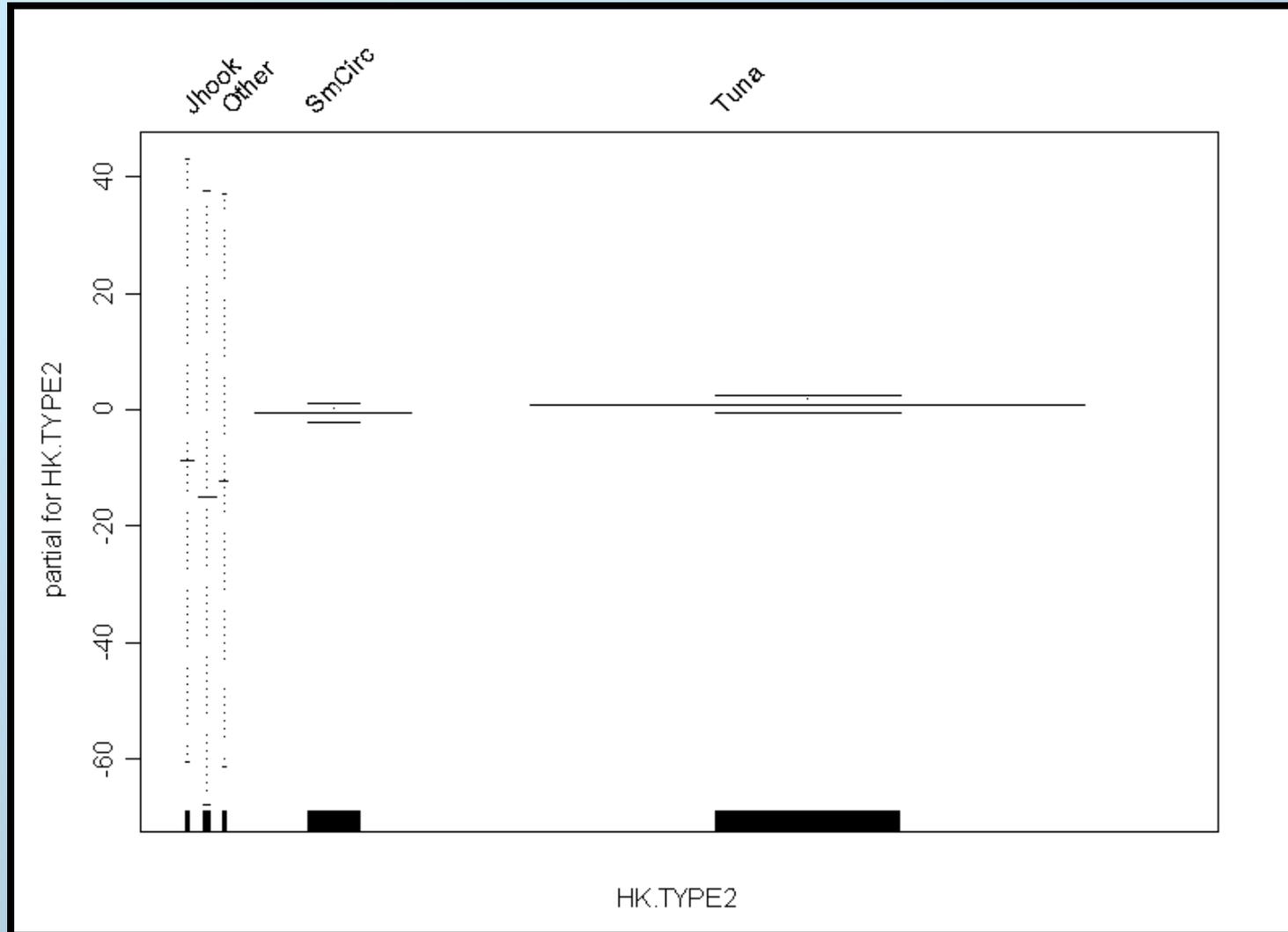
GAM: PC&BF bycatch, best fit model (stepwise selection)



- Explains ~18% of variation in bycatch rates (when animals known to interact with catch/gear)
- Hook type n.s.

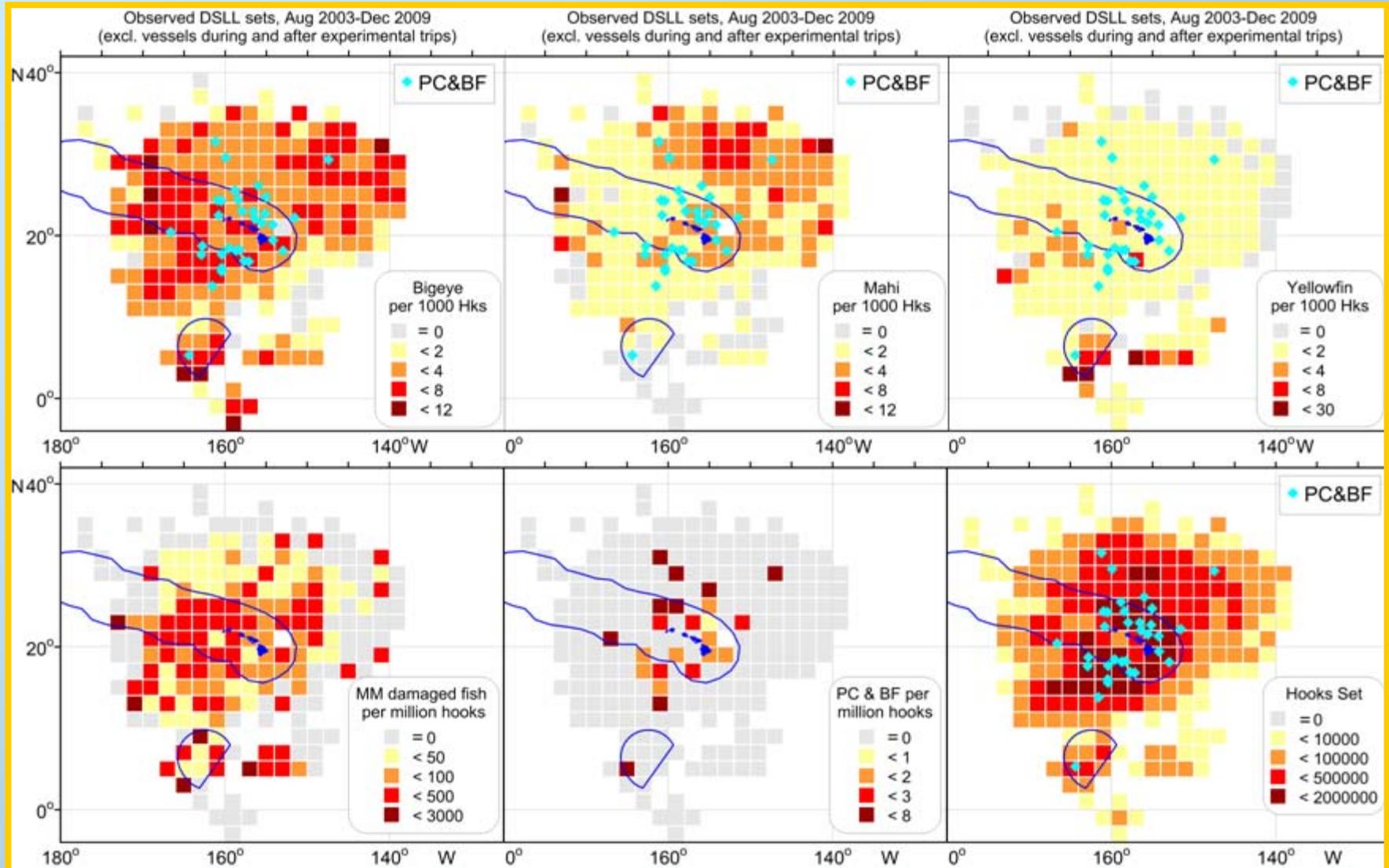
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GAM: PC&BF bycatch, hook type effect n.s.



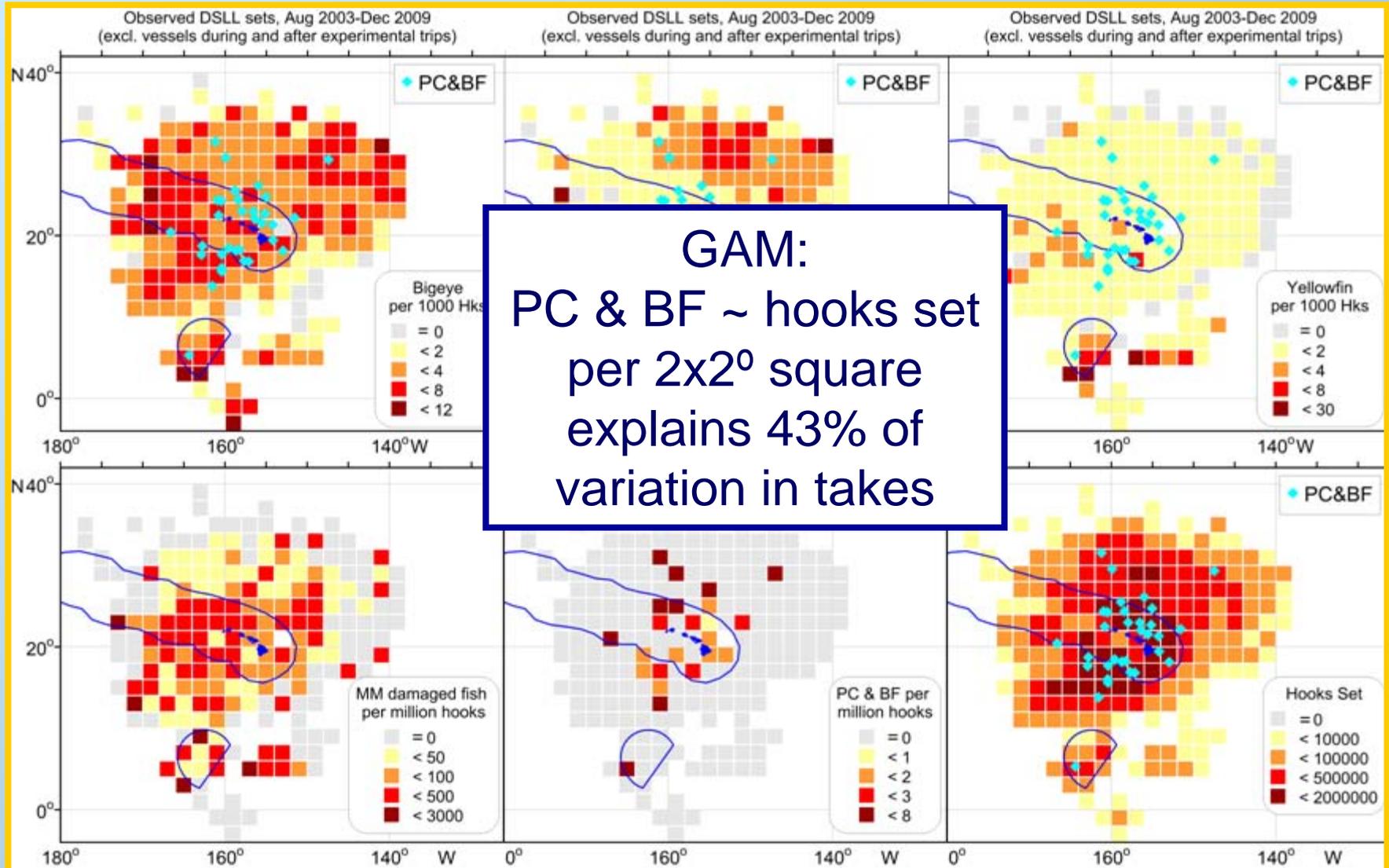
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Plot distributions of target species, depredation and false killer whale / unidentified blackfish (PC&BF) bycatch



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Plot distributions of target species, depredation and false killer whale / unidentified blackfish (PC&BF) bycatch



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TRT MEMBER CONCLUSIONS
(Andy Read)