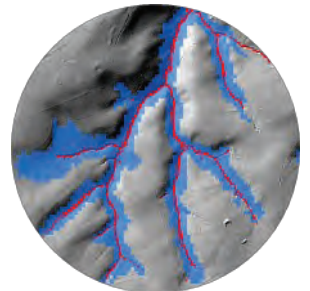


# Conservation Innovation Center

## *Democratizing conservation technology for collaborative environmental action*

The **Conservation Innovation Center (CIC)** is a leader in the field of conservation technology, cultivating a community centered around collaboration and visionary thinking. Harnessing the power of data and technology—particularly Geographic Information Systems (GIS) and Artificial Intelligence (AI)—the CIC empowers the conservation community by supporting data-driven decision-making. Our intent is to bridge the gap from high-level goals to action with tangible strategies, especially where they support the programmatic direction of our partners. To accomplish this, CIC staff explore cutting-edge methods and applications that provide **actionable insights** for organizations of all size and scale, across a variety of disciplines. The CIC bolsters the conservation community to make progressive strides by continuously pushing beyond the limitations of currently available data and analysis products to create more detailed and reliable information.

Established in 2013, the CIC was created by Chesapeake Conservancy to help shape proactive responses for one of the world's largest environmental efforts—restoring the Chesapeake Bay. Since then, the CIC has continued to pioneer **high-resolution GIS mapping** that provides new perspectives about the state of landscapes and waterways. This information is used to **identify specific project-level priorities** that can maximize conservation outcomes. Our work has had significant impacts, such as enabling partners to enact evidence-based forest conservation policies, quantifying natural climate solutions to attract private investments for carbon and water quality markets, and developing analytics and strategies that balance water rights and endangered species management.



1-meter stream channel data  
using geomorphic hydrography

The CIC is building the underlying framework of technology to inform better decision-making, leveraging insights from a broad network of partners and projects—transforming the engagement of local perspectives and geographic context throughout the environmental movement. Our staff work diligently to **scale and automate methodologies** for replication across geographies and areas of interest, as well as engaging in **research and**



Calculating drainage area for non-forested gaps along a stream channel to prioritize riparian restoration projects

**development** to broaden our expertise. We engage with environmental topics by providing partners with the appropriate information to frame challenges, evaluate alternatives, and identify optimal solutions for direct, effective implementation.

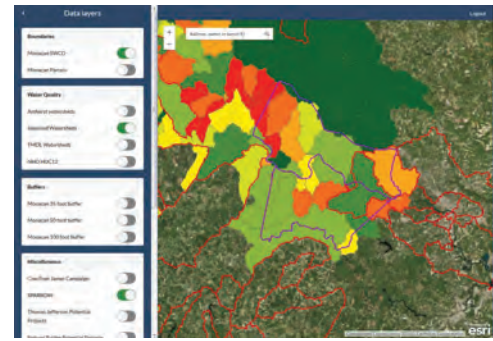
## Areas of expertise:

- △ Advanced GIS and Remote Sensing
- △ Precision conservation/restoration
- △ Artificial Intelligence/Data Science
- △ Cartography
- △ Outreach and education tools
- △ Web Applications
- △ Land cover classification
- △ Hydrographic modeling
- △ Habitat modeling
- △ Viewshed Modeling
- △ Climate resilience and solutions
- △ Conservation finance



# Collaborating with partners large and small...

CIC staff are advising the **Virginia Environmental Endowment (VEE)**—a nonprofit grant-making foundation that receives mitigation funds—on a coordinated strategy that advances cost-effective, proactive restoration for **water quality improvement**. Our staff are also working closely with some of VEE's grantees, including the **James River Association (JRA)**, to build local capacity and guide the model for precision restoration. With JRA, we are developing web-based tools for data-driven project identification, landowner outreach, and financial prioritization.



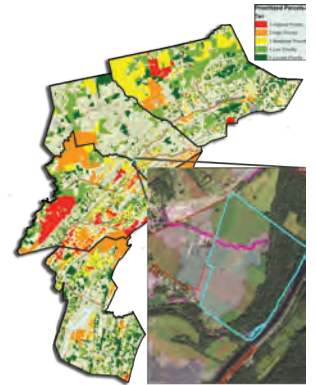
Conservation planning tool developed to help identify priority projects



1-meter land cover data for Pima County, Arizona

In coordination with the **Pima Association of Governments**, CIC staff tailored our 1-meter land cover methodologies to map the Tucson metropolitan region of Arizona; and then again for the Denver metropolitan region of Colorado with the **Denver Regional Council of Governments**. These data are being used to support regional planning initiatives, such as **flood mitigation efforts** by Pima County Flood Control District. Biohabitats, Inc. utilized the data to evaluate **habitat connectivity**, habitat quality, and riparian vegetation for the High Line Canal green infrastructure project in the Denver area. Additional applications and use-cases are continually being developed and documented to share how high-resolution data can improve planning efforts.

Since 2015, the CIC has been engaged in cooperative agreements and long-term grants with the **U.S. EPA's Chesapeake Bay Program** to provide support that informs the management of the Chesapeake Bay TMDL—a regulatory pollution diet for each jurisdiction within the watershed. Our team is producing land cover and hydrography datasets, as well as mapping possible opportunities for best management practice (BMP) implementation. We are **informing regional modeling efforts** with our data and insights, re-designing the multi-sector framework for Watershed Implementation Plan (WIP) strategies. Through this work, we are translating broad goals and regulations into specific actions that **support WIP planning** at local, state, and regional levels.



Forest buffer project prioritization in Central Pennsylvania

## ... across a variety of sectors.

- △ Microsoft AI for Earth
- △ National Park Service
- △ U.S. Forest Service
- △ U.S. Fish and Wildlife Service

- △ Esri
- △ Babbitt Center for Land & Water Policy
- △ Ecosystem Investment Partners
- △ Waterkeeper Alliance

- △ Nature Conservancy of Canada
- △ Land Trust Alliance
- △ University of Vermont
- △ Drexel University

