**Beaver Management Task Force**

**December 14, 2011**

(Compiled by Debbie Beyer, UWEX)

**Beaver management issues brain-storming sessions in July and December, 2011**

**The following lists of thoughts were initially generated at a July Task force meeting and additions to the lists were made at the December Task Force meeting. Initials after bullets indicate people who worked to develop problem statements from those bullets during the afternoon portion of our December meeting.**

**Research and monitoring**:

* Harvest estimates and population estimates are in conflict. (JS, BK)
* Accurate accounting of all beaver take related to damage management is not consistent, or is lacking (WS, fisheries, who else? TU, USFS?) (JK, SA)
* Lack of new research (DM)
* How beaver reduce the impact of dryness/drought and climate change mitigation (MM, HS)
* Fair and accurate science-based evaluation of Wildlife Services’ beaver control programs.
* Population estimates address large zones, while management strategies are site-specific. The helicopter survey is not designed to monitor success of stream management. How can we bring the scales together? (JG)
* Cost/benefit analysis of beaver and trout – economics: trout stamps, beaver pelts, both sides of the fence. (What are the benefits of beaver being in a location and the benefits of beaver not being in a location?) (Steve, Jerry)
* The cost of helicopter surveys continues to increase. (BK, JS)
* There is a statistically different population level now from 1992 in the north. (RR)
* Causes of decline in beaver numbers (DM)
* Climate change impacts on beaver population.
* Impacts of large predators on beaver populations (TN, BM)

**Policies and Regulations**

* A viable trout fishery is difficult to maintain with beaver (S, J)
* Fisheries management has zero tolerance for beaver in cold water streams.
* The 1990 plan is not flexible. (LL)
* Rules restrict beaver harvest and result in more damage along the Mississippi River.
* Regional differences create challenges in management. (AW, MM)
* Delay in rule process results in major changes in beaver numbers before action is possible.
* Annual, constant control on trout streams is too often.
* Lack of flexibility in forestry BMPs for water quality. (JG)
* User conflicts 9contract control VS citizen harvest. (DS, BS)
* We do not have a new goal for the beaver population.
* Ability to change season length.
* Mississippi River management (DS, BS)
* Wildlife management plays a small role in beaver management and fisheries management seeks little input of management decisions. (TN)
* Accountability and control of population once the plan is in place. . .how often is the population monitored? Emergency rules? What options are available to follow the plan?
* Cost of doing beaver management. Cost continues to go up; need to set priorities or find funding. (SR)

**Values**

* Species and habitat diversity VS economics. (AW)
* Damage to infrastructure (roads, etc.) (RS,SR)
* How are the cultural values of beaver considered in a plan? (RR)
* Aesthetics of beaver and beaver-altered landscapes, how to address in a plan? (SR)
* Values differ by sector of the public. (JS, BK)
* Competing interests detract from balanced programs.

**Biodiversity/Species**

* Over-harvest affects on other species. (JR)
* Beaver impacts on wild rice. (JG)
* Positive and negative impact of beaver from an ecosystem perspective. (TN)
* In the case of brown trout and rainbow trout, beaver, which are a native species, are removed to the benefit of non-native species.
* Beaver impacts to cold water resources. (RS, SR)
* Beaver impacts on all species (EH, RC)
* Concern of beaver harvest on otter populations (EH, RC)
* Waterfowl and other species benefits from beaver. (KW)

**Beaver/Habitat Relationships**

* Loss of wetlands due to low beaver numbers (JR, KW)
* Declining aspen acres statewide means fewer resources for beaver. Aspen is a huge benefit to lots of wildlife, including beaver. (JG)
* Beaver transform coldwater streams to something different. (BO)

**Education, Communication and Outreach**

* People do not understand where concentrated watershed beaver control efforts have been occurring (i.e. in coldwater fisheries areas).
* Communication is needed when dams are removed.
* Better communication is needed about inclusion of a trout stream in a beaver control effort.
* Communication is needed for user groups during trapping season in Zone D Mississippi River.
* Communication with local governments is needed.
* The public had little understanding of ecosystem services. People focus on evidence of damage. Perceptions of population are based on damage observations.
* National Forest maps are not accurate.

**Draft Problem Statements**

**At our December meeting, task force members teamed up in pairs to work on developing problem statements from the brain-stormed issues concepts. Draft problem statements were posted on flip chart pages around the room and we reviewed them all as a large group. Task force members were then asked to draft strategies for addressing the problem statements by writing on sticky-notes and posting them on the problem statements.**

**Values-related draft problem statements**

* The problem is that the values of beaver differ by user groups including: anglers, trappers, public and private entities experiencing problems from beavers, tribes, animal protection groups, and anyone interested in beaver management, which makes policy-setting and establishment of management goals difficult.
* Beaver mean different things to different segments of Wisconsin society. The problem is how are we going to incorporate the cultural values of beavers into the plan?

Draft recommendations

* Consult with tribal elders on history and value of beavers.
* Develop and implement consultation policy and schedule for seeking input and providing information to Native American tribes in WI, especially with the Ojibwe.
* Include a paragraph in the introduction of the plan that acknowledges the cultural value of beaver for tribes and others.
* The problem is beaver management often focuses on resolving the negative impacts of beaver. However, there are many non-quantitative benefits, including wildlife viewing, scenery, stewardship, and symbolism.

Draft recommendations

* + Incorporate in on-line survey and advertise the survey in a way that non-consumptive users will be likely to participate.
	+ Including non-consumptive uses of beaver should be taken into consideration during the re-writing of the beaver management plan.
* The problem is that beaver activity can impact infrastructure (roads, trails, dams/impoundments, buildings) by restricting the free flow of water, resulting in economic damage and safety issues.

Draft recommendations:

* Educate local officials on highway and culvert construction to reduce impact of beaver activity without need to eliminate all beaver.
* Recommend a serious review of culvert placement as many are placed creating problems (too high).

**Human Dimensions**:

* The problem is that there is a decline of beaver trappers in the state of WI, resulting in fewer trappers available to help local governments with nuisance beaver problems and fewer trappers to help keep the population in check.

Draft recommendations:

* + Have a beaver management focus on trapper education courses.
	+ Host a nuisance beaver trapping workshop.
	+ Need to maintain a population of trappers with skills adequate to control beaver population.
	+ Need to maintain a population of beavers adequate to support a population of skilled trappers in an appropriate number.
* The problem is that parcels are becoming more fragmented and smaller, resulting in less tolerance for beaver since more landowners are affected by beaver activity (people are not accustomed to beaver activity).

Draft recommendations:

* Change laws so landowners must have permit to remove beavers.
* Reach out to landowners (possibly with help of realtors?) to alert buyers of beaver presence and habits and resources.
* Managed Forest Law program should require that plans consider aspects of beaver management where appropriate.
* Encourage the awareness of values a beaver pond would have to the “community” of small parcel owners and not just the single owner.

**Beaver Habitat Management**:

* The problem with BMPs for water quality is that there are not enough management options allowed. BMPs are restricting timber management, which can affect many other resources.

Draft recommendations:

* Water quantity gets a lot of press. Dollars need to be assigned for water quality analysis and change.
* Benefits of BMPs are critical to protect waterways of WI yet remain very flexible for timber management and habitat manipulation.
* RMZs as part of BMPs are small in the context of landscape management. These strips of land can still have active management but are limited on what can be done to protect waterways.
* The owners of the land and/or resource manager make the decision as to if timber is cut within a buffer or if a no-cut zone is extended beyond the BMP requirements. The silvicultural practice implemented by the manager will dictate/influence what timber species is benefitted by the harvests, which then has a positive or negative effect on beaver.
* Aspen stands/acres are declining. Aspen forests, especially young aspen, benefit many game and non-game species. The problem is that if aspen continues to decline, we may not only be limiting beaver habitat, but also habitat for many other species.

Draft recommendations:

* + Society is becoming less tolerant of coppice cuts “clear cuts” – aesthetics.
	+ Need to educate and communicate the benefits of aspen.

**Policies and Regulations**

* The problem is that beaver management is perceived as absolutely necessary on coldwater systems. However, the cost of maintaining this level of management is increasing and without additional funding for those activities we need to set priorities for beaver management at all scales (regions).

Draft recommendations:

* Come to an agreement on what is held as a priority . . .eg. stream classifications – maintain removal on best and let lesser streams follow a natural course?
* Work with Fish Mgmt/Wildlife/Law Enforcement to establish a priority list and stick to it for X number of years. Provides consistency and everyone knows what’s going on and where.
* The problem is that negative impacts by beaver dams to trout populations in WI are various, cumulative and long-term even after beaver dams are removed. Even a single beaver can build a dam which may be present for years. The nature of these impacts makes it difficult to maintain a viable trout fishery with the presence of any beaver on a particular stream.

Draft recommendations:

* Need to think long-term and establish ad long-term program.
* Complete beaver and beaver dam removal on a stream-specific basis.
* Prioritize streams on which to remove beavers to balance different views.
* Triage – set #1 priority watershed/streams to have beaver-free, then set #2 and then #3 priorities AND communicate the reasoning behind the decision.
* The problem is how to identify trout streams vulnerable to beaver degradation. Or,how do we determine which streams we allow to be altered by beaver and which ones we protect?

Draft recommendations:

* Prioritize stream protection and communicate it to user groups.
* Develop criteria to include, exclude, or remove a stream from the beaver management control program.
* Need to identify other sources of trout decline/coldwater degradation. Beavers are likely not the sole problem.
* Coordinate surface water data with forest inventory where available.
* If fish management considers a stream system a priority, broad scale forest inventory along that system should be encouraged for support.
* There are a number of government and non-government parties practicing beaver control, the problem is currently wildlife management is not consulted prior to implementation.

Draft recommendations:

* Hold annual area-wide meetings between Fish Management and Wildlife Management and non-governmental parties to set annual priorities for beaver control in area. . . Question – how to resolve conflicts during planning?
* Control priorities need to be established: 1) recreational trapper, 2) local nuisance trapper, 3) wildlife damages, and this sequence should be encouraged as the proper control procedure.
* Need to develop an annual-level consultation process involving Law Enforcement, Wildlife and Fisheries in deciding what coldwater streams are to have “free-flow” conditions.
* Require a permit for beaver removal that must be issued by WDNR wildlife biologists.
* Within the WDNR, property management meetings need to occur and all reps be at the table.
* The problem is that the 1990 Beaver Management plan is not flexible, resulting in its inability to adjust to change in beaver populations and rising conflicts with people.

Draft recommendations:

* It does not allow flexibility in implementing emergency changes. Allow furbearer committee to proceed with changes when deemed necessary.
* New plan should have sunset time or at least be flexible for change.
* Make certain that the new plan offers options and review dates for goals and plan.
* The problem is that the conflict, real or perceived, between ADC efforts and recreational beaver trappers, results in frustrated trappers.

Draft recommendations:

* Highlight (county level?) streams with active control efforts, similar to bear dog attacks or volunteer public access or pheasant hunting opportunities.
* More data needed on/from other sources of ADC beaver harvest. Education of trappers based on this data should be distributed.
* Develop policies that result in no beaver control work on coldwater fisheries during the open citizen trapping season.
* Implement a reporting requirement so we know where removals are occurring and how many beavers are being removed.

**Beaver/species interactions, or beaver impacts on other species**:

* The problem is that over the past 150 years, Wisconsin’s wetland habitat has decreased by about 50% due to human influenced land-use practices. Beaver activity contributes positively to wetland resources throughout Wisconsin. Therefore a continued decline of the WI beaver population will have less of a benefit to waterfowl species of management concern and other wetland dependent species.

OR

* WI has lost approximately 50% of its historic wetlands through a variety of means. Beaver populations have been reduced in the north by 45% since the early 1990s. This has resulted in reduced acreages of wetlands, and the reduction in ecosystem services wetlands provide. Our task is to develop a plan that assures beneficial wetland affects provided by beaver are incorporated in management activities.

OR

* The problem is that beaver maintain and create important wetland habitats in forested landscapes. Many species are dependent upon, and benefit from, these beaver influenced systems. The loss of these wetlands due to decreased beaver numbers may have negative impacts on ecosystem functions and wetland dependent species.

Draft recommendations:

* + Identify list of species positively influenced by beaver impoundments. Coordinate with Endangered Resources as well for a list of herps, insects, etc.
	+ Consider negative impacts to wetlands prior to implementing beaver control actions.
* Beaver have the ability to alter their environment thus providing habitat for numerous species. Harvest of beaver at a level that eliminates beaver from systems significantly reduces habitat for these species. Our task is to develop a plan that maintains/increases species diversity relative to beaver in Wisconsin.

Draft recommendation:

* + Change policy to not allow eradication of beaver, only periodic control.
* The problem is that otter populations are benefitted by beavers’ alterations to habitat, including the creation of den sites and food sources. Reductions in beaver numbers therefore negatively impact otters. Additionally, when rules which are intended to avoid incidental harvest of otters are suspended for beaver eradication, efforts, less desirable levels of incidental harvest result.

Draft recommendation:

* Write beaver trapping regulation to reduce otter take.
* Beaver activity can alter free-flowing coldwater systems. Changes to free-flowing conditions can lead to habitat degradation as well as temperature changes which can lead to change in species composition. The task is to maintain coldwater systems, as well as maintain free-flowing conditions.

Draft recommendations:

* + Beaver elimination remains the practical option.
	+ Solutions are in place to deal with the brook trout-beaver issues. Maintain the existing solutions.
* The problem is that beaver presence has offsetting effects on different plant, animal and fish populations. Reductions in beaver populations may positively influence brook trout populations while negatively impacting aspen, waterfowl and most other furbearer and wildlife species.

Draft recommendations:

* Address the positives and negatives of control activities before implementation and base control decisions on overall species affects, not just trout.
* Look at effects beaver management can have on the whole system and plan accordingly.
* The problem is that beaver dams and changing water levels (up or down) cause wild rice to decline within a short season resulting in the need to frequently monitor and quickly respond to beavers and/or dams (within correct time frame).

**Research and Monitoring**

* The problem is that WI climate is changing, which will impact beaver, habitat and how they interact. Climate models predict increases in air temperature, and with some uncertainty, increases in precipitation in Wisconsin. These climate changes will impact stream and watershed hydrology, vegetation, beaver, and fish. Our task is to identify what these impacts will be and how we can adapt to management strategies to lessen the negative impacts of climate change.

Draft recommendations:

* + Initiate monitoring strategy to detect changes on beaver/habitat attributable to climate change.
	+ Beaver management plan is for 10-20 years, climate change is for 75-150 years.
* The problem is that the Mississippi River area beaver population data is lacking and should be collected to properly manage resources.

Draft recommendations:

* Work with waterfowl specialists to conduct surveys together, reducing costs.
* The problem is that information from the current wildlife population survey (i.e. helicopter) does not allow for the evaluation of stream-specific or site-specific management actions, resulting in uncertainty as to whether the management actions are being effective.
* The problem is that information is not shared/requested.
* The problem is that not all streams are being surveyed that should be.
* The problem is that many streams are surveyed by walking.

Draft recommendation:

* Develop information exchange requiring agencies (state, federal, local), NGOs and private (under state permit) control and monitoring results to be collected into a central clearinghouse annually.
* The problem is that the beaver populations in northern Wisconsin have been reduced approximately 45% since the early 1990s. This is viewed as progress by some segments of society but as a loss by other segments. Our task is to develop a plan that (see our charge!)
* A lack of scientific data exists regarding both the effects of climate change on local ecosystems and the ability for beaver ponds to alleviate local drought. Our task therefore is to identify and execute a strategy that identifies gaps in data and supports research to fill those gaps.

Draft recommendation:

* Partner with other agencies to save $ and avoid duplication of efforts. Share results.
* There is a good account of beaver harvest and dam removal by state and federal agencies but little information on harvest by landowners, recreational trappers and nuisance trappers. This makes it difficult to assess population impacts statewide and on a watershed basis.

Draft recommendations:

* + Make data collection and reporting a requirement for permits to private nuisance trapping (TU trapping).
	+ Require registration of all “take” resulting in beaver killed (one extreme).
	+ Devise/fix statewide recreational trapper beaver harvest survey.
	+ Canvas private nuisance trappers/firms as to beaver removals/accounting of numbers.
* Predation is one cause of mortality in beaver populations, the problem is we don’t know the extent of the predation impacts.

Draft recommendations:

* + Conduct stomach analyses of wolves captured and used in BMP studies and in incidental and legal cases.
	+ Conduct literature review of wolf and other predator species on food, habitat and use and consumption levels of beaver.
	+ Use fisheries money to conduct more food habit studies on wolves.
* The problem is that there is limited data on the drivers of beaver population dynamics (litter size, etc.)
* The problem is (lack of) guidance on information needs.
* The problem is that current beaver population estimates are only generated for northern WI, however, beaver harvest estimates are generated on a statewide level. The difference in scale of the estimates creates confusion and suggests harvest levels are biologically unsustainable when compared to the population estimate.

Example: 2005 total pop = 93,000

 2005 harvest = 71,225

 2006 harvest = 63,849

Draft recommendations:

* + Develop a rough population model to try to resolve the perceived conflict.
	+ Start asking all trappers to report their catch so that accurate harvest data can be obtained.
* We have a problem in not knowing enough detail about all the species and habitat diversity impacted by beaver and the economical benefits and sots of this biodiversity. Beaver have impacts on many other species and diversity of habitat that affect overall biodiversity. These impacts have economical benefits and costs. We need better information on these economics to make rational ecological decisions on beaver management.

Draft recommendations:

* + Conduct economic assessments of ecosystem values of habitats and species that are created or allowed to exist due to beaver activity.
	+ Conduct literature reviews and plan research on species that are associated or dependant on beaver flowages and other habitats resulting from beaver activity.
	+ Conduct literature review and plan management to determine vegetation communities created by beaver activity, and determine species associated with each community.
* The problem is that we do not have enough info on economic values of beaver & trout to enable a cost benefit analysis which would be of value in guiding management actions.
* The problem is that regional differences in beaver and trout populations and habitat create challenges in managing beaver and trout habitat.

Draft recommendations:

* Variations in regional management are needed to deal with local habitat and landscape differences.
* Divide the state into regional zones as needed based on different management needs.
* The problem is the cost of helicopter surveys are likely to increase in the future due to limited availability of in-state contractors. We have a lack of future funding alternatives to cover costs to obtain accurate and updated beaver population estimates which are critical in determining beaver management goals and policies.

Draft recommendations:

* + Consult with NASA and others with the high tech satellite imagery as an alternative survey technique for a statewide initiative.
	+ Funds may exist in federal (WI) Coastal Management Program to do aerial surveys on coastal areas!
	+ When possible, partner with other agencies already conducting aerial surveys.
	+ Develop alternate approach to estimating beaver population size.