

Tertiary Treatment

The Newsletter of the Spring Creek Chapter of Trout Unlimited

November, 2010

Volume 33, Issue 10



SCCTU President Judi Sittler caught these two brown trout spawning in Spring Creek in mid-November.

Sex outside the city Mysteries of the spawn revealed

By **Bob Carline**

This fall from Boalsburg to Milesburg more than 5,000 couples will reproduce outdoors and no one will notice. Why?

Because it will all take place underwater in the solitude of Spring Creek.

Fall is the time when our native brook trout and the introduced brown trout carry out their annual ritual of reproduction. Brook trout will spawn in the small headwaters of Spring

Creek, while brown trout will deposit millions of eggs over more than 20 miles of the main stem.

It seems incredible that so much sexual activity will occur and so few people will witness this remarkable process. During this vital life stage, mature male and female trout will barely touch each other it is Mother Nature's answer to safe sex.

For brown trout, the spawning season runs from

the middle of October to early December with peak activity in mid November.

Female brown trout with ripe eggs begin the process by seeking a one-foot-square portion of streambed with coarse sand and gravel, with depth ranging from 6 to 24 inches, and with a moderate current velocity, that is evident by some turbulence at the water surface. The female tests the

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News In Brief

Holiday Party Dec. 10

Spring Creek TU members and their families will gather for the 2010 Holiday Party Dec. 10. The festivities will be held again this year at the home of Bill Brusse, 1018 Metz Ave., State College, starting at 6:30 p.m.

The chapter will supply a small keg of beer from Otto's. Please bring a dish to share and any other beverage you like. The Holiday Party is a great opportunity to meet other chapter members in a casual, fun setting. See you there!

Elections to be held at Jan. 6 meeting

With January just around the corner, it will soon be time for board of directors elections. Four board seats will be open in 2011. A nominating committee has been formed to accept advance nominations.

If you would like to serve on the board or learn more about board service, please contact a member of the nominating committee. Committee members are Judi Sittler (jlsittler@comcast.net), Mark Pencak (tapandpence@aol.com) and Al Phillips (atp@psu.edu) Members can also be nominated from the floor at the January meeting.

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Founded in 1973, the 350-member Spring Creek Chapter of TU seeks to to conserve, protect, and restore Spring Creek's coldwater fishery and watershed.

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Meeting Schedule

Hanson to give presentation on backcountry fishing

Dec. 2, 7:30 p.m., Comfort Suites, State College

Dennis Hanson grew up in Greensburg, Pennsylvania fishing the Loyalhanna Creek and the Youghiogheny River. After earning a master's degree from the University of Pittsburgh, he began pursuing his dream of hunting and fishing in the west. After 20 years of fishing in Idaho and Montana, Dennis and his wife, Carol, began working as licensed guides for Adventure Guides of Stanley, Idaho. They are one of the few married couples in the west that work together as fishing guides. Dennis will present a PowerPoint presentation on a fishing adventure on Big Creek, a fly-in, backpacking trip in the middle of Idaho's Frank Church Wilderness of No Return. Also included

will be a presentation describing a trip on the Middle Fork of the Salmon River.

Wilt offers tips on modified center pin technique

Jan. 6, 7:30 p.m., Comfort Suites, State College

Lance Wilt, a guide with the local Spruce Creek Fly Company, will discuss his adaptation of the center pin technique for use on Central Pennsylvania waters.

A full-time fly fishing guide, instructor and travel agent working in Pennsylvania, Montana and the Patagonia region of Chile, Wilt is a certified FFF Casting Instructor and a coach for the United States Youth Fly Fishing team.

In addition, his articles and photographs appear in a number of fly fishing publications in print and online.

George Daniel on European nymphing tactics

Feb. 3, 7:30 p.m., Comfort Suites, State College

George Daniel, of TCO Fly Shop, will give a presentation titled "Understanding and Implementing European Nymphing Tactics". An angler since the age of 6, Daniel is the assistant manager and director of education at the State College TCO shop. George's passion is conducting educational classes for TCO and traveling the country conducting clinics for various groups and organizations. Daniel is also active with the U.S. Fly Fishing Team.

Eckwahl to present overview of steelhead fishing

March 3, 7:30 p.m., Boalsburg Fire Hall, Boalsburg

Barry S. Eckwahl will present, "Steelhead Solitude: Techniques to Avoid Crowds and Catch More Steelhead, Including Places to Go, Rod Set Up, and Favorite Flies"

The owner of A Perfect Drift Outfitters guide service, Eckwahl guides anglers in New York and Ohio.

Barry is a graduate of the Syracuse College of Forestry, a member of the Regal Vise pro staff and a Mystic Fly Rod pro guide.

The March meeting will be held at the Boalsburg Fire Hall in Boalsburg, between US Route 322 and Main Street, a block off Church Street.



NEW TACTIC... Guide and instructor Lance Wilt will discuss his adaptation of the center pin technique at the January 6 membership meeting.

BOARD MEETING MINUTES: October 18, 2010

**Board of Directors
Spring Creek Chapter
of Trout Unlimited
Meeting of October 18,
2010, 7 p.m.
Comfort Inn Suites,
State College, PA.**

Board Members present:

Judi Sittler, Bill Brusse, Rick Van Horn, Chris Hennessey, Bob Donaldson, Chris Haser, Jim Purtell, Ron Shealer and Bob Eberhart.

Also present were David Retchless and Joe and Wade Chandler.

Approval of September Minutes:

The draft minutes of the Board meeting of September 13 were approved after several editorial corrections were made.

Survey of attitudes about climate change:

David Retchless, a Master's degree candidate in the Geography Department at PSU presented information about his thesis project, an effort to determine how questions about climate change were presented might affect responses on a survey. The online survey would include 30-35 questions and would require about 15 minutes. He asked the Board to consider how an online survey might be distributed to Chapter members. There was discussion about how this might be done without revealing the email addresses of Chapter members. The Board agreed to discuss the issue further and then get back to Mr.

Retchless.

Comments by Joe Chandler, high school student and TU volunteer:

Mr. Chandler, a hard-working volunteer on last summer's Habitat projects, had been invited to discuss his experience as a TU volunteer and to discuss how the Chapter might stimulate more interest in the Chapter's activities among high school age students. Joe spoke about the Wildlife Leadership Academy, an organization that encourages interest in wildlife; the Academy already has programs focused on whitetail deer and ruffed grouse and is contemplating adding a group to study trout. Joe also suggested that the Chapter contact high school guidance counselors; some schools have community service requirements that might be met by participation in Chapter activities. The Board will have additional discussion about how to encourage youth participation.

Treasurer's Report:

Treasurer Rick Van Horn reported that as of September 30, the net worth of the Chapter was \$15,391. The Treasurer's Report was approved as submitted. Rick reported that he had submitted the required annual report to National TU.

Old Business:

Progress on memorials: Bob Donaldson reported that a committee, comprised of Judi Sittler, Katie Olmbalski, Bill Brusse, Ted

Trostle, Joe Humphreys and Bob has been considering memorials for George Harvey (at Fisherman's Paradise) and Tony Gerace (at the McCoy dam site). As memorials, PFBC will permit only benches; the Committee now favors either a custom built bench or a low seat wall. Katie Ombalski will contact PFBC to see if they will designate a person to meet with the Committee. Donated funds for the Gerace memorial are available and are being held by ClearWater. Two hundred dollars have been donated so far for the Harvey memorial, so additional fundraising will likely be required.

Proposed Habitat Improvements:

Bob Donaldson reported that a committee that includes Judi Sittler, Katie Ombalski, Bill Brusse and Chris Hennessey had met with a private consulting firm, Wetlands Habitat Management Inc. and looked at the Dave Carson, Stan Smith and Joe Humphreys properties near Oak Hall. The stream length of the adjacent Carson and Smith properties is about a mile and has reaches in both Spring Creek and Cedar Run. The Humphreys property, which is not adjacent to the other two properties, includes about a mile of Spring Creek. In-stream log structures and streamside vegetation might be used to improve conditions. Additionally, one stormwater pipe that discharges into

the creek should be reconfigured. The consultant will provide additional ideas. There was some concern about whether these stream reaches will be open to public fishing. Memorial funds for Dave Carson of \$890 are available for this project, but additional funding, perhaps an Embrace-a-Stream grant, will be necessary if this project is undertaken.

PATU Fall Meeting and Training Session:

This event was held on October 1 and 2 at the Stackhouse Building at Fisherman's Paradise. Judi Sittler, Chris Hennessey and Bob Eberhart attended on behalf of the Chapter. Several matters of interest to the Chapter, including review of Chapter By-Laws, easements held by Chapters, annual PATU awards, and an invitation to the Chapter to host the 2012 National TU meeting were considered and are discussed elsewhere in these minutes.

Review of Chapter By-Laws:

National TU and the Pennsylvania Council of TU are recommending that all chapters review their By-Laws. National TU has provided a model document. Judi Sittler, Chris Haser and Bob Eberhart will meet to consider updates to the Chapter's current By-Laws.

Bob Wilberding Retirement:

Bob, a long-time active member of the Chapter has

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retired from his position with PFBC. His support of the Chapter will be recognized in our newsletter and in the Chapter Facebook page.

New Business:

Best Project Award:

It was announced at the Fall PATU meeting that our Chapter has received the annual "Best Project Awards" from PATU for the three-year Habitat project on Spring Creek. The Chapter was given an engraved Orvis fly box. There was discussion of how the fly box might best be used.

Easements held by the Chapter:

National TU has expressed some interest in easements held by chapters, usually for public access to streams. The Chapter holds two such easements along Spring Creek, one along Houserville Road just downstream from Benner Pike and the other just below Bellefonte that includes the confluence of Buffalo Run and Spring Creek. Chris Haser and Rick Van Horn will contact National TU to determine what actions might be required from the Chapter.

U.S. Youth Fly-Fishing Event:

Chris Haser reported that the National Youth Fly Fishing Championship will be held in this area in late spring of 2011. The Chapter has been invited to participate in planning for this event. Chris Hennessey was designated to represent the Chapter. Volunteers may be needed to serve as controllers.

2012 National TU Annual Meeting:

The Chapter has been invited to host the National TU Annual meeting to be held in August of 2012. It was generally agreed that this would be a good opportunity for the Chapter to showcase its activities. Judi Sittler will contact the New Hampshire Chapter that hosted the 2010 meeting to get their view of whether that had

been a good experience for them.

Chapter Holiday Party:

It was agreed that the Holiday Party will be a pot-luck event and will be held at the home of Bill Brusse on Friday, December 10.

Chapter Accident Insurance:

National TU has arranged for Accident Insurance to cover injuries sustained during Chapter activities, e.g. habitat improvement projects, at a cost to the Chapter of \$110 per year. The Board approved purchase of this insurance.

Chapter Calendar of Events for 2011:

Judi Sittler distributed a proposed calendar of events for next year. This will be considered at the next Board meeting.

Committee Reports:

Banquet:

Jim Purtell has been recruiting members of the Banquet Committee. Ron Shealer, Chris Hennessey, Jeff Sturniolo, and Bob Wilberding have agreed to help out.

Newsletter:

Chris Hennessey said that he would prepare an article on the Chapter's Best Project Award from PATU for the Newsletter and possibly for the Centre Daily Times. Judi suggested Chapter members should be encouraged to prepare articles of interest to anglers for the Newsletter, e.g., the dangers of felt-sole waders, or how to tie a favorite fly pattern. Chris has the new TU logo in digital form and will distribute it to Board members for use on Chapter documents.

Youth:

Ron Shealer reported that the tank and chiller for the Trout in the Classroom (TIC) project at Mt. Nittany Middle School is set up and running and the eggs will be arriving soon. Mark Hohnadale, a science teacher at Mt. Nittany is overseeing

the project this year. Ron has also been in touch with Kurt Engstrom at Our Lady of Victory about a possible TIC project at that school. Ron feels that there should be more publicity for the TIC project when fingerlings raised in a classroom are released.

Chris Hennessey reported that a previously scheduled meeting between Molly Hetrick of Centre Region Parks and Rec and several Chapter members to discuss the First Cast Program, had been cancelled and will be rescheduled later with a smaller group. The Chapter has budgeted \$3000 for this project for the coming year.

Conservation:

Bill Brusse noted that there are three possible areas for habitat improvement projects. These are the Oak Hall area, Galbraith Gap and Thompson Run. PSU is planning a major project in the Thompson Run/Duck Pond area, so the Chapter may not need to consider this area. When a project is selected, the Chapter may apply for an Embrace-A-Stream grant from National TU.

Dave Grove, a resident of the Pleasant Gap Area, has asked the Chapter to oppose a rezoning in the "Phantom Lake" area that would permit the Graymont quarry to expand its operation. The Board chose not to take a position on this issue.

There being no further business, the meeting was adjourned.

Respectfully submitted,

Bob Eberhart
Secretary

(These minutes were approved, as submitted, by the Board of Directors at their November 15 meeting.)

Spawning secrets of Spring Creek trout revealed

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adequacy of a site by turning on her side and rapidly flexing her tail, which propels her upstream for 6 to 12 inches. If the gravel is not tightly bound by fine silt, the female's digging action will dislodge some gravel and create a shallow depression.

As you might imagine, all of this activity by female trout will not go unnoticed by the males. In fact, even before the female begins digging, she will have attracted one or more males by secreting fluids that contain sex hormones. These compounds are known as pheromones, which males can smell. It is the trout's version of Chanel No. 5, and it really works.

If the female is able to dislodge some sand and gravel during her first exploratory dig, she will continue digging until she either encounters an immovable rock, which will cause her to seek a new site, or she is able to excavate a pit about 4 inches deep. This process can take from several hours with rests in between bouts of digging. This excavated nest is called a redd.

While the female goes about her work, there is much frantic activity by a group of males hoping to mate with her. It is not uncommon to observe in the vicinity of digging female, six or more male brown trout ranging in length from 5 to 18 inches. The largest male in the group will assert his domi-



A female brown trout prepares a redd in Spring Creek.

nance by chasing and occasionally nipping the smaller males. The dominant male maintains a position alongside the female and keeps the other males downstream.

Vigorous bouts between males will result as downstream males try to come alongside the female and the dominant male chases after the intruder. If the chase lasts for more than a few seconds another subdominant male will move up near the female. When the dominant male returns, another chase ensues. Competition for spawning females is intense.

Oftentimes there will be one or more juvenile male brown trout in the vicinity of the redd. These males, 4 to 5 inches long, were hatched in March or April; hence, they are only 7 to 8 months old, but they are

precocious ñ that is, they have ripe testes. Rather than try to jostle with the larger males, these sneaky petes, lie in waiting, perhaps under the cover of large rocks.

When the female has excavated a sufficiently deep pit, she will lower herself into it so that her anal fin just touches the gravel. This is the signal the dominant male has been waiting for. He swims quickly alongside the female. She will almost arch her back and open her mouth to its maximum gape as she releases some eggs. At the same time the male will assume a similar pose and release a milky cloud of sperm - the piscine version of an orgasm.

Meanwhile, the smaller satellite males, who have been stalking this female, with no sense of decorum,

will race to the vacant side of the female and they too will release their contribution of sperm. Not to be outdone by the big guys, the sneaky petes who have been patiently waiting under cover, will dart right under the larger spawning fish and contribute their little squirts of sperm while being enveloped in a shower of eggs and sperm. No one said spawning was neat.

A 12-inch female brown trout produces about 600 eggs that are about three-sixteenths of an inch in diameter. She may not release all of her eggs the first time she spawns. Her eggs are slightly heavier than water and will sink to the bottom of the pit.

The males probably spew out hundreds of thousands of microscopic sperm

Photo by Judi Sittler.

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Spawning secrets of Spring Creek trout revealed

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cells that are propelled by a hair-like tail. The tiny sperm cells swim blindly around, bumping into each other and into the eggs. If, by chance, a sperm cell makes contact at the single pore in the egg's outer membrane, the sperm cell will be able to penetrate. The sperm cell then makes contact with the nucleus of the egg and sperm's nucleus fuses with the egg's nucleus ñ successful fertilization.

Soon after the sperm penetrates the egg, the entrance pore closes so that no other sperm can enter the egg. Nearly all of the eggs laid will come in contact with at least one sperm. The percentage of eggs that is successfully fertilized is typically more than 90%, and given all of the male inputs, this high rate of fertilization should not be surprising.

Immediately after

depositing her eggs, the female moves upstream about a foot and begins digging. The dislodged sand and gravel are sprayed downstream and bury the exposed fertilized eggs. After the female has buried her eggs, she often rests and remains close to her buried eggs. Then she will move to the pit she created while burying her eggs, and may deepen the pit. She then deposits a second batch of eggs, and the males, of course, once again go through their antics and shower the eggs with sperm.

Again, the female will move upstream slightly and dig to bury her second batch of eggs. A 12-inch female, may only require two spawnings to deposit all of her eggs, while larger females may have to repeat the process three or four times.

Once a female has deposited all of her eggs and successfully buried

them, she leaves the nest and moves to deeper water with cover. The spawning sites are readily visible to predators like great blue herons and mink. And, spawning fish are particularly vulnerable to these predators as the fish go about their reproductive ritual.

Unlike many other animals, trout do not provide any parental care to their eggs. Once the eggs are buried in the streambed, their development and ultimate hatching are dependent upon conditions in the stream. Under ideal stream conditions, trout eggs hatch in about 100 days. Once hatched, they are called alevins ñ tiny fish with a large yellowish yolk sac bulging from their bellies. The yolk provides the fish with the energy it needs to develop into a normal fry, the final stage.

The alevin stage lasts 14 to 20 days. When the fish have completely absorbed

their yolk sac, they begin to wriggle up through gravel and emerge from their nest. Depending on when the eggs were laid, water temperature throughout the winter, and other factors like dissolved oxygen, brown trout emergence can occur from late February to early April.

Once fry emerge from the gravel, they move to the shoreline and seek cover with little or no current velocity. The fish are tiny and vulnerable. They immediately begin feeding on tiny invertebrates. If they are lucky enough to avoid being eaten by larger fish or birds, they may survive until fall, and perhaps take part in the spawning ritual that produced them one year earlier.

Successful reproduction in Spring Creek and many other trout streams in central Pennsylvania is essential for producing the fine sport fisheries that we enjoy in this region.

Members invited to attend board meetings

All members are invited to attend the monthly meetings of the SCCTU board of directors. Board meetings are held at 7 p.m. on the second Monday following the regular membership meeting at the Comfort Suites in State College.