

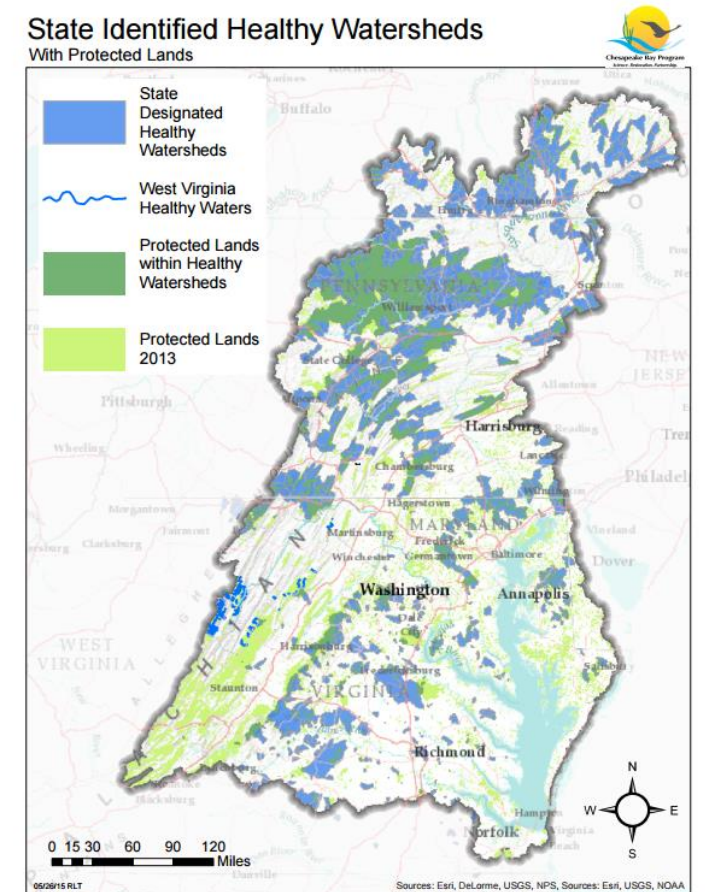
Integrated Networks and Monitoring meeting

JULY 20, 2016

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Healthy Watersheds Outcome

100 percent of state-identified currently healthy waters and watersheds remain healthy



History of State Identified Healthy Watersheds

Due to varying definitions of “healthy watershed,” the Maintain Healthy Watersheds GIT made the strategic decision to not seek a common definition for the healthy waters and watersheds addressed in this Outcome. Each jurisdiction has its own individual programs and responsibilities for watershed protection. Honoring states’ preferences, the goal team chose to move forward by focusing on tracking and supporting state-identified currently healthy waters and watersheds.

D.C. Healthy Watershed Criteria

The District of Columbia is primarily urbanized and therefore has not identified currently healthy watersheds. However, the District Department of the Environment (DDOE) has a number of laws and programs that focus on improving watershed health.

- storm water management
- sediment and erosion control
- water quality regulations
- incentive programs promoting the installation of best management practices
- RiverSmart Homes program
- incentives for the installation of green roofs on buildings
- Bay-friendly tree planting events

Fort Dupont Watershed Restoration NFWF Grant Project: Conduct Environmental Assessment in the Fort Dupont watershed that will include incorporating opportunities to implement low impact development activities in the public right of way, investigate the impact of targeted stream restoration work, and look at the feasibility for wetland restoration. In addition, conduct pre-restoration monitoring to determine baseline conditions.

Delaware Healthy Watershed Criteria

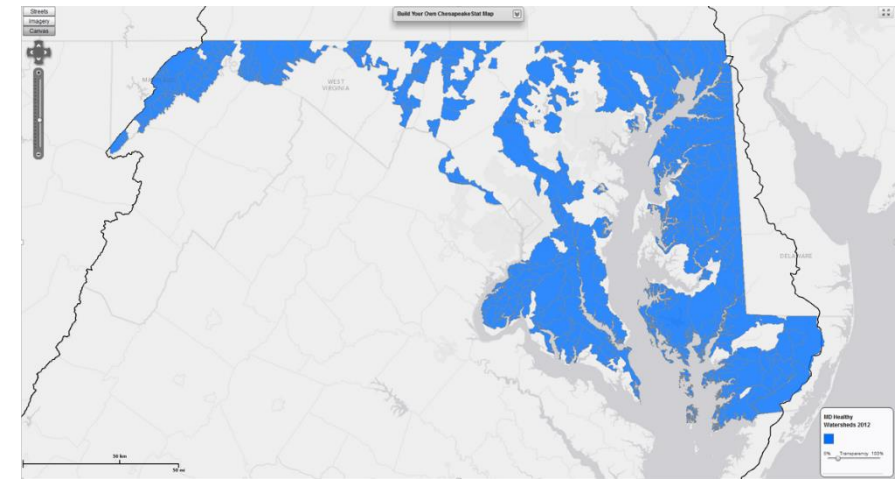
All of Delaware's tributaries to the Chesapeake Bay are impaired by nitrogen, phosphorus, and/or bacteria. Although they do not specifically define "healthy watersheds," being impaired is an indication that the watershed is not healthy. Delaware promulgated TMDL regulations for all of these tributaries long before the Bay TMDL and will not consider them to be unimpaired until they meet Delaware's Surface Water Quality Standards and no longer cause downstream impacts to the Chesapeake Bay.

Delaware has not contributed actions to the Workplan because 100% of the state's healthy watersheds are impaired and therefore there are no healthy watersheds. Anything that Delaware would put in the Workplan would be duplicative of what is in Water Quality Workplan.

Maryland Healthy Watershed Criteria (then and now)

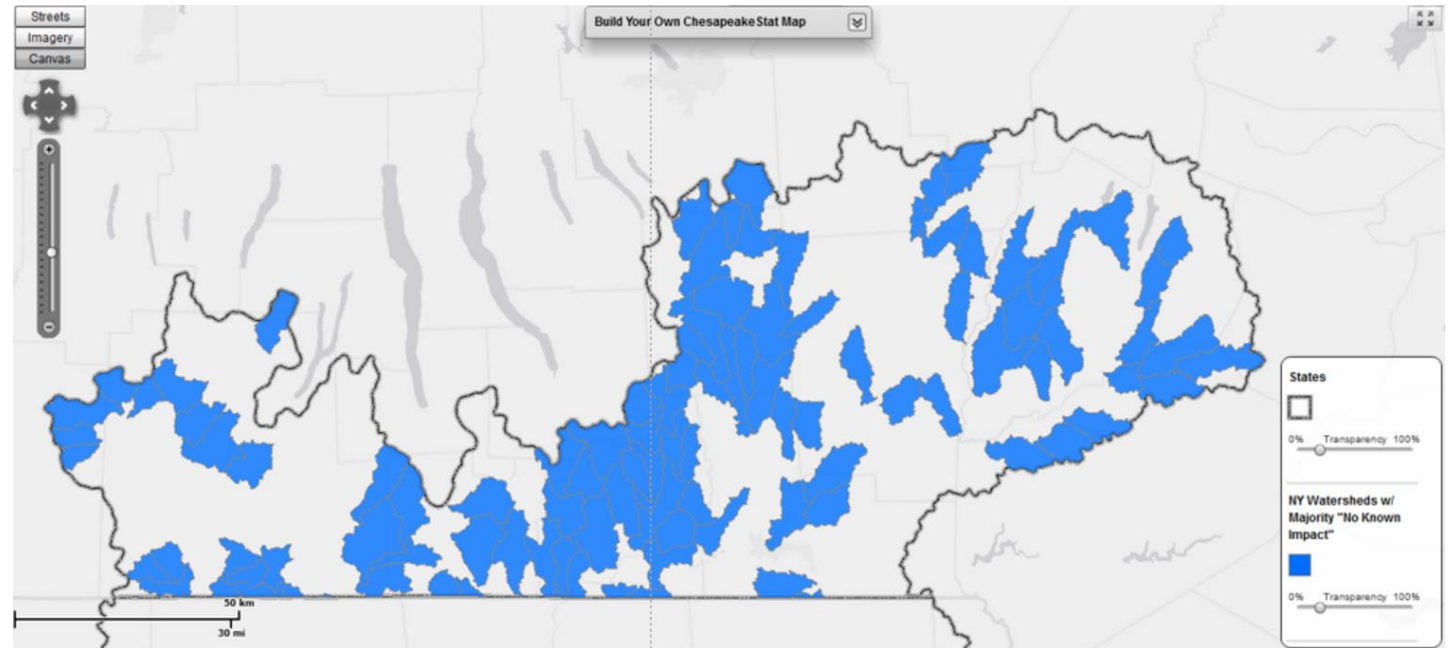
Tidal and non-tidal watersheds including those under regulatory anti-degradation protection and those with functioning habitats that support productive, diverse or unique populations of aquatic animals and plants that, collectively, provide the ecological services needed to protect downstream water resources. Data layers include: priority anadromous fisheries areas, stronghold watersheds, sentinel site watersheds, priority cold water conservation areas, high priority water quality protection areas, high priority blue infrastructure watersheds, and Maryland Tier II catchments.

Anti-degradation Tier II catchments will be used for Maryland's healthy watersheds data layer. This includes non-tidal watersheds under regulatory anti-degradation protection that exceed minimum applicable water quality criteria and standards. Currently, Tier II streams are identified according to fish and benthic indices of biotic integrity. Tier II streams are grouped into catchments and those with current Assimilative Capacity, or the natural capacity of a water body to dilute and absorb pollutants and prevent harmful effects, are included in the Tier II catchments for what the state considers to be healthy watersheds.



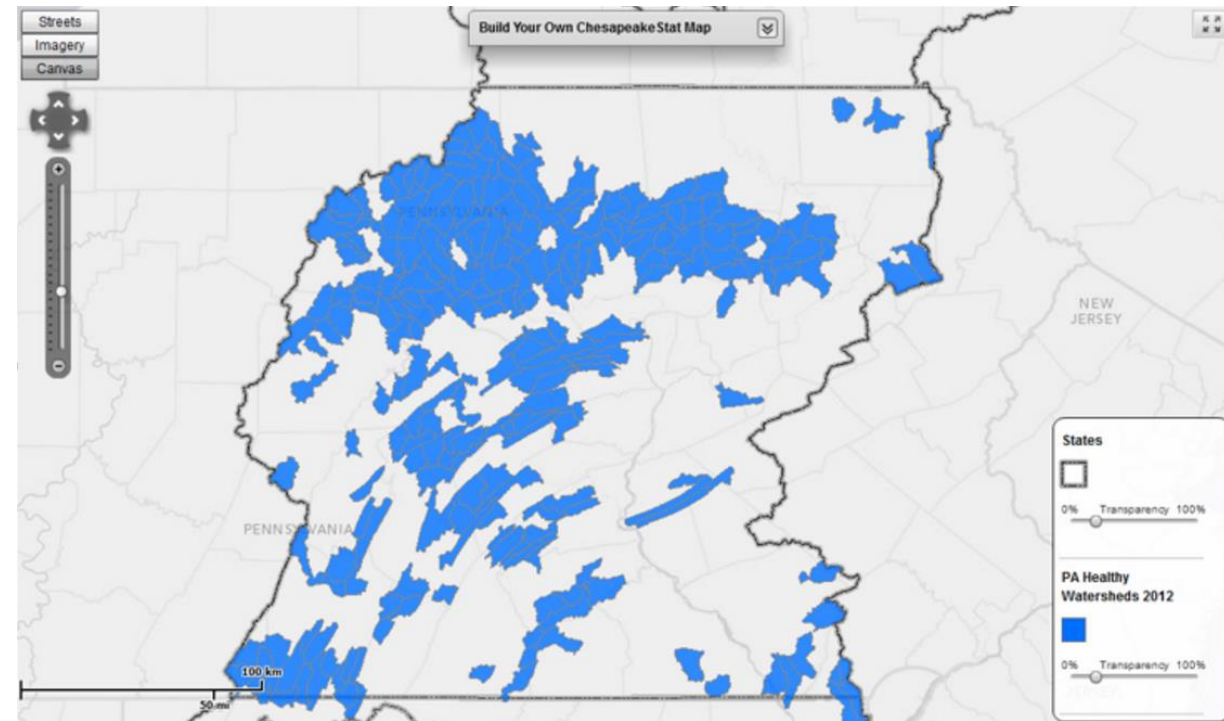
New York Healthy Watershed Criteria

The Waterbody Inventory/Priority Waterbodies List (WI/PWL) is an inventory of the state's surface water quality. The category of "No Known Impact" represents "segments where monitoring data and information indicate that there are no use restrictions or other water quality impacts/issues."



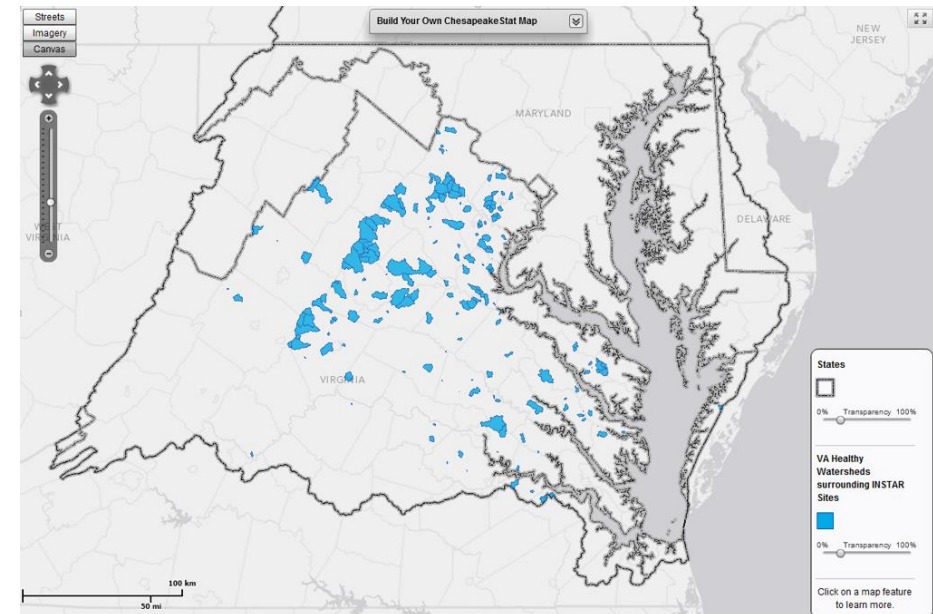
Pennsylvania Healthy Watershed Criteria

Water quality criteria are used to protect designated water uses, such as fish and aquatic life, recreation, and water supply. Designated or existing uses classified as Exceptional Value or High Quality were used as the basis for identifying Healthy Watersheds.



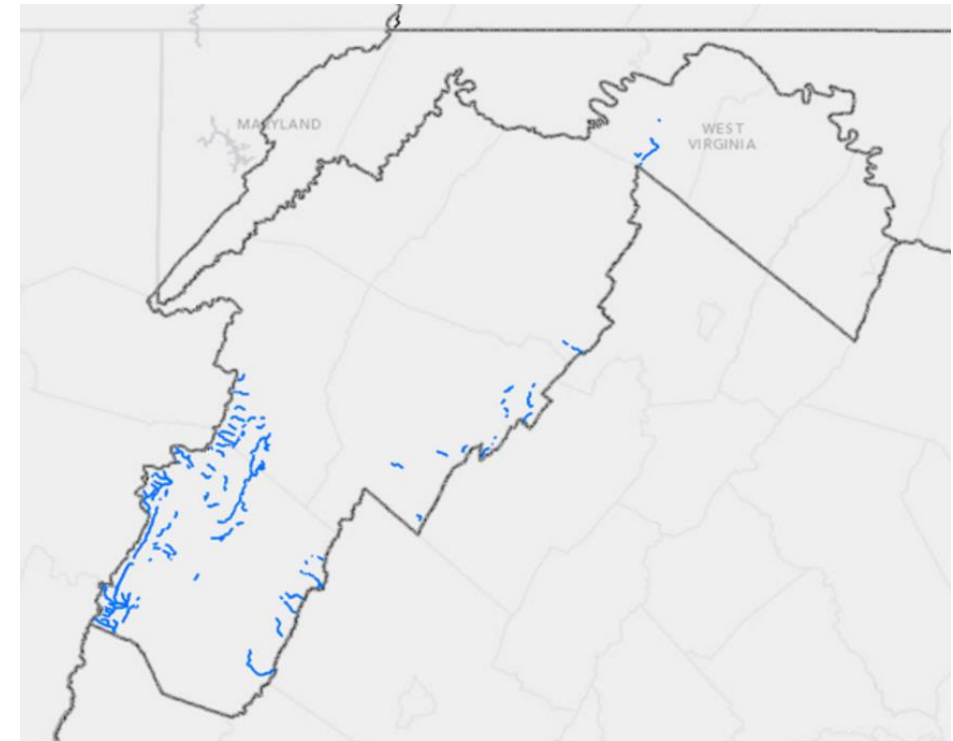
Virginia Healthy Watershed Criteria

The goal of the Interactive Stream Assessment Resource (INSTAR) is to develop a complementary, synoptic, and geospatial database for fish and macroinvertebrate community composition and abundance at stream locations throughout the state, including larger (4th order or greater) non-wadeable streams and rivers. INSTAR, and the extensive aquatic resources database on which it runs, supports a wide variety of stream assessment, management, and conservation activities aimed at restoring and protecting aquatic living resources throughout the Commonwealth.



West Virginia Healthy Watershed Criteria

West Virginia does not have a state defined "healthy watersheds" program or definition. West Virginia's antidegradation rule can be applied to help define this category of streams. West Virginia's Tier 3 waters are known as "outstanding national resource waters." These include waters in Federal Wilderness Areas, specifically designated federal waters, and high quality waters or naturally reproducing trout streams in state parks, national parks, and national forests.

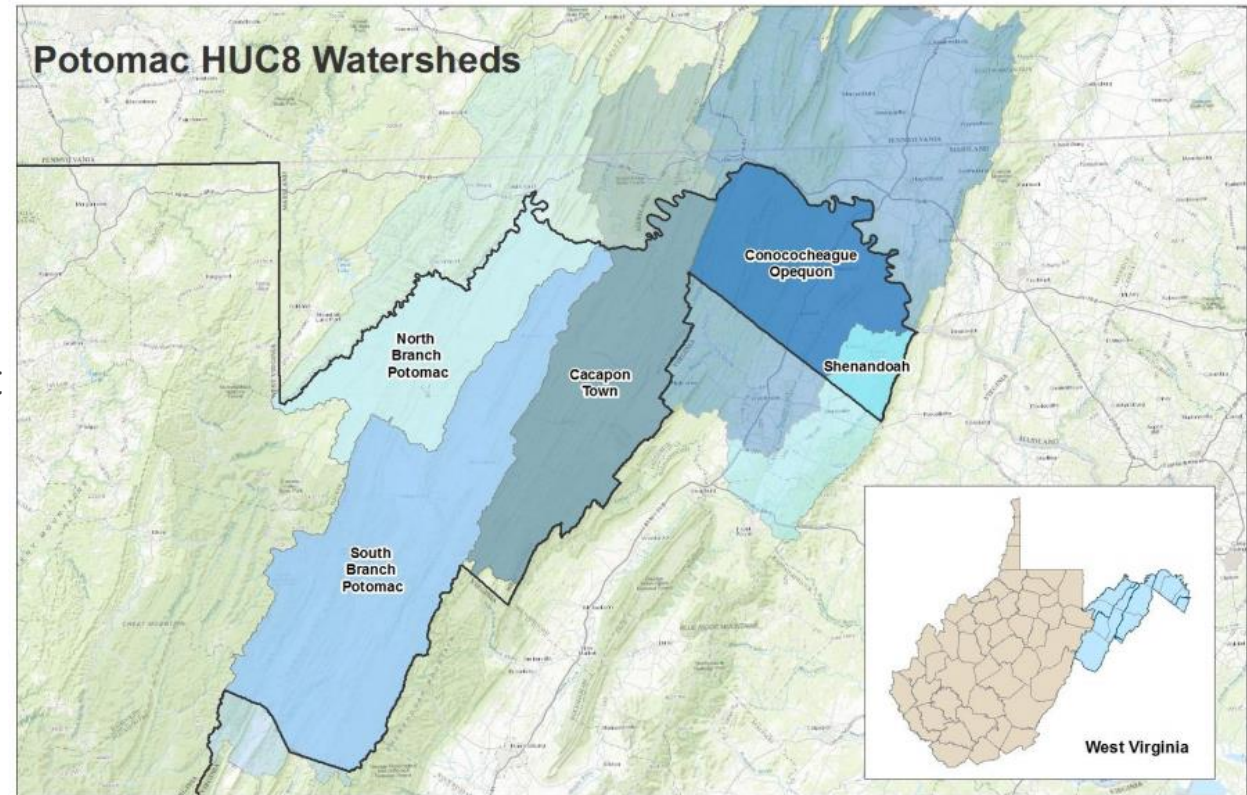


Identifying Healthy Watersheds in WV

Watershed assessment of Potomac Watersheds in West Virginia

Goals

- Develop metrics to measure current condition/function & threats
- Rank watersheds for restoration & protection priorities
- Provide science-based decision support to assist partners, stakeholders & regulatory staff with management of water resources
- Identify data gaps & data needs

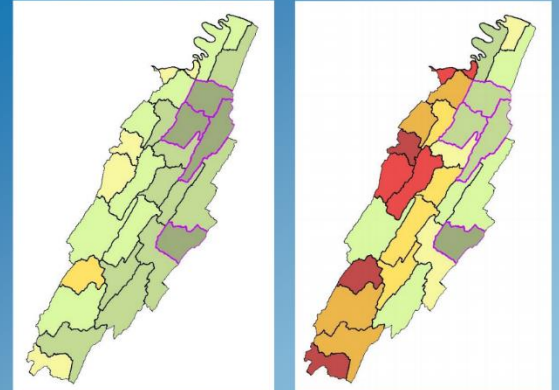


Identifying Healthy Watersheds in WV

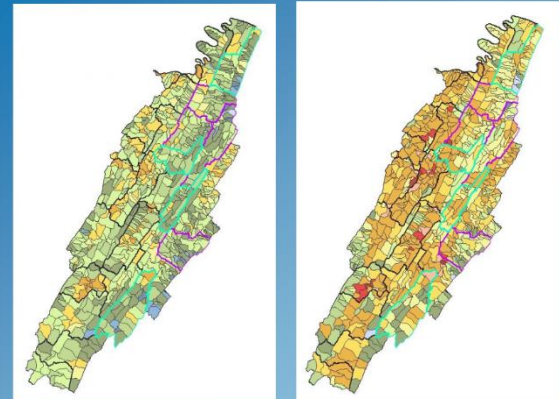
Healthy watersheds were identified and presented using two methods, the objective method and the relative method. The analysis was completed at both the HUC12 and catchment scale. Each method presents a slightly different picture of healthy watersheds in the Potomac drainage.

- The objective method utilizes 40 metrics to characterize a watershed
- four main elements of a healthy watershed:
 - water quality
 - hydrologic connectivity
 - habitat quality
 - biodiversity
- The relative method utilizes the same data with normalized relative results across the entire Potomac drainage in West Virginia. The relative analysis method helps answer the question which are the very best and the very worst watersheds.

Cacapon-Town – HUC12 Objective & Relative



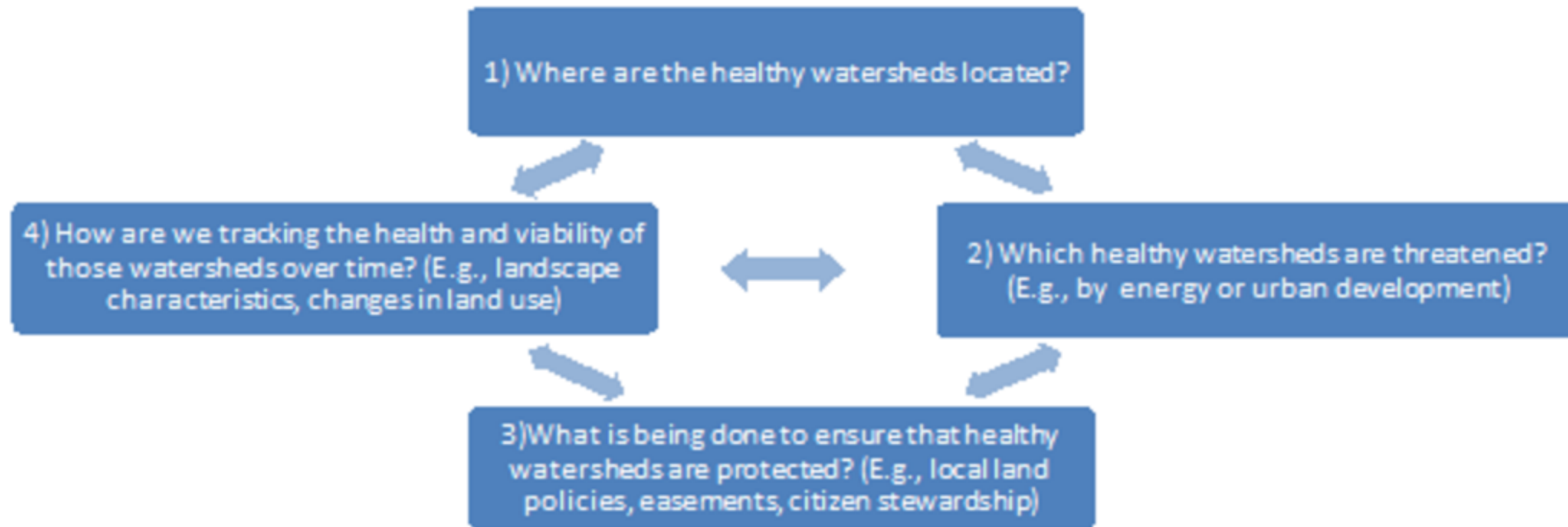
Cacapon-Town – Catchment Objective & Relative



Tracking Framework Ideas

- In 2012, GIT4 and the Chesapeake Bay Program's GIS Team produced a map of state-identified healthy watersheds and waters within the Chesapeake Bay Watershed.
- A team of graduate students in the Thomas Jefferson Program in Public Policy at the College of William & Mary surveyed local government staff and tested four categories of watershed protection tools: watershed management, zoning ordinances, development management, and natural resources protection. Their findings are described in a report found [here](#).
- Other partners and organizations have developed indices that can be used as examples for the Tracking Workgroup's work. Some examples include: Trout Unlimited's Conservation Success Index, The Maryland Department of Planning's AgPrint, The Nature Conservancy's Northeast Resilience Project.

A framework for tracking healthy watersheds and waters protection could be thought as a four legged stool or feedback loop including: 1) maps of state-identified healthy watersheds, 2) the best available assessments of the vulnerability of those watersheds, 3) the most current information on protections that are in place to assure long-term sustainability of watershed health, and 4) analyses on land use change or other landscape characteristics to track the health and viability of the watersheds over time.



Additional Tracking and Assessment Ideas

Potential Indicators: Percentage of healthy waters and watersheds that remain healthy through time

Monitoring Plan: State definitions of healthy watersheds and their list/files of those existing, GIS data layers for determining watershed status

Science Needs:

- Indicator/metrics to report besides GIS dataset of healthy waters and watersheds
- Analyses plans/protocol for determining status of each watershed in succeeding years (is the watershed threatened?)
- Determine a way to track “marginally” healthy waters and watersheds (shared data gap with steam health workgroup)
- Address shifting baseline issue (states reassess and the “healthy watersheds” are changing annually)
- What metrics should be evaluated to determine health and threats?
- Formation of a tracking workgroup (STAR) – should include other GITs that have tracking needs

Working with states to internally look at watersheds

Formation of tracking workshop (STAR)



Current Status / next steps— tracking and assessment

- States will work to come up with their own assessment framework
 - CBP Staff develop a database which as a starting point will list the state-identified healthy waters and watersheds. Send to each Jurisdictional representative
 - Jurisdictional representatives provide GIT with criteria used to determine whether watershed or water are “sustained” and fill out the rest of the information on the database
 - Coordinator creates a status map using data provided from Jurisdictions
 - CBP Staff develop an interim tracking protocol modeled on other jurisdictions to assess progress toward goal in lieu of a jurisdiction providing it directly.
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- VA is currently finalizing an assessment looking how at how vulnerable Virginia’s natural resources are. Healthy watersheds will be a component of that. VA has no budget to do a state-wide, MBSS-like program but is able to use Chesapeake Bay Implementation Grant (CBIG) funds to resample data that is older than 10 years. Some areas have been resampled already and by doing this VA can analyze trends over time