VALUING NATURE

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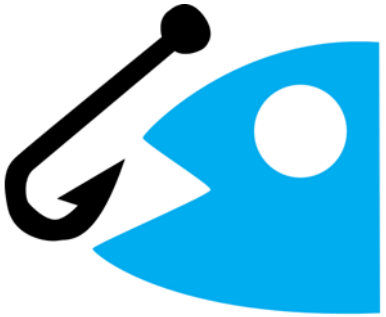
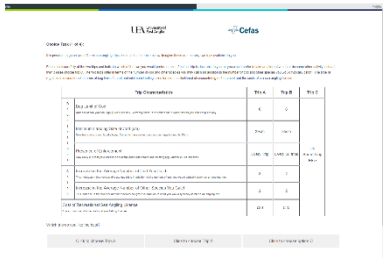
Managing Marine Natural Capital: Assessing the Impact of Fisheries Management on the Utility of Recreational Sea Anglers

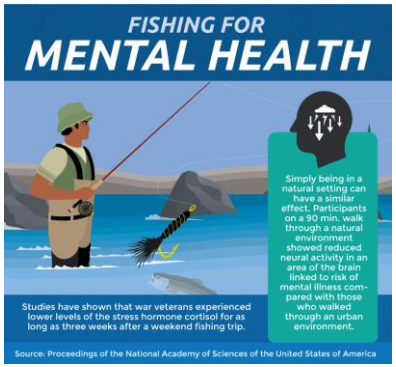
Placement Objectives

- Assess the impact of management (catch restrictions) on the benefits of Recreational Sea Angling
- Through the design of a Stated Preference Choice Experiment (SPCE)
- Complimenting my interests:
  - Outdoor and nature based activities that promote psychological well-being
  - Valuation using stated preferences



Source: Jane Hawkey, Integration and Application Network, University of Maryland Center for Environmental Science.





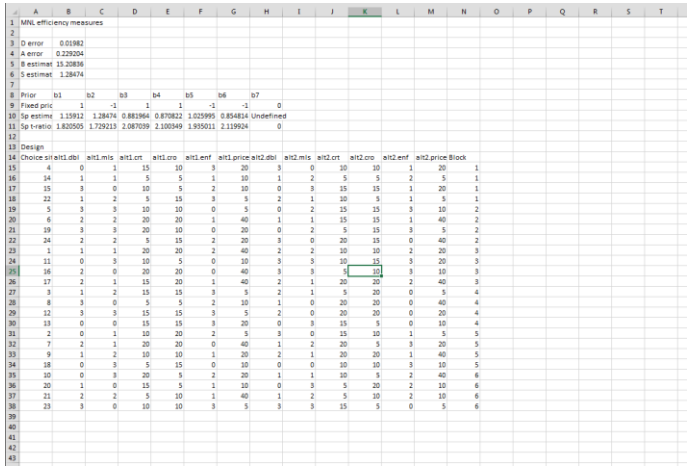
Placement Activities

- ✓ Literature Review
- ✓ Interviews with Anglers
- ✓ Survey Construction
- ✓ Initial Survey Testing
- ✓ Experimental Design

Table 1: Stated Preference Choice Experiments of Recreational Sea Anglers Preferences

Reference	Study Objective	Species Considered	Expected Catch Attributes	Management Attributes	Other Attributes	Cost Vehicle	Ranking Option	Choice pairs (J)/ Design notes
Lew & Larson (2012) – Economic values for saltwater sport fishing in Alaska: A stated preference analysis.	Estimate the economic value of fishing for different groups of anglers and for different characteristics of their fishing trips	(3) = Halibut, Chinook Salmon and Coho Salmon – (Each choice pair presented participants with attributes for two species)	**Catch per day** *(Halibut = 1/2/4 Ch Salmon = 1/2/4 Co Salmon = 1/3/6)* **Average size of fish caught (lbs)** *(Halibut = 20/40/80 Ch Salmon = 15/25/40 Co Salmon = 7/10/12)*	**Daily bag (take) limit** *(Halibut = 1/2/3 Ch Salmon = 1/2/3 Co Salmon = 3/4/6)*	**Charter or Private boat** *(Charter/Private)* **Number of fishing days** *(1/2/3 days for South Central Alaska version; 1/2/4 days for all others)*	**Fishing trip cost per person** including all fishing trip related costs *(Six levels (US$25 - $2,000) different for each of 3 respondent types)*	Which do you like best/least	(4) Conditional Logit **Number of Attributes in Choice Task = 9** **Opt out** = Do something other than Alaska saltwater fishing
Anderson & Lee (2013) – Untangling the recreational value of wild and hatchery salmon	How value of fishing is affected by changes in regulations and catch rates. Do anglers exhibit different preferences for wild and hatchery salmon, catch in excess of the bag limit	(8) = Halibut, Lingcod, Rockfish, Wild Silver Salmon, Hatchery Silver Salmon, Wild King Salmon, Hatchery King Salmon, Pink Salmon	**Catch per day** - weight per fish *(Variable for each spp)*	**Legal daily limit** *(Variable for each spp)*	None	[10]**Fishing Cost per person per day**- not including transport and lodging costs *(Private boat costs = 20/40/80$ Charter boat costs = 85/125/175$)*	If your first choice was not available what would be your second choice? For choice A and B would you most often use a charter or private boat? How many trips of each	(4) **Number of Attributes in Choice Task = 3** **Opt out** = Do one of the following (other than boat fishing in Oregon saltwater): - Saltwater shore fishing – Oregon freshwater fishing – Do

[10] Costs for both charter and private boats were presented for each scenario in a choice pair.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	MNL efficiency measures																			
2																				
3	D error	0.01982																		
4	A error	0.229204																		
5	B estimat	15.20836																		
6	S estimat	1.28474																		
7																				
8	Prior	b1	b2	b3	b4	b5	b6	b7												
9	Fixed pric	1	-1	1	1	-1	-1	0												
10	Sp estima	1.15912	1.28474	0.881964	0.870822	1.025995	0.854814	Undefined												
11	Sp t-ratio	1.820505	1.729215	2.087039	2.100349	1.935011	2.119924	0												
12																				
13	Design																			
14	Choice sit	alt1.dbl	alt1.mls	alt1.crt	alt1.cro	alt1.enf	alt1.price	alt2.dbl	alt2.mls	alt2.crt	alt2.cro	alt2.enf	alt2.price	Block						
15	4	0	1	15	10	3	20	3	0	10	10	1	20	1						
16	14	1	1	5	5	1	10	1	2	5	5	2	5	1						
17	15	3	0	10	5	2	10	0	3	15	15	1	20	1						
18	22	1	2	5	15	3	5	2	1	10	5	1	5	1						
19	5	3	3	10	10	0	5	0	2	15	15	3	10	2						
20	6	2	2	20	20	1	40	1	1	15	15	1	40	2						
21	19	3	3	20	10	0	20	0	2	5	15	3	5	2						
22	24	2	2	5	15	2	20	3	0	20	15	0	40	2						
23	1	1	1	20	20	2	40	2	2	10	10	2	20	3						
24	11	0	3	10	5	0	10	3	3	10	15	3	20	3						
25	16	2	0	20	20	0	40	3	3	5	10	3	10	3						
26	17	2	1	15	20	1	40	2	1	20	20	2	40	3						
27	3	1	2	15	15	3	5	2	1	5	20	0	5	4						
28	8	3	0	5	5	2	10	1	0	20	20	0	40	4						
29	12	3	3	15	15	3	5	2	0	20	20	0	20	4						
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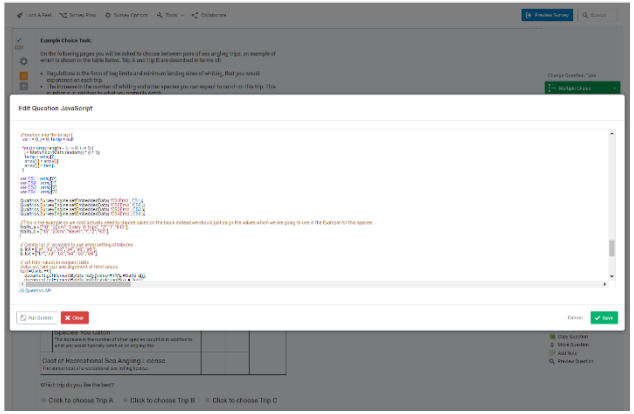
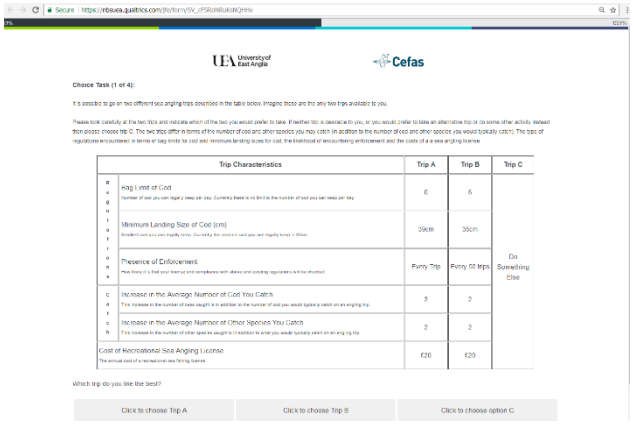
31	2	0	1	10	20	2	5	3	0	15	10	1	5	5						
32	7	2	1	20	20	0	40	1	2	20	5	3	20	5						
33	9	1	2	10	10	1	20	2	1	20	20	1	40	5						
34	18	0	3	5	15	0	10	0	0	10	10	3	10	5						
35	10	0	3	20	5	2	20	1	1	10	5	2	40	6						
36	20	1	0	15	5	1	10	0	3	5	20	2	10	6						
37	21	2	2	5	10	1	40	1	2	5	10	2	10	6						
38	23	3	0	10	10	3	5	3	3	15	5	0	5	6						
39																				
40																				
41																				
42																				
43																				

Placement Activities (continued)

- ✓ Online Survey Construction
- ✓ Piloting Online Survey
- ✓ Collecting Feedback on Survey
- ✓ Refinement of Online Survey
- ✗ Fishing?





Placement Learning Experience

Source: pixabay.com

- Insight into what life is like working at an executive agency of Defra.
- Seeing valuation from a policy practitioner perspective
- The power of non-government angling associations

Placement Learning Experiences

- Focus on Provisioning?
- Efficacy of Stated Preference Methods?
- Choice Experiment Design
  - Selecting attributes and attribute levels
  - Finding suitable payment mechanisms
  - Experimental design
  - Making online surveys
    - Fisher Yates Shuffle

Source: pixabay.com

Challenges

- Short comings in previous research
  - Payment Mechanisms
  - Explaining to non-economists why previous research methodologies maybe insufficient
- Accessing participants
- Adaptive management!
- Bureaucratic inertia

Opportunities

- Continuation of work on choice experiments with Cefas
- Invited to present at WGRFS 2018 (working group on recreational fishing surveys)
- Discussions with international group of experts performing choice experiments in this context
- Need for SPCE online survey tools
- To explicitly incorporate the spatial nature of recreational angling opportunities

Progress on Outputs

- Literature review on the application of stated preference choice experiments for assessing management of recreational sea angling in the UK
- Recommendations for the continued use of stated preference choice experiments for recreational sea angling management
- Revised online survey

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Questions?