

REPORT AND RECOMMENDED ACTIONS FOR HUMANE ANGLING IN CANADA

Cathy A. Schuppli
Animal Welfare Program, Faculty of Agricultural Sciences
University of British Columbia
2357 Main Mall
Vancouver, BC V6T 1Z4
604-822-1422
schuppli@interchange.ubc.ca

August 1999

Written on behalf of the
ANIMAL WELFARE FOUNDATION OF CANADA

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

INTRODUCTION 4

CATCH AND RELEASE FISHING 4

 Barbless Hooks 4

 Size of Tackle 5

 Bait 5

 Injured Fish 6

 Embedded Hooks 6

 Playing Fish 7

 Handling Fish 7

CATCH AND RETAIN FISHING 8

 Live Bait 8

 Fish Hooks 8

 Fishing Lines 9

 Gaff Hooks 9

 Snagging and Jigging 10

 Spear Fishing 10

 Bow and Arrow 10

 Snares and Other Methods 10

 Net Fishing 10

 Killing Fish 11

 Stringers and Holding or Transporting Live Fish 11

LEAD SINKERS 11

FISHING TOURNAMENTS 11

U-FISH OPERATIONS 12

JUVENILE FISHING 12

ETHICS 13

RECOMMENDATIONS 14

REFERENCES 17

TABLE 1. Guidelines governing catch and release fishing in the various Canadian

jurisdictions 19

**TABLE 2. Regulations governing sport fishing methods in the various Canadian
jurisdictions 21**

**TABLE 3. Regulations governing sport fishing tackle in the various Canadian jurisdictions
..... 23**

EXECUTIVE SUMMARY

In Canada, certain sport fishing regulations mandate practices that are believed to be unnecessarily inhumane to fish. In 1996 a report of the Animal Welfare Foundation of Canada reviewed sport fishing regulations in Canada with specific reference to humane considerations. This report compares and analyzes current sport fishing regulations across Canada, examines changes made since 1996, and recommends changes that will reduce the unnecessary infliction of pain and suffering on fish.

Compared to the 1996 report, changes have been made to the fishing regulations regarding the use of barbless hooks in catch and release fishing. Manitoba requires barbless hooks for all fishing. Most other jurisdictions support the use of barbless hooks, but some claim that results of research are not conclusive for all species. All jurisdictions could benefit from a comprehensive summary of all studies on the issue of barbless hooks completed to date. British Columbia Tidal Waters, Alberta, Saskatchewan, Manitoba and Prince Edward Island have made good efforts in this direction.

In many cases, management and conservation goals complement humane treatment goals. In particular, appropriate handling of fish in catch and release fishing often reduces stress and increases the chance of survival after release. Unfortunately when fish are injured, bleeding or hooked through any part of the body other than the mouth, few jurisdictions recommend that they be retained as part of the angler's daily limit, regardless of whether the fish is legal or not. Such injured fish should be humanely killed. The risk of encouraging illegal fishing by allowing anglers to keep injured, but illegal fish, should be curtailed by amending regulations in such a way that discourages this practice.

Jurisdictions should follow Manitoba in recommending that fish should be treated humanely whether they are destined for release or retention. This recommendation should be expanded to include live bait. To achieve this goal, guides should include instructions on how to kill fish humanely and fish should be killed immediately and not be held on stringers or in holding tanks. Live bait should be prohibited.

Many ducks and other water birds die of lead poisoning by eating lead fishing sinkers and jigs. Since safer materials exist, all jurisdictions should follow the National Parks lead and prohibit the use of lead sinkers and jigs.

All guides should cover the ethical treatment of animals used in the sport of angling in more detail. The promotion of an ethic of respect for animals will provide a foundation that encourages anglers to fish responsibly and humanely. To foster such an ethic, the humane treatment of fish should be addressed separately from conservation goals. Ultimately, such an ethic will help conserve fish resources for the future as well as reduce suffering and pain.

INTRODUCTION

In Canada, certain sport fishing regulations mandate practices that are believed to be unnecessarily inhumane to fish. In 1996 a report of the Animal Welfare Foundation of Canada reviewed sport fishing regulations in Canada with specific reference to humane considerations. The present report documents current sport fishing regulations across Canada, examines changes made since the 1996 report, and recommends additional changes that are now needed.

Regulations and recommendations published by regulatory authorities in the typical 1998/99 Angler's Guide were compared and analyzed. As before, this analysis is based upon those regulations and recommendations as they are conveyed to the angler rather than upon the official wording of regulations as proclaimed under the authorizing Act. This report follows the format of the first section of the 1996 report. Fishing method and tackle regulations were compared with regards to their potential impact on pain and stress on fish.

CATCH AND RELEASE FISHING

All sport fishing guides include instructions on proper handling of fish for catch and release fishing with the goal of increasing the chances of survival of released fish. As in 1996, the instructions differ in detail (Table 1) with Saskatchewan, Manitoba and British Columbia Tidal Waters (BC Tidal Waters) providing slightly more information. While Quebec had detailed instruction in 1996, they no longer do.

Barbless Hooks

The issue of barbless hooks is now addressed in all fishing guides. Barbless hooks are mandatory for all sport fishing in Manitoba. The statement that an angler may keep barbed hooks in their tackle box but not use them still remains in the text. For catch and release fishing, barbless hooks are now mandatory in Saskatchewan (no barbed hooks permitted in tack box), while they are recommended in all other provinces, except Alberta. Alberta cites that current scientific studies have not been able to demonstrate a significant difference in the effects of barbed versus barbless hooks on fish mortality and thus leave it up to the angler to decide. All other fishing guides report that use of barbless hooks increases the chances of survival of released fish because they are easy to remove and thus reduce handling time and/or injury to the fish.

Some fishing guides made reference to scientific studies or included detailed results from studies done on the effectiveness of barbless hooks. Prince Edward Island cites that "it is well documented that the use of barbed hooks greatly reduces the survival rates of any trout an angler wishes to release."¹ They cite mortality rates ranging from 3.8% for flies to 8.4% for barbless

¹ The Advantages of Using Barbless Hooks and Tips on Releasing Fish. *Prince Edward Island 1998 Fishing Summary*. Department of Fisheries and Environment. Government of Prince

baited hooks, to 31.4% for barbed baited hooks. Whether these studies were conducted under laboratory conditions or in a natural setting was not indicated. The Yukon suggests that barbless hooks are of less value when used with natural bait because they may end up deep in the gullet where hooks are difficult to remove. Saskatchewan is considering implementing mandatory barbless hook use province-wide for the 2000/01 season. To help in their decision, they proposed to study barbed versus barbless hook use on catch and release success in 1998 and to thoroughly review other studies on the subject. They encourage comments from the public on this issue. The Mountain District National Parks is also considering mandating the use of barbless hooks and are seeking comments from the public. BC Tidal Waters provide the most detailed results of hooking mortality studies on salmonids conducted by the Department of Fisheries and Oceans and other agencies. It appears that the size of salmon influences mortality, where smaller salmon are more vulnerable to barbed and large hooks. To remove the bias of conducting these studies under laboratory conditions, they used volunteer anglers, from novice to pro, to catch the fish, and then measured mortality rates after placing them in holding tanks or net pens for 24 hours or more. Data from tagging programs were also analyzed and indicated high survival rates. Due to the vulnerability of smaller fish, they felt that identifying and developing catch and release technologies and practices is a priority and further studies are currently in progress. Manitoba cites that the use of barbless hooks since 1990 has become a key element of their conservation program.

Overall, it appears that all the jurisdictions have focused some effort on evaluating the effectiveness of reducing mortality of released fish by using barbless hooks. In general, there is support for the use of barbless hooks but results of research are not conclusive for all species. All jurisdictions could benefit from a comprehensive summary of all studies on the issue of barbless hooks completed to date. BC Tidal Waters and Saskatchewan should be commended for the leadership they are showing.

Size of Tackle

The need for appropriate size of tackle was mentioned by three provinces. By matching the tackle to the fish, the number of incidental catches or the time to land the fish can be reduced. Manitoba suggests that anglers should match the tackle to the fish they are trying to catch because light tackle often results in a longer time to land the fish which increases stress levels and mortality. BC Tidal Waters recommends using large lures or artificial bait to reduce the incidental catch of undersized fish. Newfoundland suggests the leader tip should be large enough to bring in large salmon quickly or small enough to break large fish off. Presumably the latter fish would still retain the hook. The Yukon stresses the importance of matching the size of the hook to the size of the fish one wants to catch, where big hooks will more likely injure smaller fish.

Bait

Edward Island

Alberta, Ontario, Nova Scotia, New Brunswick and Prince Edward Island discourage the use of bait for catch and release fishing because of the risk that fish will swallow organic bait and that the hook will become deeply embedded in the gut. Prince Edward Island cites that “worm-baited hooks penetrate vital areas in 50% of all trout caught compared to less than 10% for flies and lures.”²

Injured Fish

Five jurisdictions have made progress towards not releasing injured fish. Saskatchewan and Parks Canada now recommend including seriously injured or dead fish as part of the angler’s daily limit. The Yukon advises that anglers stop fishing for a species after they have caught and kept the limit for that species, limiting anglers live release totals to 10 fish per species per day. Unfortunately, the Yukon guide also suggests that anglers keep bleeding or injured fish, only when they are legal (allowable size, species, or capture method). Prince Edward Island, as before, also suggests that a fish that is damaged or bleeding should be added to the creel and not released. Manitoba also suggests leaving part of the creel limit open for injured fish. For Atlantic Salmon in New Brunswick, Newfoundland and Nova Scotia, fishing must stop when retention and catch-and-release limits have been reached. British Columbia, Ontario, Manitoba and New Brunswick suggest keeping injured fish as long as they are legal. As in 1996, Quebec requires that anglers release illegal catches whether dead or alive. In general, all fishing guides, except the ones mentioned above, say that illegal fish, such as those hooked by a part of the body other than the mouth, must be thrown back. This may result in severely injured fish being released.

In many instances, humane treatment of fish and conserving fish resources may require similar measures, benefitting both goals. However, in the instance of injured fish, these two goals result in conflicting measures. From a humane perspective, injured fish should be killed immediately and included in the catch limit regardless of whether they are legal or not. From a conservation perspective, this is a risky strategy that may encourage the catching of illegal fish because anglers will be permitted to keep illegal catches without the regulating authorities knowing exactly how they were caught. For example, fish could be intentionally snagged. Perhaps mandating catch and release limits would help reduce the number of fish that could be injured.

Embedded Hooks

When a hook becomes embedded deep or is difficult to remove, all provinces except the North West Territories (where no recommendations are made) still recommend cutting the line and leaving the hook in place. BC Tidal Waters and Quebec cite that the hook will dissolve on its own and British Columbia cites that by cutting the leader one can improve the chances of

² The Advantages of Using Barbless Hooks and Tips on Releasing Fish. *Prince Edward Island 1998 Fishing Summary*. Department of Fisheries and Environment. Government of Prince Edward Island

survival of the released fish. In fact, Prince Edward Island cites that cutting the leader triples the chances of survival and that the hook will dissolve or work its way loose, passing harmlessly through the fish. Apart from Prince Edward Island, no mention was made of studies that have monitored survival rates of these fish.

Playing Fish

All fishing guides except Prince Edward Island, the Yukon and the North West Territories emphasize the importance of playing the fish quickly and not exhausting it.

Handling Fish

All fishing guides stress the importance of keeping fish in water when handling them. If the fish must be removed, for example if it is too large for the hook to be removed under water (BC Tidal Waters) then most recommend being quick and using a soft or knot free net. No guide discourages taking photographs of the fish except that Newfoundland recommends keeping the fish under water to take its picture.

All fishing guides except Prince Edward Island and BC Tidal Waters caution anglers to avoid touching the gills or eyes of the fish. Prince Edward Island, BC Tidal Waters and Quebec are the only guides that do not caution against squeezing the fish.

All fishing guides, except Prince Edward Island, recommend taking as much time as needed to help revive the fish when it is ready to be released. Tips include holding the fish in a normal swimming position while moving it slowly back and forth so water runs through its gills. The Quebec guide still states that fishing quotas do not include fish that are immediately “*thrown*” back, but the guide requires that when illegal fish are caught they “must be immediately returned dead or alive, taking care not to injure it, if still alive.”³ All fishing guides require that all fish must be released in a manner that causes the least harm to the fish.

The Yukon, Saskatchewan and Newfoundland recommend measuring fish to estimate weight so that the fish can be kept in water.

In 1996 Saskatchewan advised that walleye caught in deep waters should not be released due to their inability to adjust to water pressure. Now they advise that when catching fish from deep water, they should be raised slowly to allow the fish to adjust to pressure changes but if they cannot be revived they must be counted as part of the catch. Manitoba recommends that fish, such as walleye, showing signs of the “bends” should be retained.

Nova Scotia stresses the importance of releasing fish quickly in warmer waters. Warmer

³ Returning Fish to Water. Sportfishing in Quebec. *Main regulations April 1, 1998 to March 31, 1999*. Ministère de l’Environnement et de la Faune. Gouvernement du Québec

waters can increase stress and respiratory difficulties in fish because their metabolic rates are higher and the activity of bacteria and viruses is increased.⁴ Newfoundland goes further by advising that catch and release fishing should cease when water temperatures go above 18° C.

Overall, most issues relating to the humane treatment of fish are addressed in the catch and release recommendations of the fishing guides. This is because the handling of fish influences their future survival rate and hence the future fish resource. The ethics of causing of pain and stress are rarely addressed. In some cases conserving fish resources benefits fish welfare.

CATCH AND RETAIN FISHING

Live Bait

In this section live bait is divided into live fish bait (e.g. suckers, sticklebacks, minnows, darters) and live non-fish bait (e.g. earth worms, maggots, aquatic insects, frogs and salamanders) because regulations often pertain to one or the other.

Live fish bait is prohibited in North West Territories, British Columbia, Alberta, Saskatchewan and Parks Canada and in some areas of the Yukon, Manitoba, Ontario, Quebec and New Brunswick (Table 2). In most cases, it appears the restrictions on live bait and in particular live fish bait, are attempts to reduce the risks of introducing new species or disease to a body of water, and not related to reducing pain and stress of the bait animal itself. For example, Saskatchewan cites that “introduced fish species can upset the ecological balance of waterbodies and destroy recreational fisheries.”⁵ To prevent the spread of undesirable fish and fish disease, Saskatchewan prohibits the moving of live fish or eggs, using live fish as bait and importing live fish.

Live non-fish bait is permitted in all jurisdictions (Table 2). I assumed that if there was no mention of the use of bait in the fishing guides, then it is not regulated. The same jurisdictions as in 1996 (Nova Scotia, Prince Edward Island, Newfoundland and BC Tidal Waters) have no restrictions on the use of any form of live bait. Live non-fish bait is permitted only in some areas of British Columbia, Alberta and Parks Canada.

Fish Hooks

A requirement for barbless hooks is the most common hook restriction mentioned in the

⁴ Catch and Release. 1998 *Summary of Angling Regulations Nova Scotia*. Department of Fisheries and Aquaculture. Government of Nova Scotia

⁵ Don't Transport Live Fish. Saskatchewan Fishery Regulations. *Saskatchewan Angler's Guide 1998-99*. Saskatchewan Environment and Resource Management. Government of Saskatchewan

fishing guides (Table 3). Manitoba is the only province which requires barbless hooks for all fishing. For retention fishing, the Yukon, British Columbia, Ontario, Prince Edward Island and Parks Canada require barbless hooks in some areas or for some species. As in 1996, British Columbia requires the use of barbless hooks in most streams throughout the province (5 regions out of 8). Alberta no longer requires the use of barbless hooks in any circumstance and New Brunswick recommends barbless hooks only for catch and release fishing. Whereas Nova Scotia had no regulations on barbless hooks in 1996, it now recommends their use for catch and release fishing.

The Northwest Territories, Saskatchewan and New Brunswick have now been joined by Quebec and Newfoundland in including an illustration on how to remove barbs from a normal hook. The Yukon, Alberta, Manitoba and Parks Canada provide written descriptions on how to remove barbs.

All jurisdictions except the Yukon and BC Tidal Waters, include the maximum number of hooks that can be attached to a line varying from one to four. More than four hooks can be used to catch smelt in Quebec. BC Tidal Waters says that it is illegal to “use, on a line, gear designed to catch more than one fish at a time”⁶ and single hooks (one hook with a single point) are required in some areas of the Yukon.

Parks Canada requires that only single hooks be used. The Yukon advises that treble hooks are more difficult to remove than single hooks.⁷ Alberta and Quebec are the only provinces that specify three as the maximum number of points allowed.

Fishing Lines

With the exception of Newfoundland and BC Tidal Waters, almost all jurisdictions restrict anglers to one line when fishing in open water (Table 3). British Columbia allows two lines if there is only one person in a boat. For ice fishing, the number of lines permitted range from one to ten, with Quebec still having the highest limit.

As in 1996, five provinces stipulate a maximum distance that an angler may stray from their line, ranging from 50 to 60 m. In the remaining jurisdictions, except British Columbia, Nova Scotia, Prince Edward Island and Newfoundland, a distance was not given but some statement was included that said that it was illegal to leave a line unattended.

Gaff Hooks

⁶ BC Tidal Waters, General Restrictions. *British Columbia Tidal Waters Sport Fishing guide 1998/1999*. Department of Fisheries and Oceans. Government of Canada

⁷ Releasing the Spawners without Injuries. *Sport Fishing Regulation Summary 1998-99*. Yukon Department of Fisheries and Environment. Government of the Yukon

All forms of gaff hooks are prohibited by New Brunswick, the Northwest Territories, the Yukon, Nova Scotia and Alberta (Table 2). This is a new requirement for Alberta. Saskatchewan, Ontario and Quebec only prohibit the use of spring loaded gaffs, while Quebec prohibits all gaffs when fishing for salmon only. Saskatchewan and BC Tidal Waters permit the use of gaff hooks to land fish. Gaff hooks were not mentioned (and hence appear to be allowed) in the remaining jurisdictions, resulting in gaff hooks being permitted in half of the jurisdictions, similar to 1996.

Snagging and Jigging

Snagging or jigging (ie catching a fish by any body part other than the mouth) is prohibited in all Canadian waters. The fishing guides of British Columbia and Parks Canada, unlike the other guides, do not directly say that it is illegal to snag fish but they do not include snagging within their list of acceptable fishing methods. Newfoundland specifies that it is illegal to jig fish in inland waters.

Spear Fishing

Spear fishing is prohibited by the Yukon, Nova Scotia, Prince Edward Island, Newfoundland and Parks Canada (Table 2). New Brunswick prohibits the use of spears to land a fish caught by angling, and prohibits the possession of a jigging device or spear in inland waters. Quebec no longer prohibits spear fishing but allows it in some areas or for some species only. The remaining jurisdictions permit spear fishing in some areas or for some species.

Bow and Arrow

Bow and arrow regulations remain much the same as in 1996. The Yukon, British Columbia, Nova Scotia, Newfoundland and Parks Canada prohibit the taking of fish with any form of bow and arrow (Table 2). Bow and arrows are not specifically mentioned for British Columbia, Newfoundland and Parks Canada, but they are not included within acceptable methods. The Northwest Territories and Prince Edward Island neither permit nor prohibit bow and arrow fishing. All other jurisdictions permit bow and arrow fishing in some areas or for some species only.

Saskatchewan still remains the only province that prohibits the release of fish captured by both spear and bow and arrow fishing.

Cross-bows are prohibited by most provinces except, Saskatchewan, Northwest Territories, Ontario and Prince Edward Island, where they are neither prohibited nor permitted. Quebec appears to be the only province that explicitly permits cross-bows in some areas or for some species only.

Snares and Other Methods

All jurisdictions prohibit the use of snares, explosives, firearms, chumming, clubs, poisons, etc. as means of catching fish.

Net Fishing

The 1998 regulations concerning nets are similar to those in 1996. Most jurisdictions permit the use of nets when landing fish but not to catch them. Dip nets are usually permitted to catch ciscoes, suckers and bait fish.

Killing Fish

Fishing guides still fail to promote advice on how to kill a fish once it is landed. BC Tidal Waters suggests, as before, that you “kill it immediately so that it retains its flavour and freshness”⁸ and Manitoba goes further to say that you should “kill the fish quickly and humanely.”⁹ Saskatchewan and New Brunswick suggest making the decision to keep a fish right away and if the angler decides to keep it, then they should kill it immediately.

Stringers and Holding or Transporting Live Fish

Stringers or culling fish (where fish are held until a preferred fish is caught) are prohibited in the Yukon, Alberta and Manitoba (Table 2). Saskatchewan discourages the practice of stringers. Holding live fish is prohibited in British Columbia and Newfoundland. Many provinces, such as British Columbia, Alberta, Saskatchewan, Manitoba, Quebec and Newfoundland prohibit the transport of live fish, presumably to reduce the risk of fish being transferred into other bodies of water rather than to reduce stress to the fish. Ontario prohibits the transfer but not the transport of live fish and Parks Canada also prohibits the transfer of live fish but says nothing about holding or transporting live fish. In addition to promoting conservation goals, prohibiting the use of live bait, stringers and holding tanks, or the transportation of live fish will also reduce suffering.

LEAD SINKERS

Many ducks and other water birds die of lead poisoning by eating lead fishing sinkers and jigs. Sinkers and jigs can be purchased that are made out of other safer materials. In 1996 no jurisdictions prohibited the use of lead sinkers and jigs. However, these have now have been

⁸ Catch Tips. *British Columbia Tidal Waters Sport Fishing guide 1998/1999*. Department of Fisheries and Oceans. Government of Canada

⁹ Keeping Fish to Eat. *Manitoba 1998 Angler's Guide*. Ministry of Natural Resources. Government of Manitoba

prohibited by Parks Canada since 1997 (Table 3). In addition, Parks Canada also prohibits the possession of any lead sinkers while fishing. Lead sinkers and jigs have also been prohibited in one area in the Yukon and they are discouraged by Ontario and Nova Scotia.

FISHING TOURNAMENTS

Fishing tournaments are briefly mentioned in a few fishing guides. The Yukon, Alberta and Manitoba require a permit to hold a fishing tournament. These must be obtained from the appropriate authorities which may provide more details about regulations than the fishing guides do. Alberta encourages organizers to practice fish conservation measures as part of the rules and ethics of the event. Saskatchewan is considering implementing a licensing system in 1999 because they are aware of the impacts that tournaments can have on the fish resource. They would use licenses to minimize impacts, provide information on the number and locations of events and assist in gathering fishery information. In Saskatchewan, New Brunswick and Nova Scotia, fishing is encouraged through free “fishing weekends” where people can fish for free without a license, except when fishing for salmon. Nova Scotia stipulates that all general fishing regulations apply during a fishing tournament, even though anglers do not need to purchase a license.

U-FISH OPERATIONS

Artificially stocked ponds, where customers can fish for a fee, are mentioned only in the Nova Scotia fishing guide. In Nova Scotia, no fishing license is required in legally constructed U-Fish ponds, and season or bag limits do not apply. New Brunswick required licenses in their 1996 guide but does not mention U-Fish operations in 1998. As before, “it follows that none of the normal safeguards, restrictions, regulations or recommendations apply to the paying customer at these facilities.”¹⁰

JUVENILE FISHING

All jurisdictions allow youth (18 or 16 years old and under) to fish without a license or free. Exceptions are for salmon and sturgeon. In a few provinces they must be accompanied by an adult.

Ontario was the only jurisdiction that provided a guide on fishing with children.¹¹ The Ontario guide covers topics from how to make fishing interesting and fun, creating a fishing kit,

¹⁰ Animal Welfare Foundation of Canada 1996. *A Report and Summary on Sport Fishing Regulations in Canada with Specific Reference to Humane Considerations*. Animal Welfare Foundation of Canada, Vancouver, B.C.

¹¹ *Take a Kid Fishing. How to Have Fun and Catch Something, Too* 1998. Ministry of Natural Resources, Fish and Wildlife Branch Ontario. Government of Ontario

fishing techniques, safety and fishing ethics. Unfortunately any of the shortcomings in the general Ontario fishing regulations are transferred to the guidelines for fishing with children. Some suggestions do not promote an ethic of respect for nature. For example, the juvenile guide suggests making some barbless hooks because even if you lose a few fish the hooks will be easier to remove from the fish and also from clothing. There is no mention of the advantages of reducing injury to fish by using barbless hooks. The guide introduces the controversy over using live bait versus artificial lures but also demonstrates how to hook up worms and minnows. The guide also suggests that it may be cheaper to buy live bait because more costly lures often get snagged and lost. The ethics section is insightful because it emphasizes the importance of conserving the resource for future generations, as well as respecting all living things, especially those that may be killed and eaten. They promote instilling this attitude by modeling this behaviour as a caring adult.

ETHICS

The Yukon, Saskatchewan, Manitoba, New Brunswick and Prince Edward Island have a section in their guides on ethics, focused mainly on protecting and conserving natural, cultural and historical values. Angling ethics focus on respecting fellow anglers, keeping the environment clean, and following regulations in order to ensure fish resources for future generations. Unfortunately most guides provide little comment on humane handling of fish.

In four fishing guides, the topic of angling ethics is linked to handling fish for catch and release fishing. The Yukon specifically includes a section called “Guidelines for Ethical Live-release Fishing.” As in 1996 The Yukon also touches on ethics in the section entitled “Recreational Fishing. A First Nation View,” which emphasizes the importance of respecting the animal, taking only what one needs and using everything that is captured. In addition, the Department of Renewable Resources in the Yukon offers a course called the Hunter Education and Ethics Development Program (HEED). This course covers catch and release fishing, responsible behaviour and ecology. Saskatchewan, Manitoba and New Brunswick suggest learning techniques of handling fish to ensure their survival if released. Manitoba is the only jurisdiction that points out that anglers must handle fish appropriately, whether they will be killed or released. Their ethics discussion is embedded under the heading of “Keeping Fish to Eat” and “Handling Your Catch.” They suggest that a “measure of concern for the resource is reflected by the respect we show it and by the way we handle our catch.”¹² This is followed by recommendations of killing fish quickly and humanely, not using stringers, keeping badly injured fish in the angler’s daily bag limit and tips on catch and release fishing.

New Brunswick and Manitoba include a statement on treating fish in a humane manner.

¹² Keeping Fish to Eat. *Manitoba 1998 Angler’s Guide*. Ministry of Natural resources. Government of Manitoba.

No guides included statements about reducing stress or pain in fish.

RECOMMENDATIONS

Regulating authorities have the difficult task of providing regulations that help to conserve fish stocks for future generations and that promote an ethic of responsible and humane fishing, while at the same time not constricting anglers to the point where they will no longer enjoy the sport of fishing. Within this equation, the pain and suffering of fish still needs more emphasis. The following are recommendations based on the findings of this report. In addition, some recommendations from the 1996 report have also been included. The complete rationale for past recommendations are not presented here. For more details, see the 1996 report.

1. Fishing guides should include instructions on how to kill fish humanely.

It is important that fish are treated humanely whether they are destined for release or for retention. It should also be mandatory that fish that are being retained should be killed immediately and not held on stringers or in holding tanks.

2. Fish that are injured, bleeding or are hooked through any part of the body other than the mouth should be killed and included within an angler's daily limit, rather than released in an injured state.

Studies should be conducted that better assess the survival of fish that are hooked deeply. Perhaps these fish should be retained as well. As discussed previously, the risk of encouraging illegal fishing by allowing anglers to keep injured, but illegal fish, must be curtailed by amending regulations in such a way that discourages this practice. For example, daily limits could be placed on catch and release fishing as is done for salmon in the Atlantic Provinces.

3. Continued effort should be directed towards a better understanding of the effectiveness of barbless hooks.

BC Tidal Waters, Alberta, Saskatchewan, Manitoba and Prince Edward Island have made good efforts in this direction. Where possible, individual jurisdictions should cooperate in gathering or sharing information. Perhaps jurisdictions in the United States should also be consulted. Studies should be designed to reflect everyday angling methods similar to the salmon studies mentioned in the BC Tidal Waters fishing guide. For example, studies should be carried out in the field and not just in laboratories. Since damage caused by barbless hooks may vary with species or size, it is possible that regulations may have to vary in accordance with these differences.

4. Live bait should be prohibited.

The use of live bait should be prohibited to reduce the potential pain and suffering caused to live bait animals resulting from handling by anglers.

5. Lead sinkers should be prohibited.

All jurisdictions should follow Parks Canada lead by prohibiting lead sinkers. Retailers should be encouraged to stock non-lead tackle.

6. All fishing guides should explicitly endorse an ethic of respect for living things that will promote the humane treatment of fish and the protection of fish resources.

The topic of ethical treatment of all animals involved in the sport of angling should be addressed in more detail in all fishing guides. The promotion of an ethic of respect for these animals will provide a foundation that encourages anglers to fish responsibly. This will benefit both conservation and humane treatment goals. This topic should be presented in a prominent location in the guides where as many anglers will read it as possible.

Respect for living things must be explicitly addressed separately from conservation goals. For example, in catch and release fishing, the importance of handling fish appropriately so as to reduce the likelihood of mortality in order to conserve the species is clearly expressed in most guides. In addition, it should be stressed that fish should be handled humanely so that they suffer as little as possible. Ultimately, this will improve catch and release success.

It should be pointed out that there is scientific basis for arguing that fish can suffer from undue stress and pain as a result of angling. Studies have found that fish have a physiological stress response, similar to vertebrates.¹³ Such responses are elicited by angling and can result in death or negative effects on health. Although the evidence that fish feel pain is not unequivocal, there is a view that more studies will demonstrate similarities with mammals that feel pain.¹⁴

As Manitoba suggests, it should be emphasized that all fish should be treated humanely, whether they are intended for catch and release, for retention or as bait.

7. Sport fishing should be restricted to standard angling practices to minimize severely injuring fish by methods such as spears and gaffs.

The chances of severely injuring a fish without landing it are considerably higher when fishing with spears or bows and arrows. The possession of gaff hooks should be prohibited since their use can also inflict serious injury to fish. At a minimum, jurisdictions should follow Saskatchewan's lead and mandate that fish caught in these ways should be kept as part of the angler's daily limit and not released.

¹³ Stress and Pain in Fish by George Iwama. In *A Report and Summary on Sport Fishing Regulations in Canada with Specific Reference to Humane Considerations*. Animal Welfare Foundation of Canada

An exception to standard angling practices is the use of nets, since they can be a humane way to catch fish, as long as fish are killed immediately and catch limits are observed. Nets would have to be restricted in size, type and methods of use.

8. Single hooks should be mandated for catch and release fishing and the size and type of tackle should match the type of fish being caught.

All jurisdictions should follow Parks Canada's lead and mandate the use of single hooks for catch and release fishing, since treble hooks are more likely to cause injury when removed. The Yukon makes good suggestions about fishing methods and tackle that will best prevent injury and stress to the fish.

Regulations should also emphasize the importance of matching the size and type of tackle to the type of fish being sought. This is important not only to catch the appropriate fish but to minimize the occurrence of incidental catches. Although most anglers try to master their skills at catching specific fish, reference material or its source could be included.

9. Fishing tournaments should be regulated to ensure that fish are treated humanely by responsible anglers.

As Saskatchewan suggests, fishing tournaments should be regulated to ensure that conservation concerns are considered and anglers fish responsibly. If fish are being released they should be handled in the same way that catch and release instructions suggest. For example, fish should be kept under water as much as possible. Pictures of fish outside the water should be discouraged. Measurements used to estimate the weight of the fish should be encouraged.

10. U-fish operations should be regulated to ensure humane fishing practices.

11. Fishing guides should ensure that the regulations are clearly articulated.

The most unambiguous guides explicitly include each prohibition or allowance. For example, instead of declaring that the allowable fishing method is one rod and one line, it would be better to list allowable methods in addition to illegal methods.

12. Rationale for certain regulations should be included in the guides to foster an appreciation for the importance of complying.

Understanding why regulations exist may encourage anglers to comply with regulations. In particular, rationales for the prohibition of live bait or the transportation of live fish should be included. This should be accomplished in a way that will not overwhelm anglers with already complex regulations.

REFERENCES

- 1998 Alberta Guide to Sportfishing Regulations*. Natural Resources Service, Alberta Environmental Protection. Government of Alberta
- 1998 Angling Summary New Brunswick*. Ministry of Natural Resources and Energy. Government of New Brunswick
- 1998 Angling, Summary of Regulations Nova Scotia*. Department of Fisheries and Aquaculture. Government of Nova Scotia
- Angler's Guide 1998. Newfoundland and Labrador*. Department of Fisheries and Oceans. Government of Canada
- Angling Regulations Summary Riding Mountain National Park 1998*. Canadian Heritage Parks Canada. Government of Canada
- Animal Welfare Foundation of Canada 1996*. A Report and Summary on Sport Fishing Regulations in Canada with Specific Reference to Humane Considerations. Animal Welfare Foundation of Canada, Vancouver, B.C.
- British Columbia Tidal Waters Sport Fishing Guide 1998/1999*. Department of Fisheries and Oceans. Government of Canada
- Fishing Regulations Summary Mountain National Parks in Alberta & British Columbia April 1, 1998 - March 31, 1999*. Canadian Heritage Parks Canada. Government of Canada
- Freshwater Fishing Regulations Synopsis 1998-1999*. Ministry of the Environment, Government of British Columbia
- Manitoba 1998 Angler's Guide*. Ministry of Natural Resources. Government of Manitoba
- Northwest Territories Sport Fishing Guide April 1, 1998 to March 31, 1999*. Department of Renewable Resources. Government of Northwest Territories
- Ontario Recreational Fishing Regulations Summary 1998*. Ministry of Natural Resources. Government of Ontario
- Prince Edward Island 1998 Fishing Summary*. Department of Fisheries and Environment. Government of Prince Edward Island
- Saskatchewan Angler's Guide 1998-99*. Saskatchewan Environment and Resource Management. Government of Saskatchewan

Sport Fishing Regulations Summary 1998-99. Yukon Department of Renewable Resources.
Government of the Yukon

Sportfishing in Quebec. Main Regulations April 1, 1998 to March 31, 1999. Ministère de
l'Environnement et de la Faune. Gouvernement du Québec

Take a Kid Fishing. How to have Fun and Catch Something, Too 1998. Ministry of Natural
Resources, Fish and Wildlife Branch Ontario. Government of Ontario

TABLE 1. Guidelines governing catch and release fishing in the various Canadian jurisdictions

INSTRUCTIONS	PROVINCE, TERRITORY OR JURISDICTION													
	YK	NWT	BC	AB	SK	MN	ON	QU	NB	NS	PEI	NFLD	BCTidal	Parks
Instructions Included	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ⁵
Barbless Hooks Recommended	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓
Barbless Hooks Mandatory					✓	✓								
Size of Tackle to Match Size of Fish Recommended						✓						✓	✓	
Bait Discouraged				✓			✓		✓	✓	✓			
Release Injured Fish								✓						
Including Injured Fish in Daily Limit Recommended					✓						✓			✓
Keep Injured Fish, Where Legal	✓		✓			✓	✓		✓					
Daily Limit for Catch & Release												✓ ³		
Stop Fishing When Limit Reached	✓								✓ ²					
Cut Line if Hook Embedded Deep	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Do Not Squeeze Fish	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓		✓
Avoid Contact with Gills or Eyes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
Wet your Hands		✓	✓		✓	✓		✓						✓
Wear Gloves					✓						✓			✓
Help Revive Fish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓

	YK	NWT	BC	AB	SK	MN	ON	QU	NB	NS	PEI	NFLD	BCTidal	Parks
Use Net without Knots					✓						✓	✓	✓	
Play Fish Minimally			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Keep Fish in Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ⁴	✓
Raise Fish Slowly from Deep Water					✓	✓ ¹								
Weighing Fish Not Recommended	✓				✓							✓		
Risks of Warm Water Temperatures										✓		✓		

1 Refers to keeping fish showing signs of the “bends”

2 Mandated for Atlantic salmon only

3 Mandated for Atlantic salmon only

4 Recommends using net for larger fish where removing hooks in water is difficult

5 Instructions not included for all parks eg. Riding Mountain National Park

TABLE 2. Regulations governing sport fishing methods in the various Canadian jurisdictions

FISHING METHODS	PROVINCE, TERRITORY OR JURISDICTION													
	YK	NWT	BC	AB	SK	MN	ON	QU	NB	NS	PEI	NFLD	BCTidal	Parks
Gaff Hooks Prohibited	✓	✓		✓	✓ ²		✓ ³	✓ ⁴	✓	✓				
Gaff Hooks to Land a Fish Permitted					✓								✓	
Spear Fishing Prohibited	✓								✓ ⁵	✓	✓	✓		✓
Spear Fishing Permitted					✓									
Spear Fishing Permitted in Certain Areas		✓		✓			✓	✓						
Spear Fishing Permitted for Certain Species			✓	✓		✓	✓	✓					✓	
Bow & Arrow Fishing Prohibited	✓		✓						✓	✓		✓		✓
Bow & Arrow Fishing Permitted for Certain Species			✓	✓	✓	✓	✓	✓					✓	
Bow & Arrow Fishing Permitted in Certain Areas				✓	✓			✓						
Cross-Bows Prohibited	✓		✓	✓		✓			✓	✓		✓	✓	✓
Cross-Bows Permitted for Certain Species								✓						
Cross-Bows Permitted in Certain Areas								✓						
Use of Live Non-fish Bait Prohibited														

	YK	NWT	BC	AB	SK	MN	ON	QU	NB	NS	PEI	NFLD	BCTidal	Parks
Use of Live Non-fish Bait Permitted	✓	✓			✓	✓	✓	✓						
Use of Live Non-fish Bait Permitted in Some Areas			✓	✓										✓
Use of Live Fish as Bait Prohibited		✓	✓	✓	✓									✓
Use of Live Fish as Bait Permitted in some Areas	✓ ¹					✓	✓	✓	✓	✓				
Transporting Live Sport Fish Prohibited			✓	✓	✓	✓		✓				✓		
Holding Live Sport Fish Prohibited			✓									✓		
Holding Live Sport Fish Permitted				✓		✓	✓	✓						
Stringers Prohibited	✓			✓		✓								

1 Regulations about live bait are unclear except to in relation to conservation (transferring fish from one lake to another)

2 Spring loaded gaffs only, other gaffs permitted

3 Specifies spring gaffs only as well as spear guns

4 Spring loaded gaffs prohibited and any gaff prohibited for salmon

5 Refers to landing fish that have already been caught by angling

TABLE 3. Regulations governing sport fishing tackle in the various Canadian jurisdictions

HOOKS & LINES	PROVINCE, TERRITORY OR JURISDICTION													
	YK	NWT	BC	AB	SK	MN	ON	QU	NB	NS	PEI	NFLD	BCTidal	Parks
Barbless Hooks Mandatory for All Fishing						✓								
Barbless Hooks Mandatory for Catch & Release					✓									
Barbless Hooks Recommended for Catch& Release	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓ ⁸	✓
Barbless Hooks Mandatory for Certain Areas	✓		✓				✓				✓			✓
Barbless Hooks Mandatory for Certain Species			✓											
Maximum Number of Hooks Permitted on a Line		2	1	3	4	2	1	3-∞ ⁵	3	3	3	1 ⁷	✓ ⁹	1
Maximum Number of Points Permitted on a Hook				3				3	1 ⁶					1
Maximum Number of Lines Permitted in Open Water	1	1	2 ³	1	1	1	1	1	1	1	1			1
Maximum Number of Lines Permitted in Ice-covered Water	2	2	1	3	2	2	1-5	5-10	5					
Maximum Distance a Fisherman may be from an Unattended Line (m) 0 m = must always be attended	0	50 ²		30	25	50 ⁴	60	0	0				0	0
Lead Sinkers or Jigs Prohibited	✓ ¹													✓
Lead Sinkers or Jigs Discouraged							✓			✓				

1 Lead prohibited in one area only

2 Refers to ice fishing only, no statement made about open water

3 Two lines is allowed if only one person is alone in a boat, otherwise one is allowed

4 50 m when ice fishing but in sight at all times when in open water

5 No limit on the number of hooks for smelt fishing

6 One single hook permitted for each line in ice fishing

7 Refers to fly fishing only

8 Detailed summary of catch and release techniques included. Summary of barbless vs barbed hooks also included but cannot be generalized to all species or sizes of fish.

9 No specific numbers given but says that in most areas you can only use gear that will catch one fish at a time (exceptions: herring and tidal portion of Fraser River)