skylines

Welcome to Chesapeake Conservancy's **Conservation Innovation Center's (CIC)** ***Skylines*** quarterly newsletter!

We're proud to partner with the Chesapeake Bay Program (CBP) to map the Chesapeake Bay watershed, providing a living visual of our storied landscape. Land use/land cover data released in June highlights changes on the landscape and the water that flows through it. This data is not only ground-breaking, but essential to fulfilling the local and far-reaching goals within the newly revised *draft Chesapeake Bay Watershed Agreement: Beyond 2025*.

Familiar polygons, in an array of colors, represent different land classifications while old and new blue lines flood (pun intended) each map to reveal where water has been, is now, and will be again next season. These maps are a narrative of not only the challenges we face today but more importantly, the progress we've made and the possibilities that lie ahead.

The Chesapeake Conservancy, as well as the invaluable leadership at the EPA, USGS, and CBP and our essential data partners at the University of Maryland, Baltimore County and the University of Vermont have dedicated countless hours to ensure these datasets are detailed, accurate, accessible, publicly available, and most important, ***useful*** to anyone working to conserve and restore the Chesapeake Bay watershed and its communities.

- Emily Beach, CIC Director

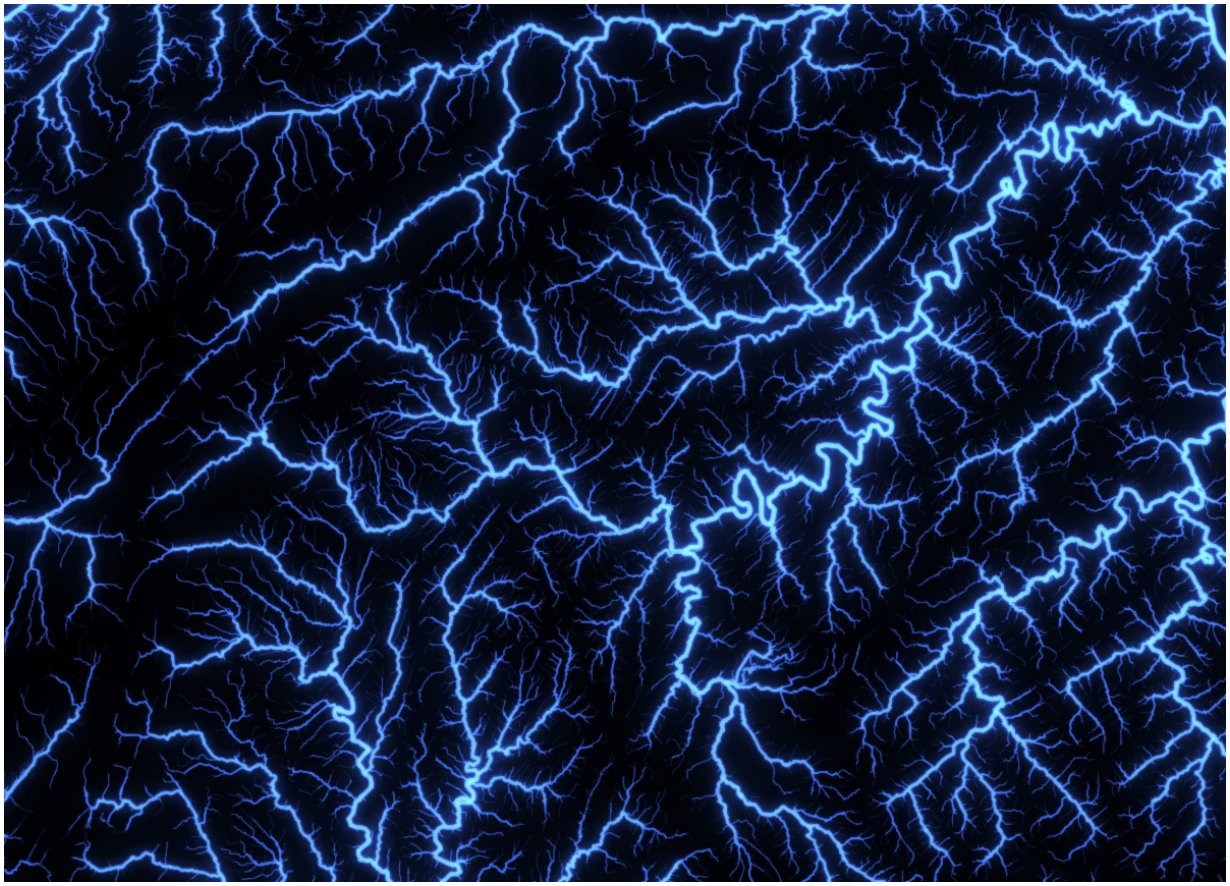
P.S. Please join me in welcoming Chesapeake Conservancy's new CEO, Susan Shingledecker, formerly with Earth Science Information Partners (ESIP)!

Empower with Data

At the Conservation Innovation Center (CIC), we serve as a catalyst for change, leveraging cutting-edge geospatial data science, artificial intelligence and advanced analytics to tackle pressing environmental and conservation challenges in the Chesapeake Bay watershed.

Our goal is to transform data into precise and actionable insights that restore and sustain the Bay's health for current and future generations.

Featured Articles



Hyper-Resolution Hydrography data identifying more than double the number of channel miles currently mapped.

Hyper-Resolution Hydrography Data

Cutting-edge data with more than double the channel miles currently mapped.

Hyper-Resolution Hydrography Data released in June provides the most comprehensive inventory of the Chesapeake Bay watershed's stream and ditch network. This collaborative effort redefines our understanding of the Chesapeake Bay's vital waterways with the potential to revolutionize restoration strategies.

Our partner, Dr. Matt Baker, a professor of geography and environmental systems at the University of Maryland, Baltimore County (UMBC), and project lead, is pioneering stream mapping with a direct-detection approach using high-resolution LiDAR elevation data. This novel method marks the first automated hydrographic mapping effort of its kind on such an extensive scale, setting a new benchmark in hydrography.

Explore the Data

Read More

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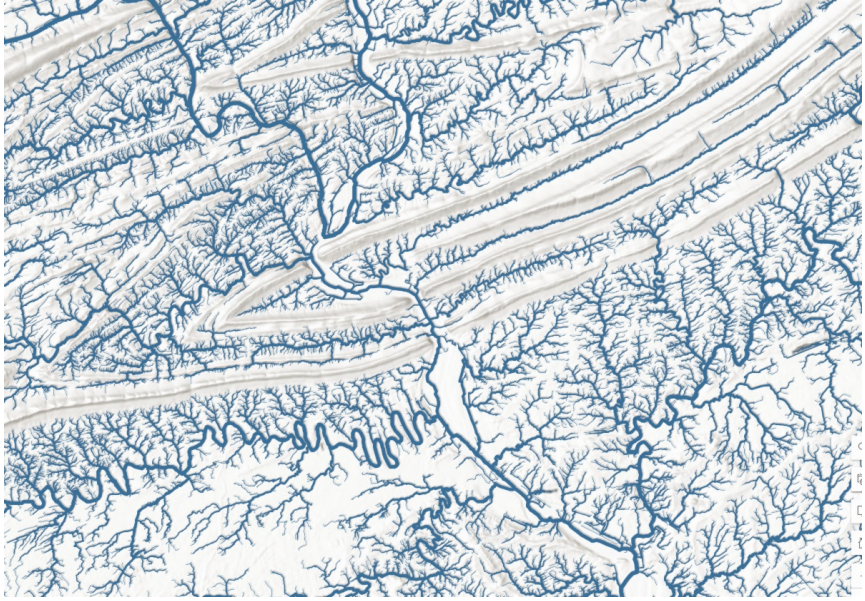

Land Use/ Land Cover Data

Foundational and authoritative data that's transforming land management, human health and conservation efforts across the Bay.

Released in June, the Chesapeake Bay Land Use/Land Cover (LULC) Database provides unprecedented level of detail, 1-meter spatial resolution land classification maps across the entire watershed and adjacent counties.

Land Use/Land Cover Data help policymakers develop targeted strategies that reduce health risks, improve environmental quality, and ultimately enhance the health and well-being of humans and communities across the Chesapeake Bay watershed.

Explore the Data

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Land Use/Land Cover Change Data

Covering 99,000 square miles and spanning three time periods.

Land Use/Land Cover Change Data are a unique demonstration of how 1-meter high-resolution LULC and change data can be created at-scale with streamlined classification

practices that enable consistency and comparability over space and time.

Land use and land cover constantly change due to natural events (flooding) and human activities (timber harvest). Monitoring these changes allows us to assess progress towards meeting goals, supplying policymakers and conservationists with precise data and trends for better decision making.

Explore the Data

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Welcome Susan Shingledecker! Chesapeake Conservancy's new CEO

Chesapeake Conservancy's new CEO, Susan Shingledecker, started in September. A seasoned nonprofit executive with deep roots in conservation and the Chesapeake region, Shingledecker previously served as Chesapeake Conservancy's vice president and director of programs from 2017 to 2020.

Shingledecker most recently served as executive director of Earth Science Information Partners (ESIP), where she led a collaborative community of earth and climate

science data professionals working to leverage the power of data to address the planet's most significant environmental challenges. In that role, she built strong partnerships with federal and state agencies, academic institutions and private-sector technology firms and worked closely with NASA, NOAA, USGS and other key stakeholders to advance innovative, data-driven solutions.

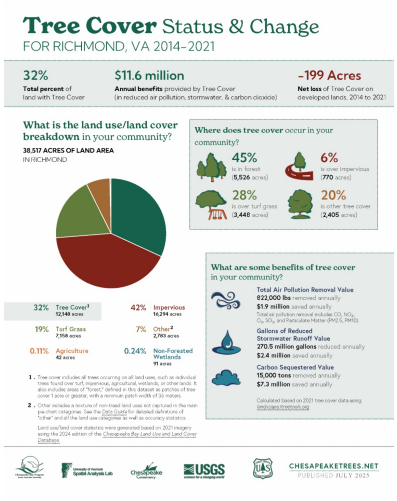
On the Horizon...

AI Wetland Mapping

The CIC's data science team has developed a cutting-edge artificial intelligence model to address the critical need for accurate, updated wetlands mapping.

U.S. Forest Service Municipal- and County- Scale Tree Canopy Fact Sheets

The new county and municipal tree canopy fact sheets for the Chesapeake Bay watershed are now available at Chesapeake Tree Canopy Network. Fact sheets include tree cover status, benefits (from i-Tree) and change information over the 2013/14 to 2021/22 time periods.



Meet the CIC Staff
David Saavedra

Senior Geospatial Analyst and Technical Lead

The Hyper-resolution Hydrography data was released this summer and you're a key person in the development of that data. What's the single most important thing people should know about using the data?

One of the most important things a person should do when using *any* new dataset–including the Hyper-resolution Hydrography–is take the time to learn about how it was made and understand its limitations. Having this kind of understanding about a dataset is important when considering if and how it will be applicable for your specific needs. For the Hyper-resolution Hydrography, we provide detailed metadata and an in-depth project report where you can learn all about the data.

How has the hydrography project developed and expanded your professional skillset while at CIC?

Creating the hydrography data was a masterclass in problem solving and troubleshooting. We developed many algorithms and rulesets to make this dataset, many of which were quite creative. Furthermore, it was exceedingly common that developing and applying algorithms to solve a problem in one area would introduce a problem in a different area and require more troubleshooting. These are just some of the many challenges of creating complex data at such a massive geographic scale.

Do you have a recent example of how you use the new Hyper-resolution Hydrography data?

I'm currently using the Hyper-resolution Hydrography data to update a suite of agricultural best management practice (BMP) opportunity layers in the Susquehanna watershed. BMPs are often implemented near streams and, as one would expect, the huge increase in streams identified in the Hyper-resolution Hydrography

data is revealing a lot of new opportunities for BMP implementation.

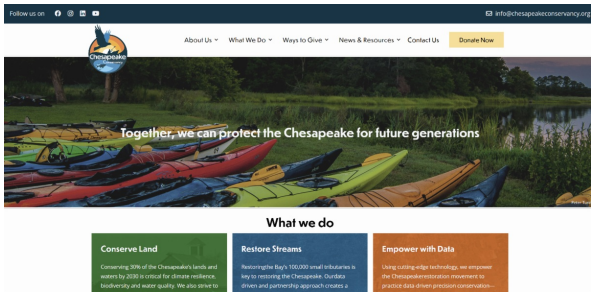
Other than the hydrography project, what project did you enjoy working on the most?

After working hard on the hydrography dataset for six consecutive years, my current favorite projects are the small ones I can finish quickly and move on from. Joking aside, I was involved in the development of our AI wetland model, and that is one of the most exciting projects to come out of the CIC in the nine years that I've been here. Not only does it utilize cool tech, the potential utility for a variety of sectors is huge.

Reach Out!

To learn more about how we can help you drive change through innovative technology or if you need a decision support tool to guide your next strategic vision, contact us at:
cic@chesapeakeconservancy.org
(443) 321-3610
Find out more about what we do

Learn more about everything we do!



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http://www.chesapeakeconservancy.org/

Support our innovative work at the Conservation Innovation Center.

Your donation empowers us to leverage cutting-edge technology and data-driven strategies to address the critical challenges facing the Chesapeake Bay watershed.

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