

Electronic Supplementary Information

Humans and the Water Environment: The Need for Coordinated Data Collection

S1. Spatial Distribution of Data Sets

The USEPA's Wadeable Streams Assessment provides precisely georeferenced point observations on numerous water quality, quantity, and habitat parameters [1]. In 2004–2005, observations were made at 2042 locations. As shown in Figure S1, the sampling sites represent virtually all parts of the contiguous United States. Some states supplemented the basic federal sampling design with additional sampling sites, producing observational clustering.

The 2010 General Social Survey (GSS) has 2035 respondents [2]. The 2009 National Survey on Recreation and the Environment (NSRE) has 103,770 respondents [3]. In both cases, the exact locations of the respondents are highly protected information not available to researchers. The GSS data are spatially identified at census tract, and county levels. Their spatial distributions at census tract level are shown in Figure S2. Where multiple observations are present within a county or census tract, they are averaged into a single observation. NSRE observations are spatially identified at zip code, census tract and county levels. The spatial distribution of the most granular coverage, zip code scale, is shown in Figure S3.

In addition to a significant loss of spatial resolution resulting from privacy protection, the GSS sampling frame deliberately oversamples some minority groups. In order to realize economies in the administration of in-person interviews, the GSS samples intensively in a relatively small number of areas. The degree to which this sampling frame reasonably represents human interactions with different environmental conditions is unknown.

Figure S1. WSA sampling sites overlaid on US county level map (N = 2035 points).

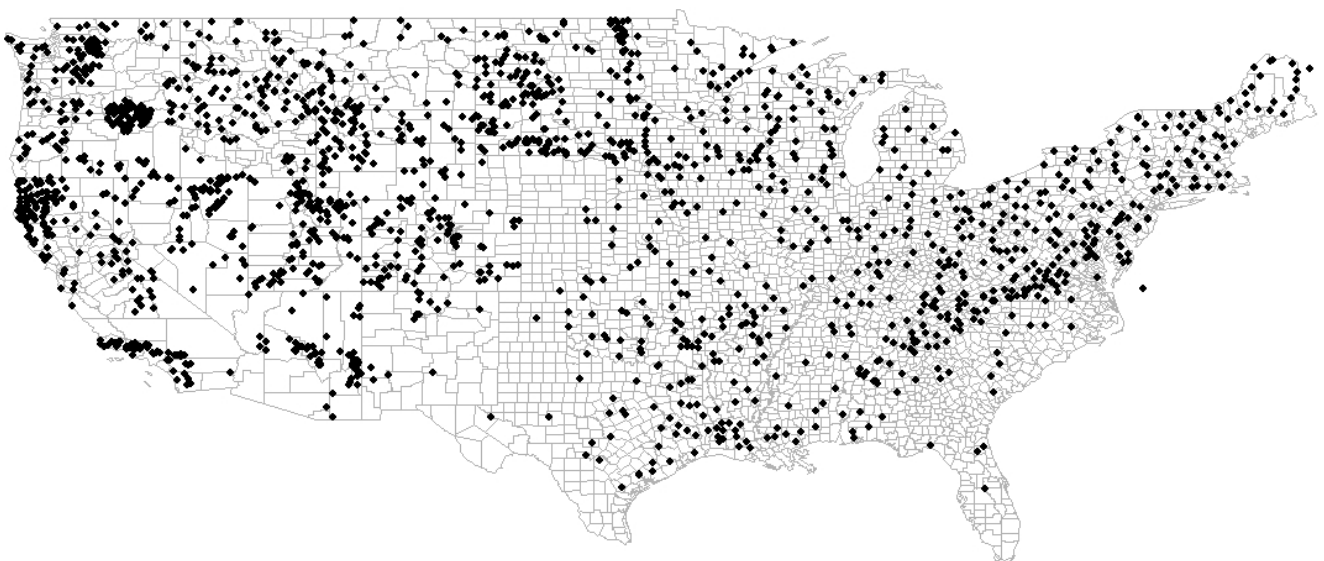


Figure S2. GSS data averaged at census tract level (N = 366 observations).

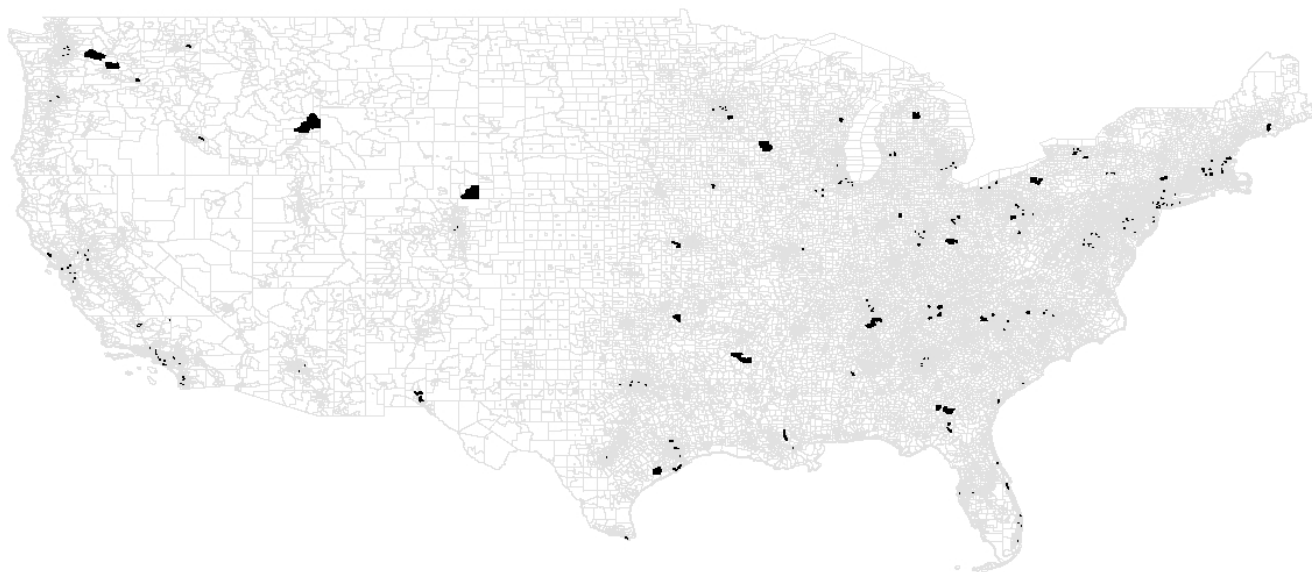


Figure S3. NSRE data averaged at zipcode level (N = 19,959 observations).



S2. Methods and Results

Table S1 reports detailed results of tests of equivalence of means of the samples used in the cases studies relative to the raw samples produced by GSS, NSRE, and WSA. Tables S2 through S4 report detailed results of the estimated models underlying Case Study 1. Tables S5 through S7 report detailed results for the models underlying Case Study 2. For each case study, the models are estimated separately for selected chemical (Tables S2 and S5), physical (Tables S3 and S6), and biotic (Tables S4 and S7) measures of stream water quality as reported in the Wadeable Streams Assessment.

Table S1. Equivalence of means of full samples versus matched samples.

Variables	Pre-match		Post-match		Welch's	Post-match		Welch's
	Mean	S.D.	Mean	S.D.	T-test ^b	Mean	S.D.	T-test ^b
GSS & Census [2,4] (n_{pre} = 2,044, n_{post} = 195)								
CS1: WSA & GSS								
h2oless	2.149	1.635	2.078	1.508	0.517 ***	na	na	na
prevdanger	1.388	1.197	1.419	1.066	−0.314 ***	na	na	na
grntaxes	2.217	1.876	2.589	1.886	−2.173 **	na	na	na
age	47.967	17.678	49.581	12.270	−1.405 **	na	na	na
children	1.885	1.739	2.550	1.510	−4.805 *	na	na	na
income	24,756.790	9,210.904	2,1399.220	1,1070.330	3.3719 *	na	na	na
polviews	3.818	1.903	4.171	1.597	−2.403 **	na	na	na
race	0.758	0.429	0.891	0.312	−4.596 **	na	na	na
sex	0.436	0.496	0.543	0.500	−2.352 *	na	na	na
grngroup	0.038	0.192	0.039	0.194	−0.034 ***	na	na	na
urban	47.967	1.635	2.078	1.508	0.517 ***	na	na	na
WSA [1] (n_{pre} = 2,042, CS1 n_{post} = 195, CS2 n_{post} = 214)								
	CS1 & CS2		CS1			CS2		
region1	0.028	0.164	0.031	0.174	−0.222 ***	0.039	0.195	−1.592 ***
region2	0.022	0.147	0.054	0.227	−1.585 **	0.029	0.169	−1.097 ***
region3	0.064	0.245	0.147	0.356	−2.624 **	0.091	0.288	−2.466 **
region4	0.066	0.249	0.039	0.194	1.538 **	0.096	0.294	−2.597 **
region5	0.080	0.272	0.047	0.211	1.717 **	0.123	0.328	−3.397 **
region6	0.074	0.261	0.039	0.194	1.940 **	0.101	0.302	−2.368 **
region8	0.048	0.213	0.008	0.088	4.397 **	0.056	0.231	−0.953 ***
region9	0.288	0.453	0.023	0.151	15.868	0.235	0.424	3.018 **
phos	0.172	0.377	0.473	0.501	−6.699	0.128	0.335	3.114 **
NO3	89.687	273.656	88.693	252.090	0.043 ***	105.566	265.822	−1.410 ***
SDO	52.385	207.883	108.379	423.868	−1.486 **	70.378	212.955	−2.033 ***
RHA	9.017	6.401	8.564	1.808	1.563 **	8.943	2.803	0.284 ***
EPT	16.247	164.489	5.080	8.632	2.657 **	13.750	56.972	0.548 ***
NSRE[3] (n_{pre} = 8,073, n_{post} = 214)								
	CS2: WSA & NSRE							
boatd	0.548	0.498	na	na	na	0.542	0.499	0.406 ***
waterd	0.761	0.426	na	na	na	0.902	0.297	−13.987
swimd	0.527	0.499	na	na	na	0.532	0.499	−0.335 ***
fishd	0.631	0.482	na	na	na	0.528	0.499	6.138 **
income	62,156.89	43,613.32	na	na	na	34,262.39	37,770.88	21.813
age	44.274	23.609	na	na	na	45.889	20.114	−2.377 **
sex	0.994	0.075	na	na	na	0.464	0.499	31.665
race	0.824	0.381	na	na	na	0.886	0.318	−5.821 *
hhsz	2.156	7.572	na	na	na	1.616	5.044	3.138 **

Notes: ^a Matched samples are at county level for CS1 and zip code level for CS2; ^b Significance at the: * 10% level, ** 5% level, *** 1% level.

Table S2. Effects of water quality on environmental attitudes and behavior using chemical measures.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
Prcvdanger ^b	na	failed to converge	−3.110 (2.696)
Grntaxes ^b	na		na
age	0.0168 (0.034)		0.0893 *** (0.029)
children	−0.479 (0.342)		0.499 * (0.296)
sex	0.914 (1.092)		−2.598 *** (0.817)
income	0.000355 ** (0.000)		2.03×10^{-4} (0.000)
incomesq	-1.52×10^{-8} *** (0.000)		-2.60×10^{-9} (0.000)
race	1.489 (1.439)		−1.132 (1.256)
grngroup	−8.406 *** (1.969)		5.862 *** (2.244)
polviews_liberal	−5.882 ** (2.670)		−
polviews_slightly liberal	−1.954 (1.947)		−
polviews_moderate	−2.496 (1.619)		−
polviews_slightly conservative	−2.534 (2.086)		−
polviews_conservative	−3.448 * (2.027)		−
polviews_extremely conservative	11.72 (2024.000)		−
region1	−2.685 (1.803)		−16.61 (1263.000)
region2	−1.426 (1.354)		0.0239 (1.749)
region4	−0.271 (1.338)		5.275 *** (1.402)
region5	−1.279 (1.608)		1.138 (1.303)
region6	0.317 (1.617)		2.654 * (1.511)
region7	−3.263 (2.481)		0.524 (1.705)
region9	2.132 ** (1.086)		5.244 *** (1.116)

Table S2. Cont.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
Phos	−0.000873 (0.001)		−0.00126 (0.001)
NO3	-6.28×10^{-5} (0.001)		-1.14×10^{-4} (0.001)
N	97		97
Adjusted R ²	0.499		0.499

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; ^a Polviews-extremely liberal and region3 are dropped *ex ante* to prevent collinearity. Region8 is dropped by Stata due to remaining collinearity; ^b Continuous predicted value from stage 1 replaces categories used for the original variable.

Table S3. Effects of water quality on environmental attitudes and behavior using rapid habitat assessment.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
Prcvdanger ^b	na	failed to converge	−3.679 (2.821)
grntaxes ^b	na		na
age	0.0185 (0.033)		0.0939 *** (0.029)
children	−0.55 (0.345)		0.530 * (0.292)
sex	0.592 (1.039)		−2.677 *** (0.834)
income	0.000363 ** (0.000)		1.84×10^{-4} (0.000)
incomesq	-1.54×10^{-8} *** (0.000)		-2.13×10^{-9} (0.000)
race	1.519 (1.416)		−1.195 (1.352)
grngroup	−8.373 *** (1.990)		5.884 *** (2.278)
polviews_liberal	−5.944 ** (2.648)		−
polviews_slightly liberal	−1.885 (1.942)		−
polviews_moderate	−2.564 (1.595)		−
polviews_slightly conservative	−2.173 (2.060)		−
polviews_conservative	−3.552 * (2.002)		−

Table S3. Cont.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
polviews_extremely conservative	12.03 (2595.000)		- -
region1	-2.668 (1.825)		-18.32 (2015.000)
region2	-1.674 (1.397)		-0.0516 (1.714)
region5	-0.347 (1.307)		5.298 *** (1.398)
region6	-1.312 (1.609)		1.046 (1.294)
region7	-0.355 (1.979)		1.659 (2.050)
region8	-3.747 (2.570)		0.0258 (1.830)
region9	2.129 ** (1.034)		4.877 *** (1.013)
RHA	-0.0497 (0.158)		0.162 (0.145)
Turb	0.0208 (0.046)		0.034 (0.050)
Constant	-9.632 *** -2.992		8.858 *** (2.298)
N	97		97
Adjusted R ²	0.495		0.495

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; ^a Polviews-extremely liberal and region3 are dropped *ex ante* to prevent collinearity. Region4 is dropped by Stata due to remaining collinearity; ^b Continuous predicted value from stage 1 replaces categories used for the original variable.

Table S4. Effects of water quality on environmental attitudes and behavior using a biotic index.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
Prcvdanger ^b	na	fails to converge	-3.293 (2.790)
Grntaxes ^b	na		na
age	0.0182 (0.033)		0.0908 *** (0.029)
children	-0.483 (0.342)		0.457 (0.306)
sex	0.699 (1.030)		-2.920 *** (0.861)
income	0.000383 ** (0.000)		2.22×10^{-4} (0.000)

Table S4. Cont.

Variable ^a	First stage		Second stage
	Attitude 1: prcvdanger	Attitude 2: grntaxes	Behavior: h2oless
incomesq	-1.58×10^{-8} *** (0.000)		-3.03×10^{-9} (0.000)
race	1.413 (1.443)		-1.02 (1.345)
grngroup	-8.061 *** (1.920)		6.044 *** (2.206)
polviews_liberal	-6.268 ** (2.738)		na
polviews_slightly liberal	-1.883 (1.940)		na
polviews_moderate	-2.547 (1.594)		na
polviews_slightly conservative	-2.167 (2.060)		na
polviews_conservative	-3.544 * (1.997)		na
polviews_extremely conservative	10.6 (1083.000)		na
region1	-2.428 (1.821)		-15.84 (1041.000)
region2	-1.629 (1.362)		0.129 (1.831)
region5	-0.31 (1.325)		5.330 *** (1.391)
region6	-1.103 (1.615)		1.175 (1.246)
region7	0.262 (1.599)		2.485 * (1.509)
region8	-3.541 (2.509)		0.375 (1.714)

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; ^a Polviews-extremely liberal and region3 are dropped *ex ante* to prevent collinearity. Region4 is dropped by Stata due to remaining collinearity; ^b Continuous predicted value from stage 1 replaces categories used for the original variable.

Table S5. Effects of water quality on recreation using chemical measurements.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
income	5.20×10^{-07}	2.63×10^{-7}	-8.20×10^{-6}	$-1.16 \times 10^{-5} ***$	-5.97×10^{-6}	-1.49×10^{-6}	-4.51×10^{-6}	-1.53×10^{-6}
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
income squared	0	0	$1.0 \times 10^{-10} *$	0	0	0	$1.0 \times 10^{-10} *$	0
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dist	1.46	1.27×10^{-1}	1.43	1.19	7.70×10^{-1}	-1.61×10^{-1}	$-6.63 **$	4.75×10^{-2}
	(2.0990)	(0.8170)	(2.1760)	(1.8230)	(2.1240)	(0.7370)	(2.8100)	(0.8410)
age	0.0129 ***	2.50×10^{-3}	0.0385 ***	-4.65×10^{-3}	0.0288 ***	8.20×10^{-4}	3.19×10^{-3}	$2.76 \times 10^{-3} *$
	(0.0040)	(0.0020)	(0.0050)	(0.0040)	(0.0050)	(0.0010)	(0.0060)	(0.0020)
sex	$-0.689 ***$	-8.55×10^{-2}	0.171	9.16×10^{-2}	$-0.405 ***$	2.00×10^{-3}	-1.34×10^{-1}	4.05×10^{-2}
	(0.1450)	(0.0570)	(0.1510)	(0.1050)	(0.1480)	(0.0510)	(0.2490)	(0.0560)
race	-2.83×10^{-1}	-1.07×10^{-1}	-2.71×10^{-1}	-2.31×10^{-1}	$-0.5697 **$	-1.22×10^{-2}	0.7285 **	-4.18×10^{-2}
	(0.2330)	(0.0880)	(0.2490)	(0.1800)	(0.2460)	(0.0820)	(0.3400)	(0.0910)
hhsz	-0.0711	-1.78×10^{-3}	-2.67×10^{-3}	6.10×10^{-3}	-2.21×10^{-2}	-2.593×10^{-4}	1.84×10^{-2}	1.35×10^{-3}
	(0.0460)	(0.0050)	(0.0160)	(0.0100)	(0.0290)	(0.0050)	(0.0170)	(0.0050)
improtect_disagree	0.435 **	6.53×10^{-2}	0.363 **	-1.98×10^{-1}	0.344 **	4.66×10^{-2}	1.05×10^{-1}	9.75×10^{-2}
	(0.1690)	(0.0680)	(0.1740)	(0.1210)	(0.1720)	(0.0600)	(0.3040)	(0.0670)
improtect_neutral	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_agree	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_strongly agree	-2.91×10^{-3}	2.58×10^{-2}	3.46×10^{-1}	2.00×10^{-1}	$-0.8904 ***$	4.28×10^{-2}	$-1.98 ***$	6.60×10^{-2}
	(0.3120)	(0.1210)	(0.3910)	(0.2600)	(0.3280)	(0.1300)	(0.3760)	(0.1400)
Phos	-2.77×10^{-4}	-2.47×10^{-5}	-1.97×10^{-4}	-1.68×10^{-4}	-1.25×10^{-6}	-2.19×10^{-5}	8.97×10^{-4}	5.74×10^{-6}
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	(0.0010)	0.0000
NO3	$7.97 \times 10^{-4} *$	6.71×10^{-5}	1.22×10^{-4}	-2.15×10^{-4}	1.29×10^{-5}	1.16×10^{-5}	-2.23×10^{-4}	-2.32×10^{-5}
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	(0.0010)	0.0000
SDO	4.00×10^{-2}	5.50×10^{-3}	-1.31×10^{-2}	-1.30×10^{-2}	-2.60×10^{-2}	-5.32×10^{-5}	-1.72×10^{-2}	-1.03×10^{-2}
	(0.0340)	(0.0090)	(0.0320)	(0.0130)	(0.0420)	(0.0090)	(0.0510)	(0.0130)

Table S5. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region1	1.55 (0.9690)	9.93×10^{-2} (0.3460)	-5.56×10^{-1} (0.9080)	-6.75×10^{-2} (0.5370)	2.01 * (1.0910)	3.85×10^{-2} (0.3110)	-1.24 (1.6220)	1.60×10^{-1} (0.3350)
region2	1.54×10 (1.1020)	1.38×10^{-1} (0.3640)	1.48 (1.2780)	-3.07×10^{-1} (0.6310)	4.09×10^{-1} (0.9140)	-8.57×10^{-2} (0.3070)	5.32 (5.1250)	3.72×10^{-2} (0.3240)
region4	-1.01×10^{-1} (0.5960)	-7.25×10^{-3} (0.2410)	-4.54×10^{-1} (0.6140)	-0.9833 ** (0.4320)	-5.14×10^{-1} (0.6060)	2.49×10^{-2} (0.2080)	-9.95×10^{-1} (0.9750)	2.07×10^{-2} (0.2340)
region5	2.05×10^{-1} (0.5220)	4.55×10^{-3} (0.2040)	-1.55×10^{-1} (0.5560)	-0.801 ** (0.3870)	2.57×10^{-1} (0.5370)	-5.52×10^{-2} (0.1840)	-7.54×10^{-3} (0.9850)	9.21×10^{-3} (0.1960)
region6	-1.14×10^{-1} (0.5440)	-6.06×10^{-2} (0.2170)	-5.42×10^{-2} (0.5770)	-3.42×10^{-1} (0.4150)	-5.89×10^{-3} (0.5700)	0.0371 (0.1900)	-1.44 (0.9680)	-1.30×10^{-3} (0.2100)
region7	-2.45×10^{-1} (0.6320)	-7.37×10^{-2} (0.2530)	-1.08 (0.7720)	-0.9560 * (0.5430)	-2.17×10^{-1} (0.6350)	-3.41×10^{-2} (0.2200)	-5.21×10^{-1} (1.2320)	-5.05×10^{-2} (0.2350)
region8	5.06×10^{-1} (0.4230)	9.98×10^{-2} (0.1660)	4.84×10^{-1} (0.4380)	-1.12 *** (0.3270)	2.39×10^{-1} (0.4330)	2.35×10^{-2} (0.1480)	-1.05 (0.7630)	-2.09×10^{-3} (0.1640)
region9	0.8249 * (0.4810)	1.05×10^{-1} (0.1770)	1.64×10^{-1} (0.4860)	-0.700 ** (0.3300)	5.59×10^{-1} (0.4880)	1.17×10^{-1} (0.1600)	-4.81×10^{-1} (0.7870)	-1.99×10^{-2} (0.1790)
region1 $\times$ income	7.66×10^{-6} 0.0000	1.63×10^{-6} 0.0000	-1.04×10^{-5} 0.0000	9.35×10^{-6} 0.0000	-2.41×10^{-5} ** 0.0000	5.87×10^{-8} 0.0000	-2.79×10^{-5} * 0.0000	-4.32×10^{-7} 0.0000
region2 $\times$ income	-1.23×10^{-5} 0.0000	1.30×10^{-8} 0.0000	-1.64×10^{-5} 0.0000	-6.49×10^{-6} 0.0000	3.05×10^{-6} 0.0000	1.24×10^{-7} 0.0000	-4.81×10^{-5} 0.0000	2.43×10^{-7} 0.0000
region4 $\times$ income	8.58×10^{-6} 0.0000	1.64×10^{-6} 0.0000	3.09×10^{-6} 0.0000	2.61×10^{-5} *** 0.0000	5.86×10^{-6} 0.0000	-1.16×10^{-6} 0.0000	-2.63×10^{-5} 0.0000	5.21×10^{-7} 0.0000
region5 $\times$ income	5.43×10^{-6} 0.0000	7.23×10^{-7} 0.0000	-5.69×10^{-6} 0.0000	9.67×10^{-6} ** 0.0000	2.52×10^{-6} 0.0000	-1.20×10^{-7} 0.0000	-1.83×10^{-5} 0.0000	8.93×10^{-7} 0.0000
region6 $\times$ income	6.08×10^{-6} 0.0000	7.97×10^{-7} 0.0000	-4.63×10^{-6} 0.0000	1.25×10^{-5} ** 0.0000	-2.84×10^{-6} 0.0000	-5.66×10^{-7} 0.0000	-9.34×10^{-6} 0.0000	-6.43×10^{-7} 0.0000
region7 $\times$ income	-6.09×10^{-6} 0.0000	-7.28×10^{-7} 0.0000	-9.35×10^{-6} 0.0000	-4.26×10^{-6} 0.0000	-7.70×10^{-7} 0.0000	3.19×10^{-7} 0.0000	-1.21×10^{-5} 0.0000	1.23×10^{-6} 0.0000

Table S5. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region8 × income	-5.04×10^{-6} 0.0000	-8.82×10^{-7} 0.0000	$-1.17 \times 10^{-5} *$ 0.0000	7.11×10^{-6} 0	-4.81×10^{-6} 0.0000	-1.99×10^{-7} 0.0000	-8.665×10^{-6} 0.0000	-5.32×10^{-7} 0.0000
region9 × income	-9.42×10^{-6} 0.0000	-1.47×10^{-6} 0.0000	-3.23×10^{-6} 0.0000	$1.14 \times 10^{-5} **$ 0	-8.77×10^{-6} 0.0000	-1.26×10^{-6} 0.0000	-0.00001652 0.0000	-6.84×10^{-7} 0.0000
region1 × distance	$-3.16 \times 10^{-1} **$ (15.7300)	-2.59 (5.5200)	1.10×10 (14.3150)	-4.50 -7.304	-2.04×10 (16.0700)	1.26×10^{-1} (4.8580)	7.12×10 (48.3500)	-1.63 (5.2930)
region2 × distance	-1.65×10 (12.6400)	-2.15 (3.9510)	-2.09×10 (16.0280)	4.32 -6.001	3.62 (9.3130)	9.05×10^{-1} (2.9330)	-1.53×10 (16.8200)	3.67×10^{-1} (3.2300)
region4 × distance	-6.29 (5.9590)	-1.21 (2.4090)	4.81 (6.2300)	0.1227 -4.869	1.16 (6.0610)	8.31×10^{-1} (2.0490)	$1.84 \times 10 *$ (9.8440)	-6.41×10^{-1} (2.3350)
region5 × distance	-4.22 (4.3040)	-4.65×10^{-1} (1.6930)	5.44 (5.1710)	5.036 -3.871	-6.15 (4.5470)	6.53×10^{-1} (1.5000)	8.77 (7.5380)	4.06×10^{-1} (1.5820)
region6 × distance	-5.35 (4.3750)	-6.26×10^{-1} (1.7440)	5.69 (4.7970)	-2.83 -3.971	4.25 (4.6390)	-2.68×10^{-2} (1.5270)	$2.05 \times 10 **$ (9.2830)	4.14×10^{-1} (1.6540)
region7 × distance	6.98×10^{-1} (4.8880)	1.69×10^{-1} (1.9520)	$1.48 \times 10 *$ (7.8310)	6.68 -6.539	8.84×10^{-1} (4.9280)	0.587 (1.6830)	8.81 (9.6520)	7.94×10^{-1} (1.7180)
region8 × distance	-2.78 (2.4360)	-5.23×10^{-1} (0.9570)	2.08×10^{-1} (2.5370)	4.31×10^{-1} -2.025	1.02 (2.4930)	1.04×10^{-1} (0.8560)	$1.20 \times 10 ***$ (4.2390)	2.80×10^{-2} (0.9610)
region9 × distance	-1.17 (2.8450)	-1.48×10^{-1} (1.0950)	-9.52×10^{-1} (3.0100)	-1.69 -2.275	-1.14 (2.9160)	-9.00×10^{-2} (0.9950)	$8.252*$ (4.3050)	1.80×10^{-3} (1.1170)
Constant	-5.50×10^{-1} (0.5260)	$3.69 \times 10^{-1} **$ (0.1810)	$-1.65***$ (0.5310)	$3.71***$ (0.3370)	-3.64×10^{-1} (0.5790)	$5.92 \times 10^{-1} ***$ (0.1650)	$2.40***$ (0.8000)	$4.51 \times 10^{-1} **$ (0.1990)
N	888	839	864	371	888	864	888	801
LL model	-570.9	-1052	-530.4	-1326	-551.2	-1135	-244.4	-1033
Pseudo R ²	0.141	0.00573	0.141	0.000121	0.141	0.00573	0.141	0.00573
Alpha		$-0.2982 **$ (0.00000)		$-0.2399 ***$ (0.07500)		$-0.3426 **$ (0.00000)		$-0.3129 *$ (0.00000)

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table S6. Effects of water quality on recreation using rapid habitat measures.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
income	-3.14×10^{-7}	1.34×10^{-7}	-8.01×10^{-6}	$-1.10 \times 10^{-5} **$	-5.55×10^{-6}	-1.48×10^{-6}	-4.06×10^{-6}	-1.37×10^{-6}
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
income squared	0	0	$1.0 \times 10^{-10} *$	0	0	0	1×10^{-10}	0
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dist	1.32	1.17×10^{-1}	1.25	1.18	6.12×10^{-1}	-1.67×10^{-1}	$-6.61 **$	3.60×10^{-2}
	(2.0930)	(0.8170)	(2.1740)	(1.8340)	(2.1190)	(0.7370)	(2.8100)	(0.8420)
age	$1.30 \times 10^{-2} ***$	2.50×10^{-3}	$3.89 \times 10^{-2} ***$	-4.81×10^{-3}	$2.89 \times 10^{-2} ***$	8.36×10^{-4}	2.81×10^{-3}	$2.76 \times 10^{-3} *$
	(0.0040)	(0.0020)	(0.0050)	(0.0040)	(0.0050)	(0.0010)	(0.0060)	(0.0020)
sex	$-6.91 \times 10^{-1} ***$	-8.55×10^{-2}	1.73×10^{-1}	8.27×10^{-2}	$-0.4077 ***$	2.43×10^{-3}	-1.38×10^{-1}	3.99×10^{-2}
	(0.1450)	(0.0570)	(0.1520)	(0.1040)	(0.1480)	(0.0510)	(0.2490)	(0.0560)
race	-3.07×10^{-1}	-1.10×10^{-1}	-2.83×10^{-1}	-2.42×10^{-1}	$-0.5726 **$	-1.30×10^{-2}	$0.7498 **$	-4.00×10^{-2}
	(0.2320)	(0.0870)	(0.2500)	(0.1790)	(0.2460)	(0.0820)	(0.3390)	(0.0910)
hhsz	-5.82×10^{-2}	-1.65×10^{-3}	-3.33×10^{-3}	5.44×10^{-3}	-2.36×10^{-2}	-2.97×10^{-4}	1.85×10^{-2}	1.11×10^{-3}
	(0.0450)	(0.0050)	(0.0160)	(0.0100)	(0.0300)	(0.0050)	(0.0170)	(0.0050)
improtect_disagree	0.4471 ***	6.68×10^{-2}	0.3540 **	$-0.2309 *$	0.3314 *	4.59×10^{-2}	1.17×10^{-1}	9.50×10^{-2}
	(0.1680)	(0.0670)	(0.1750)	(0.1210)	(0.1720)	(0.0600)	(0.3030)	(0.0670)
improtect_neutral	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_agree	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_strongly agree	1.21×10^{-2}	2.62×10^{-2}	3.74×10^{-1}	1.93×10^{-1}	$-9.01 \times 10^{-1} ***$	4.38×10^{-2}	$-1.9 ***$	6.43×10^{-2}
	(0.3110)	(0.1200)	(0.3920)	(0.2610)	(0.3280)	(0.1300)	(0.3750)	(0.1400)
turb	(0.0013)	(0.0002)	0.0034	0.0012	(0.0012)	0.0000	0.0038	0.0001
	(0.0020)	(0.0010)	(0.0030)	(0.0040)	(0.0020)	0.0000	(0.0070)	0.0000
RHA	-4.83×10^{-3}	-4.06×10^{-3}	-5.70×10^{-2}	2.48×10^{-2}	-4.93×10^{-2}	-1.64×10^{-3}	-3.45×10^{-3}	6.31×10^{-4}
	(0.0380)	(0.0150)	(0.0400)	(0.0290)	(0.0390)	(0.0130)	(0.0690)	(0.0150)

Table S6. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region1	1.51 (0.9690)	9.15×10^{-2} (0.3460)	-6.23×10^{-1} (0.9110)	-1.57×10^{-2} (0.5460)	1.949 * (1.0880)	3.58×10^{-2} (0.3120)	-1.22 (1.6230)	1.62×10^{-1} (0.3350)
region2	1.49 (1.1020)	1.31×10^{-1} (0.3650)	1.40 (1.2970)	-2.85×10^{-1} (0.6340)	3.44×10^{-1} (0.9160)	-8.91×10^{-2} (0.3080)	5.25 (5.0780)	3.85×10^{-2} (0.3250)
region4	-1.32×10^{-1} (0.5990)	-1.39×10^{-2} (0.2410)	-5.35×10^{-1} (0.6170)	-0.949 ** (0.4360)	-5.79×10^{-1} (0.6080)	2.25×10^{-2} (0.2090)	-1.01 (0.9760)	2.27×10^{-2} (0.2350)
region5	2.82×10^{-1} (0.5210)	8.24×10^{-3} (0.2040)	-2.23×10^{-1} (0.5580)	$-0.7868 **$ (0.3870)	2.00×10^{-1} (0.5380)	-5.75×10^{-2} (0.1840)	-2.78×10^{-2} (0.9770)	7.71×10^{-3} (0.1960)
region6	-1.70×10^{-1} (0.5450)	-6.65×10^{-2} (0.2170)	-2.86×10^{-1} (0.5820)	-3.94×10^{-1} (0.4100)	-3.46×10^{-2} (0.5710)	2.90×10^{-2} (0.1910)	-1.41 (0.9700)	-1.35×10^{-3} (0.2110)
region7	-9.32×10^{-2} (0.6260)	-6.82×10^{-2} (0.2510)	-1.24 (0.7810)	$-0.9887 *$ (0.5400)	-3.30×10^{-1} (0.6390)	-3.93×10^{-2} (0.2200)	-5.38×10^{-1} (1.2260)	-5.48×10^{-2} (0.2350)
region8	4.01×10^{-1} (0.4200)	8.72×10^{-2} (0.1650)	3.92×10^{-1} (0.4370)	-1.14 *** (0.3300)	2.37×10^{-1} (0.4320)	1.88×10^{-2} (0.1480)	-1.00 (0.7600)	9.64×10^{-3} (0.1630)
region9	0.7922 * (0.4790)	1.01×10^{-1} (0.1770)	1.05×10^{-1} (0.4850)	$-0.7000 **$ (0.3300)	5.28×10^{-1} (0.4870)	1.14×10^{-1} (0.1600)	-3.94×10^{-1} (0.7790)	-1.58×10^{-2} (0.1790)
region1 × income	7.50×10^{-6} 0.0000	1.59×10^{-6} 0.0000	-1.03×10^{-5} 0.0000	9.34×10^{-6} 0.0000	$-2.40 \times 10^{-5} **$ 0.0000	5.90×10^{-8} 0.0000	-2.68×10^{-5} 0.0000	-3.94×10^{-7} 0.0000
region2 × income	-1.20×10^{-5} 0.0000	-3.77×10^{-8} 0.0000	-1.70×10^{-5} 0.0000	-6.46×10^{-6} 0.0000	2.66×10^{-6} 0.0000	1.141×10^{-7} 0.0000	-4.69×10^{-5} 0.0000	2.61×10^{-7} 0.0000
region4 × income	8.65×10^{-6} 0.0000	1.65×10^{-6} 0.0000	3.35×10^{-6} 0.0000	$2.55 \times 10^{-5} ***$ 0.0000	5.92×10^{-6} 0.0000	-1.15×10^{-6} 0.0000	-2.60×10^{-5} 0.0000	4.95×10^{-7} 0.0000
region5 × income	4.62×10^{-6} 0.0000	6.47×10^{-7} 0.0000	-6.48×10^{-6} 0.0000	$8.98 \times 10^{-6} *$ 0.0000	2.24×10^{-6} 0.0000	-1.64×10^{-7} 0.0000	-1.73×10^{-5} 0.0000	9.05×10^{-7} 0.0000
region6 × income	5.71×10^{-6} 0.0000	7.30×10^{-7} 0.0000	-4.77×10^{-6} 0.0000	$1.28 \times 10^{-5} ***$ 0.0000	-3.22×10^{-6} 0.0000	-5.91×10^{-7} 0.0000	-8.03×10^{-6} 0.0000	-6.32×10^{-7} 0.0000
region7 × income	-3.95×10^{-6} 0.0000	-7.32×10^{-7} 0.0000	-8.59×10^{-6} 0.0000	-4.09×10^{-6} 0.0000	-2.64×10^{-6} 0.0000	4.23×10^{-7} 0.0000	-1.24×10^{-5} 0.0000	1.26×10^{-6} 0.0000

Table S6. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region8 × income	-3.45×10^{-6} 0.0000	-6.02×10^{-7} 0.0000	$-1.14 \times 10^{-5} *$ 0.0000	6.49×10^{-6} 0.0000	-5.19×10^{-6} 0.0000	-1.80×10^{-7} 0.0000	-8.91×10^{-6} 0.0000	-8.61×10^{-7} 0.0000
region9 × income	-9.24×10^{-6} 0.0000	-1.43×10^{-6} 0.0000	-2.79×10^{-6} 0.0000	$1.15 \times 10^{-5} ***$ 0.0000	-8.52×10^{-6} 0.0000	-1.23×10^{-6} 0.0000	-1.61×10^{-5} 0.0000	-6.78×10^{-7} 0.0000
region1 × distance	$-3.13 \times 10^{-2} **$ (15.7520)	-2.45 (5.5360)	1.26×10 (14.4160)	-5.14 (7.4150)	-1.92×10 (16.1170)	1.83×10^{-1} (4.8740)	7.00×10 (48.2990)	-1.65 (5.3150)
region2 × distance	-1.64×10 (12.6420)	-2.12 (3.9560)	-2.05×10 (16.2640)	4.32 (6.0310)	4.19 (9.3420)	9.30×10^{-1} (2.9370)	-1.53×10 (16.7550)	3.77×10^{-1} (3.2330)
region4 × distance	-6.20 (5.9600)	-1.20 (2.4120)	4.68 (6.2240)	7.48×10^{-3} (4.9010)	1.42 (6.0550)	8.30×10^{-1} (2.0500)	1.83×10^{-1} (9.8650)	-6.31×10^{-1} (2.3360)
region5 × distance	-4.39 (4.2960)	-4.85×10^{-1} (1.6930)	5.52 (5.1600)	4.95 (3.8570)	-5.91 (4.5540)	6.61×10^{-1} (1.5000)	8.71 (7.5170)	4.25×10^{-1} (1.5820)
region6 × distance	-5.12 (4.3730)	-5.93×10^{-1} (1.7460)	6.60 (4.7850)	-2.75 (3.9790)	4.59 (4.6300)	9.08×10^{-3} (1.5280)	$2.01 \times 10^{-2} **$ (9.2360)	4.29×10^{-1} (1.6550)
region7 × distance	9.22×10^{-1} (5.0500)	3.18×10^{-1} (1.9740)	$1.41 \times 10^{-1} *$ (8.2110)	5.76 (6.3950)	2.32 (5.2020)	5.52×10^{-1} (1.7330)	8.80 (9.7310)	7.16×10^{-1} (1.7720)
region8 × distance	-2.60 (2.4280)	-5.13×10^{-1} (0.9560)	4.68×10^{-1} (2.5350)	5.49×10^{-1} (2.0320)	1.24 (2.4900)	1.17×10^{-1} (0.8550)	$1.18 \times 10^{-2} ***$ (4.2300)	4.70×10^{-2} (0.9620)
region9 × distance	-1.29 (2.8300)	-1.74×10^{-1} (1.0950)	-7.54×10^{-1} (3.0140)	-1.64 (2.2870)	-9.22×10^{-1} (2.9110)	-8.37×10^{-2} (0.9940)	7.91 * (4.2430)	4.62×10^{-2} (1.1170)
Constant	-8.50×10^{-2} (0.6060)	0.471 ** (0.2300)	-1.17 * (0.6200)	3.34 *** (0.4380)	-4.37×10^{-2} (0.6130)	0.609 *** (0.2050)	2.27 ** (0.9850)	0.347 (0.2280)
N	888	839	864	371	888	864	888	801
LL model	-573.3	-1052.00	-528.60	-1327.00	-550.5	-1135	-245.1	-1034
Pseudo R ²	0.139	0.00539	0.139	0.00539	0.139	0.00539	0.139	0.00539
Alpha		-0.2982 *** (0.0000)		-0.2365 *** (0.0750)		-0.3426 ** (0.0000)		-0.3129 ** (0.0000)

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table S7. Effects of water quality on recreation using biotic index measures.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
income	-4.43×10^{-7}	1.03×10^{-7}	-7.81×10^{-6}	$-1.10 \times 10^{-5} ***$	-5.44×10^{-6}	-1.46×10^{-6}	-4.52×10^{-6}	-1.38×10^{-6}
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
income squared	0	0	1×10^{-10}	0	0	0	1×10^{-10}	0
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dist	1.25	1.11×10^{-1}	1.59	1.18	9.34×10^{-1}	-1.40×10^{-1}	$-6.72 **$	2.85×10^{-2}
	(2.0940)	(0.8170)	(2.1800)	(1.8100)	(2.1280)	(0.7370)	(2.8090)	(0.8430)
age	$1.29 \times 10^{-2} ***$	2.48×10^{-3}	$3.89 \times 10^{-2} ***$	-4.48×10^{-3}	$2.92 \times 10^{-2} ***$	8.45×10^{-4}	2.29×10^{-3}	$2.74 \times 10^{-3} *$
	(0.0040)	(0.0020)	(0.0050)	(0.0040)	(0.0050)	(0.0010)	(0.0060)	(0.0020)
sex	$-6.82 \times 10^{-1} ***$	-8.39×10^{-2}	1.56×10^{-1}	1.07×10^{-1}	$-4.28 \times 10^{-1} ***$	5.81×10^{-4}	-1.27×10^{-1}	4.01×10^{-2}
	(0.1450)	(0.0570)	(0.1520)	(0.1030)	(0.1480)	(0.0510)	(0.2490)	(0.0560)
race	-3.08×10^{-1}	-1.09×10^{-1}	-2.78×10^{-1}	-2.32×10^{-1}	$-5.72 \times 10^{-1} **$	-1.31×10^{-2}	$7.60 \times 10^{-1} **$	-3.95×10^{-2}
	(0.2320)	(0.0870)	(0.2490)	(0.1780)	(0.2460)	(0.0820)	(0.3380)	(0.0910)
hhsz	-6.04×10^{-2}	-1.64×10^{-3}	-1.79×10^{-3}	3.55×10^{-3}	-2.07×10^{-2}	-1.92×10^{-4}	1.81×10^{-2}	1.09×10^{-3}
	(0.0450)	(0.0050)	(0.0160)	(0.0100)	(0.0280)	(0.0050)	(0.0170)	(0.0050)
improtect_disagree	$4.50 \times 10^{-1} ***$	6.83×10^{-2}	$3.54 \times 10^{-1} **$	$-2.01 \times 10^{-1} *$	$3.37 \times 10^{-1} *$	4.57×10^{-2}	1.18×10^{-1}	9.48×10^{-2}
	(0.1680)	(0.0670)	(0.1740)	(0.1200)	(0.1720)	(0.0600)	(0.3040)	(0.0660)
improtect_neutral	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_agree	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
improtect_strongly agree	1.73×10^{-2}	2.76×10^{-2}	3.41×10^{-1}	1.75×10^{-1}	$-9.02 \times 10^{-1} ***$	4.23×10^{-2}	$-1.97 ***$	6.36×10^{-2}
	(0.3110)	(0.1200)	(0.3910)	(0.2610)	(0.3270)	(0.1300)	(0.3760)	(0.1400)
EPT	1.89×10^{-2}	3.74×10^{-3}	-5.18×10^{-2}	$4.43 \times 10^{-2} **$	$-5.72 \times 10^{-2} *$	-5.75×10^{-3}	3.87×10^{-2}	1.94×10^{-3}
	(0.0310)	(0.0120)	(0.0330)	(0.0220)	(0.0320)	(0.0110)	(0.0560)	(0.0120)
region1	1.50	9.40×10^{-2}	-5.20×10^{-1}	-1.03×10^{-1}	2.06 *	4.32×10^{-2}	-1.30	1.59×10^{-1}
	(0.9690)	(0.3450)	(0.9090)	(0.5340)	(1.0920)	(0.3110)	(1.6200)	(0.3350)

Table S7. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region2	1.50 (1.1070)	1.35×10^{-1} (0.3640)	1.46 (1.2660)	-3.17×10^{-1} (0.6320)	4.12×10^{-1} (0.9180)	-8.47×10^{-2} (0.3070)	5.28 (5.0910)	3.75×10^{-2} (0.3250)
region4	-1.11×10^{-1} (0.5970)	-6.05×10^{-3} (0.2410)	-4.96×10^{-1} (0.6140)	-8.86×10^{-1} ** (0.4310)	-5.69×10^{-1} (0.6070)	2.07×10^{-2} (0.2080)	-9.73×10^{-1} (0.9740)	2.33×10^{-2} (0.2340)
region5	3.05×10^{-1} (0.5200)	1.67×10^{-2} (0.2030)	-2.07×10^{-1} (0.5570)	-7.90×10^{-1} ** (0.3860)	1.94×10^{-1} (0.5380)	-6.12×10^{-2} (0.1840)	2.59×10^{-2} (0.9750)	9.19×10^{-3} (0.1950)
region6	-1.91×10^{-1} (0.5410)	-6.48×10^{-2} (0.2160)	-1.44×10^{-1} (0.5770)	-3.30×10^{-1} (0.4070)	-6.59×10^{-2} (0.5700)	2.67×10^{-2} (0.1900)	-1.30 (0.9710)	3.92×10^{-3} (0.2100)
region7	-9.35×10^{-2} (0.6160)	-6.10×10^{-2} (0.2500)	-1.04 (0.7680)	-1.03 * (0.5340)	-2.05×10^{-1} (0.6280)	-3.47×10^{-2} (0.2180)	-4.97×10^{-1} (1.2390)	-5.39×10^{-2} (0.2310)
region8	4.04×10^{-1} (0.4200)	9.03×10^{-2} (0.1650)	4.27×10^{-1} (0.4360)	-1.02 *** (0.3270)	2.10×10^{-1} (0.4320)	1.56×10^{-2} (0.1480)	-9.25×10^{-1} (0.7550)	1.25×10^{-2} (0.1630)
region9	7.86×10^{-1} * (0.4780)	1.03×10^{-1} (0.1760)	1.70×10^{-1} (0.4840)	6.35×10^{-1} * (0.3290)	5.87×10^{-1} (0.4880)	1.18×10^{-1} (0.1600)	-4.17×10^{-1} (0.7780)	-1.70×10^{-2} (0.1790)
region1 × income	7.57×10^{-6} 0.0000	1.61×10^{-6} 0.0000	-1.06×10^{-5} 0.0000	1.06×10^{-5} * 0.0000	-2.44×10^{-5} ** 0.0000	1.63×10^{-8} 0.0000	-2.61×10^{-5} 0.0000	-3.70×10^{-7} 0.0000
region2 × income	-1.15×10^{-5} 0.0000	9.12×10^{-8} 0.0000	-1.74×10^{-5} 0.0000	-5.00×10^{-6} 0.0000	2.01×10^{-6} 0.0000	4.1×10^{-9} 0.0000	-4.64×10^{-5} 0.0000	2.96×10^{-7} 0.0000
region4 × income	8.72×10^{-6} 0.0000	1.67×10^{-6} 0.0000	3.04×10^{-6} 0.0000	2.54×10^{-5} *** 0.0000	5.83×10^{-6} 0.0000	-1.17×10^{-6} 0.0000	-2.59×10^{-5} 0.0000	5.00×10^{-7} 0.0000
region5 × income	4.70×10^{-6} 0.0000	6.88×10^{-7} 0.0000	-6.16×10^{-6} 0.0000	1.01×10^{-5} ** 0.0000	2.34×10^{-6} 0.0000	-1.765×10^{-7} 0.0000	-1.68×10^{-5} 0.0000	9.18×10^{-7} 0.0000
region6 × income	5.95×10^{-6} 0.0000	7.94×10^{-7} 0.0000	-4.95×10^{-6} 0.0000	1.31×10^{-5} *** 0.0000	-2.96×10^{-6} 0.0000	-6.04×10^{-7} 0.0000	-7.52×10^{-6} 0.0000	-6.45×10^{-7} 0.0000
region7 × income	-2.99×10^{-6} 0.0000	-5.15×10^{-7} 0.0000	-7.42×10^{-6} 0.0000	-4.92×10^{-6} 0.0000	4.83×10^{-7} 0.0000	5.31×10^{-7} 0.0000	-1.34×10^{-5} 0.0000	1.06×10^{-6} 0.0000
region8 × income	-3.41×10^{-6} 0.0000	-6.12×10^{-7} 0.0000	-1.19×10^{-5} * 0.0000	6.39×10^{-6} 0.0000	-5.26×10^{-6} 0.0000	-1.80×10^{-7} 0.0000	-9.19×10^{-6} 0.0000	-8.70×10^{-7} 0.0000

Table S7. Cont.

Variable	Fishing		Swimming		Boating		Waterside activities	
	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.	Partic.	Freq.
region9 × income	-9.26×10^{-6} 0.0000	-1.45×10^{-6} 0.0000	-2.78×10^{-6} 0.0000	1.10×10^{-5} ** 0.0000	-8.60×10^{-6} 0.0000	-1.23×10^{-6} 0.0000	-1.58×10^{-5} 0.0000	-6.77×10^{-7} 0.0000
region1 × distance	-3.18×10 ** (15.7370)	-2.65 (5.5210)	1.24×10 (14.3900)	-5.17 (7.3250)	-1.92×10 (16.0950)	2.72×10^{-1} (4.8690)	6.93 (48.0780)	-1.68×10 (5.3050)
region2 × distance	-1.65×10 (12.7380)	-2.13 (3.9590)	-2.08×10 (15.9280)	4.71 (5.9780)	3.19 (9.4050)	8.57×10^{-1} (2.9310)	-1.50×10 (16.7420)	3.98×10^{-1} (3.2330)
region4 × distance	-6.32 (5.9540)	-1.23 (2.4110)	4.94 (6.2250)	-5.69×10^{-1} (4.8450)	1.41 (6.0740)	8.31×10^{-1} (2.0480)	$1.83 \times 10^*$ (9.7820)	-6.25×10^{-1} (2.3360)
region5 × distance	-4.53 (4.2950)	-5.21×10^{-1} (1.6930)	5.67 (5.1750)	4.95 (3.8120)	-5.84 (4.5480)	6.80×10^{-1} (1.5000)	8.58 (7.5000)	4.20×10^{-1} (1.5830)
region6 × distance	-4.98 (4.3600)	-5.96×10^{-1} (1.7410)	5.72 (4.7930)	-2.93 (3.9030)	4.11 (4.6330)	-2.26×10^{-2} (1.5240)	$2.02 \times 10^{**}$ (9.3490)	4.31×10^{-1} (1.6510)
region7 × distance	1.01×10^{-1} (4.8570)	1.54×10^{-1} (1.9500)	$1.35 \times 10^*$ (7.8210)	6.40 (6.4040)	1.69×10^{-1} (4.9210)	4.99×10^{-1} (1.6910)	9.63 (10.0160)	8.47×10^{-1} (1.7180)
region8 × distance	-2.59 (2.4250)	-5.21×10^{-1} (0.9550)	2.84×10^{-1} (2.5340)	2.56×10^{-1} (2.0170)	1.06 (2.4910)	1.08×10^{-1} (0.8540)	$1.18 \times 10^{***}$ (4.2160)	4.83×10^{-2} (0.9610)
region9 × distance	-1.20 (2.8340)	-1.62×10^{-1} (1.0960)	-1.18 (3.0110)	-1.66 (2.2580)	-1.32 (2.9150)	-1.17×10^{-1} (0.9960)	8.11 * (4.2610)	5.62×10^{-2} (1.1180)
Constant	-2.17×10^{-1} (0.4450)	4.10×10^{-1} ** (0.1670)	-1.58*** (0.4580)	3.36 *** (0.3380)	-3.86×10^{-1} (0.4530)	6.13×10^{-1} *** (0.1480)	2.13*** (0.6740)	3.48×10^{-1} ** (0.1670)
N	888	839	864	371	888	864	888	801
LL model	-573.5	-1052	-529.5	-1325	-549.9	-1135	-245.1	-1034
Pseudo R2	0.139	0.00536	0.139	0.00536	0.139	0.00536	0.139	0.00536
Alpha		-0.2982 ** (0.0000)		-0.2458 *** (0.0750)		-0.3426 ** (0.0000)		-0.3129 *** (0.0000)

Notes: * p<0.10, ** p<0.05, *** p<0.01.

References

1. US Environmental Protection Agency. Wadeable Streams Assessment: Washington, DC, USA, 2006. Available online: <http://water.epa.gov/type/rsl/monitoring/streamsurvey/> (accessed on 27 August 2013).
2. National Opinion Research Center. *General Social Surveys, 1972–2012: Cumulative Code Book*; University of Chicago Press: Chicago, IL, USA, 2013. Available online: <http://www3.norc.og/GSS+Website/Documentation/> (accessed on 27 August 2013).
3. *National Survey on Recreation and the Environment (NSRE) (A dataset)*; US Forest Service, South Research Station: Athens, GA, USA, 1994–2012. Available online: <http://coastalsocioeconomics.noaa.gov/core/nsre/welcome.html> (accessed on 27 August 2013).
4. US Census Bureau. *United States Census 2010*; US Census Bureau: Washington, DC, USA, 2010. Available online: <http://www.census.gov/2010census/> (accessed on 27 August 2013).

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