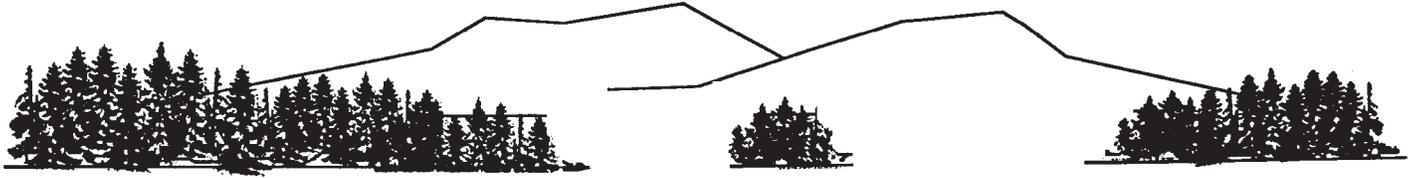


The Tuftonboro Times



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Special Edition

Volunteers jump-start Great Meadow Conservation project

The Great Meadow Conservation project, conceived by the Tuftonboro Conservation Commission and sponsored in part by the Tuftonboro Association, has already been the beneficiary of individual donations even though the parking lot on Sodom Road has not yet been built. Interested townspeople have offered money, time and talent to help create a unique resource in Tuftonboro that will benefit generations to come. Conservation easements are being finalized and trails are being laid out which will include boardwalks and a viewing platform to provide public access to the largest, untouched and unique, wetland complex in Tuftonboro.

The Great Meadow, bordered on the west by Sodom Road and on the north by Route 171 (Mountain Road) is 512 acres of open and forested wetlands. It is a large open basin with the Melvin River running through it. It is a mix of natural habitats that vary from beaver ponds to upland forest islands to deep conifer swamp with lush vegetation and well-worn game trails. It is the highest ranked wetland for ecological integrity in the region.

After the last ice age, the meadow area was a shallow lake. Over thousands of years, it filled in to become a very large wetland. In the early years of settlement, it was an important agricultural asset. New Hampshire's sandy soils don't hold a lot of moisture,

and the farmers' fields dried up in the summer. Late in the season, when water levels dropped, farmers could harvest a hay crop here and pasture cattle. Today the Great Meadow has returned to its wild character. It is surrounded by wetland forest, is host to 22 different natural communities (some very rare in New Hampshire) and provides excellent recharge for the area aquifers.

When the Conservation Commission began selling the idea to conserve this hidden gem in Tuftonboro, it hosted tours into the area for financial supporters and community leaders like the Wolfeboro/Tuftonboro Land Bank and the Tuftonboro Association Board of Directors. It was a short but challenging walk, up and down slopes and through wet areas to get to a spot where the Great Meadow could be viewed. Along the way, there were many teaching points about early settlement, agricultural history, wildlife habitat and plant history. On one of these excursions, someone said "wouldn't be nice to have a trail out here where everyone could have this experience, but the walking would be easier".

From that point on a plan for a developed trail began to emerge. A trail that would avoid steep slippery slopes, have boardwalks over wet areas and an elevated observation platform where people could sit and enjoy the experience. This would also be place for education where the wonders of nature can be explained, and people can witness happenings in the natural world.

Earlier this year, the Conservation Commission proposed to the Selectmen and the Capital Improvements Committee the idea of an environmentally sensitive trail which would allow residents to access the Great Meadow and see for themselves the wonder of the area. The trailhead parking will be just beyond the Town Garage, toward County Road. The trail would head down the slope toward the north. The proposed route would be about one mile, and the main purpose would be for education and viewing of the Great Meadow, leaving most of the wetlands untouched and available to wildlife. (There is already a donated sign set up at the proposed parking area).

Although enthusiastic about the plan, both groups agreed that other priorities would preclude public



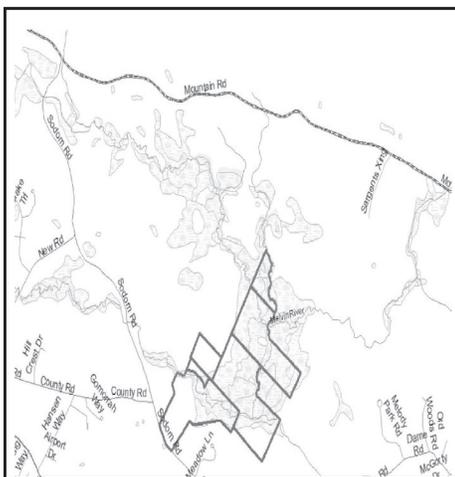
The Great Meadow is home to 22 natural communities encompassing a wide range of wildlife and plants.

money being available for the project. That is when the Tuftonboro Association stepped up and offered to contribute \$6,000.00 towards the effort.

The project will be completed in two phases. Phase one, with an estimated cost of \$12,000, will include the parking area, kiosk, materials for the core part of the trail and an observation platform. The second phase of the project, estimated to cost an additional \$12,000, will mitigate areas threatened by invasive plants, add spurs to the core trail to access other interesting areas within the meadow, and construct a second observation platform. All the labor is to be provided by volunteers. The work might take up to three years to complete, but with sufficient funding and lots of volunteers, it could happen sooner.

Please join with the Tuftonboro Association and others and help fund and build this trail. Donations may be made to the Tuftonboro Association, PO Box 121, Melvin Village, NH 03850. Be certain to note that the gift is specifically for the Great Meadow Wetlands Project.

On the following pages are four articles by Steve Wingate, a Licensed Forester and chairman of the Tuftonboro Conservation Commission. They describe what life is like in the Great Meadow in each of the four seasons. Read them carefully, then dream about what this project could mean to Tuftonboro residents, their children, their grandchildren and their grandchildren's children.



The Great Meadow is the largest wetland complex in Tuftonboro, 512 acres located between Sodom Road and Mountain Road (route 171).

Imagine it's springtime in the Great Meadow wetlands

The Great Meadow, a special 512-acre wetland complex in Tuftonboro, is a remarkable place. Located along the Melvin River, between Sodom Road and Rt. 171, it remains mostly undeveloped and in a natural state. It is located over one of the purist and most productive aquifers in this region. The meadow area is surrounded by a transition, forested wetland and forested slopes. The Great Meadow's remoteness and diversity provide habitat for nearly all the plants and animals found in New Hampshire. Free from roads, speeding traffic, houses, and yards, nature can interact as it always did.

Winter is hard in the natural world. It feels cold and black and white, but as the season turns to spring there is a burst of color and warmth. There is a revival of green shoots, blooms of flowers, buzzing of insects, and the calls of birds. The abundance of warmth and sunshine stimulate a renewal of life. Here is a sampling of a few of the events taking place in the Great Meadow this spring.

Lengthening days and increasingly warm sunshine melt the ice and snow that have covered the meadow all winter. Migrating birds on their way north stop to rest and feed while local, hibernating wildlife begins to stir. Bald eagles will soar above the wetland on thermals generated by the open terrain. They look for brook trout in and ducks on the river to feed upon while waiting for the lakes and ponds to become ice-free. Wood ducks return for the season to raise a new family. The brightly colored males court the females as they look for a nest site. They need a hollow tree not too far from water. As soon as the eggs hatch, mother calls her ducklings to the entrance. They will jump and crash to the ground like a child's toy, then follow mother to water, and begin feeding under her supervision and protection.

Brook trout who have struggled through the spring melt begin feeding on the abundant insects produced in spring. They struggled because the snow accumulation is acidic from power plant and vehicle exhaust emissions. It melts all at once releasing an acidic shock. The acidic compounds block their gills, so it is hard for the fish to breath. The water is teeming with insect larvae changing into flying adults that will lay eggs in the water to start the process all over again. Abundant sunshine encourages algae and other microscopic plants to grow, which, in turn, feeds insect larvae, fish fry, and small crustaceans. These become food for larger fish, predatory insects, and amphibians, which eventually become the main food supply for brook trout and turtles.

Abundant Sunshine also stimulates terrestrial plants to grow and flower. Flowers attract pollinators such as bees, butterflies, and hummingbirds. Migrating birds from the South arrive as insect populations begin to explode. Mayflies, dragonflies, mosquitos, stoneflies, midges, and blackflies swarm in the air. These sources of high energy protein are required by



A small pond, created by a beaver dam across an offshoot of the Melvin River, will soon attract migratory birds and teem with insect larvae, waiting to transform into flying adults that will provide sustenance for the brook trout lurking below.

nearly all migrating bird species who must recover from winter and their migration, build a nest, mate, and raise young in a few short months. The young birds need to mature, learn to fly, and to find food all before having to depart in the fall migration. This can only be done on a high protein diet.

The most common shrubs on the meadow are red osier dogwood and witch hazel. Red osier has a showy red stem that adds some color to the drab fall and winter landscape. In spring it has a small white flower producing a berry that ripens by late summer. These fruits provide important food for migrating birds in the fall including the wood duck. Native Americans made arrows from the stems as well as reinforcement for baskets. The inner bark was used to flavor tobacco. Moose, deer, and beaver browse the plants year-round.

Another common woody plant, which looks like a shrub but is classified as a tree, is witch hazel. The "witch" part of the name originates from the use of a forked stem in dowsing for water. The wood can be rendered into an alcohol used medicinally as an astringent. The bark had many uses in Native American and early pioneer medicine. This shrub-like tree flowers in the fall, and seeds develop over the next spring and summer. When mature, the plant will expel the seeds from their pods and send them up to 20 feet beyond the plant. Beaver will harvest the stems in late summer and fall and store them in the mud as a winter food supply. Mother turkeys take their young poults to hunt for insects under witch hazel shrubs which provides protection from hawks.

Another shrub-like tree that is becoming more common is glossy buckthorn. This invasive weed from Central Asia is spreading rapidly into wet areas

such as the Great Meadow. Birds eat its luscious fruit and poop out its inner seed as they fly around. Local plant-eating animals don't like to eat it so it just keeps spreading.

New emerging vegetation feeds mice, voles, snow shoe hares, and deer. Red and gray squirrels find seeds and nuts left over from last year and will eat those as they begin to germinating and become young plants. These mammals will become prey for predators such as eastern coyotes, gray fox, weasels, and bobcats. The goshawk returns in the spring. With their powerful but relatively short wing span, they can hunt in the woods taking squirrels and ruffed grouse. Goshawks make their nest from small and medium sticks in a large tree and aggressively defend the nest form anyone coming within a few hundred feet.

Black bears are waking up from their long winter sleep. Females have given birth during the winter and suckled their young in their den. These mothers haven't had a drink or eaten a meal since winter began. They venture out into the meadow to find tender shoots of sedges, grasses, and skunk cabbage. They also prowl along the wetland edge looking for rotten logs where they might find some grubs or an ant colony. Like migrating birds, bears have a need for protein in their diet after their long winter fast.

Spotted salamanders, newts, toads, wood frogs, and tree frogs all make their way to the wetland pools from winter shelters. During the fall they produced an anti-freeze to protect their bodies from freezing. Their hearts stopped beating, and they stopped breathing until spring arrived. These amphibians

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Imagine it's summertime in the Great meadow wetlands

The sun powers most living things on our planet and makes Tuftonboro's Great Meadow hot and humid in the summer, just the way its residents like it. The sun warms the water and saturated soil, fueling the growth of large quantities of microscopic plants and animals, which feed amphibians, fish, and insect larva, which feed larger predators until the top of the food chain is reached.

The special 512-acre Great Meadow, wetland complex in Tuftonboro is a remarkable place. Located along the Melvin River, between Sodom Road and Rt. 171, it remains mostly undeveloped and in a natural state. The Great Meadow is located over one of the purist and most productive aquifers in this region. The meadow area is surrounded by a transitional forested wetland and forested slopes. The remoteness and diversity of the Great Meadow provides habitat for nearly all the plants and animals found in New Hampshire. Free from roads, speeding traffic, houses, and yards, nature can interact as it always did. Being close to the Ossipee Range, which is largely conserved, the meadow benefits from the pure water that flows from the Ossipee's undeveloped slopes.

The burst of spring greens and other colors continues into summer. Various species of plants time their flowering so there is little competition for the services of pollinators while also guaranteeing an ample food source for those pollinators all season long. Butterflies, bees, and hummingbirds work flowers throughout the day finding much more opportunity in this giant wetland than in adjacent habitats.

European Bittersweet, sometimes called Bittersweet Nightshade, is an invasive plant from Eurasia and is invading nearly everywhere in Tuftonboro including the Great Meadow. The berries of the bittersweet are ripening into an attractive red color. Don't try eating them, as these berries are poisonous to humans and animals! This can be a problem for children who are attracted to the berries' bright color. Wild birds can eat them, but the fruit has a laxative effect causing the birds to expel the undigested seed all over the countryside.

Many of the amphibians that migrated to the wetland to mate and deposit eggs have left and traveled back to their former territories. Newts, salamanders, toads, and wood frogs can be found nearly a mile from the nearest wetland. Likewise, tree frogs have returned to the forest and can be heard in the evening trilling to warn other tree frogs away from their territory. The gray tree frog is a master of camouflage. It can change its skin color to match the bark of the tree branch on which it is hiding. The frog ambushes mosquitos, moths, and other insects with a flick of the tongue as they pass by.

The song birds that migrated north to breed and raise their young are kept busy finding food for their chicks. The Great Meadow is producing large



There are numerous type of wild orchids, some of them very rare, that grow in the Great Meadow.

amounts of insects, which is the high-quality protein the young need to grow mature enough to fly south before winter. In a good year, the parents might raise two broods of nestlings. Great blue herons can be seen patiently standing or wading on their long legs looking for frogs, tadpoles, or fish to feed their rapidly growing offspring. High above, a circling and soaring osprey looks for fish below in the Melvin River. When the osprey, with its incredibly accurate vision, spots a fish, it dives directly into the water (often below the surface) before launching itself back into the air with a fish in its talons.

After most other song birds have stopped singing in the Great Meadow, the common yellow throat will still be warbling. At the same time, water striders are hunting down mosquito lava and sucking out their body juices. Thank you, water striders!

Brook trout that survived winter and the difficulties of the spring melt have enjoyed cool oxygenated water in late spring and early summer. Now the unshaded portions of the river in the meadow begin to heat up. Water volumes are diminishing as rainfall is less common. The brook trout are escaping upstream to cooler, shaded tributaries or downstream where the channel is deeper, and additional water enters from shaded streams. In the early morning, painted turtles can be seen basking in the sunshine on logs by the stream bank. They feel safe out in the large wetland where it is easy to spot an approaching predator.

Wild turkeys have mated, and the young have hatched. By summer the poults are half grown and can fly for short distances. Mother brings them to the mar-

gins of the meadow to find insects to eat. They try to stay under partial tree or shrub cover where insects are still plentiful but where there is also overhead screening from hawks.

Young rodents are abundant and easy prey for foxes, coyotes, and hawks. Their parents gradually stop feeding them, and they must learn to find food on their own. This puts them in competition with their parents. Last year, there was an abundant acorn crop, a huge supply of pine cones and seed, as well as a good crop of hemlock and other tree seeds. This overabundance of food encouraged a high rodent survival rate this past winter, and a large rodent population increase this spring. These factors have created a natural crisis this summer as there now is little food to go around, and these rodents must take greater risks to find food.

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Imagine it's autumn in the Great Meadow wetlands

Fall is as colorful at the Great Meadow as everywhere else, only the timing might be different. Trees growing under stressful conditions tend to turn color and drop their leaves sooner. Sometimes as early as late August. Red maples adapt well to a range of soil moisture conditions including wetness. They are one of the more common trees in forest wetlands and edges. The name implies the beautiful color they change to at the end of the season. Deciduous trees, they shed their leaves annually, salvaging all the chlorophyll and nutrients in the leaves before letting them go. These are stored in the wood until spring then reused to nourish the new leaves. All that is left of the old leaf is the skeleton of its cells and a few minerals. It is iron oxide that makes red maple trees so bright. Iron is common in wet soils. These beacons of color stand out from the green of other common wet site trees, hemlock, balsam fir, and spruce.

The color begins to change in the meadow also. As the leaves of meadow shrubs fall, a reddish hue begins to show against the yellow, green, and brown of sedges and grasses also turning with the season. Look closely; the red haze comes from the bark of the red osier dogwood, common in the meadow. Its fruit that matures in late summer is an important food supply for migrating birds.

Many of the birds we identified in the summer appear to still be here in early fall, but they are not. Our resident birds have already begun traveling south. The individuals we see now are from further north. They are stopping by to rest and feed in their preferred habitat. There are places in our country where certain habitat types have been eliminated through agricultural and commercial or residential development. This land use change interrupts or even eliminates certain travel routes for many species of migrating birds. That is why it is very important to preserve and protect some of our natural gems such as the Great Meadow.

A few of our local bird residents remain for now. Bald eagles and osprey will stay with us fishing until waterbodies begin to freeze. Chickadees, nuthatches, and pine siskins will often stay at home as long as the food supply lasts.

In the Melvin River, brook trout are stirring from their summer hideouts and moving upstream. They are looking for just the right place to spawn. Tumbling water or a spring welling up in the bottom of the stream may be just right to keep a bed of gravel clean of silt or sand and supplied with fresh moving water. When the female finds this place, she will create a small depression in the gravel bed with powerful strokes from her tail. She then lays 20- 60 eggs, so they drop into the crevasses between the gravel pieces. An accompanying male, who may have fought off several other males, will cover the depression with milt, sperm, to fertilize the eggs. The female then



This is sphagnum moss, an important wetland plant. Thousands of years of accumulation near the tree line creates a peat bog that acts like a huge sponge, absorbing floodwater and releasing it slowly to the aquifer below.

refills the depression with a few strokes of her tail. The eggs are now secure within the gravel structure. The trout pair will continue this process several more times until she distributes all her eggs. The eggs will develop slowly through the winter and not hatch until early spring.

We may be able to catch a glimpse of a beaver family preparing for winter. They inspect and repair the dam daily. While they usually harvest food at night to reduce the chance of meeting predators on land where they are most vulnerable, they may do some dayshifts if they are behind schedule. The beavers fell trees by chewing an ever-deeper ring round the base. They can slice off a ¼ to ½ inch wood chip with each bite from their incredibly powerful jaws and sharp teeth. The beaver cut up all the branches into manageable pieces and drag them into the water. They store them for winter feeding by jamming one end into the muck at the bottom of the pond. Beaver also chew off the outer bark of pieces too large to drag and then eat the inner bark that contains sugars and proteins. Like moose and deer, beaver have the ability to digest wood cellulose. Throughout the winter they will access the limbs stored at the bottom of the pond under the ice. In the spring there will be a profusion of tree limbs floating on the surface or stuffed in the dam without a shred of bark left on them.

If we are quiet, we may see a herd of wild turkeys pass by, darting in and out of the tree and shrub cover looking for the last of the insects and wind-blown seeds. The brood consists of mothers and their poults who have teamed up for mutual protection over the summer. The young turkeys have grown to nearly adult size and they are becoming wiser about the world. The mothers have taught them that there

is more security with a cooperating group. As they look for food they periodically check for predators. In the group it is likely at any given time at least one individual is checking while the others are looking for food. They communicate with clucks and calls. Quiet clucking is used to locate each other and remain assembled as a group. Mothers give various commands to escape predators or call in the family when they are too dispersed.

Fall is mating season for moose and deer. There was a time when the Great Meadow supplied important habitat for moose. In summer they would have developed wallows to cool off in to get a break from biting insects. Moose would also feast on aquatic plants in the river and in beaver ponds. In fall, winter, and spring they could navigate the meadow with their long legs and browse on wetland shrubs. You can still find a few moose tracks, usually in the late fall and winter, but moose populations are in decline in NH. Warming temperatures, due to climate change, are making summer heat stressful for them. There is also a current plague of winter ticks.

White tail deer bucks will be patrolling the wetland edge. They leave scent scrapes to warn other bucks and advertise their services for does. Deer like to stay out of the open areas during daylight, but the edge provides cover and food, so a doe will often pass by. If she is ready and finds the buck's advertisement agreeable, she will hang around looking for a 'hookup.'

Wood turtles are moving from forest areas to the wetland edge looking for the right spot in a bog or pond to overwinter. They look for a secure location

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Imagine it's wintertime in the Great Meadow wetlands

Winter is a harsh time in the Great Meadow. Snow and ice cover the once green sedges, and beaver ponds are frozen solid. Even on a rare sunny day, cold breezes swoop in to chill the air. Many of the part-time residents have traveled south; the remaining wildlife have learned to adapt.

Brook Trout in the Melvin River look for favorable stream hydraulic structures where they can rest without fighting the current. They rest and wait for morsels of food to drift by. That food is often an insect larva drifting in the current looking for smaller insect larva or tiny freshwater shrimp. A trout which is trapped in a beaver pond will find more food but may struggle in the oxygen-poor, stagnant water.

The beavers remain active in the winter but are rarely seen out of the water. They worked hard during the fall to fell trees, chew the branches into pieces, and jam one end into the mud at the bottom of the pond. Once the thick ice makes it difficult for the beavers to forage out of the pond, they can still swim from their lodge to the stored branches and eat the bark, twigs, and buds. Beavers have special enzymes and micro organisms in their gut that breaks down wood fibers into carbohydrates. Baby beavers are born in the lodge during winter and create a high demand for food. If the family begins to run out of stored food, they will be forced to find an opening in the ice and venture into the forest for new trees to fell. Predators will be watching for this.

Mink can often be observed moving in and out of the water along the stream bank looking for prey. They are quick and aggressive, catching and eating just about anything their size and smaller. Fish and crawfish are their main meal, but an unlucky vole or hibernating reptile is fair game as well.

Small mammals like mice and voles are still active but try to remain under the snow, creating small tunnel systems from their winter sleeping quarters to supplies of grass and sedges at ground level. These small mammals present a base food supply for most predators. Each species has its own hunting technique but listening carefully to the sounds of the voles scurrying around or eating is common to all.

Fox, coyote, bobcat, and owls will wait patiently and listen intently. When they think they have the right location they will pounce on the spot and often find lunch. Bobcats are also specialists in hunting ruffed grouse and snowshoe hares. Grouse feed on tree buds high up and dive into deep snow to keep warm when not feeding. The bobcat detects the grouse with its keen sense of smell and digs after the birds. If the grouse attempts to escape by bursting into flight, the bobcat can snatch it out of the air with its long claws.

We are not likely to see any of these events since wildlife can see, smell, or hear us and will escape long before we arrive. But in winter, animals leave their tracks. The most common tracks we will see are white



In winter the Great Meadow seems cold and desolate, but nonetheless it is teeming with life.

tail deer. Mostly the deer will be wandering around looking for food. Generally, they eat buds and twigs of young trees and shrubs. The best feeding is out in the meadow, but deer feel vulnerable out in the open, and they don't like to get their feet wet. They will spend a lot of time near the edge where there is food but also cover. Deer like to sleep periodically for several hours, day and night. When it's very cold, they like to sleep under dense evergreen cover. This dense winter canopy tends to hold in the daytime warmth and to prevent the heat from radiating into space.

Conifer cover in winter is also important to many other species of wildlife, especially birds. You can follow turkey tracks from their daily searches for food to their favorite roosting trees. Turkeys don't like walking in deep or powdery snow and may remain in their roosting trees for days after a snow storm. Their favorite winter-feeding locations are spring seeps on the lower slopes above the meadow. The water flowing out of the soil is above the freezing temperature, and these springs will remain unfrozen throughout the winter. Green vegetation, insect larva, and worms can be found here in this seasonal oasis. You can often see where the turkeys have overturned small rocks and pebbles looking for flat worms. They stay in flocks over the winter to protect one another. Females and young of the year make up the largest groups. Mature males, normally rivals, tend to pair up or form small groups for protection. If you watch a flock, you can notice that one of the group is always watching out while the others feed.

One of the very important things about Tuftonboro's Great Meadow is its remoteness, and it contains most of the habitat features needed by nearly

all our native wildlife. We have developed so much of our town that few places like this exist anymore. There is still wildlife out there but only those that can fit into the habitat that's left over after development. Many species, particularly the ones that stay all winter and breed here, need some special habitat types to survive. Species like wild turkeys need certain specialized places during the year to survive. They need access to those spring seeps in the winter. They also need older, taller, hemlock trees with thick branches for roosting on cold nights. They need a tight brushy cover under trees to nest and be difficult to find by predators in early spring. The mothers need a semi-open area with lots of insects but with overhead hiding cover to raise their chicks. Every other wildlife species has a similar list of special needs. Tuftonboro's Great Meadow area has it all.

The Tuftonboro Conservation Commission has been working hard to preserve this natural gem for future generations. Recently we applied for and received two significant financial grants to purchase two properties in the Great Meadow that are for sale. We will be entering into an agreement with the Lakes Region Conservation Trust to create an easement to permanently protect this and other town properties in the Great Meadow area for the enjoyment of future generations. We would like to partner with other land owners around the meadow for similar conservation protection. Land owners can still practice forestry hike, hunt, and fish on their land but know that it will be protected from development forever. There are also tax benefits available for these donations.

**Steve Wingate, Chairman
Tuftonboro Conservation Commission**

Springtime, continued from Page 2

found shelter under dead leaves and rotted wood. Now they all make a beeline for the water, sometimes traveling over melting snow and ice. Once in the water, breeding begins. Male frogs and toads establish territories and sing to attract a mate. These rock stars of the natural world sing into the night and early mornings competing for females. Fights often break out between rivals who have not provided enough space between each other. Salamanders develop gills, so they can remain under the water until summer. All these amphibians will lay eggs in strings, chains, or

clumps often attached to wetland plant stems.

Racoons go into the meadow at night and seek out the spring bounty of frog eggs. Great Blue herons arrive back from their southern second home. They stealthily walk through the wetland wading on their stilt-like, long legs feeding on frogs, tadpoles, and fish. They make stick nests in trees that are flooded by beavers. The high water around the tree helps protect nests from climbing predators such as racoons.

This is only a small sample of all the natural activity that is happening night and day in the Great Meadow area. As we humans spread out over the

landscape changing things to suit our needs or desires, we also change the natural habitat. Roads, culverts, houses, and lawns interrupt where wildlife can travel and live. It's good to save a few special places where the natural world can carry on almost as it did before people changed everything. The Great Meadow is one of those very special places. Join the Tuftonboro Conservation Commission in trying to save this and other special places.

**Steve Wingate, Chairman
Tuftonboro Conservation Commission**

Summertime, continued from Page 3

This, however, does create more food for predators. It also makes the tick problem worse for us. In the nymph stage, ticks rely on rodents for a blood meal to develop into adults.

Black Bears are now in breeding season. Mothers with cubs will avoid males. She will bring her recently weaned cubs to the meadow to look for emerging, succulent plants. Frogs, snakes, and young rodents are fair game as well. The edge of the meadow is home to raspberry, blackberry, and blueberry bushes which bears find quickly when the berries are ripe. Other mothers are beginning to drive away their 1½-year old cubs. These yearlings will be moving cross country trying to find territory not occupied by other bears. If their mother has taught them the fine art of opening trash cans and pulling down bird feeders, young bears may be harassing human neighborhoods for the first time. Bears are true opportunists. Once they learn about all the good stuff we throw away they will never

reform from trash picking and littering.

Racoons are working the wetlands at night. You can see their fresh tracks in the morning along the muddy banks. If you had night vision you could see them in the shallow water. They look like they are washing their hands but really, they are working their paws through the muddy bottom, feeling for crawfish, worms, or frogs hiding in the muck. You might see a mother racoon with several young mimicking her behavior looking for food.

Beaver have recovered from winter stress, and young kits were born in the spring. The family will often expand their territory at this time by building dams up and downstream from the original pond. You could be surprised to be in the vicinity of one in the water. They will sound the alarm by slapping the water with their large tail making an impressive whack sound. Often summer is the time when families separate if the food supply is running short behind the dam. The parents are monogamous, mating for life, so

they will move together with any new young. Older family members will drift off to find their own habitat. Beaver ponds produce habitat for a large diversity of wildlife. Even after the pond is abandoned, it will continue to serve as a mecca of wildlife activity for many years.

This is only a small sample of the natural activity that is happening night and day in the Great Meadow. As we humans spread out over the landscape, changing things to suit our needs or desires, we also change the natural ecology. Roads, culverts, houses, and lawns interrupt where wildlife can travel and live. It's good to save a few special places where the natural world can carry on almost as it did before people changed everything. The Great Meadow is one of those very special places. Conserving the Great Meadow and a surrounding, protective buffer is one of our top priorities.

**Steve Wingate, Chairman
Tuftonboro Conservation Commission**

Autumn, continued from Page 4

underwater that won't freeze and then hibernate there. Wood turtles are becoming rare due to habitat destruction from development. They also suffer from being run over when crossing roads. Box and Blanding's turtles need similar habitat and are also declining rapidly in NH. Even under ideal conditions these turtles would be slow to recover. There are few adults to find each other and mate, and it takes over 10 years for them to be mature enough to produce

young. The Great Meadow is ideal habitat for these rare turtles and still has the size and all the habitat ingredients to support them.

Ducks can be seen in the Melvin River and beaver ponds throughout the fall, moving south. The Great Meadow is an important rest and refueling stop. Dabbling ducks can find aquatic vegetation in the backwaters and ponds while diving ducks, like mergansers, are usually the last to leave and can find small fish in the river.

The Great Meadow area is a great place to make these observations. The Tuftonboro Conservation Commission is working hard to protect this natural gem in our region. We are also proposing a trail that would provide access and an observation platform that would allow visitors to sit quietly and observe or to photograph all these events. Please support our efforts.

**Steve Wingate, Chairman
Tuftonboro Conservation Commission**



Shortly after leaving the parking lot and starting the descent to the Great Meadow, one might notice the stone foundation of an old barn. Photo courtesy of Ray Everest.

Relax, close your eyes, imagine a sunny spring day...

Relax, close your eyes, and imagine a warm, sunny, spring day. You just want to be out in it celebrating the end of winter. You pack up some water and snacks and head for the trail. First, you would visit the kiosk to get the latest trail information. Then you pass by an old barn foundation and descend from the parking area through a mixed pine and hardwood forest that was once a field in the 1800s, to an evergreen, wetland forest. You walk through islands of pine, hemlock, and spruce and across boardwalks over wet soils, with balsam fir and witch hazel on either side. After a pleasant 20-minute walk through a quiet forest of old-growth trees, you arrive. Suddenly, the darkness turns to a bright opening, and you have arrived at the Great Meadow Wetlands.

Built within and beyond the forest and brushy edge is an observation platform. It's just high enough to give you an unobstructed view of about 250 acres of wet meadow and forested edges. You notice how quiet it is. No sounds of traffic, lawn mowers, or chainsaws. Listening very hard you hear just a trickle of water flowing as it meanders in the Melvin River, a bird song, and breath of a breeze through the trees. There

is the smell of fresh spring grass and flowers or the whiff of balsam from the forest. You hear the trill of a red wing black bird and the buzz of a bee on a nearby blueberry flower.

You're sitting on a comfortable bench and dozing in the warm sunlight when you sense some movement, and you see a deer browsing along the meadow edge eating swelling buds and new spring growth from the young trees 100 feet away. An early season dragonfly helicopters by and settles on the rail of the platform. Then your patience is rewarded when you see an osprey plummeting from the sky into the river. The osprey quickly emerges from the water with a trout in its talons and lifts itself back into the air. It shifts the fish to be more aerodynamic and flies off to feed its mate who is incubating their eggs. After that, you remind yourself to "bring the camera next time."

Your trip back completes a loop, at first crossing forested islands between boardwalks over wetlands, springs, and streams. There are animal tracks in the soft mud to identify as you pass on a boardwalk leaving no trace of your passage. Then moving upslope through dense balsam fir and white pine, you

arrive at an open area. You recall that this was an old gravel pit that was taken over by invasive plants and nearly impossible to walk through. The Conservation Commission removed those invaders and replaced them with native, wildlife food plants. It feels good to know that was done.

As you make your way back to the parking area you notice a group of children with an adult coming down the trail. They stop at a tree with a number on it and the adult reads a message on her cell phone. It's from a program provided by the Conservation Commission that gives information about special places along the trail that are a part of our pioneer history or wildlife habitat or what this tree is and its importance to us. You remember hearing that this trail is not just a place to walk and explore but a place of education where you learn about the natural world and why it's important to save a few special places.

The phone rings, and you wake up; oh, just another robo-call. As you become fully conscious, you think, wouldn't it be nice if there really were a Great Meadow Trail?

You can help make it happen. See below.

Help make the Great Meadow Trail a reality, Here are some ways in which you can get involved:

1. Make a pledge or a cash contribution. Donations should be sent to The Tuftonboro Association, P.O. Box 121, Melvin Village, NH 03850-0121 and should be clearly noted that the gift is for the **Great Meadow Wetlands** project.
2. Have a skill? Are you an experienced carpenter or builder? Donate your time and talents and help build the parts and pieces of a kiosk, steps or a viewing platform. Informative signs need to be created and placed in appropriate locations.
3. Have you a strong back? Donate your energy to trail clearing and help safely remove invasive plant life where it occurs.
4. Any questions? Call the town offices at (603) 569-4539.



The beginning of the trail leading to the Great Meadow is an old logging road.

Photo courtesy of Ray Everest.

The Tuftonboro Association
P.O. Box 121
Melvin Village, NH 03850

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