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Alberta Fish and Game Association

December 5, 2017

Draft - Fishery Management Direction Response

Reader is cautioned that this document may not represent the official position of the Alberta Fish and Game Association. The intention is to create discussion and dialogue so that the Alberta Fish and Game Association can respond to issues related to proposed changes and initiatives related to fishery management in Alberta to be implemented in 2018/2019. These include angling regulation simplification, electronic version of angling regulations, Northern Pike and Walleye Management Framework, North-Central Alberta Native Trout Recovery Plan and Species at Risk Recovery Plans (bull trout, westslope cutthroat trout). Some of the direction as envisioned by the Government of Alberta can not be supported by the Alberta Fish and Game Association as currently presented. This does not imply that the AFGA is against addressing the issues and developing solutions. The long term sustainable management of Alberta fisheries that achieves an acceptable balance from an economic, social and environmental perspective must be the outcome. Such plans must establish realistic benchmarks in terms of fish population status and be prepared to accept risk. Many of the current initiatives within the Government of Alberta are linked.

The ongoing narrative must also change to become positive. For far to long the Government of Alberta has been providing a singular perspective of the status of Alberta's fisheries. The message has been that they largely exist either in a collapsed or vulnerable state. The result is that recovery efforts are required for them to be classified as sustainable fisheries. With the introduction of the modelling tool known as the Fish Sustainability Index (FSI), new risk metrics have been introduced. Unless a fishery displays fish specie densities based on subjectively defined historic high productivity metrics, it will remain at high risk. This is despite functioning within the natural productivity and variability parameters for the ecosystem.

This means recovery is not defined based on overall ecosystem dynamics but instead must display high modelled single specie population density that may not be in alignment with the productivity potential or ecosystem limitations for multi-specie fisheries. Management efforts to date have largely relied on the use the use of catch and release angling regulations or the most restrictive harvest regulations in North America. Managers have not used all the tools available to them, particularly those that deal with habitat. The result is that fish populations are managed on the basis of current productivity without dealing with natural and anthropogenic limitations. Only by dealing with all limitations can risk ratings be reduced to meet overall fishery management objectives.

The Alberta Fish and Game Association cannot support the direction envisioned which relies primarily on angling regulations. The reasons are additional lost angling opportunity and the failure to deal with all the issues that are impacting our fisheries in a comprehensive manner. The foundation is habitat.

Ironically much of the proposed direction is based on AFGA concepts and concerns. What appears to occur however is Alberta Environment and Parks takes such ideas and develops them into a framework based on their own perspective. What should have occurred is a consultation process that starts at the beginning and continues until the final plan or product is in place. During such a process Alberta Environment and Parks should be asking key questions: What can you accept? What needs to be changed? What is missing?

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The reality is that fisheries in Alberta like elsewhere in North America are subject to risk. While risk is a factor that managers need to consider, it alone should not be the driver of decisions that need to balance environmental, social and economic variables. Going forward plans must be able to demonstrate that the following attributes can occur in concert. At the end of the day the outcomes must be:

Sustainable fish populations
Habitat protection
Angling opportunity
Distribution of angling pressure
Understandable angling regulations including objectives

Each of the initiatives that are being proposed by the Government of Alberta will be described from the perspective of the Alberta Fish and Game Association. Online links to information and the perspective of the Government of Alberta have been provided.

We are asking readers to review the information provided. In doing so, would appreciate comment and feedback to the alternative directions proposed. The building blocks for such a direction are based on input over the last several years from a variety of forums. These include presentations at AFGA conference, Alberta Fisheries Management Round Table, AFGA resolutions, AFGA members, biologists and from other NGOs. Comments would include whether you could support specific elements or the overall direction. Comment on whether the proposal would achieve the desired outcomes is critical. If there are components or actions that have missed would like to know as well. Please forward comments to Darryl R. Smith at fishdoc@telusplanet.net with the subject line “**Response to 2018 Fishery Management Proposals in Alberta**”.

Would like to provide a complete package to cover all the initiatives being proposed by the Government of Alberta as a package. This is not possible due to time commitments that volunteers face when multiple issues are on the table at the same time. Will attempt to send out over the coming weeks each component. Some themes may not be fully comprehended by this approach so apologize in advance.

Initiative One

North-Central Alberta Native Trout Recovery Plan

The plan is focused on native cold-water fish species (arctic grayling, mountain whitefish, Athabasca rainbow trout, bull trout) within a defined geographic area that includes the Red Deer, North Saskatchewan, Athabasca and Smoky River drainages.

<http://aep.alberta.ca/fish-wildlife/fisheries-management/north-central-native-trout-recovery.aspx>

Draft concerns of the Alberta Fish and Game Association to the North-Central Alberta Native Trout Recovery Plan:

Any plan must be applied across the total range of cold-water species in Alberta, whether native or naturalized (bull trout, westslope cutthroat trout, eastern brook trout, brown trout, rainbow trout, Athabasca rainbow trout, golden trout, lake trout, arctic grayling, mountain whitefish). Long and short

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term sustainability is only possible by ensuring that watersheds across Alberta continue to have the necessary habitat conditions to support self-reproducing populations of these fish. To achieve this involves protection, enhancement, restoration and development of the habitat base.

There is reference to possible access restrictions for recreational users, notably OHV for environmental (habitat) reasons. The plan does not appear to apply to industry, agriculture, infrastructure or urbanization other than assessing their impact on habitat. The net deficit from past human disturbances in the watersheds that are impacting productivity from sedimentation, fragmentation and phosphorous loading are not remediated. For support, any plan must address all such issues including existing and future development that achieves a reduced linear footprint of disturbance, open road density limits and improved ecosystem function.

Interspecies competition from naturalized populations should only be considered under stringent conditions that guarantee habitat is capable of sustaining native species for generations even under a climate change paradigm. Such naturalized populations may be better adapted to exist under the current habitat conditions and those predicted in the near future than native species.

The plan relies primarily on the use of total angling closures for at a minimum five (5) year periods at the watershed scale coinciding largely at Hydrological Unit Code 8. This is analogous to medium-sized river basins. These closures are additive to the existing closure of the Upper Pembina River watershed, Tri-Creek Watershed, Whitegoat Wilderness Area, Siffleur Wilderness Area and Ghost River Wilderness Area. The plan indicates other watersheds will have similar closures placed in the future. This leads to immediate and future loss of angling opportunity over large contiguous areas in the region.

The basis for the closures is the hypothesis that mortality related to angling is the primary cause that is preventing fish populations to return to historical levels. As the watersheds designated for closure are primarily managed with catch and release or highly restrictive retention regulations, mortality associated with angling should be low. The hypothesis is that even this low angling related mortality is sufficient to prevent fish populations from rebounding from current levels. Once closures achieve a certain fish population threshold and dynamics as determined by managers, angling regulations would be modified to allow resumption of recreational angling. The plans do not appear to describe the benchmarks that would need to be achieved before angling would resume.

The watersheds contemplated for closure appear to be supporting sustainable fish populations, albeit perhaps not at historical highs. In addition, these systems provide and support much of the angling opportunity in the region including corresponding pressure. It is recognized that species at risk exist in these watersheds. Angling closures appear to be a stop gap measure in relation to the broader issues.

Fish populations across the broad landscape appear to have either stabilized, show signs of improvement or display expected variability found in natural ecosystems based on anglers observations. The plan appears to be aimed at creating a specific fishery management objective (desired state) for the watersheds rather than meeting a conservation objective. Whether closures aimed at speeding up the trajectory of the status of fish populations (density, maturity, size) to achieve a fishery management objective is supportable requires additional consultation in the context of the impact on angling throughout the region.

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Such a strategy will result in lost opportunity for anglers at least in the medium term in closed watersheds. What metrics fish populations would have to show before angling could resume is subject to interpretation, change over time and undefined fishery management objectives.

Watersheds that are not subject to the closures likely will experience increased angling pressure. If the hypothesis that catch and release incidental mortality is the major limiting factor is valid, then fish populations in watersheds not closed will be put at greater risk. This could lead to even more lost opportunity if such watersheds would then subsequently be closed in the future to reverse the effects caused by increased angling pressure. The plan does not indicate whether these watersheds would be subject to more restrictive angling regulations to mitigate a shift in pressure. If such angling regulations are contemplated, this would equate to an additional medium-term loss of opportunity.

The plan suggests that illegal harvest (poaching) will be reduced due to increased enforcement activity within the closed watersheds. The plan does not appear to have increased budgets, additional staffing or alternative enforcement strategies that would be needed to sustain a reduction in such illegal activity. Owing to the locations of the watersheds, existing capacity and priorities of enforcement, it is hard to envision a significant reduction of such illegal activity whether in closed or open watersheds.

The plan does not address offsetting lost angling opportunity that would result if the plan is implemented. This is particularly critical as the plan suggests these closures will be applied in other watersheds in the future. This will have a multi-generational effect on angling opportunity. An offsetting plan, likely through expanding put and take stocked trout fisheries and other enhancement activities such as chemical rehabilitation or lake aeration must be included.

The methodology used to define fish population status is a concern. Historical changes in population are difficult to quantify as they are based on differing methodology. The result is that a subjective, though science based interpretation as to the historical potential for such fisheries is driving benchmarks and thresholds. Natural changes in productivity and fish population occur in these watersheds. Current reactive management paradigms and the lack of long-term data using the same methodology which drive angling regulation development must use realistic thresholds, benchmarks and targets.

We recognize the digital age has allowed managers to develop modelling tools that aid in the decision-making process. This has become a major thrust in biological science. Unfortunately, the observational skills of the past appear to be diminishing that were able to recognize subtle difference and broader consequences that are not captured by such models. This carries over to the social side of biology where fishery managers must balance expectations without the skill set that is required as a social scientist. Increasingly across society and within the sciences the move is to specialist vantage points (narrow focus) rather than the generalist perspective of the past. This highlights the need for rigorous consultation processes and bringing outsiders into the decision making sphere in today's world if the direction or decisions are to reflect the required balance.

We support current monitoring protocols for these cold-water species as they will lead to comparative longitudinal studies in the future. This is provided they are used in a manner that recognizes natural variability in fish populations when used as a tool in the development of angling regulations. No single survey should be considered definitive as various monitoring protocols exist for a variety of reasons including timing, temperature, turbidity, flows and fish population dynamics.

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In addition, there is increasing concern related to the frequency and intensity of monitoring. Indirect mortality related to monitoring through use of electrofishing and angling have been documented. The use of lethal monitoring protocols such as to determine disease prevalence or containment loading are statistically driven based on sample size and location. Moving to non-lethal protocols and differing benchmarks for monitoring in natural ecosystems needs to occur. Whirling disease prevalence detection is a prime example of such a lethal monitoring practice and protocol.

Academic research, like angling pressure needs to be distributed across the landscape in a manner that integrates with overall monitoring needs for all sectors.

At this time, the Alberta Fish and Game Association can not support the planned watershed angling closures for a number of reasons including:

1. Overlying land and aquatic ecosystem habitat plan for each watershed that deals with net habitat deficit from past and how ongoing and future human induced changes to habitat will be managed has not been provided.
2. No plan is provided that shows how the department plans to manage the shift in angling pressure to other watersheds and waterbodies.
3. No plan is provided that deals with compliance monitoring and enforcement from the perspective of the environment and fishery management.
4. Firm benchmarks, metrics and timelines have not been provided that would indicate when angling opportunity would be allowed to resume.
5. No offsetting plan has been provided to deal with the potential generational loss of angling opportunity in the region.
6. Scope of the consultations appears to have been limited to online survey and two recently planned open houses in Edmonton and Calgary which are insufficient to address such changes particularly at the local and municipal level.

The following draft proposal has been prepared by the Alberta Fish and Game Association for discussion purposes based on the above concerns. The aim is to develop a plan at the broad landscape level that deals with issues such as indirect mortality associated with catch and release angling, habitat change, shifting angling pressure, angling opportunity, compliance and enforcement. At the same time it recognizes the need for local and specific actions at a watershed level.

Draft AFGA Proposal – Wild Trout, Arctic Grayling and Mountain Whitefish Management Plan for Alberta

(For discussion only – not to be considered as the official position of the Alberta Fish and Game Association)

1. **Current Fishery Zones would be realigned and renamed.** The current *Zone 1 - Eastern Slopes* would be expanded and renamed. By doing so the intention is to create a broad, common and comprehensive approach to fishery management and habitat in zones. The primary focus in Zone 1 would be on cold-water species as the zone would encompass most of the historical and current range for such species in Alberta. The boundaries would roughly follow existing Watershed Units ES1, ES2, ES3, ES4 plus the addition of Watershed Unit NB2. Possible names could be “Foothills and Mountains” (Similar realignment and focus will be suggested in later sections of this response for the Northern Boreal and Parkland- Prairie Zones). Watershed units

(ES2, NB2, etc) as currently defined would exist only for internal administrative or logistic reasons. They would be replaced from a regulatory perspective as actual watersheds at a scale necessary for management purposes (e.g. Pembina River watershed). Reference within angling regulations at a watershed or waterbody level would only be required if unique, intensive or specific fishery management approaches are used. The intention is to support the following outcomes:

- a. Common fishery management approach throughout the zone
 - b. Angling regulation simplification
 - c. Dispersion of angling pressure
 - d. Electronic angling regulations
 - e. Alignment of land-use planning, Water Conservation Strategy and the Fish and Wildlife Policy with habitat requirements throughout the zone
2. **Protecting, enhancing and restoring habitat is the critical issue in ensuring the long-term sustainability of fisheries.** This region has both an expanding human footprint and a net habitat deficit from past development. Many streams in this region are no longer capable of supporting cold-water species due to the cumulative impacts of human development over the last century. The headwaters from which most Albertans rely on for our domestic water needs are located here. Industry and agriculture also rely on this region to provide the necessary water to support their needs. The integration of land use planning, the water conservation strategy and the under revision Fish and Wildlife Policy would be a step forward. This however does not address the immediate need for regulatory tools and conditions that are applicable across the broad landscape that lead to aquatic ecosystem health. Such tools must be able to be applied on both public and private lands. Maintaining and improving aquatic ecosystem function at the watershed level must be the priority of any plan. This will only occur through an integrated and comprehensive approach involving governments at all levels and land owners. While we recognize that some of the necessary policies are in place, the necessary widespread implementation does not appear to be occurring. Actions required include:
- a. Fast tracking LARP process in this new fishery zone where not started or complete
 - b. Adopting and implementing integrated watershed management plans with aquatic ecosystem health as the key outcome
 - c. Creation of a comprehensive habitat restoration, enhancement, development and protection program that addresses aquatic ecosystem health and maintenance of wetlands that involves and is applicable across all levels of government.
 - d. Create tools and conditions that will protect habitat in critical wildlife upland zones, riparian areas, wetlands, littoral zones and aquatic ecosystems. This is a critical component if human disturbance footprint is to be managed across the broad landscape. This goes beyond best practices which are site specific. These would include:
 - i. Renewal of exiting licences or permits for industrial and agriculture purposes on public land must include an audit that addresses past environmental deficiencies with an action plan for restoration as a condition of approval
 - ii. New development approvals must be offset with habitat restoration, enhancement or protection requirements to deal with the net deficit from past development on the overall landscape. Such an offsetting formula must take into account both the impacts at the new development site and additional (cumulative) impacts that occur as the result of such development on supporting or existing infrastructure including roads.

- iii. The Government of Alberta and municipalities must assume their responsibilities for remediation of environmental impacts related to their infrastructure development and assume a greater role in compliance monitoring and enforcement. The current largely complaint based or self reporting process is insufficient considering the high level of development on the landscape.
- iv. Application of linear disturbance maximum thresholds at the township level including lower maximums in each critical habitat zone.
- v. Application of open road density maximums at a township level
- vi. Application of maximum water crossings numbers at both the watershed and township level
- vii. Move to new standards in term of water crossing design that will reduce potential for fragmentation and siltation. Additional conditions would include signage as fish habitat, ongoing monitoring, immediate remediation of harmful changes and reporting
- viii. Active compliance monitoring and enforcement aimed at ensuring ecologically sensitive areas (riparian, littoral and land use designated) are protected
- ix. Incentives for landowners to protect and manage critical habitat
- x. Incentives for landowners to restore and enhance habitat.
- xi. Mandated wetland and riparian protection requirements on private land

3. Access management is a key element in any integrated plan as it linked to habitat, illegal activity and angling pressure concerns.

- a. Passive management is the most effective from cost and efficacy standpoint. It is thus the preferred route. It is however the result of having in place a land use planning and approval process supported by linear disturbance, open road density and water crossing maximum thresholds at a township and watershed level.
- b. Active access management requires consultation when it impacts the public and other stakeholders.
 - i. Motorized access by the public on open roads should not be restricted except under very limited circumstances.
 - ii. Restricting motorized access off road is a management tool that has application at a local level in critical habitat zones. The following are principles that need to be incorporated in such plans:
 - 1. Such plans must not universally be applied across the broad landscape.
 - 2. Designated route development should be the primary tool used if managers recommend restrictions. Such route development would be used to deal with critical habitat or within a land-use planning designation such as a provincial park
 - 3. Total closures would be limited to small local site-specific land bases, designated wilderness areas or ecological reserves.

4. Environmental education, communication and awareness must be part of any ongoing plan.

This must occur within the contemporary education system, within government at all levels and between branches, with stakeholders and the public. Among these would be the following:

- a. Mandated environmental education courses (similar to current safety course requirements) for companies and individuals working on public lands
- b. Mandated angler education (perhaps analogous with the current Conservation and Hunter Education Program requirements) for those angling in designated waters within the redefined *Zone 1*. (discussed in more detail in following sections)

5. **New angling regulations within the redefined Zone 1 would be developed.** They would deal with indirect mortality related to catch and release angling, direct mortality from consumptive harvest, fish stress related to angling and monitoring due to high temperatures, angling regulation simplification, transparent objectives, distribution of angling pressure and angling opportunity across Zone 1. The proposal for Zone 1 includes the following:
- a. Flowing waters and mountain lakes would be designated as the “Coldwater Habitat Subzone” with the primary objective of supporting self sustaining populations of both naturalized or native cold-water species including trout, char, mountain whitefish and arctic grayling. Most flowing waters and mountain lakes would be managed by Conservation regulations (general). The definition for such regulations could be: “Conservation objective regulations are intended to recognize the reality of anthropogenic change, natural productivity and variability constraints yet provide a level of protection that accepts risk while still maintaining angling opportunity.” More details on actual regulations will be discussed in following sections. However, it is safe to say that if proposed regulations were adopted, they would exceed current protection levels at the broad landscape level. In addition they would be by far the most restrictive general regulations in North America for cold-water species. The following are a synopsis of the regulations and licence requirements.
 - i. Angling License requirement for this Coldwater Habitat Subzone would include:
 1. Coldwater Fish Stamp to support habitat initiatives or development of alternate fisheries
 - a. Required for all anglers except youth
 - i. Could be a condition for angling in either the *Zone 1* or the *Coldwater Habitat Subzone*
 - b. Mandatory angling education requirements as a condition of stamp purchase that addresses fish identification, proper handling and release of fish, aquatic invasive species and disease spread, fishery management, angling regulations, ethics and environmental stewardship
 - ii. Angling Regulations for the Coldwater Habitat Subzone would include:
 1. Artificial lures only – **No Bait**
 2. Single hook barbless – No double or treble hooks or multiple hooks on same lure (would still allow for the use of dropper hooks but they would need to conform to the single hook barbless designation)
 3. Year-round open seasons for mainstems, lakes and other designated waterbodies
 4. June 1 to October 31 seasons on tributaries
 5. Short term seasonal angling closures on a site-specific basis for critical conditions such as spawning or to prevent aquatic invasive species spread
 6. Spot closures or daily angling hour restrictions for high water temperature conditions, disease outbreak or environmental disaster
 7. Catch and Release only for all species
 - a. It is recognized that there is the ability for some consumptive harvest for cold-water and other species in the Coldwater Habitat Subzone. This is due to various reasons including overlapping ranges of some fish populations particularly in downstream sections of major rivers where walleye, northern

pike and goldeye may predominate. There also may be cold-water fish species, particularly mountain whitefish that could sustain some harvest in certain watersheds. Special fishery management objectives may require tools such as the reduction of certain fish specie populations through angling to reduce competition, hybridization or restore native specie biodiversity in a few watersheds. These circumstance would be captured through special regulations that are waterbody specific. A recovery objective is not included as it should be considered as part of an action plan, not a fish management objective. This also reverses the narrative to positive outcomes. The objectives have been defined in a way that transparently defines their intent to anglers and the public. The following are the proposed objectives:

- i. Refuge and Biosecurity: Such an objective would be reserved for a limited number of small watersheds/waterbodies that have the highest potential to resist anthropogenic change. As such their management would be aimed at meeting native specie biodiversity objectives and maintaining genetic purity. Angling may be allowed but would be highly regulated.
 - ii. Blue Ribbon: Intensively managed fisheries with an objective of high quality angling experience for either native or naturalized species
 - iii. Special: Regulations that vary from the general (Conservation) regulations. They would be designed to recognize that certain waterbodies have either different fish population dynamics or aquatic ecosystems. Many of these waterbodies support much of the angling pressure in Alberta and as such would be intensively managed to optimize sustainable harvest and achieve balanced fish specie profiles. Other reasons include fish populations that because of Zone boundaries are not necessarily aligned with cold-water habitat which results in different fish specie profiles. Examples would be the lower reaches of major rivers in this zone where the fish population is dominated by cool-water species such as walleye, northern pike and goldeye.
- iii. It is recognized that parts of the newly defined Zone 1 (Foothills and Mountains) is largely cool-water habitat. Waterbodies (primarily lakes) support both provincially and regionally important fisheries for northern pike, walleye and lake whitefish among other species. These could be defined as another subzone within Zone 1 or individually listed. Options of how to manage these waterbodies will take place when the Northern Pike and Walleye Management Framework is discussed. Many such waterbodies likely will fall under the Special regulation designation. Other smaller waterbodies not captured would fall under Conservation (general) regulations which would vary by species. Put and Take Stocked Trout Fisheries could represent a third subzone in Zone 1 and will

be discussed in the Angling Opportunity section and elsewhere in the response. It is also recognized that mountain whitefish and arctic grayling are present in many locations in the current Northern Boreal Zone. How to best handle these various populations, whether cold-water or cool-water that exist between zones in a consistent manner to maintain angling regulation simplification objectives requires additional thought. Currently believe the preferred option would be by using the Special regulation designation and subsequently applying the Conservation general regulations that exist for cold-water species in Zone 1 when such species dominate or are the focus of management efforts.

1. A hypothetical example could be the House River watershed, an important arctic grayling habitat in the current NB 4 Watershed Unit. To remain consistent, the regulations would be catch and Release all species, single hook barbless, no bait. Whether the Coldwater Habitat Stamp to fish such designated waters outside of Zone 1 should be required is an item for discussion.
6. **Creating angling opportunity offsets as a result of this more restrictive angling regulation paradigm must become a major priority for managers.** This will help to disperse and reduce angling pressure on self-sustaining fisheries. This would occur largely through expansion of the existing put and take trout stocking program to other waterbodies or rehabilitation and enhancement activities at existing sites. Habitat improvement that result from an integrated approach to manage the growing human footprint will have significant rewards over the long term that will lead to more sustainable fisheries at less risk. Active habitat enhancement, development and restorations activities on both private and public land can reap benefits in both the medium and long term and should be pursued in a focused manner keying in on critical or productive water courses. The requirement for offsets as a condition of development would greatly speed up such an active management approach.
7. **Species at Risk Recovery Plans (bull trout, westslope cutthroat trout) pose challenges.** This is most relevant on the habitat front due to climate change and our expanding human footprint. This management plan attempts to strike an appropriate balance while being realistic. The angling regulations proposed provide for greater protection for both native and naturalized cold-water fish species across the broad range. They also allow for special management approaches to be used in unique and limited circumstances after careful evaluation of the trade-offs that would need to be made. Refuge populations must be established both inside and outside historical ranges for these species. An integrated approach across government that moves beyond angling regulations must be undertaken if such species are to persist on the broader landscape in the long term.

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In the coming days will provide additional draft discussion papers from an AFGA perspective related to angling regulation simplification, electronic version of angling regulations and Northern Pike and Walleye Management Framework. Moving forward the Alberta Fish and Game believes the following outcomes can occur in concert but only if a comprehensive approach to fishery management is adopted that goes beyond angling regulations and involves all levels and departments of government in Alberta, landowners, industry, anglers and the public.

Sustainable fish populations
Habitat protection
Angling opportunity
Distribution of angling pressure
Understandable angling regulations including objectives

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