

Hands-on Wetland Restoration Workshops®

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Hosting a Hands-on Wetland Restoration Workshop is a great way to teach individuals how they can design and build wetlands.



Wetlands like this one are being restored across the United States and Canada by people who have attended Hands-on Wetland Restoration Workshops.



Participants become involved in the design, construction, and planting of one or more wetlands each day.



Everyone has a great time at the training. The lessons are designed so that participants can build wetlands on their own.



Many of these wetlands are being designed specifically to benefit rare species. These projects are being completed in partnership with PARC (Partners in Amphibian and Reptile Conservation), ARC (The Amphibian Reptile Conservancy), BCI (Bat Conservation International), and other organizations.



Wetlands can be designed and built to provide habitat for fish such as the Chinook Salmon.



The wetlands you design and build can be expected to be used by a diversity of amphibians.



Does the training work? Here retired Science Teacher John Byrd stands next to one of the 13-wetlands he has built at schools in Anderson County, Tennessee. He became interested in restoring wetlands for education and to help amphibians and reptiles after attending a Hands-on Wetland Restoration Workshop.



Private landowner Alleyn Unversaw stands in front of one of the 20-wetlands he has built on the farm he owns near Mt. Orab, Ohio. Alleyn enjoys hunting waterfowl and watching wildlife. He is not an Engineer or a Professional Wetland Scientist, but has a passion for restoring emergent and ephemeral wetlands. Alleyn recently hosted a Hands-on Wetland Restoration Workshop.



Ian Ives is a Sanctuary Director for Mass Audubon. He began building ephemeral wetlands for the rare Eastern Spadefoot on Cape Cod after attending a Hands-on Wetland Restoration Workshop.



Heidi Blasius returns Sonoran Mud Turtles to a wetland she restored on BLM land near Safford, Arizona. Heidi is a Wildlife Biologist for the BLM who hosted a Hands-on Wetland Restoration Workshop where 5-wetlands were restored.



Marge Sidney stands near one of the wetlands she restored near Logan Lake, British Columbia. Marge is building a series of wetlands to help clean water entering Logan Lake. She works as a Fisheries Biologist for the BC Ministry of the Environment.



Dan Taylor, a Wildlife Biologist with Bat Conservation International works to build a wetland on private land in Arizona. Dan partners with numerous agencies, nonprofits, and private landowners to promote water for wildlife across the Southwestern U.S. BCI has helped finance the design and construction of numerous wetlands across the Southwest, many which have been built during Hands-on Wetland Restoration Workshops.



Dan Taylor took the lead in restoring this wetland at the Southwestern Research Station near Portal, Arizona.



Mike Hayslett is an Instructor at Sweet Briar College in Virginia who has built a number of ephemeral wetlands for rare amphibian species. He built the one behind him on land owned by a mining company after attending a Hands-on Wetland Restoration Workshop.



Terry Back, who works as a plumbing contractor is fascinated by wetlands. He's standing in front of the first wetland he built on his farm near Salt Lick, Kentucky.



Here's how the wetland appears 3-years later. Terry's built a total of 3-wetlands on his farm and plans to build more. He's helped host Hands-on Wetland Restoration Workshops.



Heather Toles is amazing. She manages a pharmacy in Kamloops British Columbia, and uses her vacation each year to design and build wetlands. Heather is working with her husband, many other individuals and organizations to raise money for wetland projects. She attended her first Hands-on Wetland Restoration Workshop in 2006.



Individuals who attend a Hands-on Wetland Restoration Workshop learn how to use techniques that are highly effective and low cost. While the success rate for most wetland restoration projects hovers around 50-percent, graduate success rates will be 99-percent or better using the methods taught at these sessions. Individuals also learn how they can restore wetlands for less than 10-percent of the cost of similar wetland mitigation projects across North America.



Hosting a Hand-on Wetland Restoration Project involves two visits by Tom Biebighauser. During the first visit he will work with you to design wetlands. The second visit is where Tom will help you build the wetlands, and instruct a Hands-on Wetland Restoration Workshop as part of your project.



Tom will work with you and a small group of individuals to identify suitable places for building wetlands during the first visit, which is generally 3-days in length. However, it is not uncommon to spend an entire week together when designing wetlands at a number of locations. This visit is a good opportunity to meet landowners and potential partners who can help build the wetlands with you. Tom typically gives a Wetland Restoration PowerPoint presentation during the week.

One-on-one instruction



You will receive one-on-one assistance during the first visit. The days will be low-stress and enjoyable. After all, you're exploring the outdoors looking for places to build wetlands.

Mark 4-5 wetlands/day



You can expect to design and mark for construction from 4 to 5-wetlands each day during the first visit.

Wetland Design Form completed for each site



A form will be completed for each wetland you design that will include the details necessary for planning and construction.



Many of your questions about wetland restoration will be answered during the first visit. Tom wants you to feel comfortable about the sites you have selected. He will then be available to help answer any questions you have when moving forward with the projects.

Wetland Establishment Project

Eldorado National Forest
Georgetown Ranger District
California



Thomas R. Siebighauser
July 30, 2013

Wetland & Stream Restoration Projects

Francis Marion, and Sumter National Forest
Enoree and Long Cane Ranger Districts
South Carolina



Thomas R. Siebighauser
November 29, 2010

Tom will prepare a detailed report describing the wetlands you have designed, including an accurate budget for their construction. You'll be able to use this report to receive approval and funding for the wetland projects that were designed.

Roanne Jackson
Wetland Construction Workshop
March 28 and 29, 2012
Lafayette, West Virginia



The actual wetland restoration workshop can be held outdoors at the location you choose.

About the Workshop: Hands-on wetland construction workshops provide opportunities to many species of amphibians, reptiles, birds, and mammals. Unfortunately, a majority of these ecosystems have been lost due to draining and filling throughout North America. These hands-on workshops are an effective way to help the endangered species, to the big water quality, increasing flooding, and reducing ground water supplies. Fortunately, it's now possible to reconstruct wetlands that look and function similar to natural wetlands, with diverse hydro-periods, aquatic vegetation, and wildlife life.

The hands-on workshop is designed for individuals interested in learning how to use practical, low-cost techniques for creating and building wetlands for wildlife.

Each participant will be a hands-on wetland project (can be planned in natural and open areas, on private and public land, and even on school grounds to benefit plants, animals, and people). Activities will discover how to select the location for building wetlands, how to ground water and soil in place, choose appropriate construction techniques, work with heavy equipment operators, and establish a maintenance plan. A large excavator will be used to build an experimental wetland (swamp pond) from soil that are high in clay, and to modify an existing pond with a high clay into a wetland.

Who Should Attend: Biologists, consultants, engineers, foresters, educators, energy producers, developers, planners, landscape architects, gardeners, land owners, and NGOs.



Cost: \$200.00. Includes a bag lunch and beverages on March 28 and 29, hand-on materials, and a signed copy of the book **Wetland Restoration and Construction - A Technical Guide** by Thomas H. Burghammer.

Receive help planning the wetland training

The actual Hands-on Wetland Restoration Workshop can be held outdoors at the location you choose. The training can be from one to seven-days long.



Here are some of the agencies and organizations who have hosted Hands-on Wetland Restoration Workshops. These training sessions have been taught in 20-States and 2-Canadian Provinces.

Hands-on Wetland Restoration Workshop begins



The Hands-on Wetland Restoration Workshop often begins with a visit to a natural wetland.



Everyone becomes involved in the sampling of vertebrates and invertebrates.



Participants may also examine nearby constructed wetlands.



And learn how to sample for amphibians and reptiles.



Instructors help identify what is found in the wetlands.



Everyone gets excited when something unique is discovered, like these eggs of the eastern spadefoot.



Individuals are amazed at what they find in the wetlands.



Workshop participants will visit areas where wetlands have been drained and filled, and streams moved for farming years ago.



Participants learn how to find signs of wetland drainage, like this buried drain line that is exposed.



They will often have the opportunity to talk with older individuals who made their living draining wetlands, like John D. Smith, in the green cap.

Small class size for quality instruction!



Class sizes are generally limited to 30-people to maintain the highest quality instruction. A registration fee can be charged to help pay for wetland construction, lunches, books, and Tom Biebighauser's costs.



Tom will work closely with you to prepare an agenda for the Hand-on Wetland Restoration Workshop. Instruction will be active and hands-on. The number of PowerPoint Presentations will be kept to a *minimum*, as participants are much more likely to restore a wetland when they help build a wetland.



Course evaluations show that participants are more likely to remember what they have learned when they experience it outdoors.

Practical lessons



The practical lessons will involve each person in hands-on activities. Because there are no long lectures, you won't catch people texting or checking their e-mails.



The workshop begins with wetland design. Here students are using hand tools to check for groundwater.



Everyone has the chance to use these simple tools to determine how wetlands may be built.



Notice how wet the soil auger is? Groundwater was found at this site, so the groundwater wetland construction technique can be used.



Here soil that is high in clay was found, the surface water construction technique can be used.



Slope is measured by using a clinometer



Participants are taught how to use a simple construction level to accurately measure slope.



Field exercises are completed where slope is measured on wetland construction sites.



The differences between a construction level and a laser level are explained.



Measurements are taken before construction begins.



Who says you can't have fun marking the perimeter of a new wetland?



Here mosses are removed from a site prior to construction.



People are introduced to the heavy equipment operator. A detailed safety discussion is held with all of the workshop participants.



Heavy equipment is first used to remove vegetation.



All observe at a safe distance, yet are close enough to see what is going on.



Topsoil is removed and saved for spreading in the finished wetland.



Each construction step is explained to the participants.



Construction moves fast, with one wetland typically being built from start to finish in less than one day.



Here Tom discusses wetland construction with the operator, who has never built a wetland before. The class will be informed with what they discussed after the excavator resumes work. Hands-on Wetland Restoration Workshop train heavy equipment operators, along with the participants.



Watching each step the heavy equipment takes to build the wetland is of great interest to those attending. Much like the hosts of a wedding reception, Tom works his way around the site and talks to small groups while construction is taking place.



Many find watching the actual construction of a wetland to be better than YouTube.



Participants say they learn much from how Tom interacts with the heavy equipment operators who are building the wetland.



Discussions are regularly held between Tom, the heavy equipment operator, and the person hosting the Hands-on Wetland Restoration Workshop. A summary of these talks is shared with the participants who are observing construction.



The importance of construction monitoring is learned by actually measuring elevations during construction.



One becomes familiar with quicksand when building a groundwater wetland!



Working alongside the heavy equipment operator boosts self confidence, greatly increasing the chances of a person building a wetland on their own.



People find that they don't have to be an expert to build a wetland.

Hands-on activities while construction is taking place



Tom involves workshop participants in lab activities while construction is taking place. Here students are measuring the clay content in soil.



Being able to squeeze water from the soil provides a good indication that the soil is both hydric and organic.



Mineral soils of various textures are sampled for clay content.



Look, this long ribbon shows there's plenty of clay to build a wetland using the surface water technique!



Small wetlands are built in boxes of mud.



Students may be tested on their ability to build a wetland in a box.



This promises to be a glamorous looking wetland!



This wetland has been accepted by wildlife.



Each team is asked to explain how they built their wetland.



Constructed wetlands are judged by their peers in our own version of the show “Wetland Design Star.”



Hand-labor is often needed during construction of the wetland.



The wetland is seeded with wheat following heavy equipment operations. Most participants are unaware of the value of wheat for erosion control.



Native species of grasses, sedges, rushes, and wildflowers are often sown on the exposed soil surrounding the new wetland.



Organics such as wood mulch are raked in when working to remove nitrogen from runoff.



Native species of shrubs and trees are often planted by those attending the training.



For many it is the first time they have planted a native shrub or tree.



This dedicated individual is planting cattails along the perimeter of the new wetland.



Live staking is a very effective technique for planting trees and shrubs near wetlands that have a high water table.



Adding large woody debris to the wetland can be lots of fun.



Returning wood to a wetland can be a team building exercise.



Not using a chainsaw to cut stumps is a great way to improve habitat for plants and animals.



Branches can be added for salamander egg attachment.



Rocks are placed for turtle basking sites.



Leaves are added to wetlands for invertebrate production.



This new wetland is mulched using straw to control erosion and to reduce the possibility of non-native plants colonizing the site.



It is acceptable to dress formal or casual when spreading straw.



Mosses that were saved are planted around the new wetland.



These transplanted mosses can be expected to do well.



Sometimes it is necessary to rock a spillway by hand.



These students are proud of the toad house they built.



Hands-on Wetland Restoration Workshops show participants how to build forested wetlands like this one constructed in 1992.



Or like this one built on a mined area in 2003.



This deep farm pond was changed into a wetland at a Hands-on Wetland Restoration Workshop-in only one day.



This ephemeral wetland was built at a Hands-on Wetland Restoration Workshop on Cape Cod.

High ratings and they remember!



Individuals who attend a Hands-on Wetland Restoration Workshop consistently rate the training as one of the best experiences of their career.



The partnerships formed between individuals at Hands-on Wetland Restoration Workshop can result in 100s of wetlands being over a lifetime.



It is easy to host a Hands-on Wetland Restoration Workshop. Simply contact Tom Biebighauser by e-mailing tombiebighauser@gmail.com or phoning 606-356-4569.



You can expect the total cost of hosting a Hands-on Wetland Restoration Workshop to be largely paid for by the registration fees you collect from participants.



The wetlands you restore can be expected to last for thousands of years.



And will add beauty to schools and urban areas.



They'll contain a wide diversity of plants.

Hands-on Wetland Restoration Workshops

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Everyone learns best by doing. That is why Hands-on Wetland Restoration Workshops actively involve individuals in the construction of wetlands from start to finish. Participants are encouraged to build wetlands but because they want to, not because they have to. Please contact Tom Biebighauser to schedule a Hands-on Wetland Restoration Workshop today.