

USDA-APHIS WILDLIFE SERVICES

Cooperative Beaver Damage Management Program



**Protecting Valued Resources In
Wisconsin**

Introduction

The history of beaver populations in Wisconsin has followed a pattern common to many states of the Great Lakes Region. European demand for beaver fur, and the wealth generated by the fur trade, led to exploration and early settlement of the area. By the late 1800's the intense fur trapping pressure, coupled with habitat disruption as Wisconsin's resources were utilized, led to low beaver populations. At the turn of the century beaver could be found only in northern Wisconsin. The Wisconsin Department of Conservation (now the Department of Natural Resources) began a beaver live-trapping and restocking program. Restocking along with strict protection and changes in forest management practices which favored beaver, led to a steady increase in abundance and distribution. In the early 1980's, a sharp decline in the demand for beaver fur led to greatly reduced trapping efforts, and very high beaver populations.



Problems associated with beaver have increased along with the population. An increase in beaver complaints were documented between 1946 and 1986, including damage to roads, timber, railroads, fish habitat, and property. In 1990, a multi-agency beaver management task force released a beaver management plan, which targeted northeastern Wisconsin as the area most heavily damaged by beaver activities. The primary concerns in this area were negative impacts to many miles of high quality trout streams, (cold water ecosystems).

Wisconsin has approximately 10,000 miles of trout streams which are primarily brook trout streams. Most of these streams have a very low gradient and can be negatively impacted by beaver dams. Beaver dams block trout migration, create unsuitable water temperatures, and increase siltation, which converts a cold water fishery to a warm water fishery.

Beaver damage control was attempted by various methods through the years, including trapping and dam removal by contract trappers, trapping by personnel of WDNR and USFS, as well as beaver subsidy payments as an incentive for private trappers to trap beaver. These methods were met with varying and limited degrees of success. Treatments were sporadic and inconsistent in many areas.

USDA-WS Cooperative Beaver Damage Management Program

A State representative from northern Wisconsin was instrumental in bringing together United States Forest Service (USFS), Wisconsin Department of Natural Resources (WDNR), USDA Wildlife Services (WS), Counties and other interested parties to discuss the severe beaver damage problems facing northern Wisconsin in the 1980's.

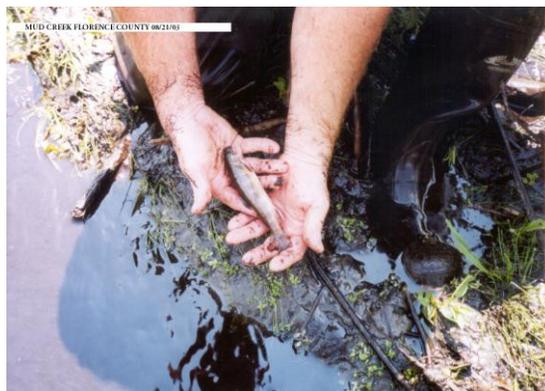
WS opened its District Office in Rhinelander, Wisconsin in the summer of 1988, primarily to address beaver damage concerns. Cooperative projects were developed with the WDNR and USFS to rehabilitate selected potentially high quality trout streams in the northeast portion of the State through the removal of beaver and dams. The objectives of this cooperative program were to remove beaver and beaver dams to restore and maintain free flowing coldwater conditions.

Although the initial emphasis of cooperative beaver damage management programs was trout habitat protection, other entities soon were making requests for assistance with beaver damage abatement. Wisconsin counties in the north sought to obtain assistance for severe beaver damage to roads and forest resources. The first cooperative agreement for forest resources protection was negotiated with Lincoln County in 1989.

Today, WS beaver damage management goals have expanded and include protecting coldwater ecosystems (the emphasis being on the whole coldwater ecosystem rather than a single species), road and culvert protection, wild rice habitat management, timber resource protection, preservation of unique habitats/plants, trail and trail bridge protection, protection of existing stream habitat improvement structures, and protection of dams and impoundments.

Restoring and Maintaining Coldwater Ecosystems (Trout Habitat Protection)

The cooperative program utilizes a very systematic and comprehensive approach consisting of an active treatment phase and a less intensive maintenance phase. The initial treatment phase involves the intensive removal of all beaver and dams from designated stream sections; the WS wildlife specialists begin removing beaver colonies from the bottom of a stream, working their way upstream. The goal of this phase is to remove beaver as quickly and efficiently as possible, using standard methods. As the specialist works their way upstream, all beaver dam locations are recorded. Once a portion of the stream is free of beaver the next step is dam removal. Small dams are removed with hand tools, while large dams are removed using explosives by a WS certified explosives specialist (blaster). Eventually the upper end of the stream section is reached. Ideally, at this point the entire section is free of beaver and primary dams. However, numerous ground surveys of the streams are undertaken to double check for any sign of remaining beaver. Also, many smaller dams become visible as the larger impoundments are removed - these too are removed. The initial active treatment phase, during which the stream is returned to free flowing condition, may take from two to four years or longer depending on the size of the system and density of beavers and dams. Cost for initial clean out is approximately \$1,500 - \$2,000 per mile of stream.



“Brookie” from one of WIWS treatment streams.

A stream is in maintenance phase once it is free of beaver colonies and dams. Streams in maintenance phase require less effort. Any beaver entering these streams have dispersed from other areas. Beaver disperse primarily in April and early May in northern Wisconsin, and an effort is made on all project

streams at this time to trap and remove dispersing beavers. A combination of ground and aerial surveys are conducted to locate active beaver colonies after the Spring. Active colonies are investigated and beavers trapped and dams removed. Any sites identified by the previous year's fall aerial survey are also trapped and dams removed. The maintenance phase is very site selective, and requires fewer resources than the initial treatment phase. A single specialist can efficiently maintain many miles of stream annually. Cost for maintenance is about \$300 per mile of stream.

WS has treated and continues to protect approximately 200 coldwater streams which totals about 1,500 miles of streams. This represents about 15% of the trout stream miles in the State. WDNR estimates this saves a potential loss of 1.9 million dollars of trout habitat annually.

County and Township Road and Forest Protection

Many northern county highway and forestry departments participate in the cooperative beaver damage management program with WS annually. In these counties, individual townships may also participate in the program under a separate agreement. Typically there are about 50 townships that participate in the cooperative beaver damage management program annually. The township program is only offered to address beaver conflicts at road sites. Road and timber complaints are received by WS through a toll-free number at the District Office and dispatched to appropriate staff. Beaver damage management efforts generally run from April thru October due to the seasonal nature of beaver activity.

Wild Rice and Tribal Work

WS cooperates with the WDNR, GLIFWC and individual tribes for beaver damage management to protect wild rice lakes. Wild rice is sensitive to water level fluctuations during germination and early growth stages and beaver dams can negatively impact wild rice growth. Beaver management has been instrumental in the recovery of wild rice beds in the northern Wisconsin. WS protects more than 20 wild rice lakes annually. WS also assists tribes with coldwater ecosystem protection.

Other Services

Many smaller agreements are renewed each year by other cooperators including Trout Unlimited, lake associations, snowmobile clubs, local WDNR property managers, and private landowners to address specific beaver damage complaints. Combining all of these service agreements, WS resolves an average of 200 individual beaver conflicts each year, saving a potential loss of over one million dollars annually.

USDA-APHIS-Wildlife Services
 Beaver Damage Management Activities on WDNR and USFS Trout Streams in Northern Wisconsin
 Calendar Year Totals 1993 – 2011

| YEAR | BEAVER REMOVED | DAMS REMOVED MANUALLY | DAMS REMOVED WITH EXPLOSIVES | TOTAL DAMS REMOVED | STREAM MILES PROTECTED |
|--------------|-----------------------|------------------------------|-------------------------------------|---------------------------|-------------------------------|
| 1993 | 1108 | 696 | 205 | 901 | 630 |
| 1994 | 885 | 730 | 116 | 846 | 630 |
| 1995 | 1099 | 504 | 291 | 795 | 640 |
| 1996 | 1009 | 739 | 261 | 1,000 | 640 |
| 1997 | 874 | 648 | 77 | 725 | 740 |
| 1998 | 564 | 753 | 310 | 1,063 | 850 |
| 1999 | 865 | 490 | 92 | 582 | 850 |
| 2000 | 632 | 711 | 96 | 807 | 900 |
| 2001 | 606 | 549 | 44 | 593 | 900 |
| 2002 | 650 | 628 | 61 | 689 | 900 |
| 2003 | 662 | 565 | 61 | 626 | 1200 |
| 2004 | 828 | 821 | 76 | 897 | 1250 |
| 2005 | 758 | 809 | 103 | 912 | 1500 |
| 2006 | 692 | 649 | 131 | 780 | 1500 |
| 2007 | 581 | 704 | 94 | 798 | 1500 |
| 2008 | 723 | 765 | 109 | 874 | 1500 |
| 2009 | 700 | 517 | 99 | 616 | 1500 |
| 2010 | 399 | 526 | 50 | 576 | 1540 |
| 2011 | 1258 | 778 | 74 | 852 | 1540 |
| TOTAL | 14,893 | 12,582 | 2,350 | 14,932 | 1540 |





WS employees preparing to remove a large beaver dam with explosives.

Program Administration

Fur and Castor Salvage

WS salvages most beaver taken in order to avoid a waste of the beaver resource. WS saves all beaver trapped during spring and fall salvage (April - May and September - October). These beavers are offered to licensed fur buyers through a bid process. WS typically is able to salvage an average of 600 beavers per year. Castors are also saved from all beavers taken; some are used for making scent to be used by the program, while the better grades are sold through the bid process. WS sells approximately 100 lbs. of castor annually. Monies generated from these sales are used to buy equipment and supplies for the program. WS also donates a portion of these monies to the Wisconsin Trappers Association for support of trapper education.

Reporting, Accountability, Non-Target Catches

WS utilizes a computerized Management Information System (MIS) to collect data on all aspects of program activities. Specialists are required by policy to accurately record their field activities, including number and locations of traps set, dates for setting and removal of equipment and number and species of all animals trapped. Locations and number of beaver dams removed are also recorded.

The catch of unintended, non-target species, such as otters, waterfowl, and turtles, is a major concern of WS and cooperators. WS collects data on non-target catches and specialists must adhere to several WS policies that provide guidance on methods and techniques to minimize non-target catches. For

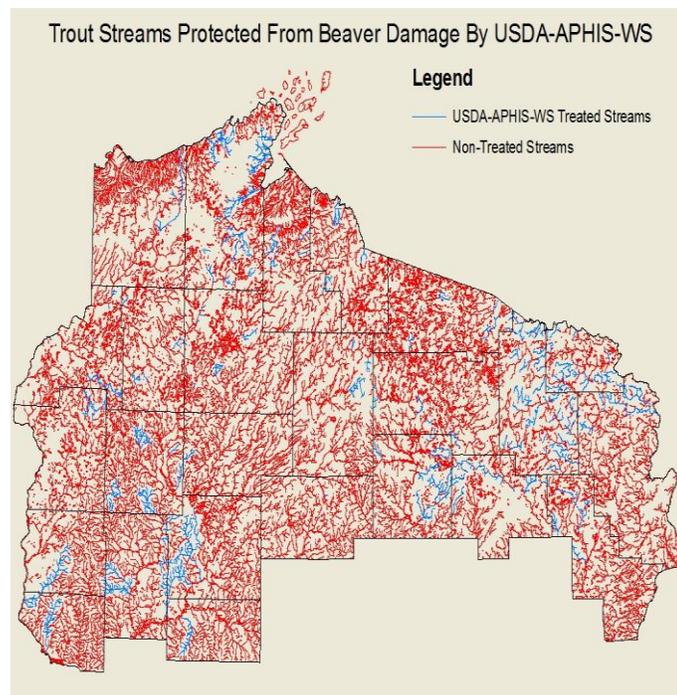
example, pan tension devices are required for all foothold traps and proper trigger placement for body grip traps is emphasized.

The MIS also manages agreements for each property where management activities take place. An agreement signed by a property landowner, lessee, or administrator authorizing WS permission to conduct management activities is required for any property prior to trapping or blasting activities taking place. In addition, to avoid conflicts with other users, WS places warning signs at all access points where traps are used. The purpose of the signs is to caution the public that traps are being used in the area for beaver damage management purposes. Public safety is also of the utmost concern when explosives are used to remove beaver dams. Before any dam is blown, the WS specialist has thoroughly checked the area for access roads, trails, and structures and has placed warning signs.

Conflicts with Recreational Trappers

Although WS beaver damage management efforts are generally conducted outside of the State's fur trapping season, WS activities and private trapper activities may overlap briefly in spring and fall. WS makes every attempt to avoid conflicts with recreational trappers during this period. If WS specialists and private trappers seek the same locations to set traps in the spring and fall, WS specialists are instructed not to set near private trappers, and to pull their own sets if a private trapper has set nearby.

Strict policy adherence, training, and common sense have resulted in very few conflicts between the public and the Wisconsin Cooperative Beaver Damage Management Program over the last two decades. The program is very cost effective due to multi-agency interest and funding. This creates a solid infrastructure that allows WS to protect many resources across Wisconsin. Operational and technical assistance work for beaver damage management is administered by the Rhinelander and Waupun District Offices. Nearly 70% of the total program is funded through cooperative agreements. There are three licensed and certified explosives specialists in the state.



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