

Appendix: Additional Tables and Figures

Appendix Table A1 – Variable Descriptions

Variable	Description
<i>Property Characteristics</i>	
Square Feet	Structural square footage measured in hundreds of feet
Bathrooms	Number of bathrooms
Age	Age of the house
Acres	Parcel acreage
Fireplace	Indicator variable for fireplace (includes both wood-burning and fabricated fireplaces)
Garage	Indicator variable for garage
Basement	Indicator variable for basement
Deck	Indicator variable for deck
Lake Adj	Indicator variable for lakefront properties
Near Lake	Indicator variable for properties within 500 meters of a lake
ln LA	Natural log of surface area of nearest lake measured in squared kilometers
ln WC	Natural log of water clarity (estimated either by satellite image or Secchi disk) measured in feet
WCLA	The interaction of ln WC and ln LA
Inverse Distance Lake	Inverse distance to closest lake measured in hundreds of meters
Inverse Distance Highway	Inverse distance to closest highway measured in hundreds of meters
Inverse Distance Ramp	Inverse distance to closest public boat ramp measured in hundreds of meters
Inverse Distance Park	Inverse distance to closest park measured in hundreds of meters
Maximum Depth	Maximum depth of nearest lake measured in meters
Ord. Count	Number of public ordinances for the nearest lake
Public Land	Indicator variable for whether the nearest lake has public land or a park nearby
Public Ramp	Indicator variable for whether the nearest lake has a public boat ramp
Eutrophic	Indicator variable for whether the closest lake has been classified as eutrophic
<i>Census Block Group Characteristics</i>	
Labor Force	Percentage of population in labor force
College	Percentage of population with a college degree
White	Percentage of population that is white
Male	Percentage of population that is male
Income	Median household income measured in thousands of 2015 dollars
Median Age	Median age
Vacancy	Number of vacant homes measured in hundreds
Population	Population measured in thousands

Appendix Table A2 – Lake Characteristics by Trophic Status

Trophic Status	Number of Lakes (n = 104)	Surface Area (km ²)	Maximum Depth (m)	Number of Samples ^a		Public Land (0/1)	Public Ramp (0/1)	Ord. Count
				WC _{SAT}	WC _{DISK}			
All	104	2.39 (3.31)	10.46 (5.46)	2.69 (2.18)	7.25 (6.47)	0.53 (0.50)	0.69 (0.46)	0.92 (1.38)
Eutrophic	32	3.46 (4.32)	7.36 (3.49)	3.53 (3.16)	7.71 (8.31)	0.56 (0.50)	0.88 (0.34)	1.22 (1.62)
Mesotrophic	40	1.99 (2.64)	9.26 (4.44)	2.33 (1.23)	7.90 (6.19)	0.57 (0.50)	0.65 (0.48)	1.02 (1.35)
Oligotrophic	32	1.83 (2.70)	15.05 (5.34)	2.28 (1.56)	5.90 (4.26)	0.44 (0.50)	0.56 (0.50)	0.50 (1.05)

Notes: Standard deviations are in parenthesis. ^aNumber of water clarity samples by lake by year.

Appendix Table A3 – Base Specification and Robustness to Variable Selection Full Results

VARIABLES	Model 1		Model 2		Model 3		VARIABLES	Model 1		Model 2		Model 3	
	Satellite	Secchi Disk	Satellite	Secchi Disk	Satellite	Secchi Disk		Satellite	Secchi Disk	Satellite	Secchi Disk	Satellite	Secchi Disk
WCLA	0.0755*** (0.0244)	0.0543** (0.0205)	0.0548** (0.0243)	0.0291* (0.0165)	0.0498*** (0.0106)	0.0444*** (0.0107)	Inverse Distance Ramp	-0.1678*** (0.0507)	-0.1818*** (0.0514)	-0.1666*** (0.0603)	-0.1720*** (0.0614)	-0.1565** (0.0607)	-0.1619*** (0.0612)
In WC	0.0352 (0.0550)	0.0136 (0.0450)	- (-)	- (-)	0.0092 (0.0434)	-0.0205 (0.0378)	Inverse Distance Park	-0.2628 (0.2414)	-0.1849 (0.2387)	0.1597 (0.3540)	0.1657 (0.3457)	0.1469 (0.3485)	0.1410 (0.3347)
In LA	-0.0682 (0.0563)	-0.0295 (0.0481)	-0.0155 (0.0617)	0.0342 (0.0487)	- (-)	- (-)	In Maximum Depth	-0.0145 (0.0493)	-0.0162 (0.0524)	0.0159 (0.0614)	0.0131 (0.0604)	- (-)	- (-)
Lake Adj (0/1)	0.7860*** (0.0495)	0.7851*** (0.0502)	0.7889*** (0.0557)	0.7939*** (0.0559)	0.7902*** (0.0551)	0.7927*** (0.0558)	Ord. Count	0.0069 (0.0120)	-0.0005 (0.0123)	-0.0246 (0.0201)	-0.0249 (0.0203)	- (-)	- (-)
Bathrooms	0.1156*** (0.0182)	0.1216*** (0.0188)	0.1162*** (0.0224)	0.1171*** (0.0221)	0.1202*** (0.0222)	0.1217*** (0.0221)	Public Land (0/1)	-0.0217 (0.0412)	-0.0272 (0.0453)	-0.1017* (0.0519)	-0.0981* (0.0549)	- (-)	- (-)
Square Feet (100s)	0.0603*** (0.0110)	0.0610*** (0.0106)	0.0665*** (0.0102)	0.0671*** (0.0101)	0.0649*** (0.0106)	0.0648*** (0.0104)	Public Ramp (0/1)	0.0966* (0.0492)	0.1139** (0.0480)	0.0892 (0.0718)	0.0924 (0.0680)	- (-)	- (-)
Fireplace (0/1)	0.1405*** (0.0345)	0.1424*** (0.0348)	0.1264*** (0.0356)	0.1246*** (0.0365)	0.1316*** (0.0360)	0.1319*** (0.0368)	Eutrophic (0/1)	-0.0305 (0.0482)	-0.0433 (0.0415)	0.0775 (0.0821)	0.0717 (0.0866)	- (-)	- (-)
Garage (0/1)	-0.0045 (0.0253)	0.0012 (0.0222)	0.0086 (0.0265)	0.0124 (0.0254)	0.0069 (0.0275)	0.0111 (0.0263)	Labor Force (%)	-0.0023 (0.0025)	-0.0019 (0.0025)	- (-)	- (-)	- (-)	- (-)
Basement (0/1)	0.0907*** (0.0305)	0.0829** (0.0311)	0.0840** (0.0315)	0.0787** (0.0330)	0.0841** (0.0323)	0.0786** (0.0329)	College (%)	0.0026 (0.0026)	0.0021 (0.0027)	- (-)	- (-)	- (-)	- (-)
Deck (0/1)	0.0431* (0.0238)	0.0433* (0.0235)	0.0381 (0.0256)	0.0391 (0.0256)	0.0372 (0.0255)	0.0389 (0.0253)	White (%)	-0.0040 (0.0026)	-0.0039 (0.0025)	- (-)	- (-)	- (-)	- (-)
Age	-0.0070*** (0.0023)	-0.0070*** (0.0023)	-0.0063** (0.0024)	-0.0063** (0.0024)	-0.0065*** (0.0023)	-0.0066*** (0.0023)	Male (%)	-0.0179** (0.0079)	-0.0184** (0.0075)	- (-)	- (-)	- (-)	- (-)
Acres	0.3323*** (0.0717)	0.3207*** (0.0718)	0.2856*** (0.0714)	0.2830*** (0.0715)	0.2885*** (0.0702)	0.2849*** (0.0704)	Income (1000s)	-0.0030 (0.0028)	-0.0033 (0.0029)	- (-)	- (-)	- (-)	- (-)
Square Feet Squared (10000s)	-0.0008*** (0.0003)	-0.0009*** (0.0003)	-0.0010*** (0.0003)	-0.0010*** (0.0003)	-0.0010*** (0.0003)	-0.0010*** (0.0003)	Median Age	0.0121* (0.0062)	0.0134** (0.0063)	- (-)	- (-)	- (-)	- (-)
Acres Squared	-0.0569*** (0.0173)	-0.0544*** (0.0172)	-0.0491*** (0.0178)	-0.0481*** (0.0178)	-0.0499*** (0.0177)	-0.0489*** (0.0177)	Vacancy (100s)	0.0005 (0.0078)	0.0014 (0.0074)	- (-)	- (-)	- (-)	- (-)
Age Squared	0.0001** (0.0000)	0.0001** (0.0000)	0.0000* (0.0000)	0.0000* (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)	Population (1000s)	-0.1039 (0.0682)	-0.1027 (0.0656)	- (-)	- (-)	- (-)	- (-)
Inverse Distance Lake	0.4218*** (0.0242)	0.4215*** (0.0230)	0.4298*** (0.0274)	0.4317*** (0.0266)	0.4278*** (0.0267)	0.4285*** (0.0257)	Constant	11.3288*** (0.5405)	11.3451*** (0.5190)	10.5049*** (0.2433)	10.4895*** (0.2345)	10.5954*** (0.1341)	10.6811*** (0.1272)
Inverse Distance Highway	-0.1514*** (0.0481)	-0.1560*** (0.0502)	-0.1585*** (0.0576)	-0.1585*** (0.0582)	-0.1590*** (0.0584)	-0.1554** (0.0585)							
Water Clarity Measure	Annual Minimum	Annual Minimum	Annual Minimum	Annual Minimum	Annual Minimum	Annual Minimum							
County Fixed Effects	YES(1)	YES(1)	NO	NO	NO	NO							
Blockgroup Fixed Effects	NO	NO	YES(46)	YES(46)	YES(46)	YES(46)							
Year Fixed Effects	YES(3)	YES(3)	YES(3)	YES(3)	YES(3)	YES(3)							
Month Fixed Effects	YES(11)	YES(11)	YES(11)	YES(11)	YES(11)	YES(11)							
Observations	1,020	1,020	1,020	1,020	1,020	1,020							
R-squared	0.6587	0.6577	0.6881	0.6872	0.6847	0.6829							

Notes: ***, **, * indicates significance at the 1%, 5% and 10% level respectively. Robust standard errors have been clustered at the census block group level.

Appendix Table A4 - Within-Census Block Group Correlation Coefficients between Structural Characteristics and WC_{SAT} and WC_{DISK}

Panel A: Satellite (WC_{SAT})

	WC_{SAT}	Bathrooms	Square Feet (100s)	Fireplace (0/1)	Garage (0/1)	Basement (0/1)	Deck (0/1)	Age	Acres
WC_{SAT}	1.0000								
Bathrooms	0.0276	1.0000							
Square Feet (100s)	0.0254	0.6330	1.0000						
Fireplace (0/1)	-0.0044	0.2702	0.2936	1.0000					
Garage (0/1)	-0.0013	0.2761	0.2563	0.2072	1.0000				
Basement (0/1)	-0.0278	0.3620	0.2708	0.1761	0.2360	1.0000			
Deck (0/1)	0.0433	0.1510	0.0615	0.1132	-0.0015	0.1402	1.0000		
Age	-0.0012	-0.4723	-0.3529	-0.1601	-0.3112	-0.2684	-0.1804	1.0000	
Acres	0.0076	0.2017	0.2042	0.0748	0.1007	0.1466	0.0416	-0.1799	1.0000

Panel B: Secchi Disk (WC_{DISK})

	WC_{DISK}	Bathrooms	Square Feet (100s)	Fireplace (0/1)	Garage (0/1)	Basement (0/1)	Deck (0/1)	Age	Acres
WC_{DISK}	1.0000								
Bathrooms	-0.0385	1.0000							
Square Feet (100s)	0.0047	0.6330	1.0000						
Fireplace (0/1)	-0.0414	0.2702	0.2936	1.0000					
Garage (0/1)	-0.0421	0.2761	0.2563	0.2072	1.0000				
Basement (0/1)	0.0034	0.3620	0.2708	0.1761	0.2360	1.0000			
Deck (0/1)	0.0384	0.1510	0.0615	0.1132	-0.0015	0.1402	1.0000		
Age	-0.0033	-0.4723	-0.3529	-0.1601	-0.3112	-0.2684	-0.1804	1.0000	
Acres	0.0107	0.2017	0.2042	0.0748	0.1007	0.1466	0.0416	-0.1799	1.0000

Appendix Table A5 – Robustness to Spatial Extent of Housing Market and Water Clarity Aggregation Strategy Full Results

VARIABLES	Model 4		Model 5	
	Satellite	Secchi Disk	Satellite	Secchi Disk
WCLA	-	-	0.0432***	0.0407***
	-	-	(0.0099)	(0.0099)
ln WC	-	-	-0.0086	0.0220
	-	-	(0.0631)	(0.0508)
Near Lake (0/1)*WCLA	0.0447***	0.0421***	-	-
	(0.0090)	(0.0092)	-	-
Near Lake (0/1)*ln WC	-0.0147	-0.0242	-	-
	(0.0392)	(0.0313)	-	-
Near (0/1)	0.0622	0.0868	-	-
	(0.0702)	(0.0657)	-	-
Lake Adj (0/1)	0.8176***	0.8204***	0.7931***	0.7978***
	(0.0485)	(0.0488)	(0.0551)	(0.0561)
Bathrooms	0.1147***	0.1152***	0.1201***	0.1219***
	(0.0180)	(0.0181)	(0.0218)	(0.0218)
Square Feet (100s)	0.0638***	0.0636***	0.0655***	0.0651***
	(0.0095)	(0.0093)	(0.0106)	(0.0106)
Fireplace (0/1)	0.1139***	0.1143***	0.1296***	0.1290***
	(0.0248)	(0.0251)	(0.0362)	(0.0362)
Garage (0/1)	0.0455*	0.0470**	0.0078	0.0075
	(0.0240)	(0.0233)	(0.0271)	(0.0266)
Basement (0/1)	0.1482***	0.1457***	0.0813**	0.0810**
	(0.0278)	(0.0281)	(0.0333)	(0.0342)
Deck (0/1)	0.0435*	0.0445*	0.0376	0.0366
	(0.0235)	(0.0235)	(0.0253)	(0.0257)
Age	-0.0069***	-0.0069***	-0.0065***	-0.0066***
	(0.0017)	(0.0017)	(0.0023)	(0.0023)
Acres	0.2617***	0.2597***	0.2863***	0.2862***
	(0.0465)	(0.0462)	(0.0705)	(0.0704)
Square Feet Squared (10000s)	-0.0010***	-0.0010***	-0.0010***	-0.0010***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Acres Squared	-0.0408***	-0.0404***	-0.0492***	-0.0490***
	(0.0101)	(0.0101)	(0.0178)	(0.0178)
Age Squared	0.0000**	0.0000**	0.0000**	0.0000**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Inverse Distance Lake	0.4474***	0.4478***	0.4288***	0.4311***
	(0.0254)	(0.0245)	(0.0263)	(0.0260)
Inverse Distance Highway	-0.1263***	-0.1246***	-0.1542**	-0.1597***
	(0.0401)	(0.0399)	(0.0584)	(0.0568)
Inverse Distance Ramp	-0.1227*	-0.1285**	-0.1589**	-0.1656***
	(0.0630)	(0.0627)	(0.0610)	(0.0608)
Inverse Distance Park	-0.0649	-0.0542	0.1312	0.1746
	(0.2237)	(0.2214)	(0.3496)	(0.3411)
Constant	10.5789***	10.5977***	10.5931***	10.5720***
	(0.0891)	(0.0891)	(0.1655)	(0.1447)
Water Clarity Measure	Annual	Annual	Annual	Annual
	Minimum	Minimum	Mean	Mean
Blockgroup Fixed Effects	YES(53)	YES(53)	YES(46)	YES(46)
Year Fixed Effects	YES(3)	YES(3)	YES(3)	YES(3)
Month Fixed Effects	YES(11)	YES(11)	YES(11)	YES(11)
Observations	1,542	1,542	1,020	1,020
R-squared	0.7368	0.7365	0.6836	0.6835

Notes: ***, **, * indicates significance at the 1%, 5% and 10% level respectively. Robust standard errors have been clustered at the census block group level.

Appendix Figure A1 – Vilas and Oneida County

