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Shelby

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Crawford County landowners plant trees "nature's way"

by Joyce Bohner

From childhood we know that "tall oaks from little acorns grow," but as adults we tend to forget that trees grow from seeds, not just from little trees. Two area landowners are getting back the basics of tree planting, planting forests something like mother nature did centuries ago.

Loren Nelson and Bill Norelius have both planted several acres of Conservation Reserve Program land into directly seeded trees. Norelius planted 7.6 acres of directly seeded trees near his new dam.

The trees will eventually add beauty to a family recreation area. Direct seeding is a new/old way of planting trees. Instead of buying hundreds of saplings and planting them in neat rows, the planter broadcasts thousands of tree seeds all over land that has been prepared for it. It was in much the same way that birds and wind broadcast acorns, walnuts and other seeds to make woodlands centuries ago.

For example on Nelson's 14.7 acres, he broadcast 40 bushels of walnuts, 30 bushels of ash, 30 bushels of bur oak and 15 bushels of black cherry. In addition, although his plan called for 30 bushels of red oak, Nelson was allowed to substitute 60 bushels of walnuts, apples and buckeyes he collected himself.

The land is on a steep hill that is not highly suited for farmland. Nelson said, "It was forest originally and I thought it should be suited to be forest again." Nelson is not inexperienced in the tree planting business, he owns and operates Evergreen Acres, a Christmas tree farm near Denison.

Bill Norelius wanted a natural looking forest to go by his pond. Although he planted saplings in rows before, he knew they would look like trees planted in rows for a long time. Terry Argotsiner of Stalecup Ag, who manages the Norelius farm promised Norelius he would look into options for a more natural looking stand of trees. Through his research, he heard about the direct seeding being done in northeastern Iowa.

"We planted all those saplings by hand," Nelson recalls getting started in the tree business. The direct seeding is a little less labor intensive. First the ground is

prepared. If it has been corn ground it must be disked. Bean stubble can be planted directly. Pasture or grassland must first be killed with herbicide and then disked to prepare it for the seed.

The walnuts and larger seeds are then dumped into a fertilizer spreader or similar implement and broadcast over the acres.

The smaller seeds can be planted with a grass seeder. Once the seeds are spread thickly over the acres, the next step is to pack them in with a harrow drag or cultipacker.

All of this must be done in the fall before the ground freezes. Then in the spring, the land-

owner maintains weed control by herbicides and mowing for a season or two. The rest is left to Mother Nature for the next 10 years.

Broadcasting the seeds has several advantages according to Joe Schwartz, district forester.

First, the diversity of seeds ensures that the species best suited the area survives. Second, thousands of small trees over a field are less vulnerable to deer and wildlife than saplings planted in rows. It also creates a more natural looking forest and is probably better at decreasing soil erosion.

Schwartz sets three priorities

for this direct seeding. The first is long term reforestation. The second is erosion control on steep slopes and the third is habitat development for wildlife. Direct seeding of trees is fairly new to Iowa.

It began in northeastern Iowa a few years ago. It has now spread across the state. Crawford County's first three direct seedings are scheduled this year. Norelius's and Nelson's were planted in October. A small area was planted on some land owned by Glenn Vetter in November.

Norelius's trees were planted through the Resources Conservation and Development

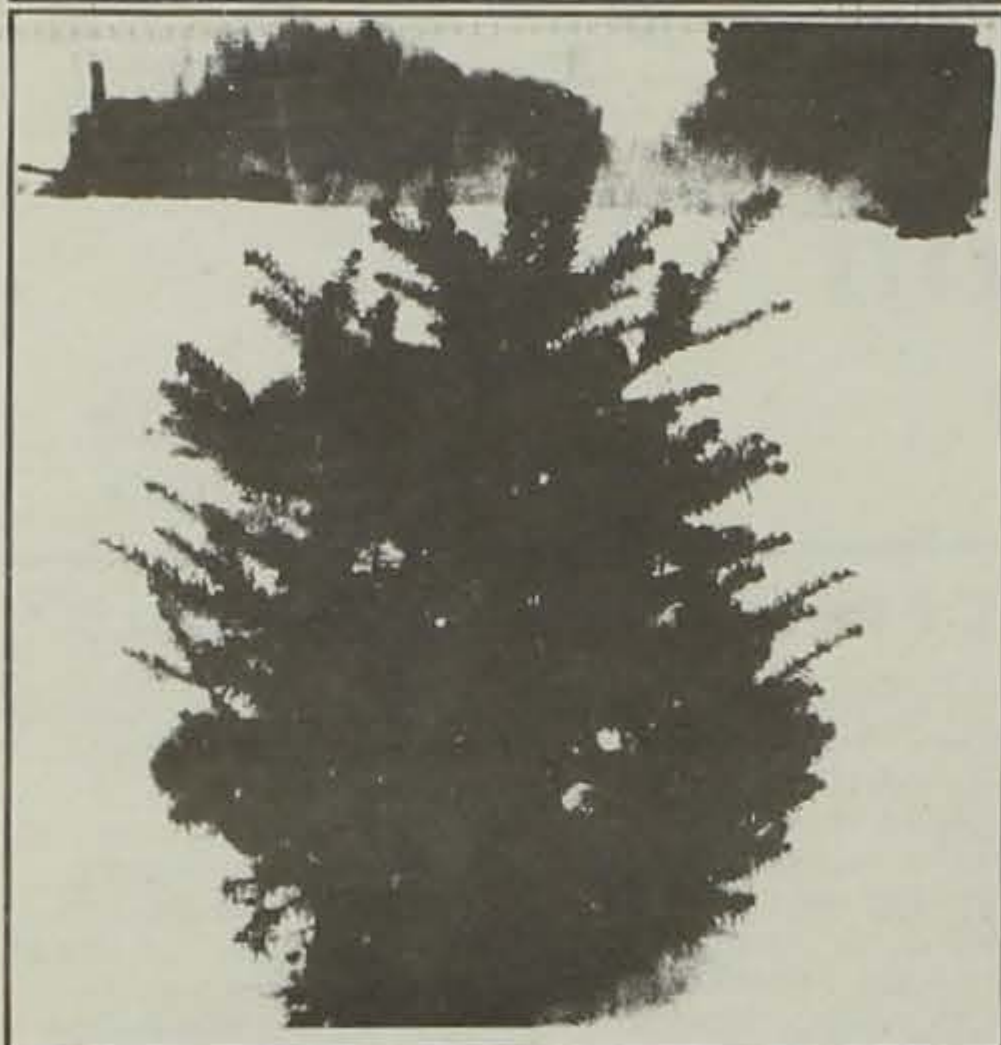
(RC&D) office. Nelson rented a machine and took care of his plantings himself.

The landowners are now responsible for maintenance. After the first year or two the trees are left to grow. If after 10 years a good thick stand is there, they may mark the best trees and thin out others with a chain saw to give the good ones room to grow.

The trees are planted in a 10-15 year CRP program, but it will take at least 30 years before any forestry income could be made off of the trees. Most landowners who do tree plantings are really doing it to benefit the next generation.



A few Crawford County landowners decided to try a "new" way to plant trees, broadcasting the seeds over a large area. In top photo Loren Nelson and his helpers plant the trees with a manure spreader. In photo at left, they load the seeds on the planter. In photo above, Bill Norelius's trees are planted.



The SWCD provides winter hardy, quality trees like this one, planted in the spring of 1999.

Windbreak planning assistance available

If you're interested in establishing a windbreak around your farmstead, the Crawford County NRCS is available for assistance.

We can help you evaluate your site, design a windbreak and make variety selections. In addition to this, you may qualify for cost-share assistance, if you are a rural landowner.

Windbreaks improve the quality of life in many ways. They help control wind & soil erosion, reduce wind chills and

become living snow fences. Planted around country homes and farmsteads, windbreaks protect people and livestock while also providing natural beauty to the landscape, wildlife habitat, and increasing property values.

For more information & to apply for cost-share, contact the Crawford County NRCS office at 141 North 7th Street, Denison, Iowa 51442 or phone 712-263-4123.

Crawford County SWCD has trees for sale

The local SWCD Commissioners are selling trees and currently have an excellent selection of windbreak stock available for spring planting. Spring tree planting season will be coming soon.

Choose from a wide variety of deciduous trees, shrubs and conifers, all of which are winter

hardy and locally grown.

If interested, stop at the NRCS office and pick up an order form. Trees will be available for pickup in mid April.

Order early for the best selection, as some sizes and varieties may be limited. There is no minimum order and you don't have to qualify for cost

share or even be a rural landowner to place an order.

The Commissioners use the money generated to fund several local efforts including conservation education projects in area schools & churches, sponsoring of the youth poster contest, and the annual SWCD scholarship fund, payment of membership dues, etc.



This windbreak, established in recent years at the Howard McMinimee farm, is already providing a multitude of benefits to the adjacent farmstead.

Notice: The Crawford County SWCD Commissioners would like to remind landowners to maintain their terraces. Terraces under maintenance agreements must be repaired. If no longer under agreements, cost-share is available to fix broken terraces.

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A message

You may have noticed from the front page that your Quad-District Conservation News has become that Quad-County Conservation News. The name change reflects the addition of Crawford County to the publication. The Crawford County Soil and Water District Commissioners have joined the publication at the invitation of the other four districts.

The Quad-County Conservation News will continue to provide stories and information about conservation efforts in the SWCD Districts of East and West Pottawattamie, Shelby and Harrison Counties. We welcome Crawford County and hope that farmers receiving it for the first time will enjoy the publication. We welcome comments from readers.

If you noticed a mistake on the address label or if your household is receiving two copies, please let your local NRCS office know and we'll make the necessary changes.

Joyce Bohnker

Quad-County Quarterly Conservation News

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This Scotch pine, planted in 1986 was a healthy tree a year ago.

Prairie potholes home to wildlife

"Ooh, yuck!" you cry as the goo from the bottom oozes up between your toes. A sulphury smell reaches your nose. A winged creature cries out in alarm and flaps away. Something green and slimy "plunks" into the water and dives into the tangled plants near your feet. Are you in danger? No. You have just entered the Wetland Zone!

Lucky you! You've found a fascinating, beautiful, and useful "prairie pothole," one of the many types of wetlands found across the United States and Canada. The winged creature was a mallard duck whose afternoon siesta you disturbed. The "plunk" was from a frog. The smell was from decaying plants that create the soil oozing up between your toes.

WETLANDS — the word defines itself. It's land that has water in and on it. It's a wet spot, a bog, a marsh, a swamp, a lake, a river, a slough, an oxbow, a pothole. It's a place where you can get your feet wet!

There used to be many wetlands in the upper Midwest. But, since the mid-1800's we have been filling and draining wetlands at a rapid rate to gain cropland, to make way for towns, cities, industries, and roads. Some states have lost 60 to 98 percent of all wetlands.

Wetlands are an important natural resource. They are just about the most productive ecosystem on Earth. Most wetlands in this region were formed as glaciers melted some 10,000 years ago. As the ice withdrew, it left behind thousands of depressions in the ground.

What makes a good wetland?

- * Wetlands are important water storage areas, especially for the heavy rains. They release their water slowly, and help prevent flooding of streams and rivers.

- * Wetlands trap sediment that may erode from upland acres. This prevents silt from clogging

up the streams. Wetlands trap many chemicals that are carried on the silt, preventing them from polluting rivers, streams, and groundwater.

- * Wetlands filter out nutrients that run off upland areas. Wetland plants use up many of these nutrients, keeping them out of streams and rivers where they would over-enrich the waters.

- * Wetlands serve as natural sponges, holding excess water and increasing soil moisture. In some areas, wetlands recharge groundwater systems.

Wetlands provide cover, food, and water for hundreds of species of wildlife year-round. These include insects, fish, reptiles, amphibians, birds, and mammals.

- * Wetlands provide recreation for thousands of people each year. Wildlife watchers, photographers, hunters, trappers, and many others use wetlands. Government agencies, private conservation groups, and concerned individuals are all working hard to educate people about the value and functions of wetlands by protecting and restoring them.

(Written by James Peas, ISU Extension Wildlife Specialist)

Scotch pine under attack

by Lynna Miller
Soil Conservation Technician

Scotch pine has been planted for Christmas trees, windbreaks, wildlife habitat, and ornamental purposes for many years in Iowa. The trees have always been a reliable, fast growing conifer, and therefore have been widely used.

Recently, however, this species has come under attack and is suddenly dying.

There appears to be a number of factors and organisms that are impacting the decline of Scotch pine. Since the late 1980's there have been a number of weather extremes, including drought and flood conditions.

Since the Scotch is not a native plant to Iowa, the tree is less adaptable to these unpredictable growing conditions and ultimately more susceptible to insect and disease problems.

There are a number of disease and insect pests that can attack Scotch pine, but the two that appear to be causing the most problems include a small bark beetle (*Ips* spp.) and a wormlike critter called a nematode (*Bursaphelenchus xylophilus*).

Bark beetles, in general, attack stressed and weakened trees. Pitch (sap) coming from the bark, small holes in a scattered pattern and sawdust on the bark and ground are indications of beetle attack. By the time these signs are visible, the tree cannot be saved.

The disease caused by the nematode is called pine wilt. Other conifers are susceptible, but the problem is most commonly found on the Scotch pine. The spread of the nematode is accomplished with the help of the pine sawyer beetle (*Monochamus* spp.), which is a wood-boring beetle.

The female beetle lays its eggs under the bark of dying pines, where the nematodes already exist. When new beetle adults emerge from these dead trees they are contaminated with lots of microscopic nematodes

ready to jump off at the next pine tree the beetle visits. New adult beetles feed on young shoots of healthy trees, and the nematode enters twigs through the feeding wounds.

Once the nematode enters, they quickly reproduce and begin to plug the water-conducting system of the tree. It isn't long before branches turn yellow and brown and then die. In some cases, the branches brown one-by-one and in others, browning occurs throughout the tree. In either case, trees are usually dead within one to three months.

We haven't been able to determine which of these pests is actually causing most of the death in Scotch pine.

It is very frustrating to stand by and watch these trees die, but the best management method is sanitation. Remove dead and dying trees immediately and destroy all removed material. The bottom line is that there are no feasible means of control for either of these problems.

Consequently, the ISU

Extension is currently advising that the Scotch pine should no longer be planted in the Iowa landscape for long term uses.

To reduce stress on remaining conifers, including pines, promote good air circulation with adequate spacing between trees and good weed control. Avoid drought stress with mulching and watering during dry periods.

As mentioned above, prune out dead or diseased branches on otherwise healthy trees.

When planting a new windbreak, consider alternating rows of conifers with deciduous trees or plant a windbreak consisting of only deciduous shrubs and trees.

Contact your local extension office to answer questions or assistance in diagnosing your particular problem.

There is assistance available to rural landowners through your local NRCS if you're interested in planting a new windbreak or renovating an existing one.

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Manhart family works together to practice conservation

by Joyce Bohnker

The family farm is becoming a rare commodity in this country, especially a family farm where different generations work side by side to provide for their families.

The Lynn and Eva Manhart family is proof, that although rare, this old-fashioned family tradition is still alive and well on their farm in Harrison County.

Lynn was born and raised in the same house he now lives in with Eva, his bride of almost 50 years. The couple raised five children there and two of their sons, David and Dan, are now farming with their father.

The first Manharts purchased the farm in 1915. When Lynn's turn came, he bought out his sibling's interest and became the sole owner. He expanded over the years, until he and his sons now farm more than 1,600 acres.

Anyone who has ever been part of a family knows that working with family members can actually be more difficult than working with strangers. But the Manharts have cooperated well. If the brothers or father disagree on how things should be done, they have always found a compromise without hurting the strong family ties.

The Manharts' success in compromise is proven both by the laughing camaraderie evident when the family is together and the strong conservation ethic that is practiced in their farming operation.

The Manharts have been practicing good conservation since long before it became mandatory.

Lynn recalls the early years. "I

never really liked those earlier terrace models, but when the new bench type came out, I started putting them in."

That was in the early 1970s and he's never stopped. "I put up terraces every year," he said. In fact the Harrison County NRCS records show the Manharts have more than eight and one-half miles of terraces on their farm.

Of course conservation is more than terraces, a fact that the Manharts are well aware of. They also keep headlands and waterways seeded and functioning and have been no-tilling for the past six years.

In addition, they have built three ponds on their farm, including one big dam in 1980. The pond has helped control flooding onto their home grounds and provided a peaceful, scenic spot for pure enjoyment.

Their outstanding record in conservation practices earned the Manharts the Harrison County Millennium Farmer award presented at the Farm Progress show last September.

It was not the first time their efforts have been recognized. They were also named the 1995 owner/operator division winners by the Harrison County Soil and Water Conservation District.

The Manharts admit some of their conservation efforts were worked out by compromise. Lynn wasn't too sure about no-till at first. But when his sons wanted to try it, he agreed.

Dan said, "The chemicals have gotten better and the equipment improved too. We tried it once and it worked."

Lynn agreed, "Now we have only a few bottom ground soybeans that aren't no-tilled."

Dan and David are both pleased with the success of their no-till operations. "The terraces last longer when you use no-till. They don't silt up as fast," Dan said.

David said, "We rented some ground in 1996. The owner has been surprised by the lack of erosion we've had on that land after some of these big rains. It's all due to no-till."

The family believes that conservation practices should work together just as their family does.

Lynn said, "I'm also a big believer in headlands. I've never torn any up. In fact, I've been seeding some more down."

"The combination is what works," he added. "You have to do both terraces and no-till and the other practices."

Lynn and Eva enjoy having their sons involved in the farming operation, especially since they know they can trust them to do the right thing for the land.

It has made the couple free to travel. They usually go south for the winter, "although not nearly enough for Mom," Dan jokes. And they also take a fishing trip to Canada every summer.

Lynn knows he can trust his farm and his livestock to his sons. At one time Lynn had the whole range of livestock that was common when he first started farming. The chickens were the first to go, several decades ago. He got out of hogs just a couple of years ago and now keeps only cattle.

The family keeps a 70 head stock cow herd and finishes out their own calves. They also buy feeder calves to finish out. "It can be anywhere from 200 to 500 depending on the price," he said.

Besides traveling, the Manharts enjoy family time. Dave and his wife, Cindy, have four children, Michele, Scott, Kelli and Jill. Dan and his wife, Peggy, have

one daughter, Melissa. Besides Dave and Dan, the elder Manharts have three other grown children, Vern who works for Bunge Co-op in Council Bluffs, Linda, who lives in Minden and works as a computer programmer in Omaha and Calvin who is also a computer programmer.

The family is active in the United Church of Christ and Eva is secretary of the women's fellowship. She also keeps busy with other activities including the G.C. club, a neighborhood club, and the Neola High School Alumni.

The men are involved in the Cattlemen's Association and the Corn and Soybean Association groups as well as the Farm Bureau.

There is no doubt that farming can be a risky business and the last few years have been especially tough. But the Manharts have no regrets.

Lynn said, "The farm is the place to raise a family. It's been good to me and I'm satisfied."

Dan added, "I like the life. I hope that we can continue."

David said, "It's a good life. Is it profitable? I don't know right now. But I hope it improves."



The Manharts: Lynn and Eva, Dan and Dave

Earthworms good for soil

The following are 10 facts about earthworms and how they help the soil and productivity:

1. A ton of earthworms supplies \$35 of fertility and \$4000 worth of natural tillage.
2. An acre of well fertilized, low-lying pasture can easily yield half a million earth worms.
3. Some Canadian no-tillers have made money selling the earthworms in their fields. Buyers have paid as much as \$20 per ticket per night- that's \$400 per night for a crew of 20.

4. Earthworms can grow to about eight inches in length. Almost 800 earthworms can occupy one square yard of soil. However most fields in the United States have between 100 to 400 worms.

5. Earthworm burrows increase water infiltration. Some burrows have been found to travel as deep as 50 inches below the soil surface.

6. Tillage tends to reduce earthworm populations by speeding soil drying and freezing rates, disrupting their burrows and burying the plant material they use as food.

7. Most herbicides are harmless, although triazine herbicides are mildly toxic to earthworms.

8. Synthetic pyrethroid insecticides are harmless to earthworms.

9. Anhydrous ammonia, although toxic to earthworms that come in direct contact with it, can benefit earthworms if it's not used every year. Anhydrous ammonia provides fertility and increased crop growth, which in turn provides increased crop residue for earthworms to feed on.

10. When earthworms were added to fields in New Zealand, where earthworms don't occur naturally, pasture productivity increased by 72 percent.



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Something to Think About

(Taken from Phillip M Harter, MD, FACEP Stanford University School of Medicine.)

"If we could shrink the earth's population to a village of precisely 100 people, with all existing human ratios remaining the same, it would look something like the following. There would be:

- *57 Asians
- *21 Europeans
- *14 from the Western Hemisphere, both north and south
- *Eight Africans.

- *52 would be female
- *48 would be male
- *70 would be non-white
- *30 would be white

- *70 would be non-Christian
- *30 would be Christian

- *89 would be heterosexual
- *11 would be homosexual

Six people would possess 59 percent of the world's wealth, and all six would be from the United States.

- *80 would live in substandard housing.

- *70 would be unable to read.

- *50 would suffer from malnutrition.

- *One would be near death, one would be near birth.

- *One (yes only one) would have a college education.

- *One would own a computer.

When one considers our world from such a compressed perspective, the need for both acceptance, understanding and education becomes glaringly apparent.



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NRCS is family traditon for Hathcock

by Joyce Bohnker

The Natural Resources Conservation Service has been in existence for about 63 years. For about 50 years of that time, a member of Ronda Hathcock's family has been an employee.

Ronda is the new soil conservation technician for the Harrison County District Office in Logan. She has worked for NRCS only since last June when she started as a WAE. But her history with NRCS is much longer than that.

Her father, Ron Carper, is a civil engineering technician working with computers in the Crawford County NRCS office. He started with NRCS in 1992. Previously, he had worked for a year and a half for IDALS as a technician.

Before that, Ron's mother and Ronda's grandmother, Carolina Seeley, was a clerk for the Guthrie County Soil Conservation District. She retired in the mid 1990s after more than 30 of service to the district.

Even before Carolina went to work for what was then the Soil Conservation Service, her father (Ron's grandfather and Ronda's great grandfather), Myron Allen, began working for the SCS in Audubon as a civil engineering technician. Now deceased, Myron worked for the SCS for 25 years before he retired in 1975.

Ronda and Ron say their family's long history with soil conservation came about more by accident than design, although Ron jokes that it was "the only organization that would have us."

Actually, father and daughter both consider it a fortuitous

coincidence that they all ended up in the same government service.

Ronda said, "It's really a great organization to work for."

Ron agreed, "There's a lot of variety here. You meet a lot of people and face a lot of challenges and you feel like you're doing something worthwhile."

Ron said his grandfather began working in the service after having some terraces designed on his farm way back in the early years of terracing. "He was very impressed by the work they did on his farm and eventually went to work for them himself."

Myron worked first as a civil engineering technician for Audubon and then as a soil conservation technician in Independence.

The next in line to work for the service was Ron's mother who made her clerking position her lifetime occupation.

Ron tried his hand at farming in Guthrie County for several years before deciding that the more reliable income of an off-farm job would be better for his family.

Ron had been fascinated by computers since the very early home models first became available. He had owned a Texas Instruments model that hooked to the back of his television set. His next model was the venerable Apple 2E.

"I just started taking them apart to see what they looked like inside and then putting them back together."

A job that combined conservation and computers was perfect. "Being raised on a farm and being around conservation all my

life, it just came naturally."

Ronda, too, did not start out to follow in her family's footsteps. The mother of two sons lives in Carroll and started out selling insurance. She soon decided she wasn't cut out for a life in sales.

Her dad suggested she apply for a WAE (part time) position that was opening in Audubon. She landed that post and hasn't looked back, despite the commute.

She didn't even blink at the long commute from Carroll to Logan when a full-time position opened in Harrison County.

"The flexible schedule makes the commute easier," she said. "Besides I enjoy the work and the people are so nice."

Ronda is still learning much about her new job. She is looking forward to learning terrace design this spring. She has already designed a couple of ponds and is waiting to see them approved and built.

She attended Des Moines

Area Community College for a year and is now taking classes at Iowa Western Community College. She is studying civil engineering, hoping to receive a degree as a technician. "Someday I'll be just like my Dad," she said proudly.

Of course working full-time and raising a family makes attending school a little difficult. "Maybe in four years, I'll complete a two-year program," she said.

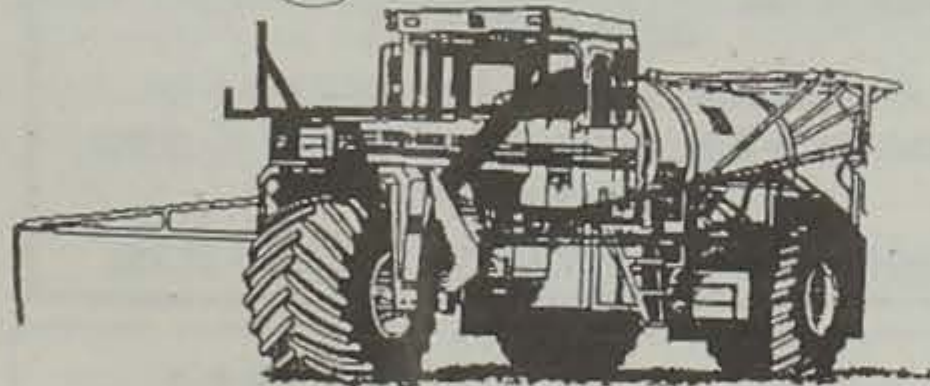
Now when the family all gets together, daughter, father and grandmother can talk shop. "We all understand what we're talking about when we're together. It's easy to relate," Ron said.

Ronda is grateful her dad steered her to NRCS. "It's really great. There are great benefits. The time is flexible. You do good work and," she added, "you get to play outside."



Ronda Hathcock, soil conservation technician in Harrison County and her dad, Ron Carper, a civil engineering technician, check out a computer model.

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Conservation Days held in Harrison County



Gayland Hall at the Outdoor Classroom answers fourth graders questions on the environment



Rick Bednarek shows some students some equipment during the Outdoor Classroom

Harrison County Conservation days was held in October at Willow Lake west of Woodbine. Fourth grade students from surrounding schools attended.

The students were introduced to soils at the Soils Station. They were shown the Harrison County Soil Survey and learned what information is contained in it and where to find it.

Rick Bednarek, Resource Soil Scientist with the Natural Resources Conservation Service in Atlantic, demonstrated how soil scientists use soil probes to look at the soil horizons to identify the soil type.

The students learned how soil scientists make soil maps and delineate the different soil types according to landscape position, parent material, and drainage (depth to the seasonal high water table).

The kids learned the Five Soil Forming Factors: Parent Material, Topography or Relief, Vegetation, Climate and Time and how each factor plays a part in forming soil. The kids textured silt loam soil and were amazed how much it felt like flour their mothers use for baking.

The kids knew the most productive layer in the soil profile is the surface horizon. They learned that organic matter is what gives the topsoil its dark black color. The more organic matter the blacker the topsoil. Organic matter has some important properties: high water holding capacity, is very

fertile, and helps keep the surface structure crumbly for planting to just name a few.

To give the students a better understanding of the different soil particle sizes, the following illustration was used. A beach ball would represent a sand particle, a baseball represents a silt particle and the head of a pin represents a clay particle. All three together represent soil texture.

Sand, the biggest particle, creates pore space for water to move through the soil and air for the roots to breathe.

Silt fills some of the gaps and helps hold water for when the roots need it.

Clay, the smallest particle, is flat in nature and acts like glue to hold the other particles together. Clay is also important for holding nutrients the plants need to grow.

The kids had a good time answering a few questions about soil like "What is the difference between soil and dirt?"

After many interesting answers, the kids learned that soil is where plants grow. Dirt is nothing more than misplaced soil which among many places is found on the bottom of shoes. Dirt does not support plant growth.

The students were asked, "How did the state of Louisiana form?" The kids really knew their history because many of them answered with: King Louis of France sold Louisiana to the United States in the

Louisiana Purchase deal. The correct answer was: The State of Louisiana formed from the fertile soils of Iowa, Illinois, Minnesota and Wisconsin through the process of water erosion. The Mississippi River carried the soil to the Gulf of Mexico where the slower moving water deposited the soil particles to form the State of Louisiana.

The kids learned about the hand-held Global Positioning Station (GPS) and how soil scientists are starting to use it to record where they gathered soil samples and soil documentation.

The most exciting part was when the kids got to carry the GPS unit and see the latitude, longitude and elevation. We all learned very quickly to have someone walk in front of the student carrying the GPS unit because the kids were so intent on looking at the readings, they didn't see the tree.

Gayland Hall, Soil Conservationist with the Natural Resources Conservation Service in Logan, discussed soil conservation practices visible during the short walk through the park.

The trail passes over a silt structure which was built to trap soil that otherwise would end up in Willow Lake. Cropland terraces have been constructed on the hillsides to control runoff and keep the topsoil in the fields to grow crops.

Native grasses such as switchgrass, big bluestem, and Indiangrass were identified. Their relationship to soil building and erosion control were discussed.

An apple was cut into pieces to demonstrate how the entire world is dependent upon a very small portion of the earth's crust for food. A very small piece of the apple peel represents the soil we use to grow crop.

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Landowners reminded**Terrace maintenance a must for good conservation system**

Terraces are a very important part of the conservation system on most Harrison County farms. Heavy rainstorms last July and August caused a lot of damage to terraces throughout the county.

The Harrison County Soil and Water Conservation District and Farm Service Agency each had cost-share programs to assist landowners in repairing these terraces.

USDA Service Center employees checked the terraces on each farm before they were repaired. They found that 52 percent of the terraces were not being maintained, 15 percent had been maintained but still overtopped, and the remaining 32 percent had damage due to animal holes and lack of maintenance.

Many of the farms had trees on the terraces, which is another maintenance concern.

When comparing terraces of the same age, there was more storage left in terraces where the field had been no-till farmed than in those where the field had been conventional-tilled. There were also less animal holes in the terraces where the field was no-tilled.

Terraces are used to reduce sheet and rill erosion and prevent gully development. They are most effective when used in combination with other practices such as conservation tillage, no-till, crop rotations, and field borders.

When a terrace is laid out, designed, and built according to Natural Resources Conservation Service standards, it is designed to hold the runoff from a 10 year, 24 hour storm, which is 4.6 inches of rain that produces 2.1 inches of runoff plus 10 years of sediment storage.

As the years pass, the sediment which accumulates in the terrace reduces its storage capacity. Maintenance is then needed to either raise the terrace ridge or remove the sediment from the terrace channel.

In order to maintain terrace ridge height and shape, farmers need to establish conservation measures such as conservation tillage, no-till and/or crop rotations which help prevent soil erosion between terraces. This helps keep the terrace channels from filling with sediment.

Never straddle the terrace ridge with tillage equipment. The ends of the equipment should operate along the top of the ridge to prevent lowering the ridge. Always till parallel to the terraces. Plow the front slope of broadbase and grassed

backslope terraces throwing the soil toward the terrace's ridge. This should be done every three to four years for most terraces which are farmed in a corn-soybean rotation with a minimum tillage system and less frequently for conservation systems that have less soil movement between the terraces.

Grassed backslope and narrowbase terraces need to be seeded to a perennial grass. Weeds, trees, and brush growth need to be controlled by spraying or mowing.

Efforts need to be taken to keep burrowing animals such as coyotes, badgers, and gophers away from your terraces. Trapping and hunting can usually control these animals.

Properly maintained terraces will last for 20 to 30 years with minimum maintenance cost. In order to keep your terrace maintenance costs down, the terraces need to be checked every year, burrowing animals need to be removed, small animal holes need to be filled and the terrace ridges need to be plowed up every three to four years.

Also, trees and brush need to be removed and the weeds controlled, as needed.

**More Outdoor Classroom**

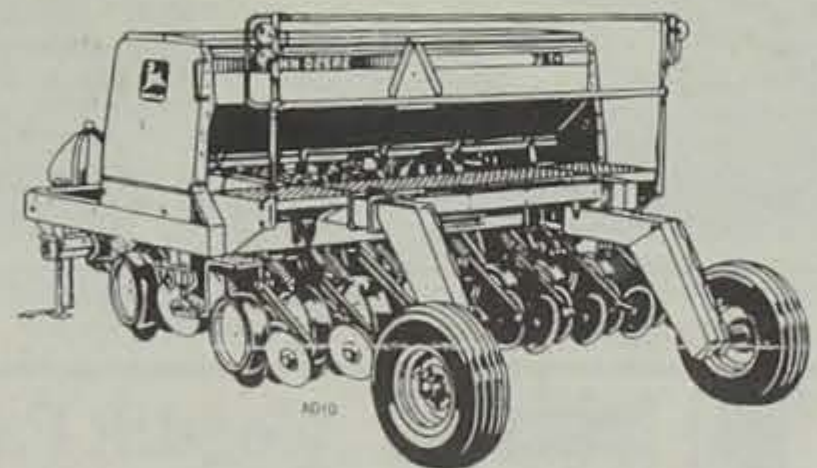
In photo above Rick Bednarek demonstrates a piece of equipment during the Outdoor Classroom held during Harrison County Conservation Days at the end of September. Many area students attended. In photo at left Gayland Hall answers a question for Janet Kirkpatrick.

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**GOOD DEALS...AND A GOOD DEAL MORE**

Pottawattamie County farmer begins terracing

At 100 years, Reichstein sees many changes in agriculture

by Joyce Bohnker

As we move into the year 2000 it is fun to look back on all that has happened in the last century.

We look at the history books and records to see how life has changed from horses to cars, airplanes and tractors; from sending letters to a telephone in every house and then e-mail.

In the past 100 years technology has changed almost every aspect of our daily lives. Most of us have experienced some of those changes in our own lives. But Henry Reichstein has seen all of them.

Reichstein is a retired farmer in East Pottawattamie County. He was born Jan. 29, 1900. Not too many people who are born at the dawn of one century can claim to see the start of the next, yet Reichstein does not look 100. His hearing is failing, but his mind is as sharp as the plow blades he once steered behind the horses.

His stride is long and vigorous,

his back straight. He still lives alone in his house in the country, not far from where he was born, the grandson of four German immigrants to Iowa.

"I was born on a farm and I always wanted to be a farmer," Reichstein said. "When I got out of high school, I just gradually took things over from my parents."

For most of us the Great Depression is a story told by our parents, or perhaps a part of our childhood. But Reichstein was already an adult, and to him the forced farm sales and bad crops of the Dust Bowl days were all too real.

"I inherited a 240 acre estate mortgaged for more than it was worth at the time," he remembers.

"I had to do a lot of planning. With the help of the Federal Land Bank, I got all the loans to under 4 percent interest and I held onto the farm," he said.

With the 30s out the way,

Reichstein was free to prosper. He expanded his land to include 640 acres and gradually accommodated the changing technology, some willingly, some a little reluctantly. "The first tractor I bought was in 1933, a Farmall International. I traded three horses for it."

Reichstein was impressed with the amount of work that could be done in a day with the new machinery, but his own preference remained with the trusty animals of his youth.

"I'd always rather work the horses. When I had a hired man, I let him drive the tractor and I worked the horses. They were company for me when I was out in the field."

Gradually though, horses became a pleasure animal instead of a work animal and the last of the horses left the Reichstein farm.

Changes continued at a rapid rate. Reichstein says, "Technology has changed a lot of things,

but I think the biggest changes have been in agriculture and transportation."

A man who was born when a slow ship was the only way across the ocean has lived to ride the Concord Super Sonic jet.

Travel was the great hobby of Reichstein's life. He was married once to a city woman, but she grew weary of farm life and the marriage failed after six years. There were no children.

Reichstein was free to go where the spirit moved him. His first trip abroad was in 1953 when he took a farm tour to Europe. He enjoyed the experience and decided to see more of the world.

He often took trips on a whim. Once he drove to San Francisco and after seeing the sights there, went into a travel office and came out with a plane ticket to Honolulu.

Then a few years later on another trip to Hawaii, he became bored and decided to fly onto Japan to explore the Far East for a while.

His travel adventures were many, and he says he would still be on the road today if his hearing were better.

When he wasn't traveling, Reichstein was working his farm. He enjoyed the outdoor life and says farming was good to him over the years. Reichstein admits he was not a pioneer in conservation prac-

tices, but he began to see their worth over the years.

"We plowed up and down the hills for a long time," he said. "When we first started contouring, people would laugh at you for going cattywampus instead of having straight north-south or east-west rows."

Reichstein built some old-style terraces on his farm many years ago, but did not modernize for a long time.

Now the 100 year old farmer is looking to the future and in the last year has put in miles and miles of new terraces with the help of EQIP funds.

He has more terraces planned in the future. He now cash rents his farm, but he still takes a lively interest in the work being done and occasionally gets on his four-wheeler to drive out into the field to see how the work is progressing or to chat with the technicians from the NRCS.

He is still not afraid to admit his reluctance to accept them though, saying "I know they do good, but I still don't really like them in my field."

One hundred years is a long time to spend doing one thing and living in one place. His travels only gave him a keener appreciation of where he lives and he has no regrets about his occupation.

"It would be hard for me to say I wouldn't be a farmer. Agriculture has been awfully good to me. It's had its ups and downs, but overall it's been good."



Henry Reichstein gazes over his farm. The 100-year-old farmer has lived in Pottawattamie County all his life.



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Paul Tauke

Tauke is district forester

Paul Tauke has been assigned by the Iowa Department of Natural Resources, Forest and Prairies Division, as District Forester for southwest Iowa. This area includes Audubon, Cass, Fremont, Harrison, Mills, Monona, Montgomery, Page, Pottawattamie, and Shelby Counties.

Tauke's office is located at the Loess Hills State Forest Headquarters in Pisgah.

Tauke received a bachelor of science degree in forestry and a minor in biology from Iowa State University in 1988.

Following graduation, he worked as a Service Forester for the Oklahoma Department of Agriculture, Forestry Division in Enid, Oklahoma. In 1990 he joined the IDNR Forestry Forests and Prairie Division in November 1999.

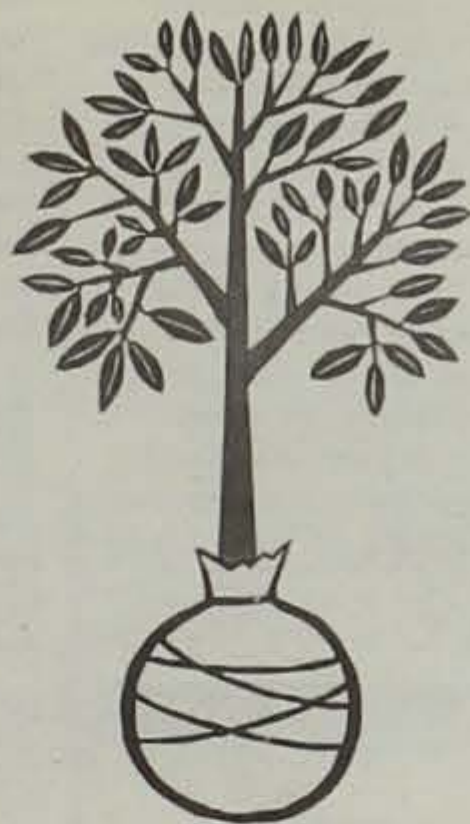
In his previous positions Tauke has worked extensively with private landowners. He has primarily assisted them with tree planting projects, woodland management planning and timber marketing. He has also been active in community and urban forestry assistance, insect and disease identification, windbreak design and forestry related educational programs.

In his current position, Tauke

will focus on assisting private landowners who are interested in tree and shrub planting, forested riparian buffers, woodland management, timber marketing, and prairie re-establishment.

As in his past positions, he will also work with communities that need advice in developing community and urban forestry plans, assist woodland owners with insect and disease identification and be available for forestry field days and outdoor classrooms.

Tauke can be contacted by mail at PO Box 187, Pisgah, Iowa 51564-0187. He can be contacted by phone at 712-456-2175.



Soil quality concerns addressed

by Joyce Bohnker

For several decades now, farmers have been dealing with the science and principles of soil conservation. But new issues, new techniques and new concerns keep cropping up.

Some of these concerns were discussed at the Wallace Research Center in February. Farmers, Soil and Water Conservation District Commissioners and NRCS personnel gathered to hear the latest research from soil and water experts from Iowa State University.

Doug Karlin, a soil scientist from the Agricultural Resource Service (ARS) spoke on soil quality.

He discussed the difference between quality soil and soil quality.

"Quality soil is the natural or inherent characteristics of the soil," he said. "Soil quality describes the status or condition of the soil and reflects land use or management decisions."

Evaluating soil quality is not always a precise science. Several different methods have been used over the years each having advantages and disadvantages.

Some are easy to use, but subjective. Others use specific scientific and mathematical testing, but are hard to use and cannot be done easily in field conditions.

Karlin said testing the soil quality is important to evaluate the success of conservation methods. Currently a variety of methods are being used, both subjective and objective. The studies help show which conservation methods will be most effective with which type of soils.

A large scale ongoing study is underway near Treynor in the watershed region. Scientists are studying the short term and long term effects of crop rotation, tilling practices, the loss of sediment and nitrogen and other details.

So far the benefits of a no-till

system include significantly reducing soil erosion, improving water use and efficiency and preserving the macropore (biological health) of the soil.

However Karlin said there are some concerns with continuous no-till. The increased macropore content can require more careful residue management. Plus too much residue and over fertilization may lead to increased nitrogen loss to the watershed.

Karlin said cropping system choices are also important to the overall health of a soil system. The benefits to crop rotation are great, but he emphasized that a true crop rotation means more than corn-soybeans.

He agreed, however, that the problems lies in markets for other crops that might fit into the rotation. The demand for alfalfa and oats is not great. Karlin said, "We can grow about 229 crops successfully in Iowa. We can sell about three." He supports research into creating new demand for alternative crops.

"My vision for 21st century agriculture is to identify crops

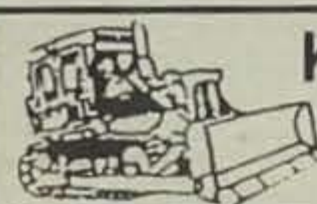
that may become useful for medicine, etc. Then create a market for them."

Karlin believes such research should be publicly funded because industry it is too dependant on short term returns.

He believes in being practical about farming decisions. He said no tillage is probably best and any form of tillage has some negative impact. "But the reality is if you have rough spots and rills, they will only get deeper if you don't work them. Realistically you minimize the amount you have to till."

Karlin sees a cycle of four important factors, each having a circular impact on the other. Economic and policy signals (crop prices, support programs) affect farm stewardship practices which in turn affect environmental and resource conditions which affects productivity which affects the economic signals.

Farmers making decisions about long term management of the soil must take all factors into account.



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East Pott Commissioners announce 2000 cost-share policies

The East Pottawattamie Soil & Water Conservation District Commissioners have finalized the policies for State and District cost-share funds. The Commissioners customized the Iowa Financial Incentive Program rules to best suit our district's needs. The following cost-share policies were drafted by the Board for the year, 2000:

REQUIRED PRELIMINARY INFORMATION

Application for any cost-share project must be obtained, and approval thereof at a monthly board meeting, prior to construction beginning to be eligible for any cost-share. If tillage is planned prior to staking, NRCS should be notified for approval first. NRCS will not stake tilled ground if prior approval for tillage has not been given. Keep in mind if cows are grazing a given field, NRCS will not stake until two days of contractor being ready to pull on.

We are in the process of switching to computerized forms. Applications will soon be computer-inputted when you come in. It will be pertinent (and time-saving) to bring all necessary information with you:

- 1) We need to know "ownership" and "tract number" where construction is planned. Do not sign up in the "operator's name"
- 2) Your social security number (if individual) or Federal I.D. number (if partnership, corporation, etc.) will be required the day you sign up. A separate

form for this will need to be filled out at the time of sign up.

3) The landowner signature is required on the cost-share application. If there is more than one owner that will result in two (or more) checks charged to separate social security numbers, both signatures are required. A signature may have to be obtained ahead of time or a Power of Attorney will need to be in our file. A Farm Service Agency Power of Attorney cannot be accepted.

4) All applications must have landowner signature. Any person may deliver the application for the "landowner" if the "landowner" has signed an application with a 2000 date.

5) All cost-share projects must be located on land within the East Pottawattamie District boundaries. If land is located in West Pottawattamie, Mills, Montgomery, etc., you must apply for cost-share with those district offices. This is a State policy, and we cannot make exceptions.

To receive cost-share, the "landowner" must sign a 20-year maintenance agreement. Know your approximate footage, especially if it will amount to less than our maximum amount. (Changes in application footage will result in more paperwork for you and the office.) If you have an idea of a contractor you may use, let us know. This helps the technician schedule staking.

TERRACES

1) One "first priority" application per owner/operator will be allowed per calendar year.

(Ownership documented in our office as of January 1, 2000.) Applications for 2000 will be accepted beginning 8-00 a.m., January 10, 2000, at the Oakland NRCS office.

2) Maximum terrace footage allowed will be 7,500 feet cost-shared at 50 percent not to exceed \$.55/ft. The maximum amount of cost-share available per terrace job is \$4,125 regardless of terrace type. Topsoiling will be required.

3) Tiling will be cost-shared at 50 percent not to exceed \$300 per intake maximum. A total cost-share job (terrace and tile) will not exceed \$7,000. Tiling will only be cost-shared in conjunction with the construction of new terraces.

4) Sign-up will be divided into three lists: Spring, Summer, and Fall. You may choose one season. Applications will be chronologically picked up as that season's funds become available. (As in the past, no assurances of any Fall allocation).

5) For those landowners building their own terraces this year, the NRCS strongly recommends they have access to a transit and tripod for check out.

Applications taken out of the office to be signed cannot be accepted prior to January 10, 2000, nor show a 1999 date. If the application is returned by mail, it should not reach us before January 10. All contractors will be spot-checked by NRCS staff.

WATERWAYS

Waterways staked and con-

structed to NRCS specs will be cost-shared at 50 percent not to exceed eligible cost of \$1.00/foot up to 2,500 feet in length not to exceed \$1,200. Tile within a waterway (available only with county funds) will be cost-shared at 50 percent not to exceed \$.50/foot of tile line in a waterway with a maximum of two tile lines per waterway.

The maximum tile length on the waterway would be one mile.

Please note: A 20-year maintenance agreement will be signed prior to receiving cost-share funds pursuant to Division of Soil Conservation Rules in Section 27 of the Iowa Administrative Code, Chapters 10, 12, and 13. Please refer to the back of your cost-share application.

It's mandatory for all cost-shared waterways to install petromat fabric as per District recommendations as far as spacing and number. The District has a fabric layer machine producers may use free of charge to install this fabric. The cost of the fabric is \$10 per check strip which is covered from raising the eligible cost to \$1/ft from \$.80/ft. on the waterway. NRCS specifications require that cost-shared waterways must have 75 percent upland treatment on HEL ground prior to construction. Specifications also dictate that waterways have a stable outlet. In some cases where the end of the waterway drops in elevation such as into a creek or fence line, a structure (small dam, chute, etc.) may be necessary to provide that stable outlet so that a ditch will not erode up the waterway. We cost-share up to \$7,000 for a structure. Please take this into consideration. The waterway and the structure for a stable outlet are two separate practices and are cost-shared

differently. If you suspect you need a stable outlet, please come in to apply for additional funding.

SUMMER INCENTIVE

1) Maximum terrace footage allowed will be 7,500 feet cost-shared at 60 percent not to exceed \$.66/foot. For terraces (not needing tiling), a maximum amount of cost-share available per terrace job is \$4,950, available for all types of terraces. Topsoiling will be required.

2) Tiling will be cost-shared at 50 percent not to exceed \$300 per intake maximum. A total cost-share job (terrace and tile) would not exceed \$7,825. Tiling will only be cost-shared in conjunction with the construction of new terraces.

3) Funds for summer construction can only be obligated after June 1 and the terraces must be completed by August 15. NO EXTENSIONS. People receiving summer cost-share funds will need to build the terraces during these dates. Extensions will not be granted due to the operator having corn or beans to harvest. We will help you stake out areas for small grain where the terraces are to be constructed to the best of our ability.

STRUCTURES

One "first priority" application per owner/operator will be allowed per calendar year. Structures will be cost-shared at the rate of 50 percent of the "estimated cost or actual cost, whichever is less" not to exceed \$7,000 per structure. Structures include: ponds, grade stabilization (638), earthen and non-earthen structures, cattle panels, rock chute, sheet piling, sediment basins, wetlands, etc. A pre-construction meeting must be held prior to commencement of project.

WINDBREAKS

Cost-share at the rate of 75 percent up to \$700 per windbreak through the REAP program. (Resource Enhancement and Protection). Individual limits of \$12/tree and \$2.25/

(Continued on page 11)

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Cost share policies

(continued from page 10)

shrub.

Windbreak renovations must be within 4-10 years of age where 20 percent of the windbreak has been destroyed.

Renovation must be completed within the same year it is commenced.

NO-TILL INCENTIVE ON CRP

This incentive is offered to encourage the practice of no-tilling into CRP sod. Participants need to sign an agreement of understanding that payment would not come until the spring to verify that they did no-till. Although this is a "one-time incentive payment per acre," it is hoped that the practice of no-till will continue on these acres. The incentive payment is \$10 per no-tilled acre of expiring CRP ground. No acre limit is set or cap on total dollars per person. Application may be made by the landowner or the producer. Once the planting is completed, participants must sign a producer certification and supply chemical history on selected acres (to be used in future educational programs) and NRCS staff will verify no-till on CRP acres prior to payment.

WELLS

This is a two-fold funded program commencing July 1, 2000. The Pottawattamie County Board of Supervisors offers a program whereby funding from State grants can be utilized as long as funds are available for the purpose of properly plugging abandoned wells. Cost-share on wells is available at 50 percent of the cost of the closure up to \$200 maximum. The District, through our Local Option Sales Tax Funds, will pick up the remaining cost of the closure (excluding sales tax) up to a maximum of \$400. (Total combined cost-share of \$600 maximum).

This program is limited to one well per year per landowner. Applications are available at the Oakland NRCS office. Please remember application by the owner and approval from both agencies must be completed prior to commencement of the closure.

Plugging must be completed by a certified well plugging contractor. Closure period will extend only 90 days past approval date.

Should you have any questions regarding this policy, please contact the NRCS office at (712) 482-6408.

Youth finds "tiring" way to save soil resources

(The following article, which included several photos was a 4-H contest project for Ryne Johnk, 12, of Hancock, Iowa. He is the son of Kent and Carla Johnk.)

Save Our Soil

Erosion of our precious soil is a very serious and preventable issue. Stopping erosion of our topsoil and farmland should be a priority and a goal for everyone!

My goal to, "SAVE OUR SOIL" was a very effective and inexpensive way to help save my family farm from eroding away.

There are many practices farmers use to stop erosion, including: no-till farming, grass strips, terraces and crop base rotation, to name a few. My Dad used several of these practices in his everyday farming, but by building a tire wall from free, used tires, I too, have helped save the soil from eroding.

This was a very wet spring in my part of the state and I could see the soil eroding as I was building the wall. Seed salesmen and neighbors saw me working the wall and stopped by to see my progress. They thought it was a great use for old tires.

Following the State Fair, I plan to give my presentation at my 4-H club meeting to help educate the members and leaders on the importance of this issue. My poster and folder will also be on display at my Soil and Water Conservation District Office to

help people learn you don't have to spend a lot of money and it is important to "SAVE OUR SOIL!!!"

In this exhibit, I wanted to stop the erosion of the bank on the side of our barn. My dad sets his water tank on the top of the bank and fills his sprayer at the bottom. The soil was eroding so bad, that we had to prop up the water tank on a hay rack, so that the tank wouldn't fall down the hill.

I went to the Soil and Water Conservation District Office in Oakland to make sure that using tires to build a retaining wall was legal. IT IS LEGAL!

With my dad's help, I removed the huge concrete slabs and old posts from the bank with a tractor and loader.

Next, we removed some of the soil from the bank with the tractor and loader. The reason I did this is so the tire wall would be vertical instead of slanted like the bank was before, and I did it because it would create more room to fill the tractor and sprayer.

I am not old enough to drive the tractor, but my dad did let me dump some of the scoops of dirt.

I went to local tire companies, gas stations and repair shops to get the used tires for the wall, free of charge. As a matter of fact, they are glad to get rid of them because they have to pay to dispose of tires.

To build the wall, I first laid out the bottom row of tires.

Next I filled every tire with soil and stomped it down in the tires, making sure each tire was tightly packed with dirt.

I had to completely fill all 139 tires by hand to make sure they were completely full. The work was very "Tire"ing.

Now, my dad has plenty of room to fill his sprayer, and the topsoil is no longer eroding away. We have several banks and hills on our farm and my grandparents' farms that need work done. Building a tire wall is one way I can help save the slopes from eroding away.

The finished tire wall measures 70 feet long by four feet high. If I had used 12 inch by 4 inch cement retaining wall blocks, it

would have required 600 blocks at a cost of \$1.59 per block for a total of \$954. If I had used eight foot long railroad ties, it would have required 52 ties and would have cost \$468.

The railroad ties would have to be replaced over time, but the tires will last forever. Using free tires is an inexpensive and effective way to retain the bank.

Saving our soil and farmland is very important to me. Someday I hope to inherit our family farm, and I want it to be as good, if not better than we bought the farm. Topsoil is very important to profitable farmers and stopping erosion with the tire wall is one way to help.

SAVE OUR SOIL!

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Fishing trip inspires conservation ethic in youth

(Editor's note: Many of you may remember an article in a past issue of the Quad District Conservation News about James Henry. This is an article by his young cousin, Kyle Peterson. It demonstrates how a small gesture can pass on an important message. The conservation ethic is often learned by the young by watching the actions of those they respect.)

As I peered out the passenger side window of my Grandpa's red Ford pickup, vast fields of neyav planted corn and soybeans stretched before me, as far as my eyes could see.

What a beautiful sight it was! As the red Ford pickup topped one of the many hills on Pioneer Trail road, a valley down below was mystically hidden by the gravel dust from the road.

While we closed in on the bottom of the hill, random dark shades began to appear through the haze. Oh, it was just a farm, but not just any farm. It was the final destination of the red Ford pickup. It was my cousin's farm.

My Grandpa pulled into the

huge parking-area in front of the large Morton building garage and idled the diesel engine. Seconds later a man appeared from the large garage.

He had a frame of 5'7" and weighed 150 pounds. He had on his favorite John Deere hat, dirty old coveralls, brown workboots and also a large smile; he walked briskly toward us. This was my eighty year old cousin, or as I call him, James. I rolled, well actually I just pushed a button and the window hummed down out of sight.

It had been a while since the last time we had met.

He put his hand in through the window to shake mine, but he pulled it quickly away. He had forgotten about the tractor grease on his hand. James wiped the black grease off onto his coveralls and proceeded to shake my hand.

From the seven decades of working in his fields, his old rough hand felt like a gentle vise squeezing my hand. I left the two old friends to talk. While I wandered around

the farmyard I decided to enter the large yellow Morton building garage. It was large enough that fifty cars could easily park inside. A sight of old tools, farm equipment and other miscellaneous items entertained my eyes.

What an incredible collection of hardware! Some would just call this a huge mess. While I walked by the tractor in the middle of the garage, I was careful not to trip and fall on anything in the narrow aisles of the different work areas. I proceeded to the back where the offices were located. I rummaged around and found a pair of mounted bull horns.

I returned outside and found my Grandpa had already left to go home. I asked James if I could keep the horns. Of course, he let me. We hopped in his pickup and drove behind the garage onto a bumpy dirt path which led into the woods. Where were we going? We were going fishing.

On James' property there was a natural underground spring. James cleverly bulldozed land to form five ponds and two waterfalls. We passed one of the waterfalls and continued on our way on the well worn path. We came to a clearing where a pond the size of a football field rests.

James had said that the bass hadn't been hitting on that pond, so we decided to venture down to a smaller pond.

After I had chosen one of James's poles from the back of the pickup and baited my hook I walked to the edge of the pond. James was right behind me. Wouldn't you know it, right when bait hit the surface of the pond I had a strike. A small bass was on the end of my line. What luck! He was a little small, but I decided to keep him. Then things seemed to slow down. We would cast and then reel in time and again with no success.

Hours went by and we caught nothing; unless you would count a few minnow sized perch. I became bored and decided to venture out in one of the row boats on the bank. While I was out in the little pond, I saw the tip of James' pole bent into the water. James saw it too. He jumped to his feet and looked intensely into the murky pond water. I beached the boat and ran to James. He loosened his tension on the reel.

This allowed the fish to take the line. Very slowly James reeled in the fish. What a fish it was! The biggest bass I had ever seen was on James' line. It

may have been, the biggest bass James had ever caught too. We put the large bass in the grass and looked at the beautiful fish. I thought we were going to keep him, so I ran back to get the bucket.

It was filled with pond water and small bass. When I returned James' fish was gone.

Oh no! I figured it had flopped back into the pond. James told me he had let him go. Dumb-founded I looked at him in disbelief. "Why would you do that?" I asked him. He replied "What good does fishing do, if there are no fish to fish for. Don't worry. He and I will cross paths again." I then went to get my pole that was on the other side of the pond. I thought about what my wise cousin had just said. On my way back to James, I too released my bass back into its home.

When I left James' farm that day, I was thinking much differently than when I had arrived. I have always respected my Cousin James, but after that day, I will respect him much more. James is a man who loves to be outside and loves to farm. His willingness to release the fish taught me to respect nature and its inhabitants so that future generations will be able to enjoy the things I enjoyed when I was 15.

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Barry Deuel, a Shelby County farmer, has become an entrepreneur, opening a plant and gift shop near Harlan.

For Harlan farmer

Flowers become alternative crop

by Joyce Bohnker

With the price for the Iowa's traditional crops of corn and soybeans at historical lows, many farmers are looking for alternative ways to make a profit.

For some that means finding work off the farm. Others are looking for other crops or livestock that could add to their profitability.

Shelby County farmer Barry Deuel found an alternative crop that most wouldn't associate with farming—flowers. Yes, the rural Harlan corn and soybean farmer has turned to flowers, plants and now gifts as a way to increase his farm income and stay on the land.

Deuel and his wife, Donna, are the operators of The Flower Barn located just a couple miles east of the high school in Harlan.

"We started raising flowers and plants in our basement last year, using grow lights," Deuel said. "But we soon realized we were going to have to put them somewhere else."

The solution was to erect a 24' by 24' foot hoop building, the kind being put up around the countryside for hog production. But the Deuels aren't using it for hogs. They're using it as a greenhouse for their spring plants.

The Flower Barn officially opened in April 1999 carrying a line of annuals and perennials for gardeners to choose from.

Deuel said, "Donna always liked flowers. There were always several beds around the house. We determined the demand was there and it was sort of a value-added agriculture. Instead of going to work off the farm, I decided to work on the farm."

Donna is a school teacher in Harlan and can help with the store in the summer. Deuel still farms 230 acres so spring was a busy season. Luckily Donna's

mother and sister are available to help out.

"After we got past spring, we decided we should extend our season to year-round by including all-occasion gifts," Deuel said.

An old barn, last used for raising pigs in 1995, was cleaned up, remodeled and painted to become the year-round Flower Barn.

Deuel looked for as many local artists and crafts people as possible to fill out his line of gifts.

He has wildlife pictures by Tom Walker, a local artist; jams and jellies from Barry's Bloomers in Woodbine; quilts by Jaime Hansen of Kimballton and lawn art by Pat Stading of Harlan.

"Quality local art really sells," Deuel said.

Not all his gifts are local. He also carries chocolates, teddy bears and other stuffed animals, ornaments and figurines.

"As much as possible, I try to find items that are 'Made in America' he said. When imports are necessary, he tries to limit where they come from, not wanting to be an unwitting contributor to forced or child labor.

Deuel's latest venture is into cut, fresh flowers and like most of what he has done so far, he is learning from trial and error and from books. "We buy the flowers wholesale and then make up bud vases and bouquets," he said. "I've been watching videos to learn how to do it and I've been really proud of a couple of the bouquets I've put together."

Deuel said going from traditional agriculture to a retail market for plants has been a real change for him. "The learning curve has been high," he said.

But with advice from an accountant friend, loans from a local bank and programs on his computer, he is learning as he goes along.

"After this first tax year, I'll find out how to improve some more," he said.

One area where the change wasn't difficult is from the solitary 'you and your tractor life of farming' to the retail greet the public life.

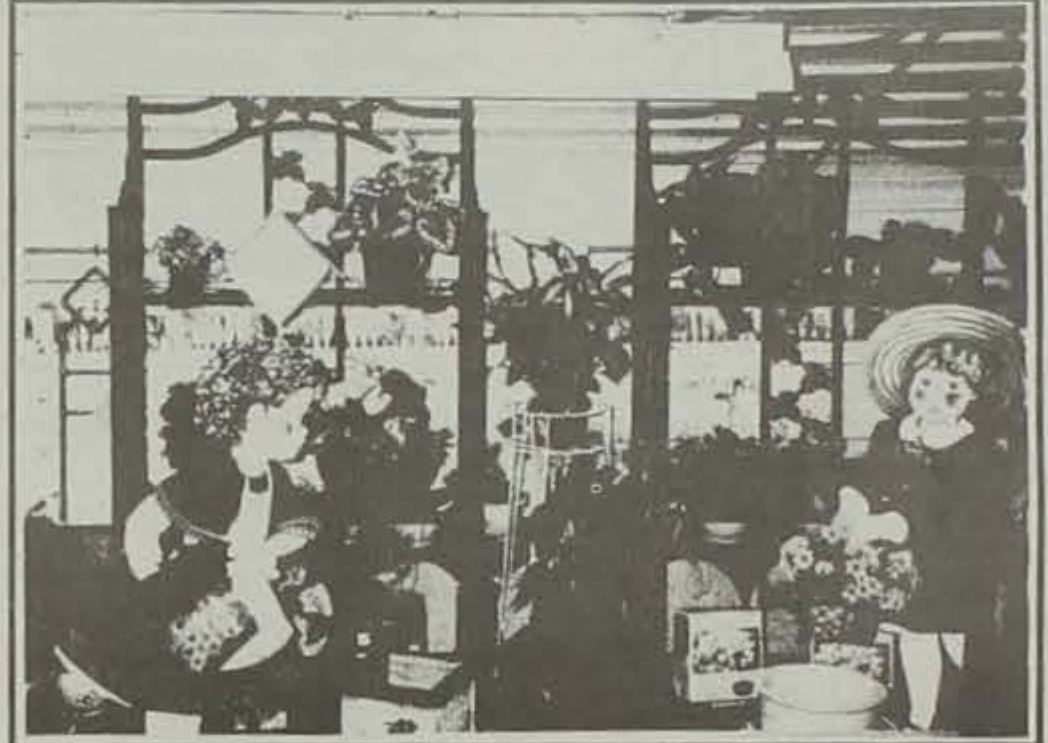
"I'm a people-type person, always have been," he said. Farming is a solitary occupation—just you and the land—but I enjoy meeting people."

Evidence of his outgoing personality is found in his participation in organizations. He has been a Soil and Water District Commissioner in Shelby County for the past eight years. He has also been on the Resource Conservation and Development Board, is active in the Hungry Canyons project and on the Loess Hills Alliance.

He is currently helping make plans for a new building for Golden Hills in Oakland to help with the Hungry Canyons and Loess Hills Alliance projects.

Deuel enjoys his farm and tries to incorporate some soil conservation techniques on his own land. But as he and his wife near retirement age, he is hoping his new venture will be successful.

"I hope to get to the point where the land could be rented out and I could work here full-time," he said.



The Flower Barn in Harlan has a large variety of gifts available. In top photo are teddy bears and in lower photo is lawn art, made locally by an Iowa artist.

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Speakers say water protection important issue for farmers

by Joyce Bohnker

For many decades the focus in agricultural conservation was on soil. That focus was reflected in the title of the Soil Conservation Service. The title change to Natural Resources Conservation Service was not just to confuse the customers, it also reflected an ongoing concern with other aspects of conservation, especially water quality.

Two speakers at the Wallace Research Farm meeting in February addressed those concerns. John Sawyer, a crop fertility specialist, addressed how over use or misuse of fertilizers can lead to problems in source water protection and upstream partners.

Ubbo Agena, a water quality specialist, discussed the impact new Environmental Protection Agency rules might have on farmers and their use of fertilizers and chemicals.

Fertilizer concerns

Sawyer focused on the use of two fertilizers, both definitely needed for profitable production in agriculture- nitrogen and

phosphorus. Studies are being conducted to determine the best management techniques to maximize farm production and minimize runoff into streams and lakes.

Both fertilizers have been showing up in the water supply. "Nitrogen management is not easy," Sawyer said. "The goal is to get nitrogen leakage down to acceptable levels. It can't be stopped entirely."

Four factors influence optimum application time for nitrogen, he said. They include the crop to be grown (obviously corn is a heavy user of nitrogen); the climate, especially the amount of rainfall; the soil texture, which can be a big factor in the amount of leaching and the type of nitrogen product being applied.

Sawyer said research has shown the amount of nitrogen applied is much more crucial to crop production than the timing. In other words side dressed nitrogen applied after the crop is growing is just as effective as spring or fall applications. He

said fall applications have been on the upswing for several reasons including drier soils in the fall, less compaction from the applications, fewer planting delays and historically ammonia is cheaper in the fall.

However, spring applications may be more efficient. And for minimizing runoff the prime application may be to put on some in the spring and more later.

"Let the corn tell you what its nitrogen needs are and then hit it with additional nitrogen as needed," Sawyer said. As an example he said 150 pounds of nitrogen seem to be needed for optimum corn production, but a 30 pound application in the spring, then an additional 120 pounds during the growing season is just as effective.

He also noted that 150 pounds is the total needed and farmers should take into account a previous planting of beans and applications of manure fertilizer.

Sawyer also said excess phosphorus has become an issue in water quality. He said because too much phosphorus does not adversely affect crop production, farmers have historically put on more than needed.

He said research shows that only 13 percent of farmers are applying phosphorus at the optimum rate while 66 percent are applying it at high to very high rates.

Research is ongoing to determine the best methods of applying phosphorus and controlling the mechanisms for transport to the water supply including erosion, runoff and leaching.

Sawyer did recommend using soil testing to determine phosphorus needs.

Coming regulations?

Ubbo Agena discussed what could be ahead for Iowa in water quality issues.

He said pollution in Iowa water is generally land use related. Before the focus of Environmental Protection Agency regulations was on industrial and municipal plants or point source pollutants that went directly into a body of water.

It was easy to measure and regulate these types of pollutants and to give a fixed allowable daily output.

But Agena said the focus is shifting to include non-point source pollutants, in other words pollutants that find their way into the water supply from runoff or leaching. In Iowa these non point source pollutants are often a by-product of agriculture.

Agena said, "Point source pollution has been regulated and brought under control. Additional water improvement will only occur if non-point source pollution is controlled."

The 1987 Clean Water Act required states to make plans to control non-point source pollutants. Iowa has received funds from the EPA since 1990 to help with non-point source pollutants. Most of Iowa's money has been

spent on watersheds and REAP (Resource Enhancement and Protection).

So far the approach has been voluntary with the only regulations applying to manure applications from large livestock confinement operations and regulations applying to pesticides.

However Agena said the voluntary approach is changing. The EPA is developing nutrient criteria for lakes and streams and many of Iowa's rivers and lakes are exceeding those standards.

The EPA is requiring states to make a list of the bodies of water that are polluted, to calculate the maximum daily loads allowed and to allocate that load among the sources of pollutants.

Agena said that calculating daily loads for non-point source pollutants is very difficult, especially since contamination does not occur daily, but during runoff events such as heavy rains.

There is no easy, cheap way to manage the discharge from runoff, Agena said. It will require the use of computer models, site specific data on soils and crops, etc. "But none-the-less, it is coming," he said.



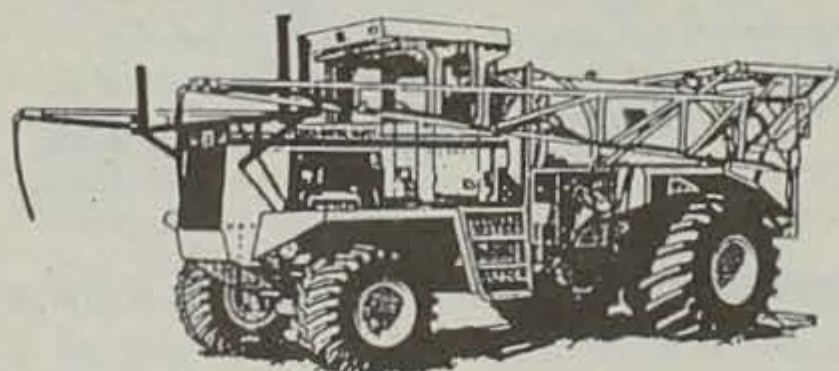
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Donna & Barry Deuel

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Schaben enjoys native grasses

by Joyce Bohnker

Bryce Schaben was only in second grade when he wrote that he wanted to be a park ranger when he grew up. His love of wildlife and nature never faltered over the years.

Now grown up and with children of his own, he is not the park ranger he dreamed of, but he is close. Actually he gave up the park ranger job to become roadside manager in Shelby County this past April.

Schaben said the job is really a continuation of his former position with the Shelby County Conservation Board as a park officer where he specialized in wildlife habitat. He sees his job as roadside manager as providing hundreds more acres of restored prairie habitat every year.

"The Roadside Management Program is only about 10 years old," he said. "The University of Northern Iowa headed it up. The plan is to use native grasses and spot spraying in ditches instead of cool season grasses and blanket spraying."

Schaben said the warm season native grasses are a big improvement for many reasons.

The grasses they use are all native to Iowa with much deeper and stronger root systems. "Once established these grasses will choke out any weed that encroaches," he said. "Once they're established you don't have any weed problems."

Another benefit Schaben cited and the one that was the key reason for him to accept the position is that native prairie grasses are a much better habitat for nesting birds and other Iowa wildlife.

Other benefits include the tall native prairie grasses providing a better snow fence and forbs and flowers added to the mixture are making the roads more pleasant to drive down.

It seems obvious now that the grasses that were here originally would be the best for the wildlife that was here originally, but it took many decades for Iowans to realize the benefits of native grasses.

"Why it took so long I don't know," Schaben said. "But I know it's here to stay."

Schaben's job is to get the grasses established. That's the hard part. There are thousands of miles of roadside ditches in Shelby County. Every time there is construction or road building on one of them that involves tearing up the grass that's there, Schaben and his crews are there to replant those areas to natives.

Although the grasses grew here originally, it is not always easy to get them started again.

Native grasses are warm season grasses. They need warm sunshine and warm ground to

begin growing. Brome and other introduced species, including weeds, are cool season grasses. They can come up first and shade the prairie seeds preventing them from getting the warmth they need.

Also prairie grasses spend the first year or two spreading out their wonderful root system. They often don't look like much early on.

But with proper maintenance which includes spot spraying and a lot of mowing the first year or two and a controlled burn at about the third year, the grasses are ready to thrive on their own.

Schaben's job includes both the planting and management of grasses. In the fall he harvests some seed from the established prairie areas in the county to help with the new plantings in the spring.

In a normal year, Schaben said he can harvest about half of what he needs to plant. Next year says he will only have about one-quarter of the seeds on hand because the schedule is so busy.

This year he planted 210 acres of prairie grasses. "Next year should be even bigger," he said. In March and April he will

pick out the best sites for spring burns and manage them. Then he will begin the planting, mowing and harvesting.

Schaben is a native of western Iowa. He grew up with a keen interest in wildlife of all kinds. After graduating from high school, he attended Peru State College in Nebraska majoring in wildlife ecology and biological science. Before graduating from college, he worked as an intern for the Crawford County Conservation Board at Yellow Smoke Park near Denison.

He was hired by the Shelby County Conservation Board after graduation from college. He worked there until accepting the roadside manager's position last April.

"It was really a good opportunity to work full-time improving habitat in Shelby County."

His interest in wildlife is a family occupation for the Schabens. His wife, Carrie, a fellow Peru State grad, is an eighth grade science teacher at Harlan. The couple has three children, Jacob, 8; Joshua, 6 and Jess, 2.

Schaben believes his job now will help preserve wildlife for his children's future.



Bryce Schaben enjoys his work as Shelby County Roadside Manager. He also enjoys the view from his office which overlooks a beautiful park area.

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Backyard Conservation

All animals need some form of shelter in their habitat. Shrubs and trees provide protection for many species from predators, as well as the weather. Birds, squirrels, and many other animals also seek nesting sites in trees and bushes.

You can help provide shelter in your backyard for a diversity of organisms in several ways.

*Plant a diversity of shrubs, trees, and herbaceous plants. Some species of birds may also find these attractive as nesting sites. Even if many of the birds you see in your yard prefer more secluded sites for nesting, trees and shrubs will encourage them to visit your yard, even if for only a few minutes. Placed near bird feeders, trees allow a convenient place for many species to eat their seeds. A large evergreen can be especially attractive as shelter to many species in the winter.

Low growing plants including shrubs and flowering plants will provide protection for many small animals such as rabbits.

*Provide shelter for ground dwelling species such as toads and chipmunks with small piles of rocks, branches, or a decaying log or stump. A piece of drain tile or other tubular material can provide protection from predators and the weather. Small piles of decaying plant

material such as leaves or grass clippings will help provide shelter and food for worms and insects, that while helpful themselves, are also a valuable food source for birds and other small wildlife species.

*Birdhouses may provide alternative nesting sites for some species. Before placing a birdhouse in your yard, determine what kind of bird you hope to have as a tenant. Birds have very specific requirements for the type of house and the size of the entry hole.

Make sure the house also meets their needs in terms of height above the ground and proximity to vegetation and water.

*Provide the creatures with building materials. While the nest form is unique to each species, the materials used to build it will vary with what materials are available locally.

Suitable nest building materials for a variety of species include 8 to 10 inch lengths of string, yarn, strips of cloth or thread. Cotton, wool, dried grass, and dried sphagnum or Spanish moss may also be helpful.

For information on making the best of your backyard, call your local conservation district. Or, check out backyard conservation on the Internet at <http://www.nacdn.org>, or <http://www.nrcs.usda.gov>.

U.S. agricultural history remembered

The following dates reflect the history of agriculture in the United States. Much has changed during the last 150 years.

1860's

USDA created.
First monthly crop report published by USDA.
Pasteurization invented.
Refrigerator railroad car patented.
First transcontinental railroad completed.
Margarine invented.
Gypsy moth accidentally brought to U.S.
Farmers made up 58 percent of the labor force.

1870's

Patent for barbed wire granted.
Pressure cooker & milking machine invented.
Telephone patented.
Grasshoppers became a serious pest in the West.
Introduction of wheat from Turkey to Kansas.

1880's

Cream separator invented.
Gas engine, farm tractor & cotton picker invented.
Insects discovered to spread plant diseases.
Refrigerated boxcars make first long-haul shipments of produce and meats.

1890's

Viruses discovered.
Simple test to determine butterfat content of milk developed.

1900's

Breeding of plants for disease resistance - wilt-resistant cotton.
Predictable recombination of parental traits could be bred by hybridization.
Vaccine developed for virus that caused hog cholera.
Airplane invented.

Pure Food and Drug and Meat Inspection Acts approved.
Hybrid corn developed.

1910's

Soil classification system developed.
Stainless steel developed.
World War I.
First Farm Bureau formed.
1920's
Farmers numbered 27 percent.
Electron microscope invented.
Great Depression began.
Hydroponics (growing plants in water) invented.

Birdseye pioneered quick-freezing/frozen food.
Soil erosion identified as serious threat to ag productivity.

1930's

Farmers numbered 21.5 percent.
Methods for genetic evaluation of beef cattle pioneered.
First soil conservation district in U.S. organized.
Worst drought in U.S. history in the Great Plains.

1940's

Mildew & rot-proof fabrics & bandages developed.
Organophosphate pesticides developed.

First simple daily nutrition guide published.

Growth regulation ability of 2,4-D discovered.

Deep vat fermentation developed, allowing mass-production of penicillin.

Technique developed to produce high-quality frozen orange juice concentrate.

National School Lunch Act passed.

1950's

North Korea invaded South Korea.
Double-helical structure of DNA described.
Center-pivot irrigation - invented.

DEET insect repellent developed.

Laser invented.
Process for making instant potato flakes developed.
Sputnik launched.
Universal Soil Loss Equation developed.

Farmers numbered 9 percent.
Neutron probe developed for field measurements of soil water content.

Atmospheric warming due to carbon dioxide buildup, "greenhouse effect", first described.

1960's

Vietnam conflict began.
"Green Revolution" launched.
Food & Nutrition Service established.

High-lysine corn developed, bred to enhance protein level.
Durable press (permanent press) cotton textile developed.

Silent Spring published, documented the effect of chemicals on environment.

1970's

Effects of salinity on plant growth determined.
First gene spliced.
Microcomputers invented.
U.S. declared free of hog cholera.

Threat to ozone layer by CFC's proposed.
Farmers made up less than 5 percent of workforce for first time.

1980's

DNA fingerprinting invented.
First 100 percent soybean ink in four colors developed.
Water Erosion Prediction Project model developed.

1990's

Biodegradable plastics developed with cornstarch.
"Dolly" cloned from an udder cell of adult sheep.
First clone of a plant-derived gene for resistance to a plant virus; N gene.

(Footnote: Information from article published in magazine, *Agricultural Research*, Dec. 1999 issue, "Timeline: A Legacy of Research" by Kathryn Barry Stelljes.)

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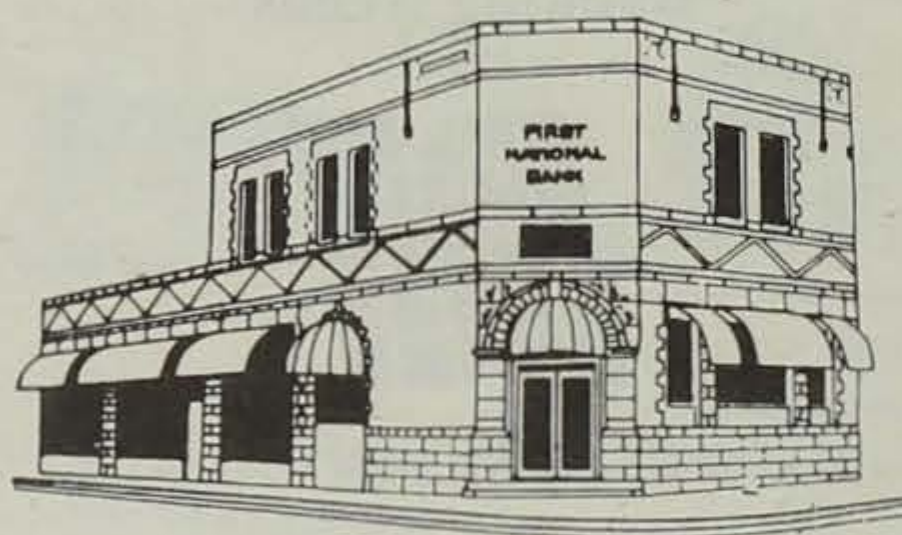
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