



Western Reserve
Land Conservancy

OUR LAND. OUR LEGACY.

Mapping Conservation Value

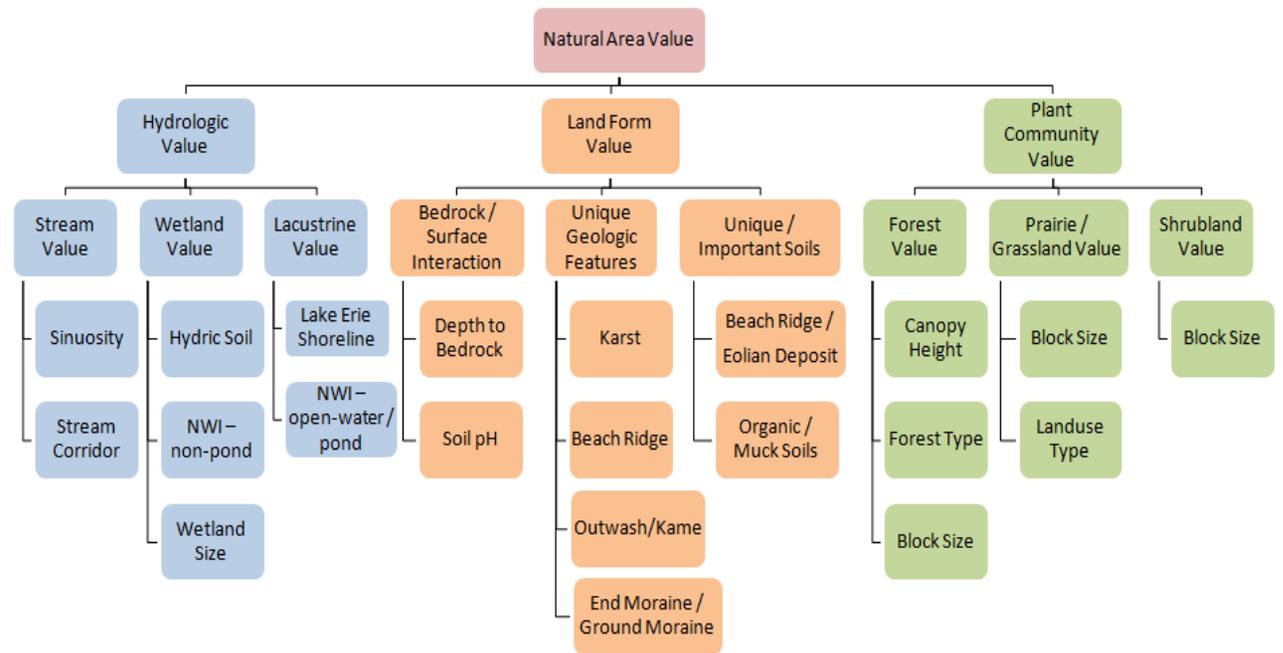
*for the
Western Reserve Region of Ohio*



In the Fall of 2009, the Western Reserve Land Conservancy’s Board of Trustees approved a strategic plan that called for an update to the approach that the Land Conservancy uses to compare and prioritize conservation projects in its service area. The updated approach needed to be science-based, and needed to incorporate the priorities of partner organizations, since the Land Conservancy works in concurrence with partners as it progresses toward a vision of hundreds of thousands of protected acres across Northeast Ohio. The approach needed to be continuous, so that all areas of the region could be measured using the same criteria. It also needed to be spatially-specific, but not parcel-specific, so that it could be a public resource.

The Land Conservancy’s GIS and Conservation Planning team worked with a National Park Service Ecologist to develop a methodology that utilizes a Bayesian Belief Network (BBN) approach. The BBN approach allows for the incorporation of expert opinion in place of missing data, or data layers with relationships that are uncertain, unpredictable or imprecise. Experts assign probability values to simple parts of a more complex model (e.g., probability of high or low conservation value for forest blocks in different size classes, stand heights, etc.) and then feed those opinions into a framework that can be represented spatially. In this way, maps can be developed that depict the consensus of what a group of local experts "believes" are areas with a high probability of conservation value.

When crafting the methodology, the team recognized the need for two distinct models that correspond to different types of conservation in the region. The characteristics of high-value natural areas are typically quite different from the characteristics of quality farmland, but the preservation of both is important for the region.



Partners & Participants:

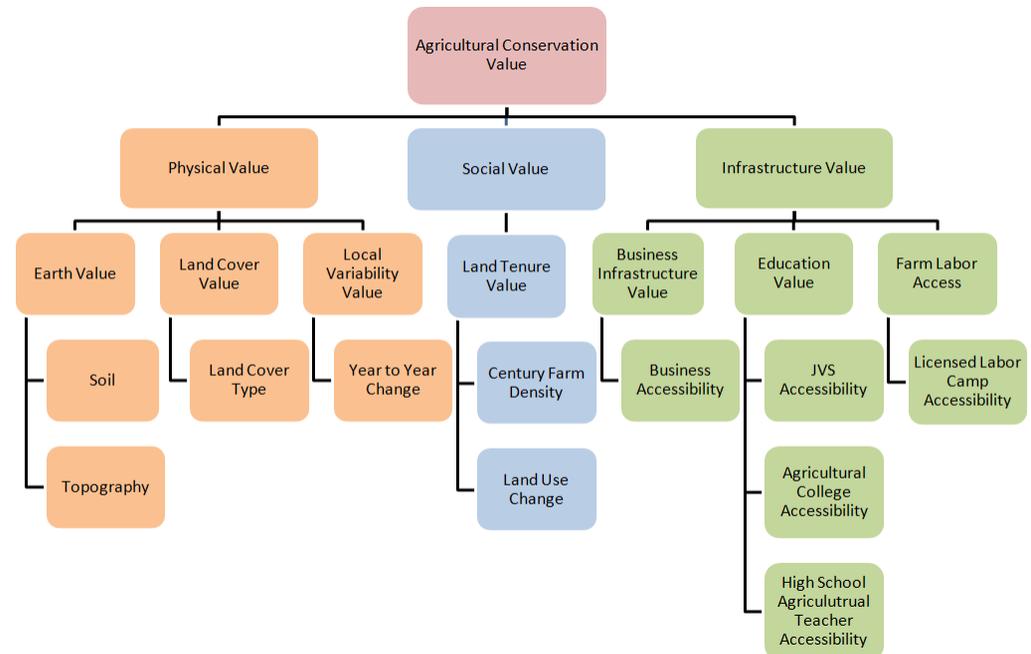
- Ashtabula County Visitors Bureau
- Ashtabula Metroparks
- Ashtabula SWCD
- Audubon Society of Greater Cleveland
- Beech Creek Botanical Gardens
- Ben Miller
- Brian Smith
- Countryside Conservancy
- Cuyahoga County Board of Health
- City of Youngstown
- Cleveland Botanical Gardens
- Cleveland Metroparks
- Cleveland Museum of Natural History
- Cuyahoga River RAP
- Cuyahoga SWCD
- Davey Resource Group
- Eastgate Regional Council of Governments
- EnviroScience Inc.
- Erie Metroparks
- Farm Bureau
- Firelands Audubon
- Floyd Brown Group
- Geauga Park District
- Geauga SWCD
- GreenCityBlueLake
- Hiram College
- Holden Arboretum
- Jim Patterson
- Kent State University- Stark
- Lake County Planning
- Lake Metroparks
- Lake SWCD
- LEAP for Biodiversity
- Medina County Park District
- Medina SWCD
- Metroparks Serving Summit County
- Mill Creek MetroParks
- Meadow Environments, LLC
- National Park Service
- Native Plant Society of NE Ohio
- Nature Center at Shaker Lakes
- Northeast Ohio Four County Regional Planning and Development Organization (NEFCO)
- Norwalk Parks and Recreation
- USDA-NRCS
- ODNR – Division of Wildlife
- ODNR – Division of Natural Areas and Preserves
- ODNR – Scenic Rivers
- Ohio and Erie Canalway Coalition
- Ohio EPA
- Ohio Outdoor News
- Ohio Wetlands Foundation
- Ohio State University
- Ohio Agricultural Research and Development Center
- Portage Park District
- Stark County Park District
- Summit SWCD
- Trumbull SWCD
- Trumbull Metroparks
- The Nature Conservancy
- The Wilderness Center
- Trout Unlimited
- Trumbull County Auditor
- Trumbull County Commissioners
- Trumbull County Planning
- Trumbull County Treasurer
- U.S. EPA
- Firelands Coastal Tributaries
- Western Reserve RC&D

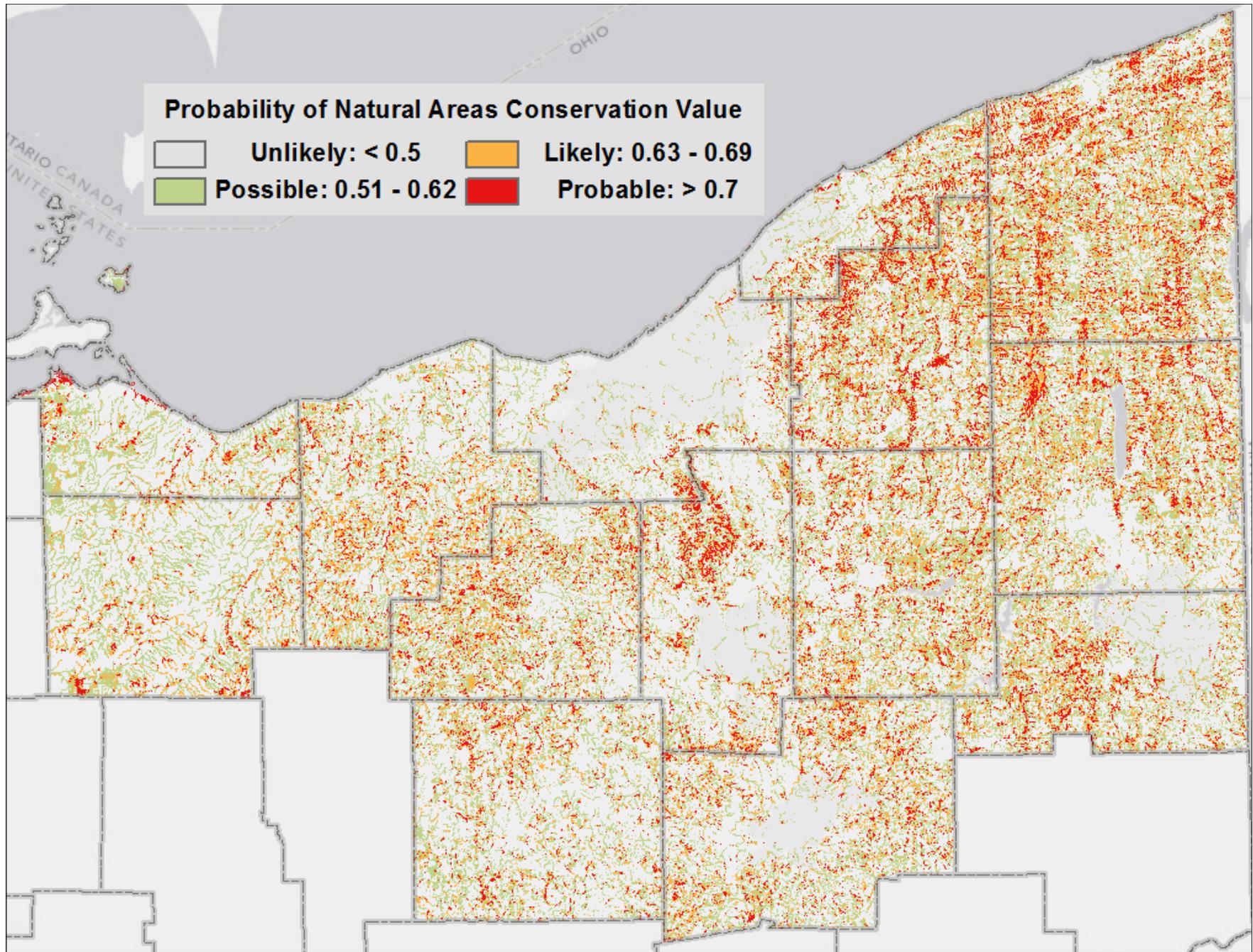
To develop the natural areas model, a series of 14 county and two regional meetings were held to help determine what local stakeholders and partners felt defined high conservation value, and what data layers could be used to describe it in a model. Expert opinions were obtained when the Land Conservancy convened an advisory group comprised of specialists from Northeast Ohio's conservation community. Land Conservancy staff worked with these experts to reach consensus on the value of each of the input data layers that were represented in the model.

Once appropriate component data layers (seen in the included charts) were identified, values representing the consensus opinion of probability of conservation value for each were entered into the belief network. Probability values for each data layer cascade through the network of relationships to arrive at a final probability of conservation value for each combination of component data layers. When represented spatially, these values form a continuous surface that can be mapped using GIS software.

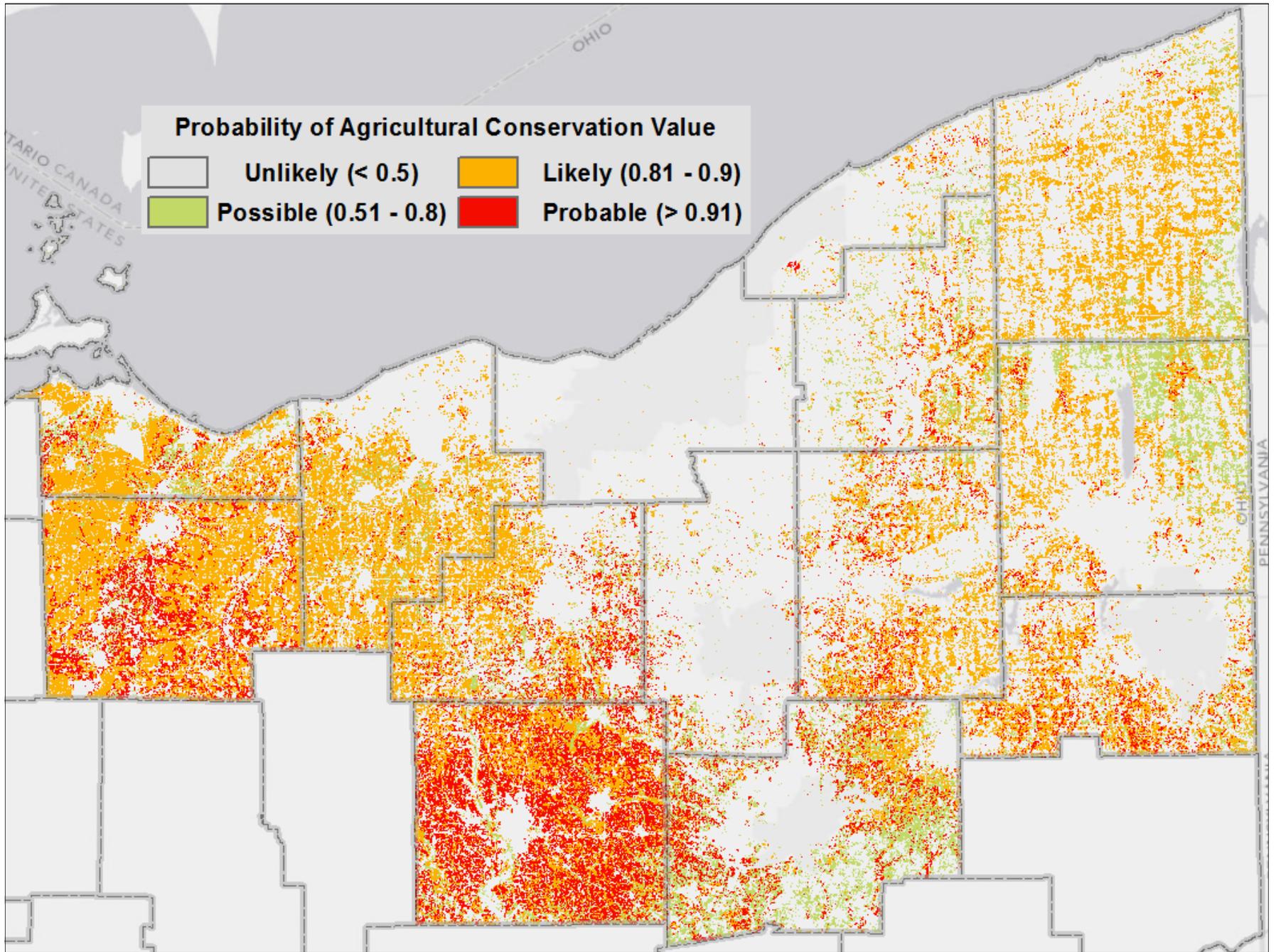
When the natural areas model was complete, the process was reprised to develop a working lands model. The Land Conservancy gathered an advisory group of agricultural practitioners and industry specialists to identify important data layers and assign the likelihood of conservation value associated with each.

The results obtained from these processes were mapped in a surface of 30-meter square units for the entire service area of the Land Conservancy. These results are seen in the included maps, and are available to be shared with partner organizations so that conservation of high-value areas can be pursued in a coordinated way.





To obtain a copy of this data, please contact Elizabeth Mather by email: emather@wrlandconservancy.org
Western Reserve Land Conservancy seeks to preserve the scenic beauty, rural character and natural resources of northern Ohio. www.wrlandconservancy.org



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