

### Appendix C: Additional Tables

**Table C1: Differences in MWTP Between Rural and Urban Respondents**

	(1)	(3)	(4)
<b>Mean MWTP Coefficients</b>	Full Sample	Rural	Urban
Distance (miles)	-0.67*** (0.15)	-0.87*** (0.23)	-0.77*** (0.21)
Fish Species	4.73** (1.48)	2.65 (1.79)	5.62** (1.77)
Fish Population	0.17** (0.06)	0.05 (0.07)	0.23** (0.08)
Algal Blooms (%)	0.77*** (0.11)	0.80*** (0.13)	0.77*** (0.15)
Nutrient Target	0.95*** (0.13)	1.11*** (0.16)	0.79*** (0.14)
Status Quo (No Program)	-69.49*** (14.78)	-50.92*** (12.93)	-10.53 (12.22)
<b>SD of Random Parameters</b>			
Distance (miles)	92.57*** (18.69)	5.57 (15.47)	104.78*** (21.48)
Fish Species	1.06*** (0.26)	1.16*** (0.34)	1.38*** (0.32)
Fish Population	6.58*** (2.12)	10.47*** (2.79)	10.38*** (1.96)
Algal Blooms (%)	0.35** (0.09)	0.25* (0.11)	0.50*** (0.10)
Nutrient Target	0.85*** (0.16)	1.08*** (0.21)	0.67*** (0.17)
Cost	0.85*** (0.13)	1.11*** (0.18)	0.85*** (0.15)
Status Quo (No Program)	1.42*** (0.23)	1.28*** (0.18)	1.50*** (0.28)
Observations (Respondents)	2058 (343)	1092 (182)	966 (161)
Log-likelihood	-1717.19	-899.63	-786.11
AIC	3506.38	1871.26	1644.22
McFadden $\rho^2$	0.15	0.16	0.16
LR $\chi^2_{63}$	62.90		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Note:** Column 1 provides the results of the WTP-space model for the pooled (full) sample. Column 2 and 3 divide the sample into rural and urban respondents. The likelihood ratio test in column 1 tests for joint similarities between rural and urban respondents. We fail to reject that MWTP values are jointly the same.

**Table C2: Correlation Coefficients in Primary Models**

<b>Panel A: Full Sample</b>							
	Status Q.	Distance	Fish Spe.	Fish Pop.	Algal	Nutrient	Cost
Status Q.	1						
Distance	0.006	1					
Fish Spe.	-0.631	0.489	1				
Fish Pop.	0.236	-0.103	-0.658	1			
Algal	-0.169	0.142	-0.392	0.792	1		
Nutrient	-0.541	0.486	0.304	0.067	0.526	1	
Cost	0.085	-0.078	-0.438	0.627	0.537	0.438	1
<b>Panel B: Rural</b>							
	Status Q.	Distance	Fish Spe.	Fish Pop.	Algal	Nutrient	Cost
Status Q.	1						
Distance	-0.591	1					
Fish Spe.	-0.253	-0.572	1				
Fish Pop.	-0.017	-0.054	-0.150	1			
Algal	-0.264	0.848	-0.691	0.238	1		
Nutrient	-0.202	0.463	-0.188	-0.006	0.614	1	
Cost	0.260	-0.018	-0.251	0.200	0.286	0.613	1
<b>Panel C: Urban</b>							
	Status Q.	Distance	Fish Spe.	Fish Pop.	Algal	Nutrient	Cost
Status Q.	1						
Distance	-0.390	1					
Fish Spe.	-0.222	-0.080	1				
Fish Pop.	-0.122	0.337	0.245	1			
Algal	0.047	0.376	-0.352	0.815	1		
Nutrient	-0.533	0.621	0.156	0.039	-0.111	1	
Cost	0.219	0.082	0.240	0.424	0.219	0.467	1

**Note:** Correlation coefficients are recovered from the primary model in Table 2 (Panel A) and the rural and urban samples in Table C1 (Panel B). As expected, correlations between parameters are large for many of the attributes providing strong evidence that an attribute-correlated model is appropriate.

**Table C3: MWTP with Certainty Adjustments**

	(1) Full Sample	(2) Adjustment 1	(3) Adjustment 2
Status Quo (No Program)	-69.49*** (14.78)	-8.90 (12.31)	196.67*** (56.60)
Distance (miles)	-0.67*** (0.15)	-0.76*** (0.18)	-0.67* (0.28)
Fish Species	4.73** (1.48)	3.34 (1.89)	-7.61 (4.78)
Fish Population	0.17** (0.06)	0.14 (0.07)	0.09 (0.13)
Algal Blooms (%)	0.77*** (0.11)	0.89*** (0.15)	0.75* (0.30)
Nutrient Target	0.95*** (0.13)	1.06*** (0.17)	0.63* (0.26)
Observations	2058	2058	2058
Log-likelihood	-1717.19	-1762.15	-1433.89
McFadden $\rho^2$	0.15	0.13	0.29
AIC	3506.38	3596.29	2939.78
Standard errors in parentheses		* $p < 0.05$ , ** $p < 0.01$ , *** $p < 0.001$	

**Note:** Column 1 presents the results from our primary specification (Table 2). Column 2 makes a certainty adjustment that recodes any “not very certain” follow-up questions to the status quo option. Column 3 makes a certainty adjustment that recodes any “not very certain” and “somewhat certain” follow-up questions to the status quo option. This can be interpreted as moving from less restrictive to more restrictive when moving from left to right in the table. MWTP values become more noisy (larger standard errors) in columns 2 and 3. However, MWTP for improvements in Algal Blooms and reaching the Nutrient Target are still large and significant. As discussed in Penn and Hu (2020), the most restrictive assumptions regarding certainty adjustments (column 3) are found to underestimate the true MWTP—overcorrecting for hypothetical bias.

**Table C4: Preferences-Space Models and Marginal Utilities**

	(1)	(2)	(3)	(4)
<b>Mean Preference Parameters</b>	Full Sample	ASC Heterogeneity	Rural	Urban
Distance (miles)	-0.0124*** (0.0026)	-0.0134*** (0.0028)	-0.0119** (0.0038)	-0.0135*** (0.0040)
Fish Species	0.0500 (0.0271)	0.0495 (0.0279)	0.0091 (0.0395)	0.0908* (0.0402)
Fish Population	0.0031** (0.0010)	0.0032** (0.0011)	0.0013 (0.0014)	0.0048** (0.0015)
Algal Blooms (%)	0.0143*** (0.0015)	0.0149*** (0.0016)	0.0125*** (0.0021)	0.0171*** (0.0023)
Nutrient Target	0.0167*** (0.0015)	0.0170*** (0.0016)	0.0172*** (0.0022)	0.0170*** (0.0022)
Cost	0.0163*** (0.0021)	0.0165*** (0.0022)	0.0150*** (0.0029)	0.0191*** (0.0033)
Status Quo (No Program)	-0.7933*** (0.1980)	-0.2811 (0.2626)	-1.1083*** (0.2755)	-0.4291 (0.2963)
Status Quo × Rural		-0.5295 (0.2880)		
Status Quo × Aware of Water Issues		-0.3753 (0.2223)		
<b>SD of Random Parameters</b>				
Distance (miles)	0.024*** (0.006)	0.027*** (0.005)	0.03*** (0.007)	1.50** (0.28)
Fish Species	0.160** (0.055)	0.174** (0.06)	0.225** (0.09)	0.024* (0.009)
Fish Population	0.007*** (0.002)	0.007*** (0.002)	0.006* (0.003)	0.009** (0.003)
Algal Blooms (%)	0.017** (0.002)	0.017*** (0.003)	0.021*** (0.003)	0.012** (0.004)
Nutrient Target	0.016*** (0.002)	0.016*** (0.12)	0.017*** (0.003)	0.015*** (0.003)
Status Quo (No Program)	1.70*** (0.32)	2.12*** (0.43)	1.300* (0.54)	2.17*** (0.47)
Status Quo × Rural		1.78*** (0.41)		
Status Quo × Aware of Water Issues		0.167 (0.34)		
Observations (Respondents)	2058 (343)	2058 (343)	1092 (182)	966 (161)
Log-likelihood	-1739.9212	-1730.2633	-913.4013	-807.9063
AIC	3535.8424	3550.5267	1882.8027	1671.8127
McFadden $\rho^2$	0.14	0.15	0.14	0.16
LR $\chi^2_{63}$	37.23			

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Note:** Marginal utilities—the coefficients from the preference-space model—are represented in the table. Column 1 provides the results of the MIXL model for the pooled (full) sample. Column 2 introduces an interaction between the Status Quo dummy and respondent characteristics. Column 3 and 4 divide the sample into rural and urban respondents. The likelihood ratio test in column 1 tests for joint similarities between rural and urban respondents. We fail to reject that preferences are jointly the same. The coefficient on cost is assumed fixed, all others are distributed normal.

**Table C5: Empirical Distributions of MWTP from Preference-Space Models**

	(1)	(2)	(3)	(4)
	Full Sample	ASC Heterogeneity	Rural	Urban
Distance (miles)	-0.76*** (0.18)	-0.82*** (0.20)	-0.80** (0.29)	-0.71** (0.24)
Fish Species	3.06 (1.73)	3.00 (1.77)	0.61 (2.65)	4.77* (2.27)
Fish Population	0.19** (0.07)	0.19** (0.07)	0.09 (0.10)	0.25** (0.10)
Algal Blooms (%)	0.88*** (0.13)	0.90*** (0.14)	0.84*** (0.20)	0.90*** (0.17)
Nutrient Target	1.02*** (0.15)	1.03*** (0.15)	1.15*** (0.25)	0.89*** (0.17)
Status Quo (No Program)	-48.54*** (11.95)	-17.04 (15.75)	-74.06*** (19.88)	-22.52 (15.16)
Status Quo × Rural		-32.10 (17.96)		
Status Quo × Aware of Water Issues		-22.75 (13.59)		

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Note:** MWTP values are recovered from the preference-space model summarized here. Means and standard errors are estimated using the delta method in the *gmn*l package in R (Sarrias and Daziano 2017). The coefficient on *cost* was assumed to be fixed for the population. This allowed us to derive meaningful distributions of MWTP by taking a simple ratio of the mean preference parameters. Results are comparable to the estimates in the WTP-space models in our main analysis (Table 2). However, the MWTP produced from the WTP-space models has a tighter distribution around the means with more precise estimates of the mean MWTP for each attribute.

## References

- Penn, Jerrod, and W. Hu. 2020. "Certainty Follow-Up Efficacy under Potential and Actual Hypothetical Bias: A Meta-Analysis." *American Journal of Agricultural Economics* forthcoming.
- Sarrias, Mauricio, and Ricardo Daziano. 2017. "Multinomial Logit Models with Continuous and Discrete Individual Heterogeneity in R: The *gmn*l Package." *Journal of Statistical Software, Articles* 79: 1-46. doi:10.18637/jss.v079.i02.