9007-004
Upper Buffalo Creek
Water Quality Project
Final Report

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1) ADMINISTRATION:
Bi-annual and annual reports were completed and submitted to WIRB and DSC to document project progress. The watershed Coordinator attended Buchanan and Fayette County Commissioner's meetings to report progress. The Watershed Advisory Committee served as a link between project participants and the SWCDs, and the Technical Advisory Committee were utilized to discuss biological, chemical, and physical developments in the watershed. Annual project meetings were conducted with supporting and sponsoring agencies (i.e., Buchanan and Fayette SWCDs, IDALS-DSC, NRCS, DNR, WIRB, and Buchanan County Conservation Board), to discuss progress and provide input on the project. The final project meeting was held on June 26, 2014.

The Plan of Work and grant agreement were modified three times. The first time, funding was moved into the grassed waterway line item. And second, funding was moved into the (new) cover crop line item. These practices required additional funding due to increase in landowner demand and positive environmental impact. The third time, the project end date was changed from December 31, 2013 to June 30, 2014, to allow final projects to be constructed and paid in the spring of 2014.

2) SEDIMENT REDUCTION:
One objective was to reduce sediment delivery by 40%. To achieve this goal, an 8,672 tons/year reduction was needed (over the course of four years). During the duration of this project, a total

of 93 practices were implemented, resulting in a 4,417 t/y (20.4%) sediment reduction. That is equal to 316 dump truck loads of sediment. The Buchanan County SWCD was pleased with the achieved sediment delivery reduction.

The original goal of a 40% reduction, in retrospect, was too high. The 40% sediment reduction was chosen for several reasons: 1) the Technical Advisory Committee felt that this reduction was achievable based on sediment delivery sources and identifying conservation practices to address them, 2) similar projects (in other counties) have used this as a base-line reduction number, and 3) the Buchanan County SWCD's previous (7-year) South Fork Maquoketa River - Water Quality Project achieved a sediment reduction of 37%. A goal of 20% to 30%, for a 4-year project, would have been more achievable, based on timeline and practices targeted for implementation. Additionally, the late harvest of 2012 and wet spring of 2013 prevented timely field visits and land surveys.

The watershed coordinator met with 51 landowners and/or farm operators to discuss conservation options. Several of these meetings resulted in a landowners and/or farm operator implementing one or more conservation practices. Funding sources were leveraged, utilizing a combination of WIRB, EQIP, CRP, IFIP, IJOBS, and landowner funds.

Each completed project had a sediment delivery calculation. The Sediment Delivery Calculator and the Pollutant Reduction Calculator were used to find these calculations. The watershed coordinator followed up with landowners and/or farm operators after project implementation to ensure the landowner and/or farm operator's conservation goals (i.e., water quality, soil conservation, and/or wildlife) were achieved.

3) NUTRIENT REDUCTION:

The second project objective was to reduce nutrients by 30%. Nutrient reduction was addressed through the promotion of nutrient management, animal waste facility upgrades, and wetland development. During the course of this project, the phosphorus (as calculated by Sediment Delivery Calculator and Pollutant Reduction Calculator) was reduced by 5,742.1 lbs./year.

Water quality monitoring samples were collected at four sites and analyzed (bi-monthly) between April and October. The parameters being analyzed included dissolved oxygen, pH, water temperature, and turbidity. Overall, the monitoring found the water to be of very good quality. Out of 152 samples, only six samples were found to have dissolved oxygen below 5 mg/L (the standard at which stresses aquatic life, potentially causing death). However, these six samples (ranging from 2.36 to 4.80 mg/L) were taken during a period of extreme drought and low stream flow, which may explain the low levels. The other 146 samples (that is 96% of the time) exhibited water quality that was favorable for aquatic life. All monitoring data has been uploaded to the DNR IOWATER database.

There was a volunteer water quality monitoring component for this project. Mark Nall (certified IOWATER volunteer) a science teacher from East Buchanan High School monitored four sites along Buffalo Creek with 10 students (totaling 28 volunteer hours). These results were uploaded to the DNR IOWATER database. This monitoring was used as a supplemental to the DNR and SWCD monitoring plan.

Jen Kurth (DNR) conducted a mussel survey in the fall of 2013. The results were compared to that of the 2008 pre-project assessment (and all other previous assessments). Kurth found several state-listed species (i.e., cylindrical papershell, creek heelsplitter, ellipse, and creeper), many of which were fairly young (less than five years old), suggesting that conditions may have improved in the creek. The Buchanan SWCD will seek to have the creek re-survey again in 2015 or 2016 (*see Appendix A and Appendix B*).

One project of significance was an animal waste facility upgrade. The total containment waste facility was constructed for 2800 hogs. It holds 530,000 gallons of liquid waste and cost $209,567 (WIRB cost-shared $15,000) – the balance was paid by the landowner/operator.

4) AQUATIC HABITAT IMPROVEMENT:

The third project objective was to improve aquatic habitat. Aquatic habitat improvement was addressed through the promotion of streambank stabilization, filter strips, riparian tree plantings, and riparian livestock exclusion. The watershed coordinator met with several landowners and operators regarding stream corridor projects.

Several landowners were initially interested in implementing streambank stabilization. This interest resulted in five streambank projects being surveyed, designed, and calculated cost-share. Unfortunately, the price tag was too high (even with 75% cost-share) and the 10-year maintenance agreement made the landowners lose interest. Riparian livestock exclusion was discussed during field visits with two landowners. However, the frequent flooding of the creek made the landowners lose interest, due to the maintenance agreement requiring cleaning out debris and repairing fences after flooding events.

Riparian projects and practices were well promoted through field visits, watershed mailings, news releases, public meetings. However, the frequent flooding combined with maintenance agreements caused lost interest among landowners and operators.

5) INFORMATION AND EDUCATION:

Many forms of information and education outreach were performed to increase awareness and knowledge of the watershed project. Outreach was presented in quarterly watershed-wide mailings, quarterly news release to local newspapers (i.e., Independence Bulletin Journal, Winthrop News, Oelwein Daily Register, and Lamont Leader), annual public meetings, information booth at the Buchanan County Fair, and other education opportunities. Some examples of these are attached.

Public meetings included: 1) No-Till, CRP Mid-Contract Management, Pasture Management, NRCS Programs, Watershed Practices and Funding Opportunities (held on 8/24/11), 2) EQIP Practices and Funding, and IFIP Cost-Share, CRP Mid-Contract Management, and Watershed Practices and Funding Opportunities (held on 9/24/12), 3) NRCS Programs, Pheasants Forever Projects, County Conservation Boards Projects, and Watershed Practices and Funding Opportunities (held on 3/2/13), Watershed Practices and Funding Opportunities and Construction Guidelines and Specifications (held on 2/27/2014).

Other educational opportunities include the Aurora Garden Club (held on 8/7/12), where the watershed coordinator presented on water quality, aquatic ecosystems, and urban conservation. Another educational opportunity was the ISU Extension Master Conservationist Class (held on 4/1/14) where the watershed coordinator presented on wetlands and water quality.

The Buchanan SWCD had a goal of two volunteers (per year) for the water monitoring outreach component. As stated previously, there were a total of 10 volunteers from the East Buchanan High School. This monitoring was supplemental to the DNR water monitoring program.

6) FINANCIAL ACCOUNTABILITY

Table 1. Watershed Improvement Funds

Grant Agreement Budget Line Item	Total Funds Approved – Application ($)	Total Funds Approved—Amended ($)	Total Funds Expended ($)	Available Funds ($)
Personnel	271,856.00	271,856.00	267,428.00	4,428.00
Travel and Training	3,000.00	3,000.00	1,752.63	1,247.37
Supplies	3,000.00	3,000.00	1,703.13	1,296.87
Information and Education	12,500.00	12,500.00	3,019.63	9,480.37
Grassed Waterways	58,500.00	114,750.00	75,129.40	39,620.60
Grade Stabilization Structures	26,250.00	5,000.00	0.00	5,000.00
Pasture Management	7,000.00	3,203.00	0.00	3,203.00
Streambank Stabilization	23,343.00	0.00	0.00	0.00
Contour Farming	2,800.00	2,800.00	2,149.00	651.00
Animal Waste - Basin	30,000.00	0.00	0.00	0.00
Animal Waste - Containment	40,000.00	15,000.00	15,000.00	0.00
Nutrient Management Plans	4,480.00	3,360.00	0.00	3,360.00
Critical Area Planting	8,000.00	4,620.00	0.00	4,620.00
Timber Stand Improvement	3,840.00	480.00	0.00	480.00
Cover Crops	0.00	10,000.00	4,540.00	5,460.00
Total	494,569.00	449,569.00	370,721.79	78,847.21

The total awarded WIRB funding for this project was $494,569 and was amended to $449,569. After paying for personnel, travel/training, outreach, supplies, and conservation practices; the SWCD expended $370,721.79. That left a balance of $78,847.21

Table 2. Total Project Funding

Funding Source	Cash		In-Kind Contributions		Total	
	Approved Amended Budget ($)	Actual ($)	Approved Application Budget ($)	Actual ($)	Approved Application Budget ($)	Actual ($)
WIRB	449,569.00	370,721.79	0.00	0.00	449,569.00	370,721.79
EQIP	176,300.00	32,485.20	0.00	0.00	176,300.00	32,485.20
CRP	322,650.00	41,474.24	0.00	0.00	322,650.00	41,474.24

IFIP	0.00	1,643.00	0.00	0.00	0.00	1,643.00
IJOBS - Other (2)	0.00	11,760.10	0.00	0.00	0.00	11,760.10
NRCS	0.00	0.00	10,000.00	20,250.00	10,000.00	20,250.00
Recipient	230,662.00	323,604.82	0	0	230,662.00	323,604.82
Totals	1,179,181.00	781,689.15	10,000.00	20,250.00	1,189,181.00	801,939.15

WIRB contribution: Approved budget: 38%
Actual: 46%

Funding sources were leveraged, when coordinating practices with funds. Several of the funding sources (i.e., EQIP, CRP, and IFIP) have dollar amounts that vary from year-to-year. EQIP and CRP were underutilized when compared to the approved application budget. This was due to the low demand of new grassed waterways for CRP and decreased annual funding from EQIP to rebuild non-functioning grassed waterways. When the SWCD did receive EQIP funds, they could not all be allocated to the watershed. County-wide projects were ranked, scored, and funded according to environmental impact.

The Buchanan SWCD was able to utilize funding sources that were not listed in the approved application budget (i.e., IFIP and IJOBS) which equaled $13,403.10. Not all of the WIRB funds requested were used. Several practices were a hard sell due to cost (even after 75% cost-share) and/or length of maintenance/practice agreements (i.e., pasture management, streambank stabilization, no-till farming, nutrient management plan, and riparian tree plantings).

7) ENVIRONMENTAL ACCOUNTABILITY

There were a total of 93 projects completed in the watershed. Grassed waterways (funded by WIRB, IFIP, EQIP, CRP, IJOBS) were in high demand by landowners and had positive environmental impact. They addressed much of the ephemeral gully sediment delivery. In total, there were 68 grassed waterway projects (equal to 80.2 acres). Three of these grassed waterways had rock check outlet structures (funded by CRP and EQIP) which prevented classic gully sediment delivery.

Two contour farming (WIRB) projects equaled 61.4 acres. One animal waste facility - total containment (WIRB) project was completed. There were seven cover crops (WIRB) projects equaling 602 acres. Three critical area plantings (landowner funded) for 4.8 acres. Additionally, there was one wetland (CRP) for 4.9 acres, two filter strip (CRP) projects for 8.8 acres, one SAFE (CRP - native seeding) for 10.4 acres, two quail buffer (CRP - native seeding) projects for 10.2 acres, and three contour buffer (CRP) projects for 5.8 acres.

Several practices did not sell well during the project. These included: pasture management, streambank stabilization, grade stabilization structures, no-till farming, animal waste facility – feed lot basin, nutrient management plans, timber stand improvement, riparian buffers, and tree plantings. Several of these projects were engineered and designed, but the landowners lost interest because the price tag was too high (even with 75% cost-share) and/or the lengths of the maintenance/practice agreements were undesirable.

Table 3. Practices and Activities

Practice or Activity	Unit	Approved Application Goal	Accomplishments	Percent Completion
Public Meetings	No.	4	4	100
Educational Events	No.	0	2	200
Grassed Waterways	Ac.	125.5	80.2	64
Waterway Outlet Structures	No.	8	3	38
Pasture Management	Ac.	28	0	0
Streambank Stabilization	Ft.	1058	0	0
Grade Stab. Structure	No.	1	0	0
No-Till Farming	Ac.	600	0	0
Contour Farming	Ac.	80	61.4	77
Waste Facility – Open FL	No.	1	0	0
Waste Facility – Total Con.	No.	1	1	100
Nutrient Management Plans	Ac.	1520	0	0
Critical Area Planting	Ac.	18.5	4.8	26
Timber Stand Improvement	Ac.	32	0	0
Riparian Buffer	Ac.	32	0	0
Filter Strips	Ac.	64	8.8	14
Wetlands	Ac.	16	4.9	31
Tree Planting	Ac.	12	0	0
SAFE (Native Seeding)	Ac.	0	10.4	N/A
Quail (Native Seeding)	Ac.	0	10.2	N/A
Contour Grass Strips	Ac.	0	5.8	N/A
Cover Crops	Ac.	500	602	120

The watershed project was well received by landowners and farm operators. Many of who own/operate land in the Middle Buffalo Creek Watershed (current project), so a built-in clientele and rapport has been built. Local newspapers have been supportive of the project and aided the SWCD when doing news releases. Combined with newspapers, the bulk of the landowners and operators received information through watershed-wide mailings and conversing with neighbors. Figure 1 shows spatial distribution of practices completed in the watershed.

8) PROGRAM ACCOUNTABILITY

There were three major actions that held this watershed project accountable. The first action was to modify plan of work and budget for grassed waterways, cover crops, and a project extension. Grassed waterways and cover crops required additional funding due to increase in landowner demand and positive environmental impact. The project extension was requested to change the project end date from December 31, 2013 to June 30, 2014, to allow final projects to be constructed and paid in the spring of 2014.

The second action was to use other/new practice funding sources when they become available. IJOBS and IFIP funding was utilized to repair old nonfunctioning grassed waterways. CRP was utilized on several new native seeding projects.

The third action was to perform extra outreach for practices that were hard to sell. As mentioned previously in environmental accountability; no-till, pasture management, tree plantings, grade stabilization structure, and others were difficult to sell due to landowner/operator cost (even with cost-share or incentives) and length of maintenance/practice agreements. The Buchanan SWCD held several public meetings (see outreach section) to cover the benefits of these and other practices. This outreach was geared to provide those who were interested in practices, but needed more information.

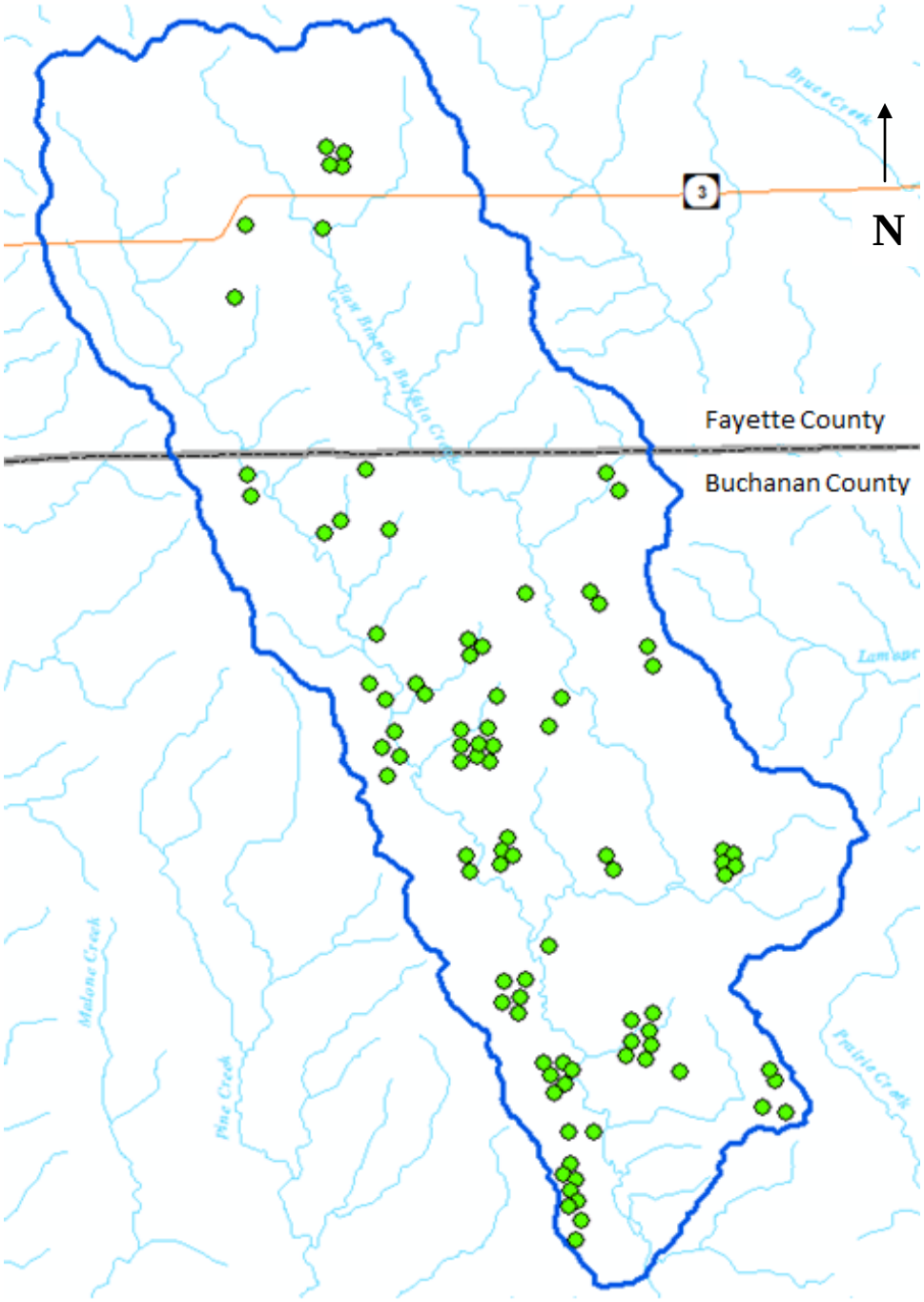

Figure 1. Map showing spatial distribution of 93 completed projects in the watershed

Project Coordinator - David Suchan
Iowa Department of Agriculture – DSC
Office: Buchanan County SWCD
503 17th St SE, Independence, Iowa 50644
Ph. (319)334-4105 Fax (319)334-6995

June 8, 2010

Dear Upper Buffalo Creek Landowners/Operators,

The Buchanan County and Fayette County SWCD/NRCS offices are happy to offer special funding opportunities for conservation practices located in the Upper Buffalo Creek Watershed. Projects range from 50% to 90% cost-share, plus incentives! These projects include: grassed waterways, grazing management, streambank stabilization, grade stabilization structures, no-till farming incentives, contour farming incentives, Ag waste facility/feedlot upgrades, nutrient management plans, critical area planting, timber stand improvement, riparian buffers, filterstrips, wetlands, and tree plantings.

If you are interested, please contact David at (319)334-4105 ext. 115 or at 503 17th St. SE in Independence (located between Cy and Charlie's Firestone/Appliance and Norby's Farm and Fleet)

Below are a few other items that may interest you:

1) Contact your local SWCD/NRCS to see if you can qualify for the USDA Conservation Stewardship Program (CSP). This program offers payments to producers who maintain a high level of conservation on their land and who agree to adopt higher levels of stewardship. Payments average $25/acre/year. **Deadline to apply is June 25, 2010 (two weeks from now). County contacts are**:

Buchanan: 319-334-4105 ext. 3 **Fayette: 563-422-3868 ext. 3**

2) CRP General Sign-Up (through your local Farm Service Agency) is rumored to be coming this summer!!! It has not been offered in four years and may not be offered again for several more years. The CRP General Sign-Up offers landowners annual payments on 10- to 15-year contracts for establishing native grasses on their land. It's widely credited with significantly boosting pheasant and other wildlife populations, but it's also beneficial for sequestering carbon, recharging groundwater supplies, protecting against soil erosion and limiting nitrogen and phosphorous runoff into river, lakes and streams. **Keep your eye on the media to see when sign-up begins**

(continued on other side)

The Upper Buffalo Creek Water Quality Project is supported in part or in total by the Iowa Department of Agriculture and Land Stewardship, Division of Soil Conservation, through grant funds of the (Iowa) Watershed Improvement Review Board. Technical assistance is provided by the U.S. Department of Agriculture, Natural Resources Conservation Service and the Iowa Departments of Agriculture and Natural Resources. All programs and services are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

3) Low Interest Loans are available! This loan fund is ready when you are. Applications are accepted at any time during the year, and turn-around time is quick. This program requires no cash up front. Quick loan processing and friendly loan repayment terms let you get your project done now. This program gives you significant cost savings. These loans complement other funding sources through NRCS. You can use a loan to provide your share of the project. Loan amounts range from $5,000 - $500,000 per borrower with loan terms up to 10 years at an interest rate of no more than 3% - fixed for the life of the loan. Loans can fund up to 100% of a project's actual cost or be used in conjunction with cost-share or grants. **Contact your local SWCD/NRCS to apply for this program.**

4) Visit with your County Sanitarian to conduct private well testing (for drinking water) and proper septic system management. Drinking water should be tested for high concentrations of bacteria and nutrients because they could cause adverse health effects. Septic systems should be maintained on a regular basis to limit the amount of nutrients and bacteria that may enter the local streams and rivers. Many County Sanitarians recommend private septic systems be cleaned every 3-5 years, to ensure proper functioning. **Please contact your Count Sanitarian with further questions or to set up a meeting. County Sanitarian contact information:**

Buchanan: 319-334-2873 **Fayette: 563-422-3767**

You are included on the watershed mailing list, because our records indicate that you either own land or operate farm ground in the watershed. If you have been sent this letter in error, we apologize. Please let us know if you would no longer like to receive information about special watershed funding and programs. Thank you!

Sincerely,

David Suchan, Watershed Coordinator
(319) 334-4105 ext. 115
david.suchan@ia.nacdnet.net

Project Coordinator - David Suchan
Iowa Department of Agriculture – DSC
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January 2011

Dear Upper Buffalo Creek Watershed Landowners and Operators,

The Buchanan and Fayette SWCD/NRCS offices wanted to remind you that there are special funding opportunities available for conservation practices! We are sure many of you are ready for the snow to melt and weather to get warmer. We would like you to consider a few programs for the upcoming growing season. Feel free to drop by the office or call us, so we can discuss the project and your ideas. Get involved!

No-Till – is utilized to increase crop residue which provides valuable ground cover, improve organic material in soil, and protect against soil erosion from water and wind.

- **$75/acre incentive payment**
- **600 acres available**

Contour Farming – is planting and harvesting crops on sloping land, which are done on land contours. This practice reduces sheet and rill soil erosion and manages water runoff.

- **$35/acre incentive payment**
- **80 acres available**

Nutrient Management – helps managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments.

- **$8/acre**
- **1660 acres available**

Pasture Management – includes fencing, legume interseeding, and/or alternative livestock watering. Pasture must be located in floodplain/riparian areas to qualify.

- **$250/acre funding**
- **28 acres available.**

Over →

Grassed Waterways – are installed in areas of concentrated water flow. These practices are intended to eliminate gully erosion during heavy rainfall events. Funds are available for new **and** for rebuilding old waterways. **(50 to 90% cost-share funding)**

Streambank Stabilization – are treatment(s) used to stabilize and protect stream/river banks in order to prevent the loss /damage to land. They can also be used for enhancing the stream corridor for fish and wildlife habitat, aesthetics, and recreation. **(75% cost-share funding) 1245 feet available.**

Grade Stabilization Structures – consists of a dam, embankment, or other structure designed to reduce water flow and stop an advancing gully. **(75% cost-share funding)**

Animal Waste Facilities – include open feedlot runoff control units or total containment units **(25% to 75% cost-share funding) 2 open feedlot runoff control units and 2 total containment units available.**

Critical Area Planting – is establishing permanent vegetation on sites that have (or are expected to have) high water/wind erosion rates. Includes seeding, seedbed preparation, and fertilizer **($250/acre) 32 acres available. Must be located in floodplain/riparian areas.**

Timber Stand Improvement – frees desirable trees from competition with poorer trees (which are cut down). This practice provides erosion control, improves water quality through uptake of soil and water borne chemicals and nutrients, and provides wildlife habitat. **($120/acre) 32 acres available. Must be located in floodplain/riparian areas.**

Riparian Buffer – are trees installed along a stream to catch sediment, build organic matter, and filter runoff before entering a stream **(Up to 90% cost-share funding, plus soil rental rate) 32 acres available**

Filterstrips – are grasses planted along a stream to catch sediment, build organic matter, and filter runoff before entering a stream. **(Up to 90% cost-share funding, plus soil rental rate) 64 acres available**

Wetland Restoration – is the rehabilitation of a drained or degraded wetland area where the soils, hydrology, vegetative community, and biological habitat are returned to the best natural condition as possible. **(Up to 90% cost-share funding, plus soil rental rate) 16 acres available**

Tree/Shrub Establishment – consists of woody plants in non-forested areas by planting seedlings, container/potted plants, cuttings or by direct seeding. This practice provides erosion control, improves water quality through uptake of soil and water borne chemicals and nutrients, and provides wildlife habitat. **(Up to 90% cost-share funding, plus soil rental rate) 12 acres available**

Quail Buffers – are strips of vegetation established at the edge or around the perimeter of cropped fields. This reduces erosion from water and wind, while providing wildlife with food and cover. **(Up to 90% cost-share funding, plus soil rental rate)**

Aquatic Ecosystems

DAVID SUCHAN, BUCHANAN COUNTY (NRCS/SWCD)

AURORA PUBLIC LIBRARY

AUGUST 6, 2012

What is an Aquatic Ecosystem?

- A community of organisms that are dependent on each other in a water-based environment.
  - >99% = Marine (saltwater): oceans, seas, lagoons, etc…
  - <1% = Freshwater: rivers, streams, lakes, wetlands, etc…
    - Freshwater organisms: algae, snails, mussels, water bugs, frogs, turtles, beavers, etc…

South Fork Maquoketa River

- Rainbow Trout
- Central Stoneroller
- Bigmouth Shiner
- Green Sunfish
- Brassy Minnow
  - 14 other species of fish
  - One “Sensitive” Species

Backbone Lake

Buffalo Creek

- 22 Species of Fish
  - Five “Sensitive” Species
- 12 Species of Mussels
  - Two “Threatened” Species

Pop Quiz!!!

- What is Iowa's #1 water pollutant?
  - A) Manure (livestock)
  - B) Sediment (soil)
  - C) Nitrogen (fertilizer)
  - D) Phosphorus (fertilizer)

Answer…

- B) Sediment

5 tons/acre/year

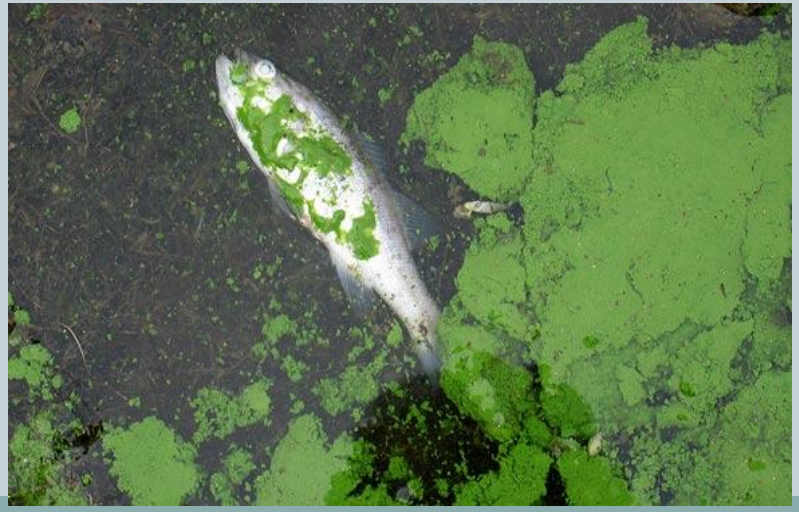
Healthy Aquatic Ecosystem

- It is easy, but hard to explain… Many variables!
- What would you say it looks like?
  - No wrong answers!

Aquatic Ecosystem: Harmful

- Things we can't really control:
  - Floods
  - Droughts
  - Predators, others…

Aquatic Ecosystem: Harmful



- Things we can control:
  - Sediment
  - Fertilizers (too much)
  - Manure (too much)

Aquatic Ecosystem: Harmful

- Things we can control:
  - Dumping Chemicals
  - Lack of Vegetation
  - Others…

Aquatic Ecosystem: Helpful

- Things we can do to help on the farm!
  - Increase Residue/Contour Farm
  - Wetlands
  - Filter Strips
  - Grassed Waterways
  - Prescribed Grazing

Aquatic Ecosystem: Helpful

- Things we can do to help in town!
  - Do not over apply lawn fertilizers
  - Limit lawn pesticides
  - Plant trees, native grasses, wildflowers
    - Rain Gardens!!!
  - Keep grass clippings in your yard
  - Start a compost pile
  - Conserve water/use a rain barrel
  - Fix leaky vehicles
  - Properly dispose of hazardous waste
    - 319-334-6312 (1618 Kentucky Ave)

Aquatic Ecosystem: Helpful

Soil Tests at local Co-op?

- Thanks!
- Any Questions?

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Upper Buffalo Creek – Public Meeting

By David Suchan, Environmental Specialist
Iowa Department of Agriculture and Land Stewardship
4 September 2012

The Buchanan County Soil and Water Conservation District would like to inform the public of an upcoming Upper Buffalo Creek watershed meeting. The meeting is open to the entire public; it will not be limited to those in the watershed. The meeting will be held on Monday, September 24th at (10 am to 12 noon) at the Independence Public Library – Community Room. The meeting (aimed at improving water quality, soil conservation, and wildlife habitat) will include presentations on watershed progress, conservation practices and funding available, and how to properly maintain conservation practices.

Please call David at 319-334-4105 ext.3 if you plan on attending, so that we have enough seats available. If you are unable to attend the meeting, but would like information in regard to these topics please contact David at the number above, or stop by the office at, 503 17th St. SE, in Independence.

This program is sponsored by Buchanan SWCD/NRCS and will be held in the Community Room of the Independence Public Library

Buchanan County SWCD

503 17th St. SE
Independence, IA 50644

Phone: 319-334-4105 ext.3
Fax: 319-334-6995
Email:
david.suchan@ia.nacdnet.net

Who to contact:

David Suchan -

Watershed

Coordinator

The Upper Buffalo Creek Water Quality Project is supported in part or in total by the Buchanan and Fayette County Soil and Water Conservation Districts and the Iowa Department of Agriculture and Land Stewardship (Division of Soil Conservation), through funds provided by the Watershed Improvement Review Board (WIRB). Technical assistance is

Buchanan County SWCD
503 17th St. SE
Independence, IA 50644

Buchanan and Fayette Soil and Water Conservation Districts

Upper Buffalo Creek–Water Quality Project

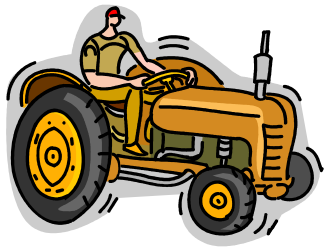
Winter 2011

Get involved! Funds are available!

The South Fork Maquoketa Watershed covers more than 36,000 acres in Buchanan, Delaware, and Fayette Counties. Agricultural land-use accounts for 88% of the total land in the watershed.

We here at the Soil and Water Conservation District (SWCD) and the county commissioners commend watershed residents for the great work that has been done in the past and ask everyone to continue reducing the amounts of bacteria, nutrients, and sediments by using conservation practices.

As crops are being harvested this fall, keep an eye open for problem areas, and consider a conservation practice (through the SWCD) as a remedy.



Get involved!

Funds are available!

These practices not only improve the value and success of your operation, but also can contribute to improving water quality significantly by reducing the amount of bacteria, nutrients, and sediment reaching surface waters.

Feel free to drop by the office or call for a farm visit, so we can discuss the project and your ideas.

We will find you the best possible conservation practice to fit your needs, while providing you the largest amount of funds possible (if qualified).

Phone: 319-334-4105

Types of Conservation Practices

The following practices are available immediately – funds given on a first-come first-serve basis.

Funds and incentives are available for:

Grassed Waterways – are installed in areas of concentrated water flow. These structures are intended to eliminate gully erosion during heavy rainfall events. Funds are available for new **and** for reconstructing waterways.

Quail Buffers – are strips of vegetation established at the edge or around the perimeter of cropped fields. This reduces erosion from water and wind, while providing wildlife with food and cover.

Filterstrips – are areas where vegetation is installed along a stream to catch sediment, build organic matter, and filter runoff before entering a stream.

No-Till – is utilized to increase crop residue which provides valuable ground cover, improve organic material in soil, and protect against soil erosion from water and wind. **($20 an acre)**

Tree/Shrub Establishment – consists of woody plants in non-forested areas by planting seedlings, container/potted plants, cuttings or by direct seeding. This practice provides erosion control, improves water quality through uptake of soil and water borne chemicals and nutrients, and provides wildlife habitat.

Timber Stand Improvement –frees desirable trees from competition with poorer trees (which are cut

Fax: 319-334-4105

down). This practice provides erosion control, improves water quality through uptake of soil and water borne chemicals and nutrients, and provides wildlife habitat.

Wetland Restoration – is the rehabilitation of a drained or degraded wetland area where the soils, hydrology, vegetative community, and biological habitat are returned to the best natural condition as possible.

Contour Farming – is the planting and harvesting of crops on sloping land, which are done on land contours. This practice reduces sheet and rill soil erosion and manages water runoff. **($35 an acre)**

Critical Area Planting – is establishing permanent vegetation on sites that have (or are expected to have) high water/wind erosion rates.

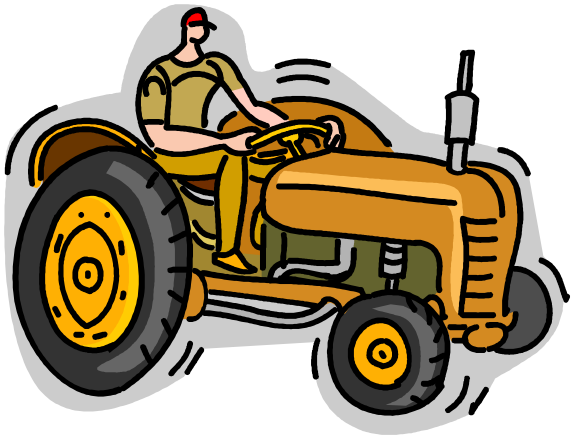
Grade Stabilization Structures – consists of a dam, embankment, or other structure designed to reduce water flow and stop an advancing gully.

Streambank Stabilization – are treatment(s) used to stabilize and protect stream/river banks in order to prevent the loss of land or damage to land use. They can also be used for enhancing the stream corridor for fish and wildlife habitat, aesthetics, and recreation.

Cover Crops – includes growing grasses, legumes, and forbs that reduce erosion from water and wind, increase organic matter in soil, and captures/ recycles nutrients in the soil. **($20 an acre)**

Email: david.suchan@ia.nacdnet.net

2012 Buchanan County Fair



The Upper Buffalo Creek Watershed Project has many special funding opportunities for landowners and operators. Feel free to drop by the office or call for a farm visit, so that we can discuss your ideas. Get involved! Practices available include:

Grassed Waterways – these structures are intended to eliminate gully erosion during heavy rainfall events. Funds are available for new **and** for rebuilding old waterways. **(50 to 90% cost-share funding)**

Pasture Management – includes paddock fencing, legume interseeding, and/or alternative livestock watering **($250/acre funding)**

Streambank Stabilization – are used to stabilize and protect stream/river banks in order to prevent the loss/damage to land. They can also be used for enhancing the stream corridor for fish and wildlife habitat, aesthetics, and recreation. **(75% cost-share funding)**

Grade Stabilization Structures – consists of a dam, embankment, or other structure designed to reduce water flow and stop an advancing gully. **(75% cost-share funding)**

No-Till – increases crop residue which provides valuable ground cover, improve organic material in soil, and protect against soil erosion from water/wind. **($75/acre incentive)**

Contact: David Suchan, Project Coordinator at the Buchanan County SWCD/NRCS
503 17th St SE, Independence, Iowa 50644 - Ph. (319)334-4105 ext. 3

Contour Farming – is planting/harvesting crops on sloping land, which are done on land contours. This reduces sheet/rill soil erosion and manages water runoff. **($35/acre incentive)**

Animal Waste Facilities – include open feedlot runoff control units or total containment units **(25% to 75% cost-share funding)**

Nutrient Management – Managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments. **($8/acre)**

Critical Area Planting – is establishing permanent vegetation on sites that have (or are expected to have) high water/wind erosion rates. **($250/acre)**

Timber Stand Improvement – frees desirable trees from competition with poorer trees (which are cut down). This practice provides erosion control, improves water quality through uptake of soil and water borne chemicals and nutrients, and provides wildlife habitat. **($120/acre)**

Riparian Buffer – are trees installed along a stream to catch sediment, build organic matter, and filter runoff before entering a stream **(Up to 90% cost-share funding, plus soil rental rate)**

Filterstrips – are grasses planted along a stream to catch sediment, build organic matter, and filter runoff before entering a stream. **(Up to 90% cost-share funding, plus soil rental rate)**

Wetland Restoration – is the rehabilitation of a drained or degraded wetland area where the soils, hydrology, vegetative community, and biological habitat are returned to the best natural condition as possible. **(Up to 90% cost-share funding, plus soil rental rate)**

Tree/Shrub Establishment –planting seedlings, container/potted plants, cuttings or by direct seeding (in non-forested areas). This practice provides erosion control, improves water quality, and provides wildlife habitat. **(Up to 90% cost-share funding, plus soil rental rate)**

Quail Buffers – are strips of vegetation established at the edge or around the perimeter of cropped fields. This reduces erosion from water and wind, while providing wildlife with food and cover. **(Up to 90% cost-share funding, plus soil rental rate)**

Contact: David Suchan, Project Coordinator at the Buchanan County SWCD/NRCS
503 17th St SE, Independence, Iowa 50644 - Ph. (319)334-4105 ext. 3

BUCHANAN COUNTY SOIL & WATER CONSERVATION DISTRICT

Urban Conservation

Upper Buffalo Creek - Water Quality Project

Summer 2012

"Conservation Strategies for Communities"

BUCHANAN COUNTY SOIL & WATER CONSERVATION DISTRICT

503 17th St SE
Independence, IA 50644

Phone: 319-334-4105
Fax: 319-334-6995
E-mail:
david.suchan@ia.nacdnet.

Even the most urban landscape can be turned into a sanctuary for wildlife and help improve and protect our natural resources. Simple plantings of native shrubs, wildflowers and grasses can attract birds and butterflies and other animals, providing food and cover. In addition to bringing nature to your doorstep, many urban conservation practices can help improve the quality of our lakes, rivers, and streams by reducing stormwater runoff.

Urbanization has greatly increased the amount of waterproof surfaces creating an overload of stormwater runoff in our watersheds. Large quantities of water, which previously were allowed to infiltrate into the ground, now flow quickly through storm sewers and into our lakes, rivers, and streams. This short-term spike in water flow runoff increases flooding and erosion problems as well as delivers large amounts of nutrients and sediments into our waters.

Listed on the back, are a few different urban conservation practices that community members **(in Aurora, Stanley, and Winthrop)** can use to help improve the quality of the lakes, rivers, and streams we all enjoy.

9 Ways That Residents of Aurora, Stanley, and Winthrop Can Help:

1) Use lawn fertilizers with care. Over application on grass and over-spreading (onto streets and sidewalks) can make it easy for the fertilizer to find its way into surface waters.

2) Limit the use of lawn pesticides. When using lawn pesticides, follow the recommended application rates stated on the package. Over application makes it easier for excess pesticides to find its way into surface waters.

3) Consider planting trees, native grasses, or native wildflowers! They are great for backyard birds and butterflies, and they have deep root systems which helps rainwater to drain into soils quicker.

4) Keep lawn clippings and mulched leaves in your yard. If they are blown onto sidewalks and streets, they can be transported by storm water runoff into surface waters. Yard waste transported to surface waters can provide too much nitrogen and damage water quality. Mow on a high setting frequently, this helps mulch grass and other yard waste into the soil (provides great organic material).

5) Start a compost pile! Composting turns household wastes (old food, grass clippings, livestock manure, dried leaves, twigs, and others) into valuable fertilizer and soil organic matter.

6) Use water wisely! If you need to water your yard, do it in the early morning before the sun is intense or in the evening when the sun has gone down. This helps reduce the loss of water from evaporation. Installing rain gutters and collecting water from downspouts also helps reduce your water bill. Use a rain barrel to capture rain water!

7) Properly plug any old or unused wells or cisterns. Surface storm water runoff is capable of transporting water into these wells and cisterns, which can pollute ground water.

8) Quickly fix any leaks from vehicles or equipment. Leaking oils and fluids are extremely harmful to water quality. One quart of oil can contaminate thousands of gallons of water.

9) Properly handle hazardous household products. Avoid household products with hazardous ingredients, or handle them with extreme care. Many toxic ingredients in paint thinners and drain cleaners, for example, can contaminate water sources. When using these products, only enough of the product to get the job done, never dump hazardous products (down drains, the toilet, or near flowing water, ponds, or lakes), and do not dump them on the ground.

The Upper Buffalo Creek - Water Quality Project is supported by the Iowa Department of Agriculture and Land Stewardship, Division of Soil Conservation, through funds of the Watershed Improvement Review Board. Technical assistance is provided by the U.S. Department of Agriculture, Natural Resources Conservation Service.

Project Coordinator - David Suchan
Iowa Department of Agriculture – DSC
Office: Buchanan County SWCD
503 17th St SE, Independence, Iowa 50644
Ph. (319)334-4105 ext. 115 Fax (319)334-6995

Sponsors and Supporters

Government

Federal:

United States Department of Agriculture:

- Natural Resources Conservation Service
- Farm Service Agency
- NE Iowa RC&D

State:

Iowa Department of Agriculture and Land Stewardship:

- Division of Soil Conservation

Watershed Improvement Review Board (WIRB)

Iowa Department of Natural Resources - Environmental Protection Division

Iowa State University:

- Cooperative Extension Service

Local:

- Buchanan and Fayette County Soil and Water Conservation Districts

Other:

- Local landowners
- Pheasants Forever
- Upper Buffalo Creek Watershed Advisory Committee
- Upper Buffalo Creek Watershed Technical Advisory Committee
- Local Newspapers

July 31, 2013

Funding for Cover Crops

Dear Watershed Landowners and Operators,

Have you ever thought of trying fall cover crops? Well, now might be the time because there are funds available!

Funding is $20/acre for up to 50 acres. This special funding is based on a first-come, first-served basis. Call **319-334-4105 ext. 3** or stop by the Independence office at **503 17th St. SE.**

Fall cover crops can help build soil, fix nitrogen, prevent erosion, and fix compaction issues. Cover crop seeding can consist of cereal rye, winter wheat, radish, winter peas, hairy vetch, turnip, and others.

OVER →

The Upper Buffalo Creek Water Quality Project is supported in part or in total by the Buchanan and Fayette County Soil and Water Conservation Districts and the Iowa Department of Agriculture and Land Stewardship (Division of Soil Conservation), through funds provided by the Watershed Improvement Review Board (WIRB). Technical assistance is provided by the U.S. Department of Agriculture, Natural Resources Conservation Service. All programs and services are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap. Equal opportunity employer.

Buffalo Creek Wildlife Management Area

Wildlife Habitat Tour

August 7th
Session 1: 1pm to 3pm
Session 2: 5pm to 7pm (meal provided)

RSVP to Chris Hiher at 563-929-0375

Topics include:

- Introduction to Buffalo Creek Wildlife Management Area
- Wildlife Food Plots
- Wetland Management
- Effects of Prescribed Fire
- Native Plant Identification

Directions:
Meet at the intersection of 120th Ave and 325th St. (South of Robinson, in Delaware County)
Use 110th Ave or Robinson Road and turn East on 310th St. and South on 120th Ave.

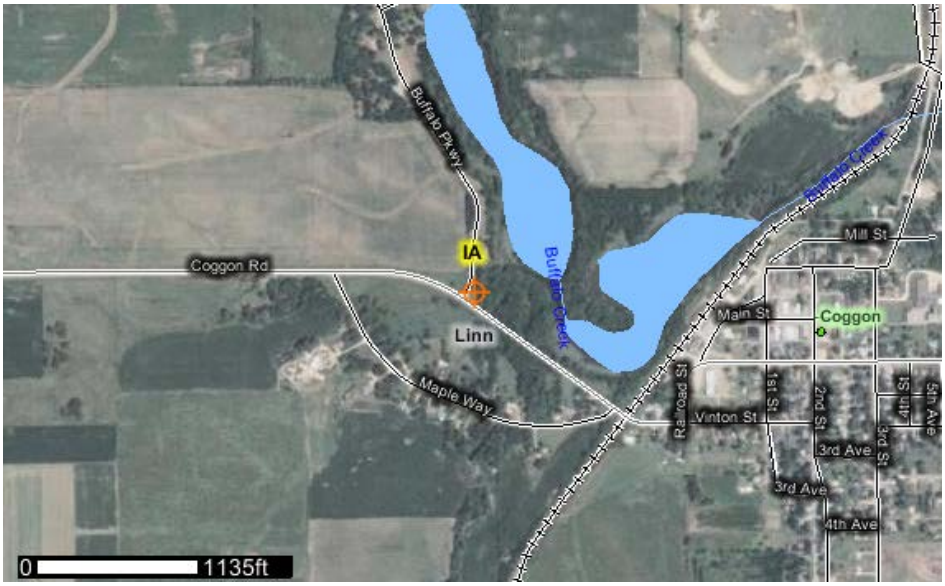
Sponsored by Pheasants Forever

APPENDIX A
Mussel Assessment Sites

Site ID: 63
UTM Coordinates (NAD 83 Zone 15): 621916.5233, 4681515.8376

Landowner: Casey and Jane McGowan 319-435-2036 or 319-294-2220

Site ID: 56
UTM Coordinates (NAD 83 Zone 15): 620431.7179, 4682081.4777



Landowner: Linn County

Site ID: 59
UTM Coordinates (NAD 83 Zone 15): 616984.2789, 4687071.5437

Landowner (left side of road): Clair Mangold 563-932-2466
Landowner (right side of road): Delaware County

Site ID: 54
UTM Coordinates (NAD 83 Zone 15): 613754.4618, 4691251.0000

Landowner (left side of road): Daniel/Lucean Fangman 563-932-2797
Landowner (right side of road): Ronald Monaghan 563-920-9336

Site ID: 58
UTM Coordinates (NAD 83 Zone 15): 610809.3157, 4695954.0134

Landowner: Mark Werner 319-934-3526 or Sandra Werner 319-935-3704
Landowner: Joseph McIntosh 319-935-3209 or William McIntosh 319-934-3525

Site ID: 55
UTM Coordinates (NAD 83 Zone 15): 608259.8950, 4699654.1524

Landowner (north side of road): Gene Buhr 319-935-3486
Landowner (south side of road): Mark Quade 563-583-2039

Site ID: 57
UTM Coordinates (NAD 83 Zone 15): 604478.3691, 4705521.7476

Landowner (north side of road): Paul Reck 319-935-3092
Landowner (south side of road): Lives out of State – Paul Reck (above) rents the land

APPENDIX B
Mussel Assessment Results

Site 63:

Seventy-seven mussels from 8 species were collected alive, with another 5 species found only as shell. In 1984, 10 species were found alive here, with another 2 collected as shell. In the most recent survey in 2008, 2 species were found alive, with another 9 found as relic shell only.

Common name	Scientific name	Condition
Elktoe	Alasmidonta marginata	Living
White heelsplitter	Lasmigona complanata	Living
Fluted-shell	Lasmigona costata	Living
Mucket	Actinonaias ligamentina	Living
Lilliput	Toxolasma parvus	Living
Ellipse	Venustaconcha ellipsiformis	Living
Fatmucket	Lampsilis siliquoidea	Living
Plain pocketbook	Lampsilis cardium	Living
Giant floater	Pyganodon grandis	Recent Shell
Cylindrical papershell	Anodontoides ferussacianus	Recent Shell
Creek heelsplitter	Lasmigona compressa	Recent Shell
Pimpleback	Quadrula pustulosa	Recent Shell
Threeridge	Amblema plicata	Recent Shell

9007-004 Upper Buffalo Creek Water Quality Project: January 1, 2010 – June 30, 2014

Site 56:

Thirty-seven mussels from 5 species were collected alive. In 1984, 12 species were found alive here, with another 3 collected as shell. In the most recent survey in 2008, no living mussels were found, and 3 species found as relic shell only.

Common name	Scientific name	Condition
White heelsplitter	Lasmigona complanata	Living
Wabash pigtoe	Fusconaia flava	Living
Ellipse	Venustaconcha ellipsiformis	Living
Fatmucket	Lampsilis siliquoidea	Living
Plain pocketbook	Lampsilis cardium	Living

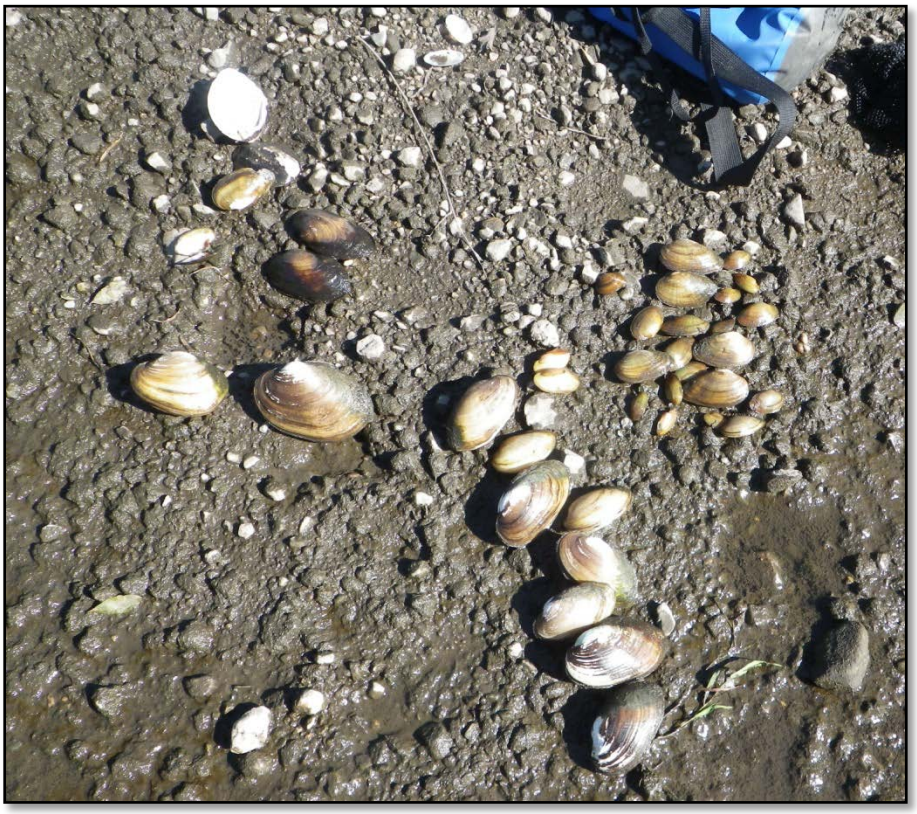
Site 360: (Buffalo Creek WMA in Delaware County)

This site was not surveyed in the previous surveys, but is one that I survey in 2010. I resurveyed it this time to see what effects, if any, the drought has had on mussels in the upper segment of Buffalo Creek. We found 64 mussels from 8 species this time, compared to 51 mussels from 4 species in 2010, with another 4 species found as shells only. It would appear that the drought has not had an impact at this site.

Common name	Scientific name	Condition
Cylindrical papershell	Anodontoides ferussacianus	Living
White heelsplitter	Lasmigona complanata	Living
Creek heelsplitter	Lasmigona compressa	Living
Wabash pigtoe	Fusconaia flava	Living
Lilliput	Toxolasma parvus	Living
Ellipse	Venustaconcha ellipsiformis	Living
Fatmucket	Lampsilis siliquoidea	Living
Plain pocketbook	Lampsilis cardium	Living

Site 59:

Thirty-one mussels from 4 species were collected alive and another 3 as shells only. In 1984, 3 species were found alive here, with another 2 collected as shell. In the most recent survey in 2008, no living mussels were found, and 7 species found as relic shell only.



Common name	Scientific name	Condition
Wabash pigtoe	Fusconaia flava	Living
Ellipse	Venustaconcha ellipsiformis	Living
Fatmucket	Lampsilis siliquoidea	Living
Plain pocketbook	Lampsilis cardium	Living
White heelsplitter	Lasmigona complanata	Recent Shell
Creek heelsplitter	Lasmigona compressa	Recent Shell
Threeridge	Amblema plicata	Weathered Shell

Site 54:

Twelve mussels from 4 species were collected alive and another 3 as shells only. In 1984, 2 species were found alive here. In the most recent survey in 2008, no living mussels were found, and 2 species found as relic shell only.

Common name	Scientific name	Condition
Mucket	Actinonaias ligamentina	Living
Lilliput	Toxolasma parvus	Living
Ellipse	Venustaconcha ellipsiformis	Living
Plain pocketbook	Lampsilis cardium	Living
Creeper	Strophitus undulatus	Weathered Shell
Elktoe	Alasmidonta marginata	Recent Shell
Fatmucket	Lampsilis siliquoidea	Weathered Shell

Site 58:

Ten mussels from 5 species were collected alive and another 2 as shells only. In 1984, 5 species were found alive here. In the most recent survey in 2008, no living mussels were found, and 2 species found as relic shell only.

Common name	Scientific name	Condition
Giant floater	Pyganodon grandis	Living
White heelsplitter	Lasmigona complanata	Living
Mucket	Actinonaias ligamentina	Living
Lilliput	Toxolasma parvus	Living
Fatmucket	Lampsilis siliquoidea	Living
Threeridge	Amblema plicata	Weathered Shell
Plain pocketbook	Lampsilis cardium	Weathered Shell

Site 55:

No live mussels were found at this site, but shells of 6 species were found. In 1984, 4 species were found alive here, with another 5 found as shells only. In the most recent survey in 2008, 2 living mussels from one species (giant floater) were found, and 2 species found as relic shell only.

Common name	Scientific name	Condition
Giant floater	Pyganodon grandis	Recent Shell
Cylindrical papershell	Anodontoides ferussacianus	Recent Shell
Creeper	Strophitus undulatus	Recent Shell
Mucket	Actinonaias ligamentina	Recent Shell
Fatmucket	Lampsilis siliquoidea	Weathered Shell
Plain pocketbook	Lampsilis cardium	Weathered Shell

Site 57:

Ten mussels from 2 species were found at this site, and another species as shell only. In 1984, 6 species were found alive here, with another one found as shell only. In the most recent survey in 2008, no living mussels were found, and 1 species was found as relic shell only.

Common name	Scientific name	Condition
Cylindrical papershell	Anodontoides ferussacianus	Living
Fatmucket	Lampsilis siliquoidea	Living
Threeridge	Amblema plicata	Weathered Shell

Of all the mussels found in this survey, there were living representatives of three state-listed mussels: cylindrical papershell (Anodontoides ferussacianus), creek heelsplitter (Lasmigona compressa), and ellipse (Venustaconcha ellipsiformis), with a recent shell found from an additional listed species, creeper (Strophitus undulatus). Additionally, many of the mussels we found were fairly young (less than five years old), suggesting that conditions may have improved in the stream for mussels.