

Spring Creek Watershed Landowners Summer 2017 Newsletter



Est. 1994

THE MOST PRISTINE
LARGE OZARK STREAM
IN OKLAHOMA
MANAGED AND
PROTECTED BY
PRIVATE
LANDOWNERS

Phone: (918) 906-6762

Email info@springcreekok.org

www.springcreekok.org

Coalition Notes Death of Robert K. Heth, Valued Science Advisor

By David Martinez, SCC Science Chair

The Spring Creek Coalition has learned of the passing of Dr. Robert K. Heth on December 14, 2016. Known to most of his acquaintances as “Kip,” Heth was a gifted, enthusiastic biologist and educator who studied the myriad life forms of streams at locations throughout the Ozarks and Ouachita Mountains of Oklahoma, Arkansas, and Missouri. Spring Creek was among the many natural environments studied by Kip, and he cherished the creek’s rich diversity, its relatively unimpaired condition, and its beauty.

Kip is perhaps most renowned for his expertise on aquatic invertebrates, those being the principal subject of most of his formal research. One landmark paper of Kip’s is “The Ephemeroptera [mayflies] of Spring Creek, Oklahoma, with remarks on notable records,” co-authored with W.P. McCafferty and R.D. Waltz. That paper reported 40 species of mayflies from Spring Creek, 28 of which were first records of the species for Oklahoma. Kip highlighted the creek’s diversity of mayflies and other creatures in an article he wrote for the summer 2010 issue (<http://springcreekok.org/docs/newsletters/201008sccnewsletter.pdf>) of the Spring Creek Watershed Landowners’ Newsletter.

I first met Kip in the late 1990’s, when we discovered that each of us had begun searches for a rare fish, the plains topminnow. One of the historical localities for the fish in Oklahoma was on Spring Creek in the vicinity of Luck Spring, and we were able to verify (with the kind permission of landowner George Kamp) the continued occurrence of plains topminnows at that locality. Kip and I continued searches for the fish together, eventually updating the species’ status throughout the Neosho and Spring river drainages in Oklahoma, Kansas, and Missouri.

Kip had a vast and detailed knowledge of stream organisms, the kind of knowledge that can be obtained only from countless hours of field and laboratory study. To the benefit of many, including me, he was unfailingly generous in sharing that knowledge and increasing appreciation for the amazing wonders to be found in nature, if we only take time to look.



Kip and his wife, Ollie, on Spring Creek

Equally impressive to Kip’s biological skills were his commitments to faith and family, which always were central priorities in his life. I am confident that Kip’s endeavors will continue and be multiplied, through his lasting influence on family, friends, colleagues, and institutions. As one outcome of these endeavors, certain special places on Earth will be better known for their extraordinary natural qualities and as priorities for conservation. Spring Creek is one of those places.

Isopods, Why They Matter

Mother Nature was working against us. We rescheduled our isopods seminar due to flooding in April, but went ahead with the indoor portion on May 20th in spite of a 6” rain the night before. Attendance was low, but those who came to Alexander Hess’ presentation got a lot out of it.

“I found Alex’s talk absolutely terrific,” noted long-time SCC member Kay Frank. “He

*Mission: to unite as citizens and
actively engage in the preservation
of the Spring Creek Watershed*

*Please contact SCC to be removed
from or added to this mailing list*

**Spring Creek Coalition
2434 East 56 Place
Tulsa, Oklahoma 74105**

“I” is for Isopods

made it more important than just isopods. He also set up a microscope with many invertebrate samples in the back of the room. It takes a lot of trouble to bring in that equipment and samples, and the children were drawn to it. I appreciated Alex’s effort.”



Alex helps Maddie & Layne at the microscope.

Isopods, aquatic invertebrates related to the more well-known terrestrial rollie pollies, can be found in all kinds of water--streams, swamps, ground water, and oceans. Those in streams have fat bodies and short legs to deal with currents; those in swamps, paddle-like legs; and those in ground water, thin legs and bodies so that they can maneuver through crevices, with long antenna instead of eyes.

Alex told us about the importance of aquifers such as the Ogallala which stretches from North Dakota to Texas, providing the water for the bread basket of America. He maps the boundaries of the Boone, Roubidoux, (Spring Creek area) and other aquifers by tracking the DNA of isopods brought up in well water.

“The idea that Alex is going to be able to sample water from wells, from confined aquifers,

Watercress

and be able to tell their boundaries by studying isopod DNA is really interesting,” notes Kay. “This mapping is something we can’t easily do otherwise.”

“I’ve found isopods in Mayes and Cherokee counties more related to those in Pennsylvania than to those in the next county,” notes Alex. “How do they get to another place hundreds of miles away? I am excited about exploring this question and others. In the Edwards aquifer in Texas, we have found five different species living together. How do they do that? This has never been studied.”

Because isopods are confined to the waters they live in, they also serve as indicators of water quality. If they are found in your stream, your water is good. If they are missing, something is wrong.

Ocean isopods have been found to adapt to heavy metals by concentrating them in their shells, perhaps leading to ideas of how to cleanup ocean pollution.

“I found it fascinating,” says David Martinez, SCC Science Advisor, “that we have something, invertebrates, being able to adapt to a very strange environment and being able to tell us about that environment, our aquifers. Isopods live everywhere beneath us, tiny and obscure. Most people have no idea they are even there. Yet they can tell us a lot about the earth and the history of the earth.”

Alexander Hess, our presenter, is a first year PhD biology student at the University of Tulsa.

Watercress: a Spring Creek Superfood

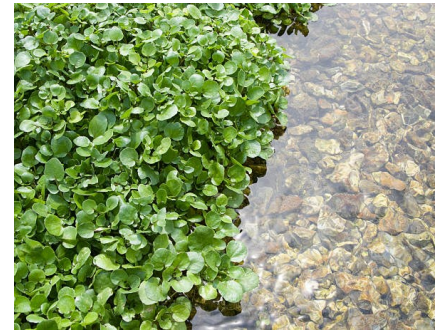
Watercress is an aquatic plant grown for centuries as a mineral-rich, leafy-green vegetable. It is low in calories and packed with vitamins and minerals. Gram for gram, watercress contains more vitamin C than an orange, more calcium than milk, more iron than spinach, and more folate than bananas.

a Superfood

Research has shown that watercress lowers cholesterol and helps prevent and fight cancer particularly of the throat, lungs (Hecht SS, Chung FL, Richie JP, *et al.*, 1995) and breast (University of Southampton, 2010).

Watercress has a peppery taste somewhat similar to mustard greens. It can be added to salads or juiced. And it grows abundantly along Spring Creek. SCC member Becky Bell reports that she harvests watercress from a spring on her property and uses it in smoothies for its health benefits. What’s not to like?

Our new SCC student board representative, Katie Easter, a biology student at NSU Tahlequah, gives us this warning: “As is the case with most things, gathering watercress from the wild is not completely without risk. You should wash it thoroughly and be careful where you get it. Watercress grown in the presence of manure can be an environment for *Fasciola Hepatica*, the common liver fluke.”



Watercress grows along Spring Creek.

This is more likely to happen in developing countries. Can people get infected with *Fasciola* in the United States? “Yes. It is possible,” says the Center for Disease Control (CDC)

website, “but few cases have been reported in published articles. Some cases have been documented in Hawaii, California, and Florida. However, most reported cases in the United States have been in people, such as immigrants, who were infected in countries where fascioliasis is well known to occur.”

It is up to each individual to decide whether to har-

Meeting with GRDA

vest and eat wild watercress. Know your source (Spring Creek is rated a high-quality water by the Oklahoma Water Resources Board); know what’s upstream. And if unsure, use your found watercress in cooked dishes as heat quickly kills any parasites.

SCC Meets with GRDA

Three SCC board members met in May with Ellen Edwards, Grand River Dam Authority (GRDA) General Counsel, Ed Fite, GRDA Scenic Rivers, and Dr. Darrell Townsend, Assistant General Manager, Ecosystems & Lake Management. “Since GRDA has jurisdiction over Grand Lake and all its tributaries, including Spring Creek, it’s important that we keep in touch and keep communications open,” notes Beth Rooney, SCC board president. “Relations between GRDA and SCC have been very positive.” Here are some highlights from the meeting:

- GRDA is starting its comprehensive water plan. They will be working with the Oklahoma Water Board and Corps of Engineers. Meetings for public input will be set later.
- Dr. Townsend emphasized that serving as a good steward of the natural resources under its control has always been at the core of the overall GRDA mission. Since the arrival of GRDA CEO Dan Sullivan, the agency has worked to bolster those efforts and insure that the emphasis on water mirrors the emphasis on electricity. GRDA does recognize that the value of its water resources, and all state water resources, continues to increase.
- Partnership with NSU: Dr. Townsend’s team has partnered with professors at NSU to fund an on-site lab to study watershed issues. The lab should be operational by fall semester with plans to fund graduate students and have routine monitoring of Spring Creek and the Illinois River. We should see a press release soon.