



**Annual Updates and Planning Meeting
November 12-13, 2013
Virginia DEQ/DCR Office in Abingdon, Virginia**

Meeting Purposes:

- (1) Receive Updates on Key Watershed Issues
- (2) Receive Updates on Key CPCRI Projects
- (3) Identify Priority 2014 Projects and Update Work Plan
- (4) Solidify Teams to Implement 2014 Projects

Meeting Summary:

November 12, 2013 –

I. Update on Healthy Watersheds Assessment (*Brad Kreps, TNC*)

The project has been delayed by government shut-down and establishment of a new contract by EPA. According to Laura Gabanski (EPA Healthy Watersheds Program Director), a new contractor is in place and work will begin later in November. The new contractor is the Research Triangle Institute (RTI). RTI will pick up on the Cadmus work and has ideas about how to take an approach that is more sensitive to the geographic scale of our assessment vs. the state-level assessment methods which Cadmus had been trying to apply to the Clinch-Powell. The timeline for project completion is uncertain, but Brad Kreps will have a follow up call with Laura Gabanski later in December to discuss this and other aspects of re-launching the assessment effort with RTI.

II. Regulatory Updates

DEQ Update (Allen Newman)

New VPDES permits have been issued in St. Paul and Claypool Hill. These permits have more stringent requirements on ammonia discharges pursuant to pending formal changes in allowable levels of ammonia (EPA is pushing for tighter standards and DEQ is going ahead and recommending tighter standard in advance). DEQ continues its partnership with Dominion Power to conduct mercury sampling at 5 sites along the Clinch River. The Science Team expressed interest in incorporating this new data into its river assessment efforts.

An Upper Clinch River Bacterial TMDL is complete for a 20-mile stretch of river. A Middle Clinch River Bacterial TMDL is in development for a 70-mile stretch of river. The Powell River Bacterial-Benthic TMDL (from Big Stone Gap to TN line) is also near completion. More focus needs to be given to the implementation plan for all three of these TMDLs. Implementation provides a chance for CPCRI partners to help restore these

impaired reaches (e.g. work with PSA's on straight pipes). 24 previously impaired segments have been delisted!

Concern was expressed by VDGIF about the depressed mussel fauna in Little River below Claypool Hill. DEQ explained that Claypool Hill has an antiquated sewage treatment plant that is still relying on chlorine but once the new plant comes on-line it will meet more stringent standards.

Some discussion about the Callahan Creek (Upper Powell) discharge and new efforts with PSA to address waste sewage concerns with new package treatment plants. Planning districts tend to act as project managers for these projects and there are financial challenges to local PSA's in taking on long-term maintenance of these plants. CPCRI can perhaps play a role educating communities about the needs for better sewage treatment in certain watersheds.

Virginia's 2012 draft 303(d) assessment is under EPA's review at present time and there will be some de-listings. DEQ will report back to the group on the de-listing package to provide information on why de-listings occurred. EPA stressed the need for CPCRI to connect its work to the de-listings if that is appropriate.

TDEC Update (Sherry Wang)

On its 303-d list, TN lists 12 miles of the main-stem Powell River as impaired due to loss of mussel species. TN lists 16 miles of the Clinch River as threatened due to potential loss of mussel species. At this time, a specific stressor is not identified for these listings, but there is hope that the CPCRI Science Team can help provide science based information on stressors as the Science Plan work unfolds.

Primary future direction for TDEC is to focus on implementation side of TMDLs via Healthy Waters Restoration and Implementation plans. There is continued interest from TDEC in coordinating with DEQ and others in VA to protect and restore the Clinch and Powell Rivers.

The group had some discussion about past joint TDEC and DEQ monitoring and the possibility of doing more together. Dr. Carl Zipper suggested that joint efforts to monitor trace metals would be very helpful. Also, the idea that the TN portion of the Clinch can serve as a reference site for "healthy waters" was mentioned. It was suggested that the states jointly approach EPA regions III and IV about support for continued joint monitoring.

USFWS-New Endangered Species Listings (Roberta Hylton)

Three new species have been federally listed in the Clinch-Powell: (1) proposed listing for Northern Long-Eared Bat, and listing for (2) Slabside Pearly mussel, and (3) Fluted Kidneyshell mussel.

At this time, no critical habitat has been designated for the bat. The Center for Biodiversity petitioned for the listing and USFWS has responded by proposing the listing. The primary threat is White-Nosed Syndrome.

The mussels have critical habitat mapped and established and it includes the NF Holston, Clinch, Powell, and Big Moccasin Creek. Threats to mussels include mining, gas and oil development, contaminants, and the Asian clam. A recovery plan has not yet been developed.

New bat listing may impact/change permitting processes for affected permittees. The mussels will not change anything since so many other mussels are already federally listed in the same habitat areas.

There was a short discussion about endangered species mitigation and mitigation banking but that doesn't seem to be something USFWS is looking at in the Clinch-Powell. COE stressed the challenge of establishing a mitigation bank in SW Virginia. Currently there are no mitigation banks. Mitigation is accomplished directly by permittees or through the Virginia Aquatic Resources Trust Fund- an in lieu fee program managed by The Nature Conservancy with oversight from DEQ and COE.

DEQ Updates to Storm-water Regulations (Kelly Miller)

Significant change in law now requires that VA Counties manage their own storm-water and E & S programs. DEQ will provide oversight. Local governments are in the process of developing their own ordinances. There is an opportunity for CPCRI partners to provide support by encouraging best practices like rain gardens, etc. There are still no MS4 areas in the Clinch Powell but nearby Gate City and Weber City are now MS4. Very few counties are hiring new staff to meet this new workload demand, but rather are expanding roles of existing staff. Previous "built environment" CPCRI symposium provided the kinds of tools and resources that localities now need. Kelly suggested that CPCRI think about how it can do more outreach with localities around storm-water and E & S control.

DMME-DGO Update on Natural Gas Development (Rick Cooper)

Natural gas well numbers and production levels have been on a steady upward trend in Clinch Powell since early 1990's, but numbers are dwarfed by nearby WV and PA. In last couple of years, drilling trends are down somewhat due to better plays in PA. Natural gas development in VA is primarily coal-bed methane with some traditional wells, too. There are no developed Marcellus Shale wells in VA. Horizontal drilling is used in some places on conventional gas plays in SWVA...CBM wells are normally drilled vertically.

Most well fracturing in VA is done with nitrogen rather than large volumes of water. Waste water from well drilling and initial flow-back can be applied on-site if water quality standards are met. Produced waters are deep well injected at approved facilities.

Highest water quality risk is during the site development phase (E & S control and initial drilling)...once well is in place and operational, there tend to be fewer problems.

Wells are not monitored as point sources. There is an interest and opportunity to do downstream monitoring at places like Indian Creek. Currently DGO does not coordinate with other agencies in Clinch Powell on its permitting. Interagency coordination is not a requirement of their permitting process.

DMME/OSM Update on Coal Mine Permitting (Tim Browning, Earl Bandy)

Coal industry is facing significant challenges right now and recently more layoffs have been announced by major companies like Alpha Natural Resources and Arch Coal. 2013 is the first year that there are <100 producing mines in Virginia. Currently there are no pending applications or major permit updates/revisions going on in the Clinch Powell.

EPA permit reviews on both NPDES and SMCRA is extremely slow. Permit delays are a big challenge right now.

Some challenges around bonding requirements and inconsistency between 5-year SMCRA bonds and 10 year COE mitigation monitoring requirements for 404 permits.

TMDL watersheds: For the first time, Big Sandy TMDLs are calling for reductions from existing mine operations. Previously, existing mining operations have been exempt and not required to reduce loadings. DMME is trying to move forward with its TMDL Offset program which would allow new mining to occur if offsets could be implemented that would reduce pollutant loads elsewhere in the watershed. DMME is in ongoing dialogue with EPA about this pollution trading concept.

Active permitting is facing significant hurdles in terms of DMME's interactions with federal agencies. On positive side, AML funding is doing a lot of good in the watershed and there is a potential de-listing of Dumps Creek.

Opportunities: There will be more focus on avoiding impacts in the permitting/mitigation hierarchy process. There are some promising new techniques related to fill construction. There continues to be more research on how to isolate TDS-generating materials in reclamation process. New weep berms may hold promise on sediment reduction side of things.

No mining permits in TN portion of the Clinch Powell. Where mining does occur in TN there are no valley fills permitted and streams are skipped unless damaged by previous mining. In these re-mining cases, using contemporary reclamation techniques, there is an opportunity to re-connect headwater streams that were previously cut in half by old pre-law mining benches. The market for steam coal has contracted significantly and high production and transportation costs of Appalachian coal are putting it at a competitive disadvantage with Wyoming coal. In TN, there is a high degree of activity among environmental groups and they are taking a close look at all permits. Some mining permits are being challenged on premise that federally threatened Black-sided Dace will be harmed.

Lands Unsuitable for Mining Petition on North Cumberland WMA – EIS is being developed and will soon be released.

OSM Stream Protection Rule – The highest priority for OSM right now. Expect the rule to come out in 2014.

III. Watershed Restoration Projects and Opportunities

Copper Creek and Clinch River Restoration and BMP Efforts (Melanie Carter – USFWS)

Partners have spent over \$4 million in stream restoration projects in the Copper Creek watershed from 2009-2012. This has involved a strong partnership with Scott County SWCD and NRCS. 47 landowners have been involved with projects in this time period.

Copper Creek Bridge Replacement is a great success story that could be featured on CPCRI website. Many Riparian Buffer and Reforestation projects have been completed.

Copper Creek is a big USFWS priority since it has no energy development in the watershed and is largely comprised of forested and agricultural lands. USFWS has also done monitoring in this watershed and CPCRI Science Team is interested in trying to assimilate this information into its work.

Also a partnership with Appalachian Sustainable Development to plant edible riparian species such as paw paws on stream restoration/buffer projects as an economic incentive.

Work will continue in 2014 thanks to new support from TVA.

TN Clinch Powell Watershed Alliance (Ronald Lambert, TNC)

Joint project between TNC and Clinch Powell RC&D which has received support from a wide variety of partners including EPA, TVA, TWRA, TDA, USFWS, VDGIF, etc. The main focus of the alliance is to address sedimentation and other non-point source impacts through implementation of best management practices. Since 1996, TNC and the RC&D have jointly implemented 201 projects with 96 different landowners. Nearly 400,000 feet of exclusion fencing has been installed; over 167,000 feet of pipeline and 193 water tanks. 6 conservation easements have been completed and the 850 acre Kyles Ford Preserve was transferred to the State of Tennessee.

Through a new grant from TVA-TDEC (TN Healthy Watersheds Program), the alliance is now working to secure additional protections for key stream side areas. They are also developing a strategic protection/restoration plan for the TN Clinch which can help prioritize future grant investments.

DMME Abandoned Mined Land Reclamation Projects (Richard Davis, DMME)

Lower levels of coal production mean lower level of Abandoned Mined Land funding. DMME has to be creative to get all AMLs cleaned up as there is not enough public funding to clean up all AMLs- especially priority 3 sites (which only pose an environmental threat). For example, AML projects can be a good alternative to hollow fills when spoil from active mine sites is placed on old AML benches. Good example of this shown in Wise County, VA.

Some recent AML success stories include the Stone Creek Tipple site which was recently restored and will have a public hiking trail on it. This is a great success story that

should be put on the CPCRI website. DMME also has a partnership with DCR and TNC to clean and monitor water quality at multiple waste coal pile sites in the Clinch drainage.

Lee County Sawmill Remediation Project (Steve Lindeman-TNC and Meade Anderson-DEQ)

DEQ-TNC-Lee County are looking at a possible final reclamation of degraded sawmill site as a brownfield. DEQ has some leftover EPA-brownfields money to put towards the initial environmental hazards assessment work.

IV. Clinch Powell Science and River Assessments

Science Plan Phase I -- USGS ERIC Publications (Greg Johnson-USGS TN)

2010-2012 USGS-VA Tech-USFWS science work is being published in a collection of 6 articles which have been submitted to the Journal of the American Water Resources Association. There is a cost of \$3,000 per article if they are to be “open access”. This is a significant cost hurdle. Right now, the plan is to at least make the introductory article open access.

USGS has negotiated an agreement with Dominion Power that will allow it to continue its continuous monitoring program at 3 key sites along the Clinch in VA. USGS is trying to extend an arrangement with TWRA to continue monitoring at 2 sites on the TN side of the Clinch. USGS has continued interest in understanding conductivity/TDS patterns in the Clinch system.

Science Plan Phase II- Current Water Quality and Caged Mussel Studies (Braven Beauty-TNC)

The Science Team continues its data collection and analysis in pursuit of a better understanding for the causes of mussel decline in the Clinch Powell system. Current efforts are testing four key hypotheses:

- (1) There are measureable differences in water quality between sites with healthy and unhealthy mussel populations.
- (2) There are measureable differences between water column quality and water quality in interstitial spaces where mussels reside.
- (3) Contaminants in the river are bioavailable to mussels.
- (4) There are measureable differences in the biological response of introduced caged mussels in healthy versus unhealthy reaches of the river.

WQ and biological response of caged mussels is being assessed at 8 main-stem Clinch sites and in 4 major tributaries. Water column quality is being measured using integrated composite samples. DEQ-TDEC-TNC staff has collected in-stream samples which were analyzed by EPA Region III labs. A wide suite of parameters were measured. There are some very interesting techniques being used to sample water quality in the interstitial spaces. Organic contaminants are another key focus with passive samplers being used to assess petrochemicals, pesticides, and pharmaceuticals.

After residing *in situ* for 6 months, caged mussels are being harvested and body burden analyses are being conducted to measure uptake of organic contaminants and metals. There is also some lab toxicology testing being used.

Preliminary findings...Dumps Creek and Guest River have significantly higher sulfate and dissolved solids concentrations. There was a spike of dissolved zinc at Artrip and downriver. Resident native mussels tend to have greater metals burdens than caged mussels. Water quality and biological response differences generally track with differences in resident mussel health. More analysis needed and measurements are being repeated this year.

Mussel Augmentation Programs (Jess Jones-USFWS and Megan Bradley-VDGIF)

The mussel recovery group is a strong partnership involving VDGIF, USFWS, TNC, VA Tech and others. There are five priority restoration reaches in the Clinch-Powell. These reaches present a mix of native mussel conditions. For example, the reach between Nash Ford-Carbo has some of the healthiest mussel populations in VA, while the reach around Pendelton Island (Scott Co.) has seen some of the heaviest declines.

VDGIF's Aquatic Wildlife Conservation Center in Marion, VA is the facility where many of the native mussels are propagated and grown out for reintroduction to the river (VA Tech also produces mussels). Over 15,000 mussels (of a wide variety of species) were released into the river system in 2013. The MRG continues to quantitatively evaluate and compare different release strategies in an effort to maximize the success of the augmentation effort. Generally speaking, the success rate is getting better and better. Importantly, most of the brood stock for the mussel program comes from the healthiest reach of the Clinch in TN.

There is an important need to continue sharing information between the MRG and the CPCRI Science Team as target restoration reaches should ideally have the best supporting habitat and water quality conditions possible.

There was a short discussion about long term funding needs of the MRG and mussel restoration effort. To this point, funding has come from USFWS settlement funding and a State Wildlife Grant Program. A long-term sustainable funding mechanism is not in place and that is something that needs more consideration. Perhaps there is a way CPCRI partners can collectively advocate for this among key leaders in USFWS and VDGIF.

November 12, 2013 –

I. Development of Annual Work Plan

See attached XCEL spreadsheet

II. Key Next Steps and Follow Up Items

- Meeting summary and draft work plan sent out to full group in two weeks (Brad Kreps)

- Follow up with Laura Gabanski to understand new time line and next steps for Healthy Watersheds Initiative (Brad Kreps)
- Send out information from de-listing package to understand causes for de-listings in VA Clinch-Powell (Allen Newman)
- Discuss options for continuing bi-state, bi-EPA Region collaboration on water quality sampling (Steering Committee)
- Review current CPCRI Website and make plans to update with new success stories etc. (Outreach Team)
- Explore ways to make connections and set up specific information exchange events with the grass roots Clinch River Valley Initiative (Outreach Team)
- Convene team meeting and begin work on White Paper to chart expansion/extension of current Science Plan work (Science Team)
- Figure out how to address open access costs of current article publications (Science Team)
- Convene first team call in December and finalize list of projects for CPCRI Work Plan (Conservation/Restoration Projects Team)