

COLORADO STREAM RESTORATION NETWORK (CSRN)

and the Colorado Riparian Association (CRA)

The story of the CSRN starts with the 2013 flood...

- How do we help?
- What role does CRA play?



The Colorado Riparian Association was formed in 1989 by a small group of dreamers who believed that our riparian zones should not become sacrifice areas

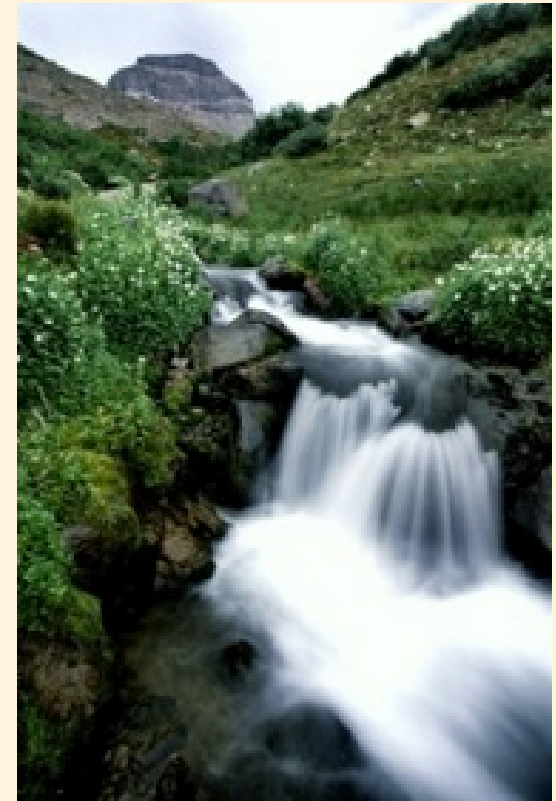
Today, a growing group of volunteers that includes landowners, citizens, agency staff, planners, and technical specialists, the Colorado Riparian Association shares that dream by sharing its knowledge, enthusiasm, and experience with anyone who joins us in trying to improve Colorado's river systems and riparian ecosystems.

Our mission is:

To promote the conservation, restoration, and preservation of Colorado's riparian areas and wetlands.

Goals

- To foster a practical and scientific understanding of riparian areas and wetlands in Colorado.
- To promote sound management of riparian areas and wetlands in Colorado through demonstration and education.
- To promote communication and coordination among all people interested in riparian areas and wetlands in Colorado.



www.coloradoriparian.org

COLORADO STREAM RESTORATION NETWORK (CSRN)



CRA is a membership of riparian advocates, many of us restoration practitioners

CRA goal: *communication and coordination*

Conversations with others trying to figure out how to help...what to do...how to get to best end result...

City of Longmont focusing on education and importance of understanding these natural systems before going about work in them... to “fix” them...

COLORADO STREAM RESTORATION NETWORK (CSRN)

Longmont had creative plan to bring in Dave Rosgen,
Wildland Hydrology, for training on natural channel design

Building on that, we morphed into a grassroots, ongoing
knowledge share education program

Based loosely on the *Colorado Weed Network (CWN)* model

Pertinent/current topics presented by local experts

Knowledge share through discussions amongst our riparian
community



COLORADO STREAM RESTORATION NETWORK (CSRN)

CRA found a role!

We're involved, guided by our mission

We share knowledge and impart motivation

We believe, with comprehensive understanding of natural river processes, we can maximize the use of natural materials and methods in recovery and restoration projects

(subliminal message)



COLORADO STREAM RESTORATION NETWORK (CSRN)

We stay tied in to overarching recovery and restoration plans being led by our State agencies

Understanding and working with rivers is an important path to resiliency

Reap rewards not only during future floods, but also every day of non-flood through ecosystem services

State Water Plan links resiliency to ecosystem structure and function, along with risk reduction



CSRN

Series of free bi-monthly workshops that leverage the expertise of our local riparian community to share knowledge and tools for working successfully in Colorado's river systems and riparian ecosystems



CSRN



2014 Workshops

Target: 6

Accomplished: 2

Focused on providing tools for our leaders tasked
with flood recovery:

Stream Restoration Body of Knowledge
(SR-BOK), Dr. Sue Niezgoda

Natural Channel Design, Dave Rosgen

CSRN



2015 Workshops

Target: 6

Accomplished: 6*

Competency Areas for Stream Restoration;
Continue working from the SR-BOK

SR-BOK identifies 21 competencies necessary to
work successfully in our stream corridors

**on track for 6 bi-monthly FREE workshops*

ASCE Stream Restoration Body of Knowledge (SR-BOK)

Journal of Hydraulic Engineering (JHE) paper in 2014 introduced a stream restoration body of knowledge (SR-BOK) intended to advance the practice of river restoration

The SR-BOK uses a detailed series of competencies developed as a guide for establishing a minimum level of knowledge in the interdisciplinary fields and practices related to stream restoration

CRA and SCWC has been working with Dr. Sue Niezgoda, a lead author of the SR-BOK paper, to help introduce the concepts to Colorado

Dr. Niezgoda has contributed to 3 SCW conferences, starting in 2010 and including workshops on risk and uncertainty, updates on the SR-BOK process, and serving on Practice of Restoration panels

ASCE Stream Restoration Body of Knowledge (SR-BOK)

Foundational Outcomes:

- (1) Hydrology
- (2) Hydraulics
- (3) Fluvial geomorphology
- (4) Sediment transport
- (5) Stream ecology
- (6) Habitat structure and function
- (7) Fish biology (*wildlife biology*)
- (8) Plant ecology and riparian dynamics

Technical Outcomes:

- (9) Surveying/hydrometry
- (10) Watershed analysis
- (11) Geomorphic and habitat assessment
- (12) Biomonitoring/bioassessment
- (13) Alternatives analysis
- (14) Analytical techniques
- (15) Restoration design
- (16) Uncertainty and risk

Professional Outcomes:

- (17) Project development
- (18) Restoration policy (codes and regulations)
- (19) Communication and information management
- (20) Construction inspection
- (21) Professional and ethical responsibility

SR-BOK says...

River restoration is a multi-disciplinary field, requiring skills and input from:

- Engineers
- Geomorphologists
- Hydrologists
- Biologists
- Ecologists
- construction experts
- permitting specialists
- and more!

A successful river restoration team is often composed of several, if not all, of these disciplines.

It is essential for all practitioners to have some level of competency in as many fields as possible in order to:

- successfully practice river restoration;
- understand the complexities involved in a particular restoration project;
- be able to effectively communicate with the other disciplines on a restoration team; and
- apply the proper standard of care in the practice of restoration.

Interpreting the SR-BOK...

No single person can be an expert in everything

Voluntary use of the SR-BOK helps us each strive for appropriate levels of knowledge in all areas of restoration...helps us work better together

Resulting benefits:

- building comprehensive restoration teams suited for specific project needs
- focusing our individual professional development

SR-BOK raises awareness for each of us working in and for Colorado streams on what we've got covered, and when that suffices versus what we need to improve or who we need to add to our teams

CRA encourages the use of the SR-BOK as a **voluntary tool** for stream restoration practitioners in Colorado

CSRN



2015 Workshops

Target: 6

Accomplished: 6*

Competency Areas for Stream Restoration;
Continue working from the SR-BOK

SR-BOK identifies 21 competencies necessary to
work successfully in our stream corridors

**on track for 6 bi-monthly FREE workshops*

CSRN

2015 Workshops

Competency Areas for Stream Restoration



Jan: Restoration Design:

Successful Implementation, Example Projects/Lessons Learned

Mar: Fish Biology & Monitoring

Jun: Plant Ecology & Riparian Dynamics: *Vegetation Challenges for Urban Streams*

Aug: Hydrology & Hydraulics

Oct 19th: Fluvial Geomorphology and Sediment Transport

Dec: TBD...late-breaking regulatory issues *or* stream ecology, habitat structure and function

COLORADO STREAM RESTORATION NETWORK

What's coming?

2016 Workshop Series

Keep rolling!

2015/16 CSRN Kids

CRA members will work with interested teachers to bring the CWCB Watershed Model into K-5 classrooms to introduce students to concepts of watersheds, rainfall-runoff, flood risk reduction, interrelated processes (what's upstream affects downstream)

CSRN



2016 Workshops

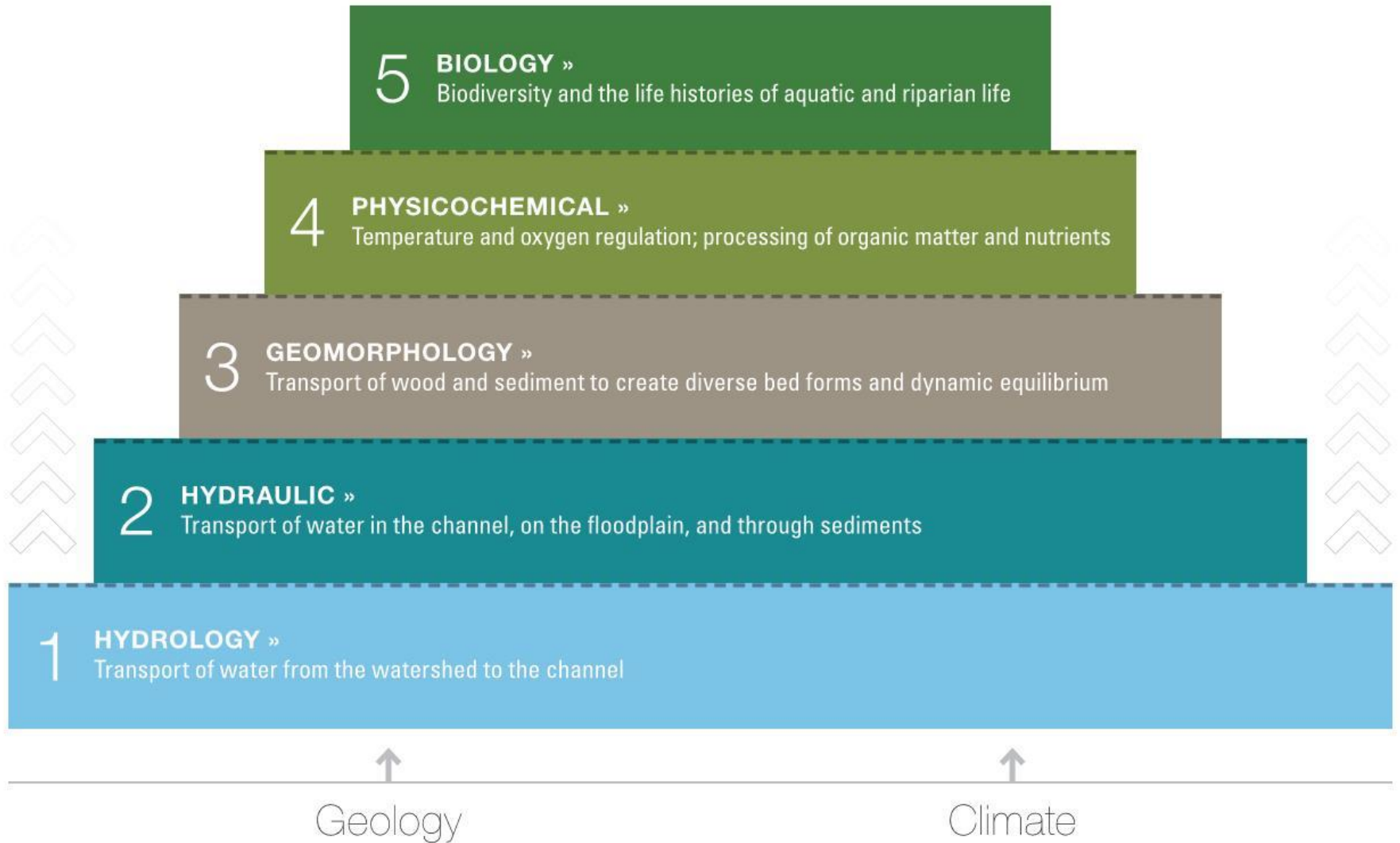
Stream Academy

Targeted training developed for practitioners working with or within Municipalities and Land Development

Built on principles of the SR-BOK and Will Harman's/EPA's Stream Functions Pyramid

Stream Functions Pyramid

A Guide for Assessing & Restoring Stream Functions » OVERVIEW



Stream Functions Pyramid

A Guide for Assessing & Restoring Stream Functions » FUNCTIONS & PARAMETERS



CSRN

Outreach Challenges



Our audience to date has been largely government and consulting professionals working on flood recovery along the Front Range

Current capacity ~60 people

How do expand to more broadly cover our state?

How do we deliver our message more broadly to help improve planning and development...proactive, not reactive

COLORADO STREAM RESTORATION NETWORK (CSRN)

The vision is ongoing knowledge share to benefit
Colorado's stream corridors and riparian areas

