Framing the Discussions

Strategic Assessment Questions

| MISSION	CONTEXT	VISION	STRATEGY	ASSESSMENT	ACTION PLAN	ADAPTATION
Statement of purpose and reason for being/doing	*Values Principles Interests Needs*	*Inspiring description of desired situation*	*Policies Methods Programs*	*Assets Skills*	*Tasks Projects Management Governance*	*Monitoring Outcome results Adjustment process*
• *Why are we here?* • *What is expected of us?* • *What is our shared interpretation?*	• *What do we value – individually and as a group?* • *What do we want to look like and be?*	• *What will we accomplish?* • *What does "ideal" look like?* • *How do we describe "success?"* • *How will we inspire collaboration and commitment?*	• *How will we achieve the vision?* • *What route(s) will we take?* • *Who else will be involved?* • *How do we ensure accountability: from whom and to whom?* • *How will we know when we arrive?*	• *What will we need to implement our strategy?* • *What do we have now and what else will we need?* • *What do we have now that we may not need?* • *Revise the Strategy to outline how we will acquire what we need*	• *What will be done?* • *Who will do it?* • *With whom will we collaborate?* • *To whom will products be delivered, and/or how will they be used?* • *How will we know we did a given task as designed?* • *How will we know it worked as we planned?*	• *Compare results to anticipated outcomes* • *Assess overall progress in achieving our vision* • *Assess completeness in exercising our mission responsibilities* • *What can we learn from our efforts?* • *What adjustments can we make to get better results?*

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Major Questions

- *A. "What are the relationships among various other monitoring and reporting programs of other state agencies?"*

- *B. "How can I/(we) apply the information in a meaningful way to change things in our local area? Are there any decision support programs to assist with decision analysis?"*

- *C. "As a sister agency, how can we supply information without undue additional workload?"*

- *D. "What assistance is available to help with using this information?"*

- *E. "When/how will there be funds available to maintain and enhance stream systems, instead of only fixing them once they have slipped below regulatory thresholds?"*

At What Scale?
All are related to landscape conditions
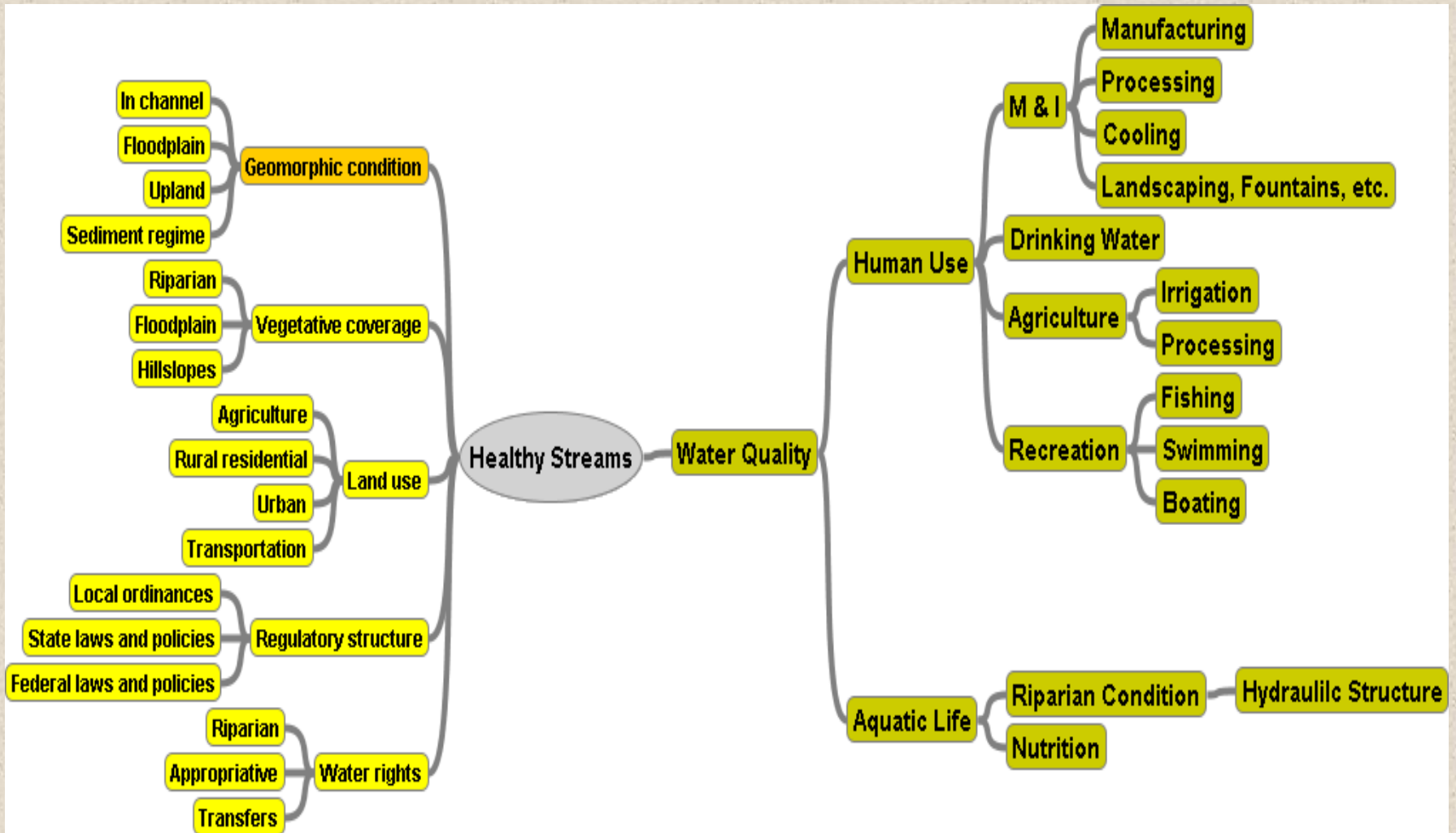
Finding The Right Scale

"For the HSP to have maximum effect, it should at least to some degree, connect with the watersheds of the streams of interest, and to the activities and characteristics of those watersheds that affect water quality.

This would enable support for a broader range of management decisions that will affect stream health."

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Disciplined Inquiry

Conclusion oriented inquiry	Decision oriented inquiry
Science community	**Political community**

Develops findings		Creates outcomes
Develops technical and research reports, and scientific articles		Develops products, processes, programs and systems
Explaining, investigating and learning		Trying, applying and learning
Characterized by highly developed order and structure		Characterized by risk taking, trial and error, and acting on intuition
Produces new knowledge and has the outcomes of *decision oriented inquiry* as a knowledge source		Uses knowledge from *conclusion oriented inquiry*, and is also a knowledge source for *conclusion oriented inquiry*

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Seeks truth	Seeks justice

The two types of inquiry are supplemental to one another, and each is strengthened by the robust character of the other. The Healthy Streams Partnership can serve as a dynamic link between them.

Healthy Streams PARTNERSHIP

Healthy Streams Partnership

WATER QUALITY MONITORING COUNCIL

Program Flow

Data → (Analysis) → Information → (Context) → Knowledge → (Plan) → Actionable Knowledge (Implementation)
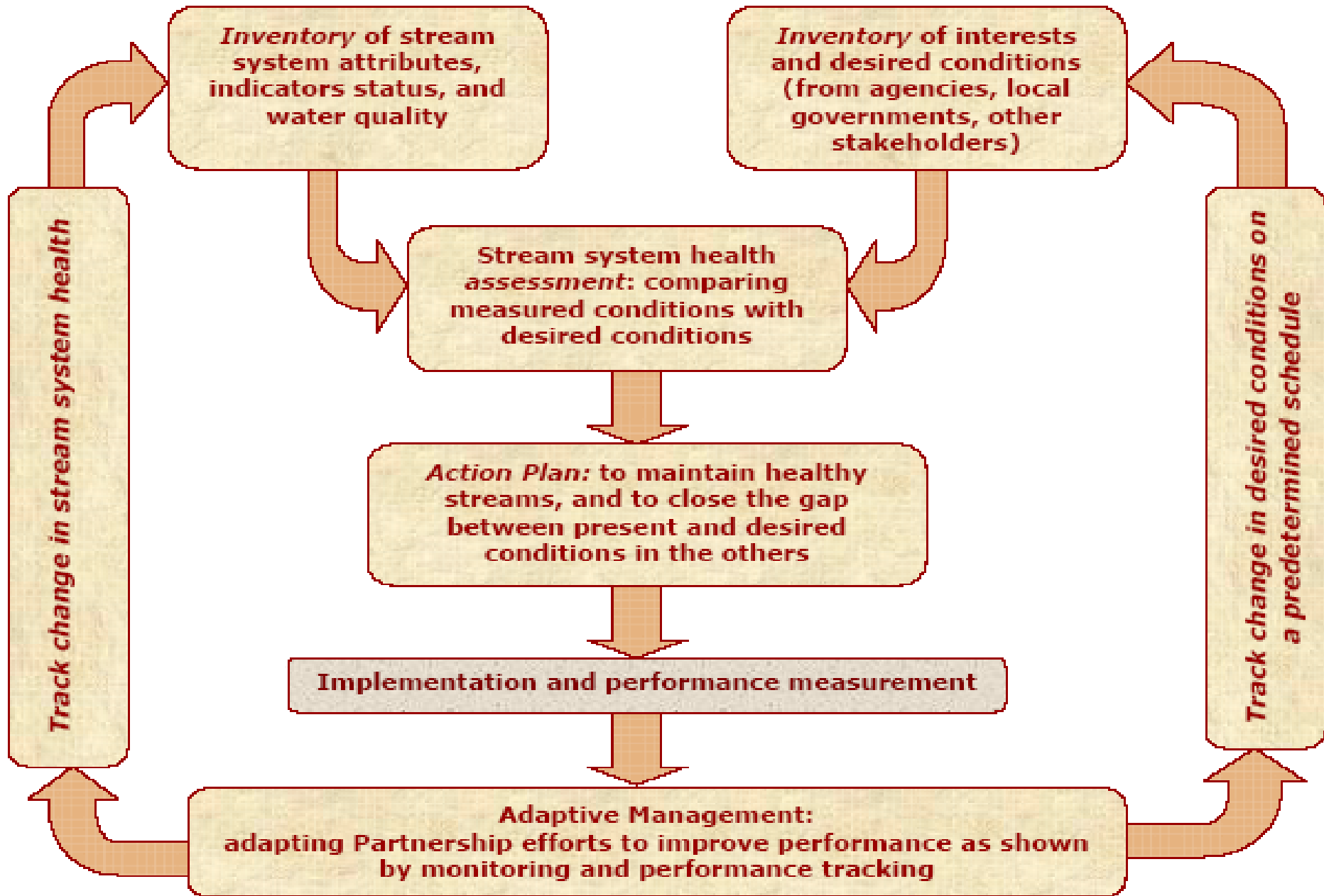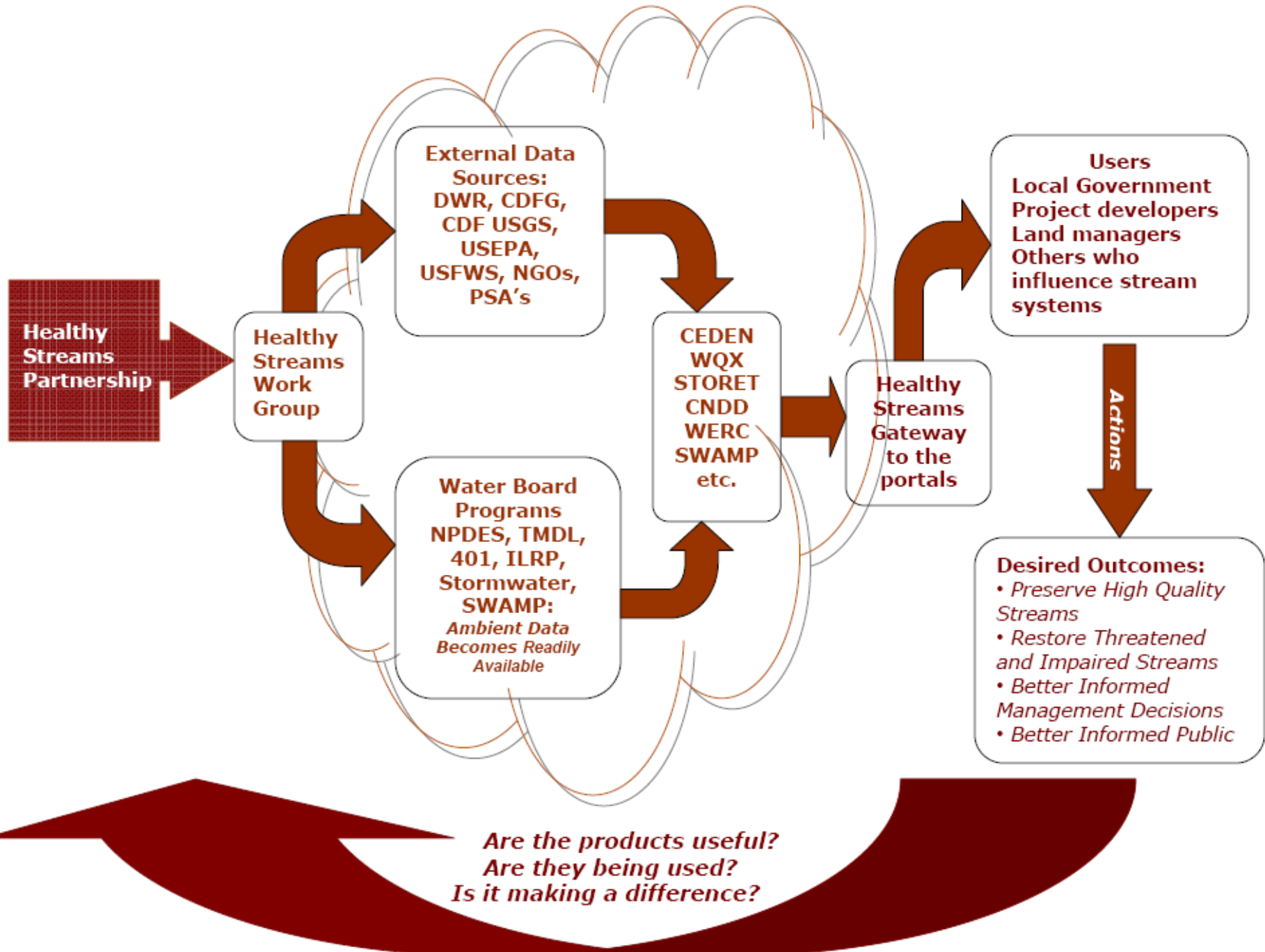
"Double loop" assessment and adjustment

Conclusion Based Inquiry generates and analyzes data, turning it into information.

Decision Based Inquiry applies the information in a context, generating knowledge that, when used to plan and design, becomes actionable knowledge used to implement programs, policies and actions

The results of those actions can then be monitored and analyzed through **Conclusion Based Inquiry**, completing the loop that informs Adaptive Management decisions from those involved in **Decision Based Inquiry**.

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Process Context

Inventory of stream system attributes, indicators status, and water quality

Inventory of interests and desired conditions (from agencies, local governments, other stakeholders)

Track change in stream system health

Stream system health *assessment*: comparing measured conditions with desired conditions

Track change in desired conditions on a predetermined schedule

Action Plan: to maintain healthy streams, and to close the gap between present and desired conditions in the others

Implementation and performance measurement

Adaptive Management: adapting Partnership efforts to improve performance as shown by monitoring and performance tracking

Healthy Streams Partnership

Healthy Streams Work Group

External Data Sources: DWR, CDFG, CDF USGS, USEPA, USFWS, NGOs, PSA's

Water Board Programs NPDES, TMDL, 401, ILRP, Stormwater, SWAMP: *Ambient Data Becomes Readily Available*

CEDEN WQX STORET CNDD WERC SWAMP etc.

Healthy Streams Gateway to the portals

Users Local Government Project developers Land managers Others who influence stream systems

Actions

Desired Outcomes:
• *Preserve High Quality Streams*
• *Restore Threatened and Impaired Streams*
• *Better Informed Management Decisions*
• *Better Informed Public*

Are the products useful?
Are they being used?
Is it making a difference?

Some Potential Benefits

- *Clear definition of stream functions, services, products and values important to the State*

- *Establishment of a scientifically valid means to track change, using watersheds as organizing units*

- *Enhanced access to useful information and integrated assessments to inform decisions*

- *Conducting existing business and agency activities with reference to watershed dynamics and responses as a systems context*

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USEPA Healthy Watersheds Concept

The Healthy Watersheds concept is based on a holistic systems approach to watershed protection and conservation.

It is: 1) identifying healthy watersheds on a state-wide basis and healthy components of other watersheds;

and 2) conserving healthy watersheds and protecting healthy components of other watersheds.

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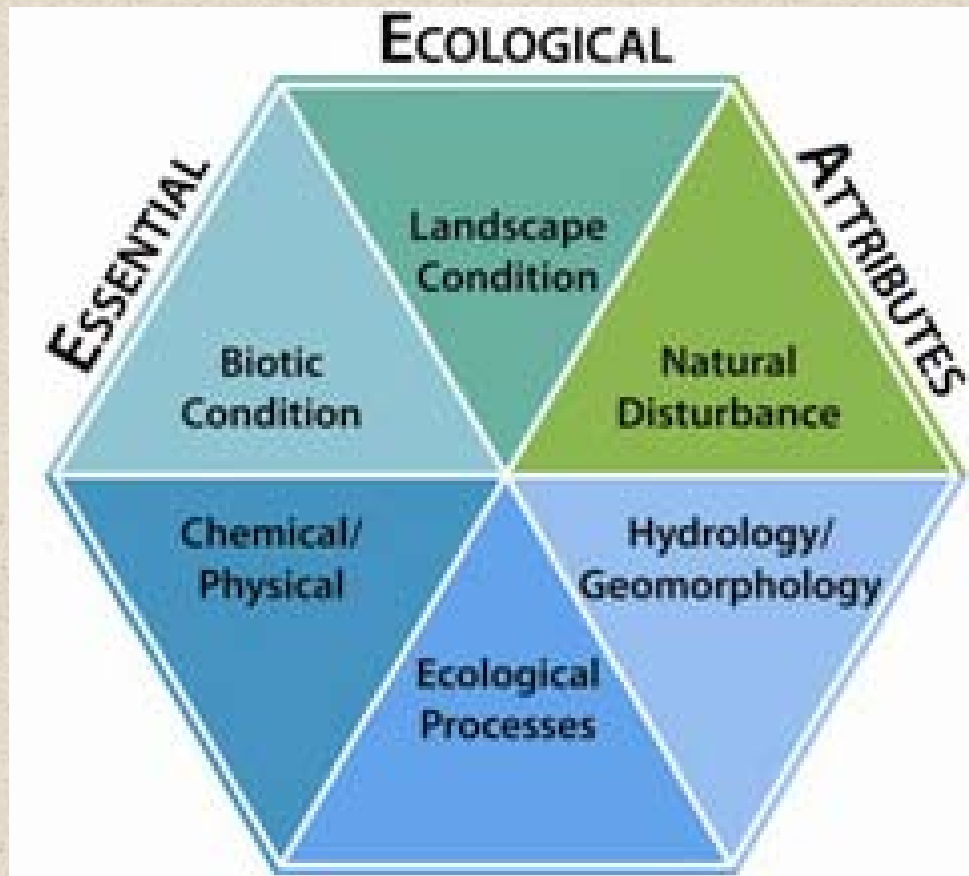
The Healthy Watersheds concept views watersheds as integrated systems that can be understood through the dynamics of essential ecological attributes.

Healthy Streams Partnership
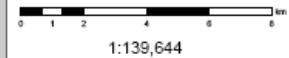
Pine Rivers Shire Council

Healthy Streams Partnership
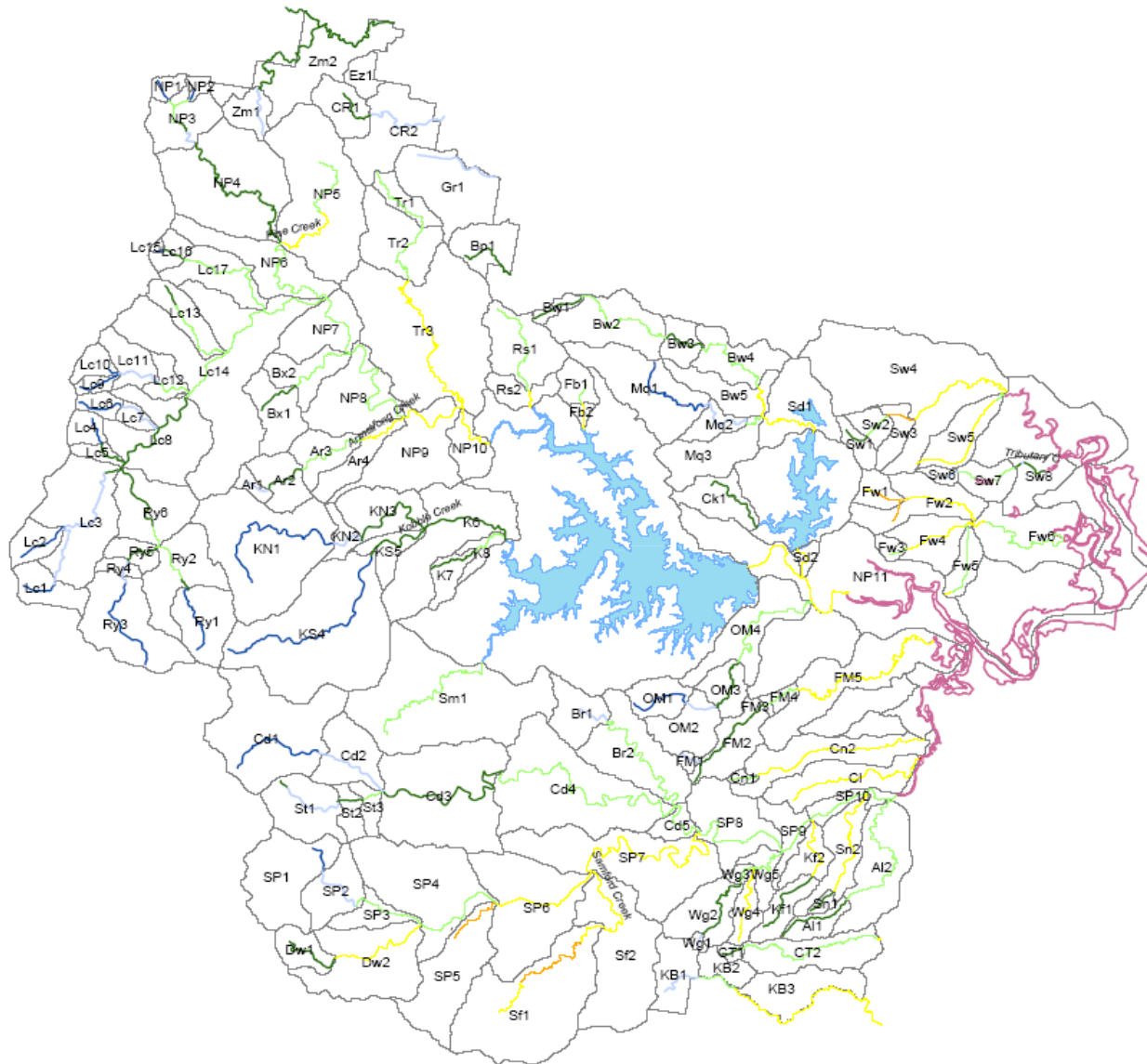
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Objectives

- Healthy waterways of high value are adequately protected;
- Track whether the health of the Shire's waterways is increasing or decreasing;
- Water resources are protected and managed in a sustainable way;
- Track whether certain catchments and their streams are under particular stress;
- Degraded streams are recovering.

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Key indicators

- **Stream health is expressed as a Stream Health Class (SHC), of which there are seven: a to g, with (a) being the best.**

- **The stream health assessment is based on testing the respective stream section for nine performance indicators**

- **Locally desired levels for each indicator are specified in The Stream Health Manual which is the Council's main tool for auditing the success of local stream management actions.**

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Virginia Healthy Watersheds Initiative

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- HWI identifies and ranks streams from exceptionally healthy, to restoration candidate.

- The Watershed Integrity Model represents important terrestrial features that should be conserved for water quality integrity based on the best available data.

- It includes software (INSTAR) and other support tools to increase utility for users

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Watershed Integrity (Health) using the National Watershed Boundary Dataset (NWBD)

Legend

NWBD Sub-Basins

Watershed Integrity

No Data
Moderate
High
Very High
Outstanding

0 30 60 120 Kilometers

These data are current as of October 15, 2008.
For additional information, please contact VA DCR.
Department of Conservation and Recreation
Soil and Water Conservation Programs
203 Governor Street, Suite 206
Richmond, VA 23219-2094
(804) 786-2064

This map was created by the
CENTER FOR ENVIRONMENTAL STUDIES at
Virginia Commonwealth University.
For additional information,
contact the Center at: http://instar.vcu.edu

Healthy Streams Partnership
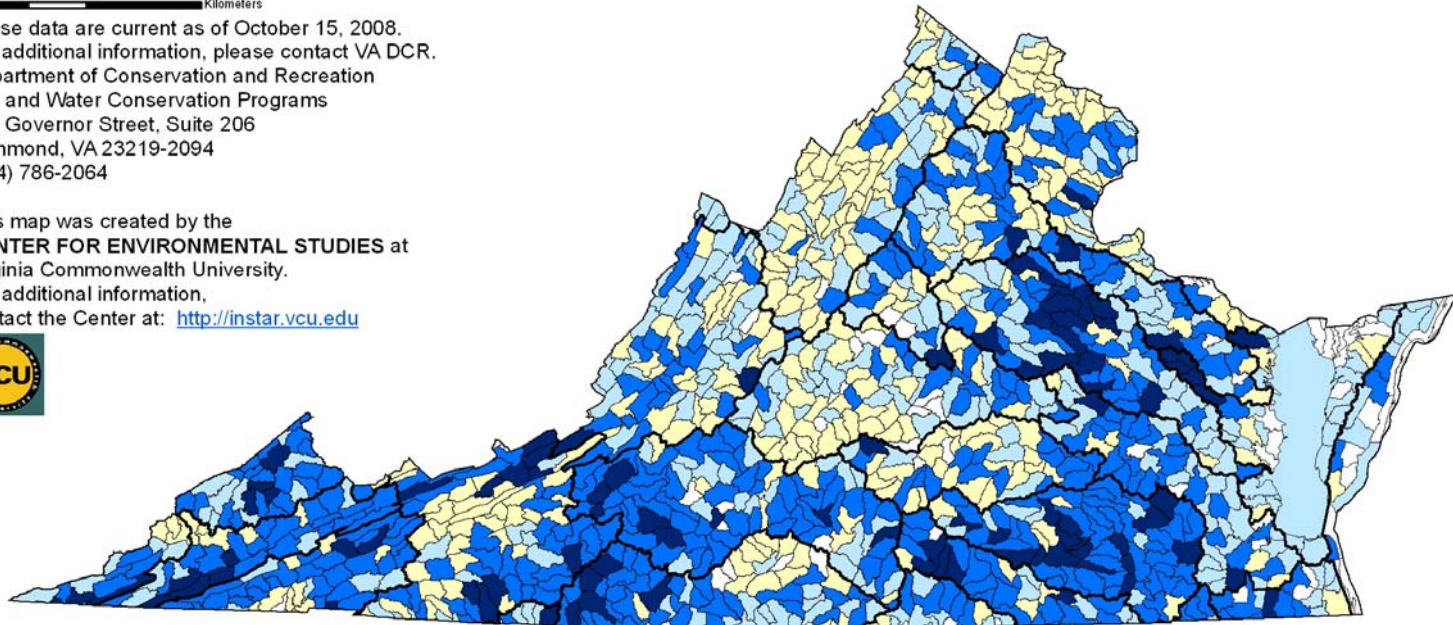
What is *INSTAR*?

- **INSTAR (*INteractive STream Assessment Resource*) is a dynamic and interactive mapping and data visualization application. It allows users to access and manipulate a comprehensive (and growing) cooperative database.**

- **The application supports *user-driven* database queries, mapping functions, and online editing capabilities**

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INSTAR uses two different techniques to assess streams and watersheds:

- **Probabilistic study reaches for sampling are selected through a statistically powerful stratified (by stream order) random design. Data are compiled into databases, and the application macros calculate over 50 separate ecological metrics**

- **It evaluates the ecological health of stream reaches based on percent comparability of emperical data to the appropriate (e.g. basin, stream order) reference model.**

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Australian Rivers Assessment System (AUSRIVAS)

Welcome to the AUSRIVAS web site

AUSRIVAS

Introduction

Bioassessment

Macroinvertebrates

Diatoms

Fish

Macrophytes

Riparian Vegetation

Physical assessment

Physical & Chemical

Benthic Community Metabolism

Resources

Getting an AUSRIVAS username and password

Mapping & reference site screening module

Training & accreditation

Accreditation Register

Info

AUSRIVAS Contacts

Links

Site Info

Feedback

Tweed River, NSW
Photo courtesy of NSW EPA

The Victorian field sampling sheet has been updated (Aug 2008)

A field sampling sheet for Victorian high and low gradient streams has been added (Aug 2008)

The NSW sampling manual has been updated (Dec 2004)

AUSRIVAS Online Courses run each semester (if there are sufficient enrollments). For more information go to the Training and Accredition section of this site.

Queensland field sampling sheets and site information sheet have been updated (Sep 2004)

The Mapping and Reference Site Screening software **IS AVAILABLE** (June 2004).

eWater CRC

Australian Government
Department of the Environment and Heritage

Australian Government
Land & Water Australia

Healthy Streams Partnership

What is AUSRIVAS?

- AUSRIVAS (**Aus**tralian **Riv**er **A**ssessment **S**ystem) is a prediction system used to assess the biological health of Australian rivers. It was developed under the National River Health Program (NRHP) by the federal government in response to growing national concern for maintaining ecological values.

- The NRHP involves the major environmental agency in each state and territory, and is centrally administered by Environment Australia and the Land and Water Resources Research and Development Corporation (LWRRDC).

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Utility of AUSRIVAS

- **The addition of output from a modified 'Wild Rivers' data set for reporting nominal degrees of catchment disturbance has great value to decision makers at many levels.**

- **The AUSRIVAS style of models for predicting biological impairment integrate physical/chemical and biological measures of water quality and habitat condition.**

- **In the past these have been largely (but artificially) separated within and between organizations responsible for assessing water quality. Many of the variables used for predicting invertebrate communities include features of the riparian zone and the catchment.**

- **The addition of catchment condition indicators from the Wild Rivers project provide much stronger connections between catchment activities and resulting water quality.**

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One example of map output from software available online

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Are we doing what we planned?

Are we doing it well?
Is "it" the right thing to do?

MISSION

Reason to exist

- To realize positive results in clean water protection and enhancement by supporting better informed management decisions and implementation

VISION

Results of accomplishing the Mission

- Maintained existing healthy streams, and steadily improving conditions in the others, as shown through aggregated partnership data and analyses

STRATEGY

Basic elements to achieve the Vision in pursuit of the Mission

- Provide easy access to current data

- Provide a systemic view of stream system condition

- Adopt or build a stream condition rating for public use

- Provide support for HSP products

ACTIONS

Discrete steps to implement the Strategy in pursuit of the Vision to execute the Mission

- Provide current data

- Provide support for alternatives analysis

- Maintain feedback loops with users

- Aggregate multiple data sources from partners

REFLECTION

Double loop learning

- Periodic assessment of results and utility of HSP, with adjustments to continually improvement in overall stream health

Monitoring

Strategic Planning Elements for HSP

Strategic Assessment Questions

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Healthy Streams Partnership