

Wildlife Ponds... “if you build it, they will come”

By Carl Struck, NM Tree Farm #2

forestreefrog@gmail.com (575)587-1066

Remember the line in the movie “Field of Dreams” when Kevin Costner's character hears a voice in his head saying “if you build it, he will come”? I think of a slight variation on that line when I look out on our 1/3 acre wildlife pond in the high Ponderosa pine forests of Northern New Mexico. In 2010 my wife, Johanne Riddick, and I decided to take the plunge and invest in a huge hole in the ground on the edge of our natural mountain meadow hoping to catch some of the often abundant Spring run-off. We'd watched for decades as our snow pack turned into a steady stream of melt for 3-6 weeks between late February and early April only to dry up into a cracked gully in the heat and dry air of May and June. We knew from digging test pits in the meadow that the soils under the meadow grasses had heavy clay content (probably discouraging the growth of Ponderosa Pine seedlings) so we thought we might have an ideal site for a pond. A call to the New Mexico State Engineers office clarified the permitting process and got the ball rolling. They suggested I contact our regional NRCS (Natural Resource Conservation Service) office for construction guidance as well as the fact that having the NRCS issue their stamp of approval for our “wildlife pond” project would make the permitting process go smoother. Vernon Mirabal at the Taos NRCS was very helpful in setting up a site visit with their wildlife pond expert and informed me that if our site qualified there was possible cost share monies available. As it turned out, all the funding for that fiscal year had been allocated but it was good to know that there was financial help potentially available if the pond site qualified as a useful wildlife resource.

It's important to note that our prospective pond site was a significant distance from the nearest acequia, stream, intermittent stream, riparian zone or spring. Had any of these features been present nearby it would have been unlikely that we would have received a permit. Our pond would only receive water from Spring snow melt and monsoon run-off and mostly from snow or rain falling on our own property.

Our site visit with the NRCS team went very well with everyone confirming that our site would make a perfect wildlife pond. They staked out the general area for the pond and informed us that by their calculations, having consulted topographical maps of our area, our pond site could potentially receive 40 to 80 acres of watershed run-off under peak ideal conditions (the “perfect storm”). They also shared a lot of pond construction information, answered all our many questions and issued us site plan preparation documents to share with the State Engineers office. We filed all the necessary paper work and received a Livestock Water Impoundment (Wildlife Pond) permit a few weeks later.

For months I had been researching pond construction advice from a number of Pond experts, reading books and articles on the subject and reviewing pond construction do's and don'ts, so when the time came to interview several heavy equipment operators, comparing differing approaches to the project as well as projected costs and timing issues, I felt confident in communicating what we wanted and expected. We felt most comfortable with a local Father/Son team operating between them a D6 bulldozer, a front end loader, a back-hoe and a 12 yard dump truck. After settling on a work/pay schedule and going over construction details we set a start date of early September as the monsoon season should be over by then and the soils fairly dry. We spent the next few weeks clearing any trees and shrubs from the site area and planning how to deal with the mountains of excavated material. I was to be the third member of the construction team...the ground man, which I soon learned was an exhausting position!

On September 7, 2010 we started the project by scraping the top soil, the top 12” to 16”, from the pond/embankment area and saving it in a pile (a small mountain really) nearby for embankment top and back-side back-filling when the digging was done. Then we carefully extracted the stumps and

roots left from the trees we had removed from the future embankment footprint, as any wood left here would eventually rot, leaving cavities water could follow eventually developing into a future leak.

At this point the site preparation was complete and the real job of digging the pond basin began. For the next 3 weeks our team of three worked scraping, piling, moving, placing, and compacting the clay/silt to form the embankments. Excess clay was moved to various forest access roads to form crowned surfaces to improve their drainage. My job was removing any wood root chunks, rolling large rocks away from the embankment area (for future landscaping and reducing future leak avenues) and keeping our two operators focused on the shape and contour of the pond basin. I kept hopping between the role of sweating laborer and foreman/conductor. We lost a handful of days to equipment breakdowns but were lucky to find our almost pure clay deposits in our meadow went down over 9 feet before transitioning to the more expected glacial moraine cobbles, gravel/caliche composition. This unexpectedly deep clay deposit would later prove a boon to water retention once the pond began to fill.



The pond cavity half excavated. Note the pile of rocks and large pile of reserved topsoil to the right of photo. 2010 photo by Johanne Riddick

When we finally reached the point where the future pond outline felt right (i.e. our budget was maxed-out) and the depth of the basin was between 11 and 12 feet, we covered the top and backsides of the embankment with the reserved topsoil, moved the largest excavated boulders to aesthetic positions, cleaned up as much of the construction upheaval as possible and called it done!



Finished pond ready for the rain! Note the top and backsides of the embankment are covered with the reserved top soil. 2010 Photo by J. Riddick

We scattered local hay over the top and backsides of the embankment after seeding with a mountain mix of regional grass/wildflower seeds and waited ... and waited ... and waited for the rain and snow. I had this idea that it would only take a year, maybe two to fill this giant pit but the next 4 years were the hottest, driest successive years in New Mexico history. This long waiting period did allow the grasses and wildflowers to establish themselves on the embankment, however, reducing erosion when the torrential, over-filling rain eventually arrived! During those 4 years of waiting, the pond depth was a foot or two deeper every Spring until on March 19, 2015, after a 1.5" rainfall fell on our winter long snow-pack, the pond overflowed and our spillway was tested as our inlet became a rushing stream that could have filled our pond several times over! In retrospect, we might have been lucky we had those dry 4 years allowing the clay/silt embankment plenty of time to settle and compact. It was both amazing and gratifying to see such a large, deep body of water in the midst of our dry Ponderosa forest and to admire our surrounding forest and mountain peaks fully reflected, for the first time, on its tranquil surface!

The list of plants and creatures that have found their way to our "oasis" in the Ponderosa is a long and fascinating one. From the first, Chorus Frog tadpoles, Water Striders, various forms of water beetles, Tiger Salamander larva and Wandering Garter Snakes made it their home and we introduced Fat Head Minnows and Grass Carp (for mosquito control and water weed control respectively) so the water has always been rich with life. The wet clay margin at shoreline has held the frequent tracks of Elk wading through the shallows as well as a Black Bear skirting the edge and a Mountain Lion that one early morning swam across and left his tell-tale story behind. We often walk up to the pond to find water fowl (Green Winged Teal, Ring-Necked Duck, Canvas Back duck and Eared Grebe to name just a few) and of course more often, our common Mallard. A pair of Mallards in fact even hatched and raised 3 ducklings on our floating island this past Summer!



Our pond soon after it's first fill. Note grasses on the embankment but pond edge/emergent plants have not arrived yet! 2015 Photo by J. Riddick

It didn't take long for the Dragonfly/Damselfly squadrons, those dazzling jewels of any aquatic habitat, to stake their claim to our pond with a certitude of abundance and we frequently encounter the Belted Kingfisher diving for minnows as well as the Spotted Sandpiper stalking the muddy margins. Of course, parallel to all the animals, the aquatic plants also made their appearance with Sedge the first arrival followed by numerous forms of the Spiked Rushes and the Giant Bulrush and, of course, Cattails (which, for now, I'm pulling up as I find them, to give our native plants a chance to colonize the shore before this invasive species takes over)! We also introduced some beautiful lily-pads to provide some shade and color. With all this life arriving I thought it advisable to install a solar powered aerator to provide a little more oxygen in the water as we have no daily source of oxygenated water naturally available except during run-off times.

One of the unexpected consequences of the pond has been the development of a small wetlands just below the down-slope embankment. Another habitat creation! I've hand-dug two small, shallow seasonal pools in this area to capture this oozing moisture and provide another niche for amphibians and birds to enjoy and this Summer was rewarded with the unexpected appearance of a Northern Leopard Frog (a species at risk)...how he managed to hop his way here is a mystery! This "wetlands" has attracted many forms of water loving Basket Grasses and Field Cress as well as supporting plantings of strawberries (yum!), Mint and Blackberries. What the birds and other wildlife don't eat is up for grabs by us two legged's I figure! Ah yes, the two legged's! How many children (and grown-up children) have enjoyed a cold dip on a hot day or a paddle in our old canoe or just meditating on the banks taking in the breathtaking diversity of the "wild"!

Since that day of filling, almost 3 years ago, we never miss an opportunity to "check on the pond" for there is always something new and interesting making an appearance where fresh water has

made a new home in an arid Ponderosa habitat! One of our friends calls it the biggest science experiment he's ever seen... another thinks it's the biggest toy. We think it's just glorious to spend an evening watching wild-life swimming, flying or drinking from this deep, cool basin of life-giving water. Will we see an Albert Squirrel come to the edge for a drink? A flock of Tree Swallows swirling and dipping low to scoop up some water in their lower beak? Maybe some Night Hawks wheeling in acrobatic circles or Little Brown Myotis Bats (another species at risk) hunting some freshly hatched Mayflies... who knows? Needless to say we've never regretted for a moment our decision to “invest” in our wildlife pond and yes, if you build it...they will come!



Species of Pond Damselfly ovipositing (egg laying) and mating on introduced lily-pads.

2017 Photo by Johanne Riddick