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Pathways for Getting to Better Water Quality: The Citizen Effect

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Chapter 14
Cross-Cultural Collaboration for Riparian Restoration on Tribal Lands in Kansas

Charles J. Barden, Lillian Fisher, William M. Welton, and Ryan Dyer

Introduction

American Indian tribes are recognized as sovereign nations within the borders of the United States by the federal government. As such, they have the right and responsibility to set their own laws and standards regarding environmental quality within the boundaries of their reservations. This sovereignty sometimes puts them at odds with local, county, and state agencies who are similarly charged, but whose best interests or value systems may run counter to those of the tribe. Juxtapose this tension upon a long history of ethnic cleansing, broken treaties, forced acculturation, general ill treatment, and the sometimes well-intentioned, but ultimately harmful acts of government entities, and there is little need to wonder that tribal communities may treat offers of outside assistance with suspicion. On the side of the assisting entity, a land-grant university, for example, there is a cultural tendency toward a big brotherly approach of doing "what's best for the tribe" without recognizing that the tribe may have its own idea of what is best for them, or that this may differ from the land grant's plans.

Collaborative partnerships must recognize the sovereignty of tribal government, the dignity of tribal people, and the uniqueness of tribal culture to overcome distrust, and to accept and integrate tribal authority and decision mechanisms if they are to effectively address shared environmental concerns. This case study reports on lessons learned during a decade of cooperation between Kansas State University (KSU), Haskell Indian Nations University (Haskell), and the Prairie Band Potawatomi Nation (PBPN) on water quality education and riparian buffer adoption. Traditional tribal beliefs prioritize water as the most sacred of elements and provided the basis for engaging in cross-cultural collaboration on streambank stabilization, riparian restoration, and watershed bioassessment activities.

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The Prairie Band Potawatomi Nation

The PBPN reservation is located in northeast Kansas. The reservation is 11 miles by 11 miles, hence 121 square miles of rolling prairie, woodlands, crop, and pasture land, cut by numerous perennial streams. Land within the reservation has a checkerboard pattern of ownership, with more than 34,000 acres owned by the tribe, of which, some is held in trust by the Bureau of Indian Affairs, while much of the remainder is owned by non-Indians. The Potawatomi themselves are not historically a farming people and the croplands are largely leased to white farmers who use standard crop production practices relying on fertilizers and pesticides. The tribe maintains a herd of approximately 140 bison and limited vegetable gardens and orchards. Water for residents comes from the local rural water district, but the Potawatomi monitor the surface waters on the reservation because these are used for recreation and subsistence fishing. The reservation is located about an hour's drive from Haskell Indian Nations University, one of two intertribal colleges in the United States. Haskell's student body is comprised entirely of Native American students drawn from all 50 states and more than 130 different tribes. Haskell attempts to weave cultural awareness into the curriculum, including classes and research efforts.

The collaboration described here began with a Kansas State University Extension demonstration project entitled "Bioengineering and Riparian Buffers – Building Tribal Capacity to Improve Water Quality in Kansas." The USDA CSREES National Integrated Water Quality Program had established a priority opportunity for extension water quality outreach to underserved audiences. Dr. Charles Barden, primary author, initiated contacts and planning with the Native American tribes in Kansas. The specific history of conflicts and negotiation that established this successful cooperative project is discussed in the general context of challenges and opportunities for working with tribal organizations.[1]

First Contact: Overcoming Distrust

The environmental departments of the four Kansas tribes (PBPN, Sac & Fox, Iowa, and Kickapoo) were invited by Bill Welton (coauthor) to consider proposing a cooperative project. Welton, an environmental science professor at Haskell Indian Nations University, facilitated the initial discussion. The only tribe to accept the invitation was the PBPN. Tribal representatives attending the first meeting included the PBPN biologist and an interested tribal member. Tribal leaders were wary and uncertain about the idea. In an earlier "cooperative" effort – an organic orchard

[1]Barden, C. J. 2003. "Lessons Learned from Collaboration with the Potawatomi Nation." Presented at sixth International Union of Forestry Research Organizations (IUFRO) Extension Working Party Symposium, Troutdale, OR, September 30.

planting – a KSU faculty member had failed to follow through. Grant funding was lost, and the tribe lacked the resources to continue the work.

Once assured that KSU Extension forestry would not "walk away" after starting the project, the tribe was willing to discuss details of a new joint effort. While the tribal representatives only wanted to have tribal members hired for the tree planting and other fieldwork, they ultimately agreed to develop an integrated crew of three KSU students and three tribal members. The tribe selected its own crew members. KSU included the campus Native American Student Association in their recruiting. As a result of the meeting, a letter of support for the proposal from the tribal council was secured within a week. The proposal was funded late in 1998.

Appearing Before the Tribal Council

The project was a cultural as well as a scientific collaboration. As project plans were developed and implemented, the KSU partners found at every stage it was necessary to work with the Tribal Council and through Tribal departments rather than directly with individuals. Streambank stabilization practices were to be installed in spring 1999. To secure use of some of the tribe's heavy equipment, as proposed in the project, the KSU Principal Investigator had to appear before the Potawatomi Tribal Council, present the project plan for the riparian restoration, and request use of the tribes' heavy equipment.

The first scheduled meeting was canceled when the council got behind in their agenda. At the following meeting, the presentation seemed to be well received, until one of the council members asked pointedly, "Did you just *assume* that we would provide this equipment for your project?" Tribes are sensitive about their limited resources, and despite early discussions, the tribal leadership still felt no "ownership" of the project. When they were told that, with donation of their operators and equipment, multiple streambank sites could be established, the tribal council unanimously approved the use of tribal equipment, although they left it up to the departments whether there would need to be a charge for its use. The departments never charged for use of their equipment or operators, on this first project.

The importance many Native Americans place on the natural world and relationships within it cannot be overemphasized.[2] Red elm (*Ulmus rubra*), a tree with declining populations due to its susceptibility to Dutch elm disease, is the preferred fuel for Potawatomi ceremonial fires. Black walnut (*Juglans nigra*) is a valuable species widely planted in Kansas, for both nuts and timber. Tribal leaders requested these tree species be included in the buffer plantings, so we added both species.

Overcoming the distrust with which the KSU partners were met during initial exchanges was achieved through a three pronged approach: a trusted third party,

[2]Deloria, Jr., Vine and Daniel Wildcat. 2001. *Power and Place: Indian Education in America*. Golden, CO: Fulcrum Resources.

Bill Welton of Haskell, was engaged to introduce them; an effort was made early to meet with and engage the tribal council in the project; and the tribe's suggestions were listened to and incorporated into the project.

Field Work Begins on the Reservation: Building Trust

The initial fieldwork – tree planting and installing revetments – was carried out in early spring in cold weather. Recruitment of students for outside work at this time of year is not necessarily easy. Ultimately three students from KSU College of Agriculture and two Potawatomi college students from Haskell formed the crew that did the heaviest work. Three Potawatomi high school students were hired to plant trees the following week.

One of the KSU students had worked the previous summer for an agricultural chemical application company in the area. Although he had applied fertilizer and other treatments to fields on the reservation, he remarked how he had never met or dealt with any tribal members. His Potawatomi co-worker told him that the tribe was originally hunters and warriors from the north woods (Michigan, Wisconsin, and Ontario), and they had little interest in being farmers. Indeed, most of the tribal agricultural land was leased out to non-Indian farm operators.

Conservation techniques demonstrated in this project included cedar revetments and willow posts to stabilize eroding stream banks, and the planting of native prairie grass and forest buffers to reduce pesticide and nutrient runoff into streams. Staff from several tribal departments, as well as student tribal members, worked alongside KSU faculty and students and other agency personnel to install the demonstration areas, thereby building tribal capacity to apply these conservation techniques.

The college-aged crew worked well together, performing physically demanding work, often in cold and wet conditions. A cedar revetment was installed, which involved dragging whole trees into position on the stream bank, and then anchoring them by driving stakes either with a sledgehammer or a gas-powered jackhammer. Each day we would come in from the field to eat lunch at the Potawatomi environmental office, next to the American Legion post. After several days, a tribal elder invited us to a tribal celebration on that Friday, to dedicate the opening of the first paved road on the reservation. He said "You are working to make our home a better place, please be our guest on Friday." When we mentioned to the tribal biologist how persistent the elder had been in asking us to attend the road celebration, he said, "Several tribal members have noticed the hard work of the crew, and they really want you to come to the event." When we suggested the elder might just be inviting us to be polite, the biologist said an elder would not likely do that, and certainly not twice!

After 4½ days of demanding outside work, we were able to attend a portion of the celebration. The project crew was indeed made to feel welcome, and the generous meal of buffalo burgers was a welcome respite from the sack lunches we had

been eating all week. The celebration was an excellent cultural experience for the KSU students.

The following week, the tribal high school students worked hard planting the needed trees and shrubs in the riparian buffers. The plantings were mowed and weeded several times that first summer. The only setback occurred in November, when beaver moved into the revetment site and cut off many of the willow poles and stakes we had installed. When it was suggested that the beaver could be eliminated the tribe emphatically disagreed. The Potawatomi have a prophecy that states: "When the buffalo, beaver, and eagle return, the tribe will be prosperous again." The beaver could be trapped for pelts, but not just to remove them from an area. The willow cuttings were virtually wiped out, and did not resprout.

Only two complaints were heard about the initial project. One was from the county extension board, which questioned why KSU Extension was working so much with the tribe, when they do not pay local taxes that support the county extension agent. The criticism was easily deflected, because the project was supported through federal grant funds. The Bureau of Indian Affairs agent relayed that the other tribes were a bit jealous of the assistance that KSU was providing the Potawatomi. He simply reminded them that they chose not to attend the proposal-planning meeting they were invited to the previous summer.

During spring break in March 2000, a new crew of KSU college students was hired, along with tribal members, to install another cedar revetment to control streambank erosion, and to plant three more riparian buffers. To replace the beaver-eaten willows, sycamore seedlings were used, because beaver rarely feed on that species. In this year, the red elm was received from the nursery and added to the riparian buffers. While we were working on the site, a tribal member came by to see what we were doing. He was very interested in the red elm planting and we gave him four seedlings to plant. That fall we were checking the planting, and again he came by to visit. When asked how the red elm got through the dry summer, he replied he had not checked on the seedlings after he planted them. "If they make it, it was meant to be," he said.

The project employed one of the Potawatomi youth for the summer, to help maintain the four riparian buffer tree plantings and to help get the neglected fruit orchard back under management with irrigation, weed control, pruning, and fertilizing. The project had connected the tribe with another extension fruit expert who advised them on orchard management. This helped KSU "make amends" for dropping the orchard project several years earlier. The apple orchard has since become quite productive, and has been greatly expanded with the addition of grapes, brambles, cherries, and plums. The fresh fruit is primarily used at the early childhood and senior centers on the reservation.

Using a crew made up of both tribal and nontribal members was integral to our success. Working hard in a conspicuous place helped tribal members see that the KSU partners were sincere in the stated goals of our project. Attending the tribal celebration and helping out everyday people in little ways, whether it was providing a summer job to a teenager or giving a few extra seedlings to a tribal member with an interest in red elm, provided avenues for the Potawatomi to get to know KSU

faculty and students better and to make it easier to work on future collaborations. Respecting their priorities and integrating them with our own, (i.e., giving preference to the beaver over the willow), showed that we respected tribal values.

Called Before the Kansas Legislature

In November of 1999, the KSU project leader was asked to appear before the Joint Legislative Committee on State/Tribal Relations in Topeka, to provide a presentation on the riparian restoration project. In the statehouse chambers, there was palpable tension between the state legislators and agency leaders on one side of the room, and the tribal members on the other side. The project leader was directed to sit on the "state" side of the room and many people were watching closely when he crossed the room from the speaker's area to greet the Potawatomi Chairwoman and chat with tribal members in attendance.

Our successful project was the only good news on the agenda that day; the only positive example of state–tribal relations. Wedged between heated testimony and arguments about the tribes selling state tax-exempt gasoline, the legality of tribe-issued license plates, and the spillover effects of tribal casino gambling, our slide show depicted excellent cooperation between a state-funded university, several government agencies, and the Potawatomi tribe. State governments have difficulty dealing with the federally granted status of tribes as "sovereign nations" within the state's boundaries. State agencies are not used to negotiating on taxes and fees, but we believe that if they would compromise on these issues with the tribes, the differences would not be insurmountable. Increased flexibility and compromise such as were developed for the riparian buffer project is an effective way to overcome some of the most problematic roadblocks.

Using the Demonstration Sites: Building Partnerships

In 2001, the Kansas Alliance for Wetlands and Streams (KAWS), an association of organizations and individuals interested in conservation, met at the Potawatomi tribal headquarters and toured the riparian buffer and streambank stabilization sites. Later, the tribal biologist agreed to serve a term on the KAWS board of directors. Classes from both Haskell Indian Nations University and KSU take field trips to the demonstration sites. Bureau of Indian Affairs land managers have also toured the sites. Research data on the effect of fabric mulch and tree shelters on seedling growth has been collected, and has proven very valuable.

As of 2003, the riparian buffers had become well established. The bur oak, pecan, green ash, and black walnut trees averaged over 8′ (almost 3 m) in height. Most sycamores were over 15′ (over 4 m) tall. The shrubs (plums and bush cherries) bore fruit for the first time that year. However, the red elm had been mislabeled

from the nursery. The seedlings turned out to be winged elm (*Ulmus alata*), a shrubby, southern species that suffered winterkill injury and heavy deer browsing. The cedar revetments have stabilized almost a thousand feet (more than 300 m) of streambank, but some erosion still occurred where beaver have burrowed into the banks, and removed the streambank willows.

Even though the federal funding of the original project is long over, the tribe and the authors have continued to manage the sites, consult on forestry-related issues, and develop further collaborative projects. In 2006, KSU, Haskell, and the Potawatomi submitted a joint proposal for a research-demonstration project, which secured funding from the USDA Tribal College Research Grants Program. This second project was to document the long-term effect of the earlier cedar revetments, and to compare that with a control, untreated site, and a stream reach using rock weirs for stabilization. Haskell students learned field research techniques by collecting physical survey and bioassessment data. These same sites were used for the National Tribal College Research Workshop in May 2007. Findings of the bioassessment portion of the project were presented to the PBPN tribal council by (coauthor) Fisher in May 2008, along with scientific posters that were created by Haskell students involved in the research. The council was very receptive to the findings and was particularly pleased that Haskell students had benefited from participating in research on tribal lands.

A third collaborative project was begun in late 2008, again with funding from the USDA Tribal College Research Grants Program, to assess the streambank stability and riparian zone health of streams throughout the reservation. Walking in-stream surveys were conducted to collect geo-referenced data. Using the same strategy outlined in the original project, the survey teams were comprised of KSU students, Haskell students, and tribal members working in mixed groups of twos or threes. The PBPN Environmental Protection Agency (EPA) has been very supportive of this effort, providing us with up-to-date GIS maps of reservation land ownership boundaries, hiring tribal staff to help with this specific project, and providing a vehicle for transporting teams. The PBPN EPA staff also hosted the crew at an Indian taco lunch toward the end of our field work. This project will culminate with training on the installation of a streambank stabilization site with invitations extended to the three other Kansas tribes, the Kickapoo, Sac & Fox, and Iowa to attend the demonstration. The PBPN Department of Roads and Bridges will provide the heavy equipment and operators for the installation.

Another example of progress in the development of good relations between land grant universities and the PBPN is highlighted by the tribe's request for assistance with a problem unrelated to water quality. In 2008, the PBPN was having trouble with grazing management of their bison pasture. They turned to Barden, a forester, to find appropriate connections with other KSU faculty to develop a comprehensive herd and range management plan that would improve herd health and reduce the need for winter feeding. Barden served the intermediary function in this case, facilitating a meeting between the tribal council and KSU range specialists, and arranging a field trip to the Konza Prairie for tribal council members, tribal elders, and tribal staff. Konza Prairie is a long-term ecological research site, owned by The

Nature Conservancy, and managed by the KSU Biology department, where the tribe reviewed their bison management plan and practices. The partners are confident that this collaborative relationship will continue into the future.

Return of Red Elm

Correcting the mistake of planting winged elm instead of red elm in the first riparian buffer planting took several years. Because red elm was not available in the nursery trade, seed was collected from positively identified red elm and planted in a small nursery bed on the KSU campus, while others were grown in pots in the Kansas Forest Service greenhouse. The first red elms were transplanted into one of the buffer demonstration sites in spring 2007, and they are growing well. In April 2008, landscape-sized red elm saplings were ceremonially planted with the tribal council at the Potawatomi government center and each council member took a small red elm home for planting. One sapling was also planted at the childcare center.

Conclusion

Four riparian buffer and five streambank stabilization demonstration sites have now been established on the Potawatomi reservation, involving the planting of more than 4,000 trees and shrubs. The project has been successful on many levels, including the primary goal that the Potawatomi are now restoring other riparian sites on the reservation with the knowledge, skills, and contacts gained from the initial project. Also, the placement of both tribal and nontribal project employees in graduate education or professional employment in the environmental and agricultural fields has been rewarding. KSU students have gained a better understanding of the Native American perspective. The restored riparian demonstration sites are used annually for numerous field trips by many organizations.

The initial project has spawned three additional collaborative research projects between Haskell Indian Nations University and Kansas State University, two of which directly involved Potawatomi tribal personnel in carrying out the project deliverables. The authors have a heightened awareness of state and tribal conflicts, and increased sensitivity to local culture when proposing or conducting programs. We advise others wanting to work with Native American tribes to learn of their origins, their traditional resource uses, and be willing to incorporate things of value to the tribe in the project plans. Be ready to negotiate on points of conflict between the tribe and your organization. If possible, develop a good working relationship with one or two tribal staff or tribal council members who will be willing to champion your cause. One of the Haskell students (coauthor Dyer) who worked on the original cedar revetment back in 1999, was recently reelected to the Tribal Council position of treasurer. Having his continued support in the Council for our collaborations is invaluable.

Invest the time to make the relationship a long-term one. In general, short-term projects that leave the tribe with expensive-to-maintain equipment or procedures that require a high degree of training do little good and may, as in the case of the organic orchard that was left to the Potawatomi without adequate support, harm the chance for later collaborations.

As the KSU and Haskell partners learned more about the Potawatomi as a people, it became easier to include things in our grant proposals that are useful to them culturally, such as planting red elm trees instead of some other species, and to avoid offending them, such as suggesting we eliminate the sacred beavers that happened to be damaging some of the trees planted for our project. In turn, the relationship with the PBPN has matured and deepened. The tribe has grown from being primarily a recipient of an outreach project to being a true collaborator on these efforts to restore riparian areas and improve natural resource management on the reservation.

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