Order	Indicator_Name	Type	Component	Description	Field_Name
1	Hydrologic Unit Code 12-Digit (HUC12)	Base	HUC ID Political	Twelve digit Hydrologic Unit Code (HUC12) consistent with the WBD snapshot for NHD Plus Version 2.1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	HUC12_TEXT
2	Name HUC12 Watershed	Base	HUC ID Political	Name of 12-digit Hydrologic Unit Code (HUC12) consistent with the WBD snapshot for NHD Plus Version 2.1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	NAME_HUC12
3	EPA Region	Base	HUC ID Political	Identifies all EPA Regions within a HUC12 boundary. Calculated from State attribute. Region 4 WSIO Version 1, October 2013	EPA_REGION
4	All States in HUC12 2014	Base	HUC ID Political	Identifies all States that a HUC12 boundary crosses. Source data used was WBD snapshot for NHD Plus Version 2.1 and NLCD2006 data (see metadata for more information). Developed for the EPA by the EPA Office of Water Recovery Potential Screening contractor, Cadmus. Region 4 WSIO Version 1, October 2013.	STATES2014
5	Single State HUC Flag (if 1 single state)	Base	HUC ID Political	The percent of total HUC12 area that is comprised by a specific named state. Source data used was WBD snapshot for NHD Plus Version 2.1 (see metadata for more information) and 2013 state boundaries dataset from http://www2.census.gov/geo/tiger/TIGER2013/STATE/. Region 4 WSIO Version 1, October 2013.	INSTATE_14
6	Tribal Lands in HUC12 Flag	Base	HUC ID Political	Identifies HUC12s that include Tribal land presence. Source data used was WBD snapshot for NHD Plus Version 2.1 (see metadata for more information) and Tribal information from http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including all lands associated with Federally-recognized tribal entities— Federally recognized Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical Areas. Region 4 WSIO Version 1, October 2013.	TRIBE_FLAG
7	% Tribal Lands in HUC12	Base	HUC ID Political	The percent of total HUC12 area constituting Tribal lands. Source data used was WBD snapshot for NHD Plus Version 2.1 (see metadata for more information) and Tribal information from http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including all lands associated with Federally-recognized tribal entities— Federally recognized Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical Areas. Region 4 WSIO Version 1, October 2013.	TRIBE_PCT
8	HUC12 Adjacent to Tribal HUC12s	Base	HUC ID Political	Identifies HUC12s that do not contain Tribal lands but border HUC12s that do contain Tribal lands. Source data used was WBD snapshot for NHD Plus Version 2.1 (see metadata for more information) and Tribal information from http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including all lands associated with Federally-recognized tribal entities— Federally recognized Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical Areas. Region 4 WSIO Version 1, October 2013.	TRIBE_BUFR
9	% Not In US	Base	HUC ID Political	The percent of the HUC12 area that is not included in the United States or State. Region 4 WSIO Version 1, October 2013.	LC0_NLCD06_PCT_WS
10	Area Of Watershed (HUC12) In Square Meters (Grid)	Base	Hydrologic EcoRegion	The total area of a HUC12 boundary calculated from 30-meter resolution grids (square meters). Source data used was a grid of the WBD snapshot for NHD Plus Version 2.1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	AREA__WS_GRID_SQMETER

Order	Indicator_Name	Type	Component	Description	Field_Name
11	% Land in Watershed	Base	Hydrologic EcoRegion	The percent of the HUC12 that is land (not identified as surface water by the Water Mask*). Equation used: (HUC12 area - Water Mask/HUC12 area) x 100. Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	LAND_PCT_WS
12	% Water in Watershed	Base	Hydrologic EcoRegion	The percent of the HUC12 that is surface water as identified by the Water Mask*. Equation used: Water Mask/ HUC12 area x 100. Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	WATER_PCT_WS
13	Watershed NHDPlus2 Streamlength	Base	Hydrologic EcoRegion	The length of NHD stream features in HUC12 (kilometers). Calculated from the "NHDPlus2 NHD Snapshot" dataset. Includes all NHDFlowline features with FTYPE (feature type) equal to StreamRiver, CanalDitch, or Connector. NHDFlowline features with FTYPE equal to ArtificialPath are only included if they pass through a NHDArea feature with FTYPE equal to StreamRiver.	STREAMLGTH_NHD
14	Watershed NHDPlus2 Waterbody Area	Base	Hydrologic EcoRegion	Area of NHD waterbody features in HUC12 (square kilometers). Calculated from the "NHDPlus2 NHD Snapshot" dataset.	WBAREA_NHD
15	% Hydrologically Connected Zone (HCZ) in Watershed	Base	Hydrologic EcoRegion	The percent of the HUC12 that is in the *Hydrologically Connected Zone. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).Equation used: (Hydrologically Connected Zone/ HUC12) x 100. Region 4 WSIO Version 1, October 2013.	HCZ_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
16	% Riparian Zone (RZ) in Watershed	Base	Hydrologic EcoRegion	The percent of the HUC12 that is in the *Riparian Zone. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Equation used: (Riparian Zone/ HUC12) x 100. Region 4 WSIO Version 1, October 2013.	RIPARIAN_ZONE_PCT_WS
17	EcoRegion (2010) Level 3 Codes [All]	Base	Hydrologic EcoRegion	All Level III Ecoregion codes within a HUC12 boundary. Level III Ecoregion source data used was downloaded in May 2010 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	ECOREGION2010_L3_CODES_ALL
18	EcoRegion (2010) Level 3, 1st Code (Largest Area)	Base	Hydrologic EcoRegion	The Level III Ecoregion code with the greatest area within a HUC12 boundary. Level III Ecoregion source data used was downloaded in May 2010 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	ECOREGION2010_L3_1STCODE
19	River Basin Name	Base	Hydrologic EcoRegion	Name of 6-digit Hydrologic Unit Code (HUC06) that contains a HUC12 boundary. Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD February 2014. Region 4 WSIO Version 1, October 2013.	RIVER_BASIN_NAME
20	Hydrologic Unit Code 8-Digit (HUC08)	Base	Hydrologic EcoRegion	Identifies the 8-digit Hydrologic Unit Code (HUC08) that contains a HUC12 boundary. Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD February 2014. Region 4 WSIO Version 1, October 2013.	HUC08
21	Name Hydrologic Unit Code 8-Digit	Base	Hydrologic EcoRegion	Name of 8-digit Hydrologic Unit Code (HUC08) that contains a HUC12 boundary. Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD February 2014. Region 4 WSIO Version 1, October 2013.	NAME_HUC08

Order	Indicator_Name	Type	Component	Description	Field_Name
22	Total number of aquatic species WS	Ecological	Biotic Community Condition	The total number of species associated with aquatic habitat that are listed as G1, G2, or in the federal endangered species program that may reside within each HUC12. G1 and G2 denote Global Conservation Ranks classified by NatureServe. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	AQ_ALL_SP_CNT_WS
23	Total number of wetland species WS	Ecological	Biotic Community Condition	The total number of species associated with wetland habitat that are listed as G1, G2, or in the federal endangered species program that may reside within each HUC12. G1 and G2 denote Global Conservation Ranks classified by NatureServe. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	WTL_ALL_SP_CNT_WS
24	Total number of terrestrial species WS	Ecological	Biotic Community Condition	The total number of species associated with terrestrial habitat that are listed as G1, G2, or in the federal endangered species program that may reside within each HUC12. G1 and G2 denote Global Conservation Ranks classified by NatureServe. Terrestrial habitat refers to land areas such as forests, grasslands, deserts and rainforests. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	TR_ALL_SP_CNT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
25	% Natural Cover, N-index (2006) in Watershed	Ecological	Watershed Natural Condition	The percent of the HUC12 with natural cover (excludes urban and agricultural classifications). N-index cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX_NLCD06_PCT_WS
26	% Natural Cover, N-index 2 (2006) in Watershed	Ecological	Watershed Natural Condition	The percent of the HUC12 with natural cover (excludes barren, urban or agricultural classifications). N-index 2 cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX2_NLCD06_PCT_WS
27	% Wetlands (2006) in Watershed	Ecological	Watershed Natural Condition	The percent of the HUC12 classified as wetlands by the 2006 National Land Cover Database. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WETLANDS_NLCD06_PCT_WS
28	% Woody Wetlands (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC90_NLCD06_PCT_WS
29	% Emergent Herbaceous Wetlands (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC95_NLCD06_PCT_WS
30	% Woody Vegetation (2006) in Watershed	Ecological	Watershed Natural Condition	The percent of the HUC12 classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WOODY_NLCD06_PCT_WS
31	% Forest (2006) in Watershed	Ecological	Watershed Natural Condition	The percent of the HUC12 classified with forest cover by the 2006 National Land Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FOREST_NLCD06_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
32	% Deciduous Forest (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Deciduous Forest' (code 41) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC41_NLCD06_PCT_WS
33	% Evergreen Forest (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Evergreen Forest' (code 42) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC42_NLCD06_PCT_WS
34	% Mixed Forest (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Mixed Forest' (code 43) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC43_NLCD06_PCT_WS
35	% Shrub/Scrub (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Shrub/Scrub' (code 52) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC52_NLCD06_PCT_WS
36	% Grassland/Herbaceous (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Grassland/Herbaceous' (code 71) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC71_NLCD06_PCT_WS
37	% Open Water (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Open Water' (code 11) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC11_NLCD06_PCT_WS
38	% Perennial Ice/Snow (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Perennial Ice/Snow' (code 12) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC12_NLCD06_PCT_WS
39	% Barren Land (2006) in Watershed	Ecological	Watershed Natural Condition	The percent area in a HUC12 boundary classified as 'Barren Land (Rock/Sand/Clay)' (code 31) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC31_NLCD06_PCT_WS
40	% Canopy Cover 2001, Median Value of Watershed	Ecological	Watershed Natural Condition	The median value of percent canopy cover in a HUC12. Source data used was the National Land Cover Database (NLCD) 2001 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_CANOPY_COVER2001_MEDIAN_WS
41	% Canopy Cover 2001, Mean Value of Watershed	Ecological	Watershed Natural Condition	The mean value of percent canopy cover in a HUC12. Source data used was the National Land Cover Database (NLCD) 2001 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_CANOPY_COVER2001_MEAN_WS
42	% Canopy Cover 2001, Standard Deviation, Watershed	Ecological	Watershed Natural Condition	The standard deviation value of percent canopy cover in a HUC12. Source data used was the National Land Cover Database (NLCD) 2001 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_CANOPY_COVER2001_STD_WS
43	% Canopy Cover 2001, Sum of Values in Watershed	Ecological	Watershed Natural Condition	The sum of all values of percent canopy cover in a HUC12. Source data used was the National Land Cover Database (NLCD) 2001 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_CANOPY_COVER2001_SUM_WS
44	Slope, Mean Value in Watershed	Ecological	Watershed Natural Condition	The mean slope value in a HUC12. Source data used was NHDPlus version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	SLP_MEAN_WS
45	Slope, Standard Deviation of Values in Watershed	Ecological	Watershed Natural Condition	The standard deviation of slope values in a HUC12. Region 4 WSIO Version 1, October 2013.	SLP_STD_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
46	Elevation (cm), Mean Value of Watershed	Ecological	Watershed Natural Condition	The mean value elevation (cm) in a HUC12. Source data used was NHDPlus version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION_CM__MEAN_WS
47	Elevation (cm), Standard Deviation in Watershed	Ecological	Watershed Natural Condition	The standard deviation value elevation (cm) in a HUC12. Source data used was NHDPlus version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION_CM__STD_WS
48	Elevation (cm), Range of Values in Watershed	Ecological	Watershed Natural Condition	The maximum value elevation (cm) in a HUC12. Source data used was NHDPlus version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION_CM__RANGE_WS
49	Watershed Mean Soil Stability	Ecological	Watershed Natural Condition	Average soil stability in HUC12. Calculated as one minus average K factor (WS_KFACTOR).	WS_SOILSTABILITY
50	Percent rare ecosystem	Ecological	Watershed Natural Condition	An estimate of the percent of land within each HUC12 that could be classified as a rare ecosystem. Ecosystem rarity in EnviroAtlas is based on size, shape, and type of ecosystem. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B5E59 1817-C13D-498A-BA0D-F3D28D986324%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	RARE_ECO_PCT_WS
51	Percent rare ecosystem protected	Ecological	Watershed Natural Condition	An estimate of the percent of land within each HUC12 that is protected and could be classified as a rare ecosystem. Ecosystem rarity in EnviroAtlas is based on size, shape, and type of ecosystem. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B5E59 1817-C13D-498A-BA0D-F3D28D986324%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	RARE_ECO_PROT_PCT_WS
52	Carbon storage by tree biomass (kg/m2)	Ecological	Watershed Natural Condition	An estimate of the kilograms of dry carbon stored per square meter of above ground biomass of trees and forests in each HUC12. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B60BE 4324-84B3-4C0F-A9A3-22E198F814E6%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	CARBON_STORE_TREE_BIO_MASS_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
53	Carbon storage by tree root biomass (kg/m2)	Ecological	Watershed Natural Condition	An estimate of the kilograms of dry carbon stored per square meter in below ground biomass in each HUC12. Biomass below ground includes tree root biomass and soils. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B60BE4324-84B3-4C0F-A9A3-22E198F814E6%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	CARBON_STORE_ROOT_BIO_MASS_WS
54	Natural biological nitrogen fixation (kg N/ha/yr)	Ecological	Watershed Natural Condition	This map depicts mean biological nitrogen fixation in natural and semi-natural ecosystems within each subwatershed (12-digit HUC) in kg N/ha/yr. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B1B0B5221-C726-4E7D-93FD-23F7A4FF8930%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_NAT_BIO_FIX_MEAN_WS
55	Cultivate biologic nitrogen fixation(kg N/ha/yr)WS	Ecological	Watershed Natural Condition	The mean rate of biological nitrogen fixation from the cultivation of crops within a HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B18DA5C01-F53D-4CC3-B557-046C3FF5A584%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_CULT_BIO_FIX_MEAN_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
56	% Natural Cover, N-index (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as natural cover (excluding urban and agriculture) by the 2006 National Land Cover Database. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (AttILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX_NLCD06_PCT_HZ
57	% Natural Cover, N-index 2 (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as natural cover (excluding barren, urban and agriculture) by the 2006 National Land Cover Database. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (AttILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX2_NLCD06_PCT_HZ
58	% Wetlands (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as wetlands by the 2006 National Land Cover Database. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WETLANDS_NLCD06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
59	% Woody Wetlands (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC90_NLCD06_PCT_HZ
60	% Emergent Herbaceous Wetlands (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC95_NLCD06_PCT_HZ
61	% Woody Vegetation (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WOODY_NLCD06_PCT_HZ
62	% Forest (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified with forest cover by the 2006 National Land Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	FOREST_NLCD06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
63	% Shrub/Scrub (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Shrub/Scrub' (code 52) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC52_NLCD06_PCT_HZ
64	% Grassland/Herbaceous (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Grassland/Herbaceous' (code 71) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC71_NLCD06_PCT_HZ
65	HCZ Mean Soil Stability	Ecological	HCZ -Corridor Natural Condition	Average soil stability in HCZ*. Calculated as one minus average K factor in HCZ (HCZ_KFACTOR). *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	HCZ_SOILSTABILITY

Order	Indicator_Name	Type	Component	Description	Field_Name
66	% Natural Cover, N-index (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as natural cover (excluding urban and agriculture) by the 2006 National Land Cover Database. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	N_INDEX_NLCD06_PCT_RZ
67	% Natural Cover, N-index 2 (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as natural cover (excluding barren, urban and agriculture) by the 2006 National Land Cover Database. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	N_INDEX2_NLCD06_PCT_RZ
68	% Wetlands (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent of the HUC12 that is within the Riparian Zone* and classified as wetlands by the 2006 National Land Cover Database. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	WETLANDS_NLCD06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
69	% Woody Wetlands (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC90_NLCD06_PCT_RZ
70	% Emergent Herbaceous Wetlands (2006) in RZ	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC95_NLCD06_PCT_RZ
71	% Woody Vegetation (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent of the HUC12 that is within the Riparian Zone* and classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	WOODY_NLCD06_PCT_RZ
72	% Forest (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent of the HUC12 that is within the Riparian Zone* and classified with forest cover by the 2006 National Land Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	FOREST_NLCD06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
73	% Shrub/Scrub (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Shrub/Scrub' (code 52) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC52_NLCD06_PCT_RZ
74	% Grassland/Herbaceous (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Grassland/Herbaceous' (code 71) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC71_NLCD06_PCT_RZ
75	Computed Topographic Index (Wetness) Mean WS	Ecological	Hydrology Flow & Channel	Mean value of Computed Topographic Index (wetness)* in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(ln (flow accumulation/tan(slope)) + 3x3 mean of ln (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values greater than 800 have been determined to represent areas which are usually wet.	COMPUTED_TOPO_INDEX_MEAN_WS
76	Computed Topographic Index Standard Deviation WS	Ecological	Hydrology Flow & Channel	Standard deviation value of Computed Topographic Index (wetness)* in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(ln (flow accumulation/tan(slope)) + 3x3 mean of ln (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values greater than 800 have been determined to represent areas which are usually wet.	COMPUTED_TOPO_INDEX_STD_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
77	Computed Topographic Index (Wetness) Sum WS	Ecological	Hydrology Flow & Channel	Sum of all values of Computed Topographic Index (wetness)* in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(ln (flow accumulation/tan(slope)) + 3x3 mean of ln (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values greater than 800 have been determined to represent areas which are usually wet.	COMPUTED_TOPO_INDEX_SUM_WS
78	Flow Accumulation (Max Upstream Pixels) Mean WS	Ecological	Hydrology Flow & Channel	The mean value of flow accumulation (upstream pixels) in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FLOW_ACCUMULATION_MEAN_WS
79	Flow Accum (Max US Pixels) Standard Deviation WS	Ecological	Hydrology Flow & Channel	The standard deviation value of flow accumulation (upstream pixels) in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FLOW_ACCUMULATION_STD_WS
80	Flow Accumulation (Max Upstream Pixels) Sum WS	Ecological	Hydrology Flow & Channel	The sum of all flow accumulation (upstream pixels) values in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FLOW_ACCUMULATION_SUM_WS
81	% of HUC12 that drains to 1st Order Streams	Ecological	Hydrology Flow & Channel	The percent of the HUC12 that drains to 1st order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM_ORDER_1_PCT_WS
82	% of HUC12 that drains to 2nd Order Streams	Ecological	Hydrology Flow & Channel	The percent of the HUC12 that drains to 2nd order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM_ORDER_2_PCT_WS
83	% of HUC12 that drains to 3rd Order Streams	Ecological	Hydrology Flow & Channel	The percent of the HUC12 that drains to 3rd order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM_ORDER_3_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
84	% NEF2001, National Ecological Framework, WS	Ecological	Aquatic Condition / Connectivity	The percent of a HUC12 that is part of the 2001 National Ecological Framework (NEF)*. The NEF is comprised of Hubs and Corridors. In the NEF, Hubs are defined as Priority Ecological Areas that are greater than 5,000 acres in size. Corridors are defined as linkages between Hubs and were determined using a cost surface analysis to determine the least human disturbance pathway between individual Hubs. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's mission to protect.	NEF2001_PCT_WS
85	% HUBS, National Ecological Framework 2001, WS	Ecological	Aquatic Condition / Connectivity	The percent of a HUC12 that is categorized as a Hub by the 2001 National Ecological Framework (NEF)*. In the NEF Hubs are defined as Priority Ecological Areas that are greater than 5,000 acres in size. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's mission to protect.	HUBS_NEF2001_PCT_WS
86	% CORRIDORS, National Ecological Framework2001, WS	Ecological	Aquatic Condition / Connectivity	The percent of a HUC12 that is categorized as a Corridor by the 2001 National Ecological Framework (NEF)*. In the NEF Corridors are defined as linkages between Hubs (Priority Ecological Areas greater than 5,000 acres). Corridors were determined using a cost surface analysis to determine the least human disturbance pathway between individual Hubs. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's mission to protect.	CORRIDORS_NEF2001_PCT_WS
87	% Auxiliary Areas, NEF 2001, WS	Ecological	Aquatic Condition / Connectivity	The percent of a HUC12 that are auxiliary areas to the National Ecological Framework (NEF)*. Auxiliary Areas are defined as natural land cover that are contiguous to the NEF. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's mission to protect.	AUXAREA_NEF2001_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
88	% N-Index06 Contiguous H2O, in Watershed	Ecological	Aquatic Condition / Connectivity	The percent of the HUC12 that is classified as natural cover, not urban or agricultural, (N-index) and contiguous to water (as identified by the Water Mask*) in the watershed. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	N_INDEX_06_CON_H2O_PCT_WS
89	% of Stream length contiguous to 2006 IC = 0% WS	Ecological	Aquatic Condition / Connectivity	The percent of HUC12 stream length contiguous to (flow through) zero percent impervious cover. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_0_PC_WS
90	% Stream lgth contiguous 2006 IC; 0% < IC < 5% WS	Ecological	Aquatic Condition / Connectivity	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than zero percent and less than 5 percent (0% < IC < 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_0_5PC_WS
91	% of Lake Shore Lgth within 30 m of 2006 IC =0% WS	Ecological	Aquatic Condition / Connectivity	The percent of HUC12 lake shore length within 30m of zero percent impervious cover. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHORE_PC_2006_IC_0_PC_WS
92	% Lake Shore Lgth within 30 m, 2006 IC;0%<IC<5% WS	Ecological	Aquatic Condition / Connectivity	The percent of HUC12 lake shore length within 30m of impervious cover greater than zero percent and less than 5 percent (0% < IC < 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHORE_PC_2006_IC_0_5PC_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
93	% Natural Cover Change,N-Index Chng 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX_CHG_2001_06_PCT_WS
94	% Natural Cover Change,N-Index 2 Chng 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX2_CHG_2001_06_PCT_WS
95	% Wetlands Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in wetland land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WETLAND_CHG_2001_06_PCT_WS
96	% Forest Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in forest land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FOREST_CHG_2001_06_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
97	% Woody Vegetation Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in woody vegetation land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Woody vegetation land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WOODY_CHG_2001_06_PCT_WS
98	% Natural Cover Change,N-Index Chng 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX_CHG_2001_06_PCT_HZ
99	% Natural Cover Change,N-Index 2 Chng 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX2_CHG_2001_06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
100	% Wetlands Change 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in wetland land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WETLAND_CHG_2001_06_PCT_HZ
101	% Forest Change 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in forest land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	FOREST_CHG_2001_06_PCT_HZ
102	% Woody Vegetation Change 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in woody vegetation land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Woody vegetation land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WOODY_CHG_2001_06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
103	% Natural Cover Change,N-Index Chng 2001-06 RZ	Ecological	RZ -Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	N_INDEX_CHG_2001_06_PCT_RZ
104	% Natural Cover Change,N-Index 2 Chng 2001-06 RZ	Ecological	RZ -Ecological History	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), ' Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	N_INDEX2_CHG_2001_06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
105	% Wetlands Change 2001-06 RZ	Ecological	RZ -Ecological History	The percent of HUC12 change in wetland land cover classifications within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	WETLAND_CHG_2001_06_PCT_RZ
106	% Forest Change 2001-06 RZ	Ecological	RZ -Ecological History	The percent of HUC12 change in forest land cover classifications within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	FOREST_CHG_2001_06_PCT_RZ
107	% Woody Vegetation Change 2001-06 RZ	Ecological	RZ -Ecological History	The percent of HUC12 change in woody vegetation land cover classifications within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Woody vegetation land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	WOODY_CHG_2001_06_PCT_RZ
108	Empower Density 2001, Median Value in Watershed	Stressor	Watershed Disturbance	The median empower density* value in a HUC12 area per year. *Empower density is the non-renewable emergy flow through a watershed. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEDIAN_WS
109	Empower Density 2001, Mean Value in Watershed	Stressor	Watershed Disturbance	The mean empower density* value of a HUC12 area per year. *Empower density is the non-renewable emergy flow through a watershed. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEAN_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
110	Empower Density 2001, Standard Deviation Values WS	Stressor	Watershed Disturbance	The standard deviation empower density* values in a HUC12 area per year. *Empower density is the non-renewable emergy flow through a watershed. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_STD_WS
111	Empower Density 2001, Sum of Values in Watershed	Stressor	Watershed Disturbance	The sum of empower density* values in a HUC12 area per year. *Empower density is the non-renewable emergy flow through a watershed. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_SUM_WS
112	% Imperviousness06, Median Value of Watershed	Stressor	Watershed Disturbance	The median value of percent imperviousness in a HUC12. Source data used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_MEDIAN_WS
113	% Imperviousness06, Mean Value of Watershed	Stressor	Watershed Disturbance	The mean value of percent imperviousness in a HUC12. Source data used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_MEAN_WS
114	% Imperviousness06, Standard Deviation, Watershed	Stressor	Watershed Disturbance	The standard deviation value of percent imperviousness in a HUC12. Source data used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_STD_WS
115	% Imperviousness06, Sum of Values in Watershed	Stressor	Watershed Disturbance	The sum of all percent imperviousness values in a HUC12. Source data used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_SUM_WS
116	Impervious Cover (2006) IC ≥ 5%, PCT of Watershed	Stressor	Watershed Disturbance	The percent of HUC12 with ≥ 5% impervious cover (IC). Equation: (Sum of IC pixels ≥ 5% /All HUC12 pixels) x 100. Source data used was NLCD2006 version 1 (see metadata for more information). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	IC_2006_GE_5PCT_PCT_WS
117	Impervious Cover (2006) IC ≥ 15%, PCT of Watershed	Stressor	Watershed Disturbance	The percent of HUC12 with ≥ 15% impervious cover (IC). Equation: (Sum of IC pixels ≥ 15% /All HUC12 pixels) x 100. Source data used was NLCD2006 version 1 (see metadata for more information). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	IC_2006_GE_15PCT_PCT_WS
118	% Human Use, U-index (2006) in Watershed	Stressor	Watershed Disturbance	The percent of the HUC12 that is agricultural or urban. U-index cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX_NLCD06_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
119	% Human Use, U-index 2 (2006) in Watershed	Stressor	Watershed Disturbance	The percent of the HUC12 that is barren, agricultural or urban. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information. U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX2_NLCD06_PCT_WS
120	% Urban (2006) in Watershed	Stressor	Watershed Disturbance	The percent of the HUC12 classified as urban by the 2006 National Land Cover Database. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	URBAN_NLCD06_PCT_WS
121	% Developed, Open Space (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Developed, Open Space' (code 21) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC21_NLCD06_PCT_WS
122	% Developed, Low intensity (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Developed, Low Intensity' (code 22) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC22_NLCD06_PCT_WS
123	% Developed, Medium intensity (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Developed, Medium Intensity' (code 23) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC23_NLCD06_PCT_WS
124	% Developed, High intensity (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Developed, High Intensity' (code 24) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC24_NLCD06_PCT_WS
125	% Agriculture (2006) in Watershed	Stressor	Watershed Disturbance	The percent of the HUC12 classified as agriculture by the 2006 National Land Cover Database. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	AG_NLCD06_PCT_WS
126	% Pasture/Hay (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Pasture/Hay' (code 81) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC81_NLCD06_PCT_WS
127	% Cultivated Crops (2006) in Watershed	Stressor	Watershed Disturbance	The percent area in a HUC12 boundary classified as 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	LC82_NLCD06_PCT_WS
128	Watershed Mean Soil Erodibility	Stressor	Watershed Disturbance	Average soil erodibility (K) factor in HUC12. Calculated from the "STATSGO2" soil attribute dataset.	WS_KFACTOR

Order	Indicator_Name	Type	Component	Description	Field_Name
129	Percent agriculture on hydric soil WS	Stressor	Watershed Disturbance	The percentage of land managed for agriculture that has hydric soils within each HUC12. This includes all land dedicated to the production of crops, but excludes land managed for pasture. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B167113DA-E941-4CB3-8E93-8FE2600C08DA%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	AG_HYDRIC_PCT_WS
130	Road Density 2003, Median Value (mi /sq mi) WS	Stressor	Watershed Disturbance	The median road density (mi/sqmi) value in a HUC12. Source data used was 2003 ESRI Streetmap (See metadata for more information). Region 4 WSIO Version 1, October 2013.	ROAD_DENSITY_2003_MEDIAN_WS
131	Road Density 2003, Mean Value (mi /sq mi) WS	Stressor	Watershed Disturbance	The mean road density (mi/sqmi) value in a HUC12. Source data used was 2003 ESRI Streetmap (See metadata for more information). Region 4 WSIO Version 1, October 2013.	ROAD_DENSITY_2003_MEAN_WS
132	Road Density 2003,Standard Deviation(mi /sq mi) WS	Stressor	Watershed Disturbance	The standard deviation road density (mi/sqmi) value in a HUC12. Source data used was 2003 ESRI Streetmap. Region 4 WSIO Version 1, October 2013.	ROAD_DENSITY_2003_STD_WS
133	Road Density 2003, Sum of Values (mi /sq mi) in WS	Stressor	Watershed Disturbance	The sum of all road density (mi/sqmi) values in a HUC12. Source data used was 2003 ESRI Streetmap (See metadata for more information). Region 4 WSIO Version 1, October 2013.	ROAD_DENSITY_2003_SUM_WS
134	Empower Density 2001, Mean Value in HCZ	Stressor	HCZ -Corridor Disturbance	The mean empower density value that occurs in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEAN_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
135	Empower Density 2001, Median Value in HCZ	Stressor	HCZ -Corridor Disturbance	The median empower density value that occurs in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEDIAN_HZ
136	Empower Density 2001,Standard Deviation Values HCZ	Stressor	HCZ -Corridor Disturbance	The standard deviation empower density values that occur in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_STD_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
137	Empower Density 2001, Sum of Values in HCZ	Stressor	HCZ -Corridor Disturbance	The sum of empower density values that occur in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_SUM_HZ
138	% Human Use, U-index (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as agricultural or urban. U-index cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	U_INDEX_NLCD06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
139	% Human Use, U-index 2 (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as barren, agricultural or urban. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	U_INDEX2_NLCD06_PCT_HZ
140	% Urban (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as urban by the 2006 National Land Cover Database. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	URBAN_NLCD06_PCT_HZ
141	% Agriculture (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as agriculture by the 2006 National Land Cover Database. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	AG_NLCD06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
142	% Pasture/Hay (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Pasture/Hay' (code 81) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC81_NLCD06_PCT_HZ
143	% Cultivated Crops (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC82_NLCD06_PCT_HZ
144	HCZ Mean Soil Erodibility	Stressor	HCZ -Corridor Disturbance	Average soil erodibility (K) factor in HCZ. Calculated from the "STATSGO2 "soil attribute dataset.	HCZ_KFACTOR
145	Road Density 2003, Median Value (mi /sq mi) HCZ	Stressor	HCZ -Corridor Disturbance	The median value for road density (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012 (metadata can be found here: http://www.esri.com/library/whitepapers/pdfs/esri-data-and-maps.pdf); and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_MEDIAN_HZ
146	Road Density 2003, Mean Value (mi /sq mi) HCZ	Stressor	HCZ -Corridor Disturbance	The mean road density value (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_MEAN_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
147	Road Density 2003,Standard Deviation(mi /sq mi)HCZ	Stressor	HCZ -Corridor Disturbance	The standard deviation road density value (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_STD_HZ
148	Road Density 2003, Sum of Values (mi /sq mi) HCZ	Stressor	HCZ -Corridor Disturbance	The sum of all road density values (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_SUM_HZ
149	Empower Density 2001, Median Value in RZ	Stressor	RZ -Corridor Disturbance	The median empower density value that occurs in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEDIAN_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
150	Empower Density 2001, Mean Value in RZ	Stressor	RZ -Corridor Disturbance	The mean empower density value that occurs in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEAN_RZ
151	Empower Density 2001, Standard Deviation Values RZ	Stressor	RZ -Corridor Disturbance	The standard deviation empower density values that occur in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_STD_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
152	Empower Density 2001, Sum of Values in RZ	Stressor	RZ -Corridor Disturbance	The sum of empower density values that occur in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_SUM_RZ
153	% Human Use, U-index (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent of the HUC12 that is within the Riparian Zone* and classified as agricultural or urban. U-index cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	U_INDEX_NLCD06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
154	% Human Use, U-index 2 (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent of the HUC12 that is within the Riparian Zone* and classified as barren, agricultural or urban. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	U_INDEX2_NLCD06_PCT_RZ
155	% Urban (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent of the HUC12 that is within the Riparian Zone* and classified as urban by the 2006 National Land Cover Database. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	URBAN_NLCD06_PCT_RZ
156	% Agriculture (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent of the HUC12 that is within the Riparian Zone* and classified as agriculture by the 2006 National Land Cover Database. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	AG_NLCD06_PCT_RZ
157	% Pasture/Hay (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Pasture/Hay' (code 81) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC81_NLCD06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
158	% Cultivated Crops (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC82_NLCD06_PCT_RZ
159	Road Density 2003, Median Value (mi /sq mi) RZ	Stressor	RZ -Corridor Disturbance	The median value for road density (mi/sq mi) of a HUC12 that is within the Riparian Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	ROAD_DENSITY_2003_MEDIAN_RZ
160	Road Density 2003, Mean Value (mi /sq mi) RZ	Stressor	RZ -Corridor Disturbance	The mean road density value (mi/sq mi) of a HUC12 that is within the Riparian Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	ROAD_DENSITY_2003_MEAN_RZ
161	Road Density 2003,Standard Deviation(mi /sq mi) RZ	Stressor	RZ -Corridor Disturbance	The standard deviation road density value (mi/sq mi) of a HUC12 that is within the Riparian Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	ROAD_DENSITY_2003_STD_RZ
162	Road Density 2003, Sum of Values (mi /sq mi) in RZ	Stressor	RZ -Corridor Disturbance	The sum of all road density values (mi/sq mi) of a HUC12 that is within the Riparian Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	ROAD_DENSITY_2003_SUM_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
163	Proximity of 2006 IC ≥ 5% to water WS	Stressor	Hydrologic Alteration	The proximity of impervious cover (IC) that is greater than or equal to 5 percent to water. The more proximal IC is to streams causes a higher value in this metric. 'Water' includes streams, lakes and reservoirs as defined by the National Hydrography Dataset. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	PROX_WATER_2006_IC_GE5_PC_WS
164	Proximity of 2006 IC ≥ 15% to water WS	Stressor	Hydrologic Alteration	The proximity of impervious cover (IC) that is greater than or equal to 15 percent to water. The more proximal IC is to streams causes a higher value in this metric. 'Water' includes streams, lakes and reservoirs as defined by the National Hydrography Dataset. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	PROX_WATER_2006_IC_GE15_PC_WS
165	% Water, 2006 IC ≥5%;Weighted Sum Stream & Lake WS	Stressor	Hydrologic Alteration	The percent of HUC12 weighted sum of water contiguous to impervious cover that is greater than or equal to 5 percent (IC ≥ 5%). 'Water contiguous to impervious cover' is defined as stream length contiguous to and lake shore length within 30m of impervious cover as defined by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	WATER_PC_2006_IC_GE5_PC_WS
166	% Water,2006 IC ≥15%;Weighted Sum Stream & Lake WS	Stressor	Hydrologic Alteration	The percent of HUC12 weighted sum of water contiguous to impervious cover that is greater than or equal to 15 percent (IC ≥ 15%). 'Water contiguous to impervious cover' is defined as stream length contiguous to and lake shore length within 30m of impervious cover as defined by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	WATER_PC_2006_IC_GE15_PC_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
167	% of Stream length contiguous to 2006 IC ≥ 5% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 5 percent (IC ≥ 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_5PC_WS
168	% of Stream length contiguous to 2006 IC ≥ 15% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 15 percent (IC ≥ 15%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_15PC_WS
169	% of Stream length contiguous to 2006 IC ≥ 25% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 25 percent (IC ≥ 25%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_25PC_WS
170	% of Lake Shore Length within 30 m 2006 IC ≥ 5% WS	Stressor	Hydrologic Alteration	The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 5 percent (IC ≥ 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE5_PC_WS
171	% of Lake Shore Lgth within 30 m 2006 IC ≥ 15% WS	Stressor	Hydrologic Alteration	The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 15 percent (IC ≥ 15%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE15_PC_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
172	% of Lake Shore Lgth within 30 m 2006 IC ≥ 25% WS	Stressor	Hydrologic Alteration	The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 25 percent (IC ≥ 25%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE25_PC_WS
173	% U-Index06 Contiguous H2O, in Watershed	Stressor	Hydrologic Alteration	The percent of the HUC12 that is classified as agricultural or urban (U-index) and contiguous to water (as identified by the Water Mask*) in the watershed. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	U_INDEX_06_CON_H2O_PCT_WS
174	% Contiguous Urban (2006) in Watershed	Stressor	Hydrologic Alteration	The percent of the HUC12 that is classified as urban by the 2006 National Land Cover Database and contiguous to surface water as identified by the Water Mask*. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	URB_CONTIG_NLCD06_PC_WS
175	% Contiguous Agriculture (2006) in Watershed	Stressor	Hydrologic Alteration	The percent of the HUC12 that is classified as agriculture by the 2006 National Land Cover Database and contiguous to surface water as identified by the Water Mask*. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	AG_CONTIG_NLCD06_PC_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
176	Number of dams WS	Stressor	Hydrologic Alteration	The number of dams within a HUC12. Source data: The National Inventory of Dams maintained by the US Army Corps of Engineers. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B29750-880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	DAMS_CNT_WS
177	Number 2010 Road Stream Crossings in Watershed	Stressor	Hydrologic Alteration	The number of road stream crossings in a HUC12. Streams were identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Roads were determined from 2010 Streets. Region 4 WSIO Version 1, October 2013.	ROAD_2010_STRM_X_SO_ALL_CNT_WS
178	Number 2010 Road 1st-3rd order Stream Crossings WS	Stressor	Hydrologic Alteration	The number of roads crossing 1st - 3rd order streams in a HUC12. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Roads were determined from 2010 Streets. Region 4 WSIO Version 1, October 2013.	ROAD_2010_STRM_X_SO_1_3_CNT_WS
179	Number 2010 Road 4th-9th order Stream Crossings WS	Stressor	Hydrologic Alteration	The number of roads crossing 4th - 9th order streams in a HUC12. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Roads were determined from 2010 Esri Streetmap. Region 4 WSIO Version 1, October 2013.	ROAD_2010_STRM_X_SO_4_9_CNT_WS
180	Domestic Water Demand (MGD) 2005 WS	Stressor	Hydrologic Alteration	An estimate of the millions of gallons of water used daily (MGD) for domestic purposes in each HUC12. For the purposes of this map, domestic or residential water use includes all indoor and outdoor uses, such as for drinking, bathing, cleaning, landscaping, and pools for primary residences. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC6DBEBAB-03EF-43C8-8DCA-8D2845E06A96%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	DOM_H2O_USE_MGD_2005_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
181	Agricultural water use in MGD 2005 WS	Stressor	Hydrologic Alteration	An estimate of the water used daily for agricultural irrigation for a HUC12 in the contiguous United States (million gallons/day). Estimates include self-supplied surface and groundwater, as well as water supplied by irrigation water providers, which may include governments, companies, or other organizations. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BD5113083-CFCD-48EC-BC24-0ADA5B9BDDB7%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	AG_H2O_USE_05_WS
182	Industrial Water Use (MGD) WS	Stressor	Hydrologic Alteration	An estimate of the millions of gallons of water used daily for industrial processes in each HUC12. Estimates include self-supplied surface and groundwater, as well as water supplied by water providers, which may include governments, companies, or other organizations. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B4E58C04B-8A17-4B07-9EE4-1D9365D5B0D9%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	IND_H2O_USE_MGD_WS
183	Water use for Thermo Cooling Annually (MGY)	Stressor	Hydrologic Alteration	An estimate of the millions of gallons of water used annually (2009) for thermoelectric power generation in each HUC12. Thermoelectric power creates electricity through steam powered turbines. This map is based on water withdrawn and does not include water that is returned to the watershed. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BA15BD49A-0C75-4E64-902B-581D89F7B8AC%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	H2O_USE_THERMO_MGAL_YR

Order	Indicator_Name	Type	Component	Description	Field_Name
184	Water supply from reservoirs (million gallons)	Stressor	Hydrologic Alteration	An estimate of the millions of gallons of surface water in each HUC12 that is contained in reservoirs and/or behind dams using the National Dams Inventory survey data from 2009. This map only estimates volume and does not take into account water rights, designated uses, or previous appropriations. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B29750-880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	H2O_USE_RESV_MGAL
185	Watershed Streamlength 303d-Listed	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams". These criteria include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D
186	% Watershed Streamlength 303d-Listed	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of stream features in HUC12 listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed impaired streams (STREAMLGTH_303D) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_PCT
187	Watershed Waterbody Area 303d-Listed	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (square kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset.	WBAREA_303D
188	% Watershed Waterbody Area 303d-Listed	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of lakes, estuaries, and other areal water features in HUC12 listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed impaired waters (WBAREA_303D) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_PCT
189	Watershed Streamlength 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Total HUC12 length (km) of streams, rivers, and other linear water features that are either listed as impaired and/or have one or more TMDLs. Calculated from the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	STREAMLGTH_303DTMDL
190	% Watershed Streamlength 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of HUC12's total length (km) of streams, rivers, and other linear water features that are either listed as impaired and/or have one or more TMDLs. Calculated from length of 303(d) listed impaired waters/waters with TMDLs (STREAMLGTH_303DTMDL) and length of NHD stream features (STREAMLGTH_NHD).	STREAMLGTH_303DTMDL_PCT
191	Watershed Waterbody Area 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Total HUC12 area (sq km) of lakes, estuaries, and other areal water features that are either listed as impaired and/or have one or more TMDLs. Calculated from the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	WBAREA_303DTMDL

Order	Indicator_Name	Type	Component	Description	Field_Name
192	% Watershed Waterbody Area 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of HUC12's total area (sq km) of lakes, estuaries, and other areal water features that are either listed as impaired and/or have one or more TMDLs. Calculated from area of 303(d) listed impaired waters/waters with TMDLs (WBAREA_303DTMDL) and area of NHD waterbody features (WBAREA_NHD).	WBAREA_303DTMDL_PCT
193	Watershed 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset.	CNT_303D_WATERS
194	Watershed Segment-Cause Combinations Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of impairments for waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique water segment ID-parent cause of impairment combinations in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset.	CNT_303D_IMPAIRMENTS
195	Watershed Impairment 303d and TMDL Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters with TMDLs or listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	CNT_303DTMDL_WATERS
196	Watershed Cause-Segment Count 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Count of impairments for waters with TMDLs or waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as number of unique water segment ID-parent cause of impairment combinations in the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	CNT_303DTMDL_IMPAIRMENTS
197	Watershed Streamlength 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D_NUTRIENTS
198	%Watershed Streamlength 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of stream features in HUC12 listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed nutrient impaired streams (STREAMLGTH_303D_NUTRIENTS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_NUTRIENTS_PCT
199	Watershed Waterbody Area 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of impairment.	WBAREA_303D_NUTRIENTS

Order	Indicator_Name	Type	Component	Description	Field_Name
200	% Watershed Waterbody Area 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of assessed lakes, estuaries, and other areal water features in HUC12 listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed nutrient impaired waterbodies (WBAREA_303D_NUTRIENTS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_NUTRIENTS_PCT
201	Watershed Nutrients 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired due to nutrients and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of impairment.	CNT_303D_WATERS_NUTRIENTS
202	Watershed Streamlength 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Pathogens" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D_PATHOGENS
203	%Watershed Streamlength 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of stream features in HUC12 listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed pathogen impaired streams (STREAMLGTH_303D_PATHOGENS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_PATHOGENS_PCT
204	Watershed Waterbody Area 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Pathogens" listed as a parent cause of impairment.	WBAREA_303D_PATHOGENS
205	% Watershed Waterbody Area 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features in HUC12 listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed pathogen impaired waterbodies (WBAREA_303D_PATHOGENS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_PATHOGENS_PCT
206	Watershed Pathogen 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Pathogens" listed as a parent cause of impairment.	CNT_303D_WATERS_PATHOGENS

Order	Indicator_Name	Type	Component	Description	Field_Name
207	Watershed Streamlength 303d-Listed Sediment	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Sediment" or "Turbidity" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D_SEDIMENT
208	% Watershed Streamlength 303d-Listed Sediment	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of stream features in HUC12 listed as impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed sediment impaired streams (STREAMLGTH_303D_SEDIMENT) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_SEDIMENT_PCT
209	Watershed Waterbody Area 303d-Listed Sediment	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Sediment" or "Turbidity" listed as a parent cause of impairment.	WBAREA_303D_SEDIMENT
210	% Watershed Waterbody Area 303d-Listed Sediment	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of lakes, estuaries, and other areal water features in HUC12 listed as impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed sediment impaired waterbodies (WBAREA_303D_SEDIMENT) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_SEDIMENT_PCT
211	Watershed Sediment 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Sediment" or "Turbidity" listed as a parent cause of impairment.	CNT_303D_WATERS_SEDIMENT
212	Watershed Streamlength 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Metals (other than Mercury)" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D_METALS
213	% Watershed Streamlength 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of stream features in HUC12 listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed metals impaired streams (STREAMLGTH_303D_METALS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_METALS_PCT

Order	Indicator_Name	Type	Component	Description	Field_Name
214	Watershed Waterbody Area 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Metals (other than Mercury)" listed as a parent cause of impairment.	WBAREA_303D_METALS
215	% Watershed Waterbody Area 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of lakes, estuaries, and other areal water features in HUC12 listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed metals impaired waterbodies (WBAREA_303D_METALS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_METALS_PCT
216	Watershed Metals 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Metals (other than Mercury)" listed as a parent cause of impairment.	CNT_303D_WATERS_METALS
217	Manure application (kg N/ha/yr)	Stressor	Severity of Pollutant Loading / Fragmentation	The mean rate of manure application to agricultural lands from confined animal feeding operations (CAFOs) within each HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B0A4E7DDE-5F54-4DB5-8688-6AB2B1C8AFE5%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	MANURE_APP_WS
218	Synthetic N fertilizer application06(kg N/ha/yr)WS	Stressor	Severity of Pollutant Loading / Fragmentation	The mean rate of synthetic nitrogen fertilizer application to agricultural lands within a HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B09DF9B39-6CC8-4DFF-A14D-1BA14C06321F%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_SYNTH_FERT_APL_MEAN_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
219	Total nitrogen deposition 2006 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the 2006 annual deposition of reduced nitrogen a HUC12 (kilograms per hectare). This map includes both dry and wet deposition of reduced nitrogen. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5 D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_DEP_TOTAL_06_WS
220	Total nitrogen deposition 2002 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the 2002 total annual deposition of nitrogen in a HUC12 (kilograms per hectare). This map includes both dry and wet deposition of oxidized and reduced nitrogen. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_DEP_TOTAL_02_WS
221	Total reduced nitrogen deposition 2006 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the annual deposition of oxidized nitrogen within a HUC12 (kilograms per hectare). This map includes both dry and wet deposition of oxidized nitrogen. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5 D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_RED_DEP_TOTAL_06_WS
222	Total reduced nitrogen deposition 2002 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the 2002 annual deposition of reduced nitrogen in a HUC12 (kilograms per hectare). This map includes both dry and wet deposition of reduced nitrogen. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_RED_DEP_TOTAL_02_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
223	Total oxidized nitrogen deposition 2006 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the total annual deposition of nitrogen within a HUC12 (kilograms per hectare). This map includes both dry and wet deposition of oxidized and reduced nitrogen. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5 D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_OX_DEP_TOTAL_06_WS
224	Total oxidized nitrogen deposition 2002 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the 2002 annual deposition of oxidized nitrogen within each HUC12 (Kilograms per hectare). This map includes both dry and wet deposition of oxidized nitrogen. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_OX_DEP_TOTAL_02_WS
225	Total sulfur deposition 2006 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the 2006 annual deposition of sulfur within each HUC12 (kilograms per hectare). This map includes both dry and wet deposition of sulfur. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5 D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	SLF_DEP_TOTAL_06_WS
226	Total sulfur deposition 2002 (kg/ha)	Stressor	Severity of Pollutant Loading / Fragmentation	An estimate of the total annual deposition of sulfur within each HUC12 (kilograms per hectare). This map includes both dry and wet deposition of sulfur. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	SLF_DEP_TOTAL_02_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
227	% Human Use Change, U-Index Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural or urban classifications (U-index) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX_CHG_2001_06_PCT_WS
228	% Human Use Change, U-Index 2 Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in barren, agricultural or urban classifications (U-index 2) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX2_CHG_2001_06_PCT_WS
229	% Urban Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in urban classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	URBAN_CHG_2001_06_PCT_WS
230	% Agriculture Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Agricultural land cover classifications include 'Pasture/Hay' (code 81) and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	AG_CHG_2001_06_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
231	% Human Use Change, U-Index Change 2001-06 HCZ	Stressor	HCZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural or urban classifications (U-index) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	U_INDEX_CHG_2001_06_PCT_HZ
232	% Human Use Change, U-Index 2 Change 2001-06 HCZ	Stressor	HCZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in barren, agricultural or urban classifications (U-index 2) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	U_INDEX2_CHG_2001_06_PCT_HZ
233	% Urban Change 2001-06 HCZ	Stressor	HCZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in urban classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	URBAN_CHG_2001_06_PCT_HZ

Order	Indicator_Name	Type	Component	Description	Field_Name
234	% Agriculture Change 2001-06 HCZ	Stressor	HCZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Agricultural land cover classifications include 'Pasture/Hay' (code 81) and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	AG_CHG_2001_06_PCT_HZ
235	% Human Use Change, U-Index Change 2001-06 RZ	Stressor	RZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural or urban classifications (U-index) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	U_INDEX_CHG_2001_06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
236	% Human Use Change, U-Index 2 Change 2001-06 RZ	Stressor	RZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in barren, agricultural or urban classifications (U-index 2) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (AttILA) version 2004. AttILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	U_INDEX2_CHG_2001_06_PCT_RZ
237	% Urban Change 2001-06 RZ	Stressor	RZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in urban classifications within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	URBAN_CHG_2001_06_PCT_RZ
238	% Agriculture Change 2001-06 RZ	Stressor	RZ -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural classifications within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Agricultural land cover classifications include 'Pasture/Hay' (code 81) and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (AttILA) version 2004. AttILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	AG_CHG_2001_06_PCT_RZ

Order	Indicator_Name	Type	Component	Description	Field_Name
239	Single State HUC12 Flag	Social	Flags	Classifies HUC12 watershed as located entirely in one single US state or overlapping multiple states. Value of 1 if HUC12 is located in a single state. Value of 0 if HUC12 overlaps multiple states. Calculated from the US Census Bureau 2013 TIGER state boundaries (downloaded July 2014) and the "NHDPlus2 WBD Snapshot" (downloaded March 2014).	INSTATE_14_15
240	Watershed Streamlength Assessed	Social	Level of Information	Length of stream features assessed under Section 305(b) of the Clean Water Act in HUC12 (kilometers). Represents only the most recent assessment cycle that the state has provided to EPA as geospatial data. Calculated from the EPA Office of Water "305(b) Waters as Assessed" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams". These criteria include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_305B
241	% Watershed Streamlength Assessed	Social	Level of Information	Percent of stream features in HUC12 assessed under Section 305(b) of the Clean Water Act. Calculated as length of assessed streams (STREAMLGTH_305B) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_305B_CUSTOM).	STREAMLGTH_305B_PCT
242	Watershed Waterbody Area Assessed	Social	Level of Information	Area of lakes, estuaries, and other areal water features assessed under Section 305(b) of the Clean Water Act in HUC12 (square kilometers). Calculated from the EPA Office of Water "305(b) Waters as Assessed" NHD-indexed dataset.	WBAREA_305B
243	% Watershed Waterbody Area Assessed	Social	Level of Information	Percent of lakes, estuaries, and other areal water features in HUC12 assessed under Section 305(b) of the Clean Water Act. Calculated as area of assessed waterbodies (WBAREA_305B) divided by total waterbody area (WBAREA_NHD + WBAREA_305B_CUSTOM).	WBAREA_305B_PCT
244	Watershed Segments with TMDLs Count	Social	Level of Information	Count of waters with TMDLs in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	CNT_TMDL_WATERS
245	Watershed TMDL-Segment-Cause Count	Social	Level of Information	Count of impairments with TMDLs in HUC12. Calculated as the number of unique water segment ID-parent cause of impairment combinations in the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	CNT_TMDL_IMPAIRMENTS
246	Watershed TMDL-Segment-Pollutant Count	Social	Level of Information	Count of TMDLs in HUC12. Calculated as the number of unique water segment ID-TMDL pollutant combinations in the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	CNT_TMDLS
247	Watershed Count Ratio TMDLs to Impairments	Social	Level of Information	Ratio of number of TMDLs to impairments in HUC12. Calculated from TMDL count (CNT_TMDLS) and count of impairments for 303(d) listed waters/waters with TMDLs (CNT_303DTMDL_IMPAIRMENTS).	TMDL_IMPAIRMENT_RAT
248	Watershed Streamlength with TMDLs	Social	Level of Information	Length of stream features with TMDLs in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Sediment" or "Turbidity" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL

Order	Indicator_Name	Type	Component	Description	Field_Name
249	% Watershed Streamlength with TMDLs	Social	Level of Information	Percent of stream features in HUC12 with TMDLs. Calculated as length of streams with TMDLs (STREAMLGTH_TMDL) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_PCT
250	Watershed Waterbody Area with TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with TMDLs in HUC12 (square kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	WBAREA_TMDL
251	% Watershed Waterbody Area with TMDLs	Social	Level of Information	Percent of lakes, estuaries, and other areal water features in HUC12 with TMDLs. Calculated from area of waterbodies with TMDLs (WBAREA_303D) and total waterbody area (WBAREA_NHD + WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_PCT
252	Watershed Streamlength with Nutrient TMDLs	Social	Level of Information	Length of stream features with a nutrient-related TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent TMDL pollutant. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_NUTRIENTS
253	% Watershed Streamlength with Nutrient TMDLs	Social	Level of Information	Percent of stream features in HUC12 with a nutrient-related TMDL. Calculated as length of 303(d) listed nutrient impaired streams (STREAMLGTH_TMDL_NUTRIENTS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_NUTRIENTS_PCT
254	Watershed Waterbody Area with Nutrient TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with a nutrient-related TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent TMDL pollutant.	WBAREA_TMDL_NUTRIENTS
255	% Watershed Waterbody Area with Nutrient TMDLs	Social	Level of Information	Percent of assessed lakes, estuaries, and other areal water features in HUC12 with a nutrient-related TMDL. Calculated as area of waterbodies with a nutrient-related TMDL (WBAREA_TMDL_NUTRIENTS) divided by total waterbody area (WBAREA_NHD + WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_NUTRIENTS_PCT
256	Watershed Segments with Nutrient TMDLs Count	Social	Level of Information	Count of waters with a nutrient-related TMDL in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent TMDL pollutant.	CNT_TMDL_WATERS_NUTRIENTS
257	Watershed Streamlength with Pathogen TMDLs	Social	Level of Information	Length of stream features with a pathogen TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Pathogens" listed as a parent TMDL pollutant. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_PATHOGENS

Order	Indicator_Name	Type	Component	Description	Field_Name
258	% Watershed Streamlength with Pathogen TMDLs	Social	Level of Information	Percent of stream features in HUC12 with a pathogen TMDL. Calculated as length of 303(d) listed pathogen impaired streams (STREAMLGTH_TMDL_PATHOGENS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_PATHOGENS_PCT
259	Watershed Waterbody Area with Pathogen TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with a pathogens TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Pathogens" listed as a parent TMDL pollutant.	WBAREA_TMDL_PATHOGENS
260	% Watershed Waterbody Area with Pathogen TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features in HUC12 with a pathogens TMDL. Calculated as area of waterbodies with a pathogens TMDL (WBAREA_TMDL_PATHOGENS) divided by total waterbody area (WBAREA_NHD + WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_PATHOGENS_PCT
261	Watershed Segments with Pathogen TMDLs Count	Social	Level of Information	Count of waters with a pathogens TMDL in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset with "Pathogens" listed as a parent TMDL pollutant.	CNT_TMDL_WATERS_PATHOGENS
262	Watershed Streamlength with Sediment TMDLs	Social	Level of Information	Length of stream features with a sediment TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Sediment" or "Turbidity" listed as a parent TMDL pollutant. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_SEDIMENT
263	% Watershed Streamlength with Sediment TMDLs	Social	Level of Information	Percent of stream features in HUC12 with a sediment TMDL. Calculated as length of streams with sediment TMDLs (STREAMLGTH_TMDL_SEDIMENT) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_SEDIMENT_PCT
264	Watershed Waterbody Area with Sediment TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with a sediment TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Sediment" or "Turbidity" listed as a parent TMDL pollutant.	WBAREA_TMDL_SEDIMENT
265	% Watershed Waterbody Area with Sediment TMDLs	Social	Level of Information	Percent of lakes, estuaries, and other areal water features in HUC12 with a sediment TMDL. Calculated as area of waterbodies with sediment a TMDL (WBAREA_TMDL_SEDIMENT) divided by total waterbody area (WBAREA_NHD + WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_SEDIMENT_PCT
266	Watershed Segments with Sediment TMDLs Count	Social	Level of Information	Count of waters with a sediment TMDL in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset with "Sediment" or "Turbidity" listed as a parent TMDL pollutant.	CNT_TMDL_WATERS_SEDIMENT

Order	Indicator_Name	Type	Component	Description	Field_Name
267	Watershed Streamlength with Metals TMDLs	Social	Level of Information	Length of stream features with a metals TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Metals (other than Mercury)" listed as a parent TMDL pollutant. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_METALS
268	% Watershed Streamlength with Metals TMDLs	Social	Level of Information	Percent of stream features in HUC12 with a metals TMDL. Calculated as length of 303(d) listed metals impaired streams (STREAMLGTH_TMDL_METALS) divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_METALS_PCT
269	Watershed Waterbody Area with Metals TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with a metals TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Metals (other than Mercury)" listed as a parent TMDL pollutant.	WBAREA_TMDL_METALS
270	% Watershed Waterbody Area with Metals TMDLs	Social	Level of Information	Percent of lakes, estuaries, and other areal water features in HUC12 with a metals TMDL. Calculated as area of waterbodies with a metals TMDL (WBAREA_TMDL_METALS) divided by total waterbody area (WBAREA_NHD + WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_METALS_PCT
271	Watershed Segments with Metals TMDLs Count	Social	Level of Information	Count of waters with a metals TMDL in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset with "Metals (other than Mercury)" listed as a parent TMDL pollutant.	CNT_TMDL_WATERS_METALS
272	Percent potentially restorable wetlands WS	Social	Complexity / Suitability	An estimate of the percent of land within a HUC12 that may be suitable for wetland restoration. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B80AFCF1D-0C2B-4E4A-B07A-B2B57E6772D5%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	WTLD_REST_POT_PCT_WS
273	Watershed NPDES Permit Count	Social	Complexity / Suitability	Count of National Permit Discharge Elimination System (NPDES) permits in the HUC12 watershed, including both active and expired NPDES permits. Provides an estimate of the prevalence of point sources of pollution in the HUC12 watershed. Calculated from the EPA Office of Water "NPDES Permitted Facilities" NHD-indexed dataset (downloaded February 2014) and the "NHDPlus2 WBD Snapshot" (downloaded March 2014). Calculated as the number of NPDES permit features in each HUC12 polygon.	NPDES_PERMIT_CNT

Order	Indicator_Name	Type	Component	Description	Field_Name
274	Percent small natural areas WS	Social	Complexity / Suitability	The percent of land within a HUC12 that are covered by small patches of natural areas. Small natural areas are less 500 acres and covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_SM_AREA_PCT_WS
275	Percent medium natural areas WS	Social	Complexity / Suitability	The percent of land within each HUC12 that are covered by medium sized natural areas. Medium natural areas are areas less than 25,000 acres but greater than 500 acres and are covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_MD_AREA_PCT_WS
276	Percent large natural areas WS	Social	Complexity / Suitability	The percent of land within each HUC12 that are covered by large natural areas. Large natural areas are greater than 25,000 acres and covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_LG_AREA_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
277	Percent land with any IUCN status WS	Social	Complexity / Suitability	The percentage of land within a HUC12 that is protected. It includes all lands that have been classified by International Union for Conservation of Nature (IUCN) as protected areas. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FFDE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	IUCN_ALL_PCT_WS
278	Percent GAP status 1 and 2 WS	Social	Complexity / Suitability	The percent of land within a HUC12 that is designated as Status 1 or 2 under the USGS Gap Analysis Program. These lands have permanent protections in place limiting visitation, use, and human impacts. Lands with status 1 have more restrictions in place to minimize disturbance and maintain the land's natural state. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FFDE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	GAP_PROT_1_2_PCT_WS
279	Percent GAP status 3 WS	Social	Complexity / Suitability	The percent of land within a HUC12 that is designated as Status 3 under the USGS Gap Analysis Program. These areas have permanent protection from conversion of natural land cover for the majority of area. Subject to extractive uses of either broad, low-intensity type (e.g.. Logging) or localized intense type (e.g.. Mining). Confers protection to federally listed endangered and threatened species throughout the area. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FFDE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	GAP_PROT_3_PCT_WS

Order	Indicator_Name	Type	Component	Description	Field_Name
280	Percent Drinking Water Source Protection Area WS	Social	Human Health	Percent of total watershed area designated as drinking water source protection area (SPA). Based on state data consolidated by EPA in SDWIS SAFE DRINKING WATER INFORMATION SYSTEM (http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/index.cfm) processed March 2014. Includes areas protecting surface drinking water sources but not groundwater drinking sources. Multiple drinking water sources and their individual SPAs can occur and overlap. Each SPA % of area is counted individually and added, thus total values can exceed 100%.	DW_SWPA_PCT_WS