COMMERCIAL VS RECREATIONAL FISHERIES ALLOCATION IN CANADA: PACIFIC HERRING, SALMON AND HALIBUT

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ABSTRACT

The commercial-recreational fisheries allocation process for herring, salmon, and halibut in Pacific Canada differs. For each species, the paper describes the allocation process, the strength of the resulting access rights, performance to date and emerging issues. The role of economic analysis in allocation decisions is discussed. The case of Pacific halibut, a ground-fish species, is highlighted as the recreational sector has been selling its unutilized allocation in-season to the commercial sector, a transfer feature that has created new policy issues.

Keywords: strength, transferability, governance, sustainability, monitoring.

INTRODUCTION

The allocation of fish between commercial and recreational sectors is contentious because it involves assigning a form of property rights, in the form of predetermined shares of the Total Allowable Catch or TAC, to competing interests – property rights issues always evoke extreme passion.

Formal allocation results in strengthened and more clearly defined access rights to the fish resource. But these rights are not property rights per se as the rights do not entail all of the attributes of pure property such as security, permanence, exclusivity, and transferability (Scott 1999). Fish are subject to the "rule of capture" whereby a fisherman does not have ownership to individual fish until the fish are caught.

And the position of the Canadian Department of Fisheries and Oceans (DFO) has always been that a commercial or recreational fishing licence is a privilege, granted annually, not a property right. The absolute right to issue, suspend, cancel and refuse issuance or reissuance of any licence is at the sole discretion of the federal Minister of Fisheries and Oceans.

In Canada resource conservation is the highest priority. After conservation needs are met, First Nations aboriginal Food, Social & Ceremonial (FSC) requirements and treaty obligations have the next highest priority. The allocation of remaining fish resources to commercial and recreational use is a matter of public policy.

This paper outlines the recreational vs commercial allocation process, the strength of the resulting access rights, performance to date, and emerging issues. The paper also identifies the degree to which two necessary conditions for efficiency in allocation exist, namely: 1) defined sectoral shares, and 2) the ability to transfer shares (Pearse 2006). Results are compared and contrasted for three species groups in Pacific Canada, namely herring, salmon and halibut.

TWO VERY DIFFERENT SECTORS

Fisheries allocation between the commercial and recreational sectors is particularly vexing because the characteristics, motivations, and output measures for participants differ dramatically (Edwards 2000, Lal et al 1992, Gislason et al 1996, Gislason 2001).

Figure 1: Two Different Fisheries Sectors

	Commercial Fishery	Recreational Fishery
Activity	• Renewable resource extraction • Processing • Marketing	• Outdoor recreation
Product	Fish	Angling experience • Catching fish • Harvesting fish • Aesthetics
Output Measure	Tonnes	Angler-days
Producing Sector	• Commercial fishermen • Processors • Distributors	• Independent anglers* • Lodges** • Charters**
Consumers	Seafood consumers	Anglers

* the independent angler produces the experience for his or her immediate consumption.
** these businesses typically provide packages to sell the fishing experience to anglers.

The commercial fishery is a renewable resource extraction, processing and marketing industry that produces food for consumers. Commercial sector output is the amount of fish harvested. Commercial sector values reflect the value end consumers place on the food product as well as the costs of harvesting, processing, and marketing.

In contrast, the recreational fishery is a form of outdoor recreation which is dependent on a natural resource base. The quality of the angling experience is affected by fish availability and several non-fish related factors such as the environmental setting, congestion, and camaraderie with other anglers i.e., the ability to tell a "fish story" (Larkin 1982). Angling activity is measured not in units of fish caught or harvested, but in angler-days. Recreational values reflect the value that anglers place on the "expectation and opportunity" of catching fish as well as the costs of angling.

CASE STUDY #1 – HERRING

Pacific herring is a pelagic species of fish that is not a direct target of recreational anglers. However, a small amount of herring is caught under commercial licence and subsequently sold as bait to anglers. Commercial users include the spawn-on-kelp ("J" licence) and roe herring (seine "HS" and gillnet "HG" licence) components.

ALLOCATION PROCESS

From the total herring TAC are subtracted amounts for aboriginal FSC use, Special Use (e.g., sport bait herring sales, aquarium, charity), Food & Bait and commercial Spawn-on-Kelp operations. The residual is allocated to the commercial Roe Herring fishery.

The total TAC has been 25,000 – 40,000 tonnes in recent years with the combined Special Use and Food & Bait allocation being only 1,250 tonnes or less than 5%. The commercial fishery – spawn-on-kelp plus roe herring – gets 85% + of the TAC. The Food & Bait and Special Use TAC amounts have not changed for many years. Commercial, Food & Bait and Special Use fishery components all are managed under Individual Quota or IQ regimes.

Economic considerations have not had any impact on the allocation process between recreational and commercial interests.

PERFORMANCE REVIEW, SUSTAINABILITY & EMERGING ISSUES

In essence, the sport bait allocation of herring has higher priority than the commercial allocation but because the sport allocation is so small and has been constant, this has not been contentious. This may change as recreational fishing activity and associated bait requirements escalate in the future. The allocations are not transferable between sectors.

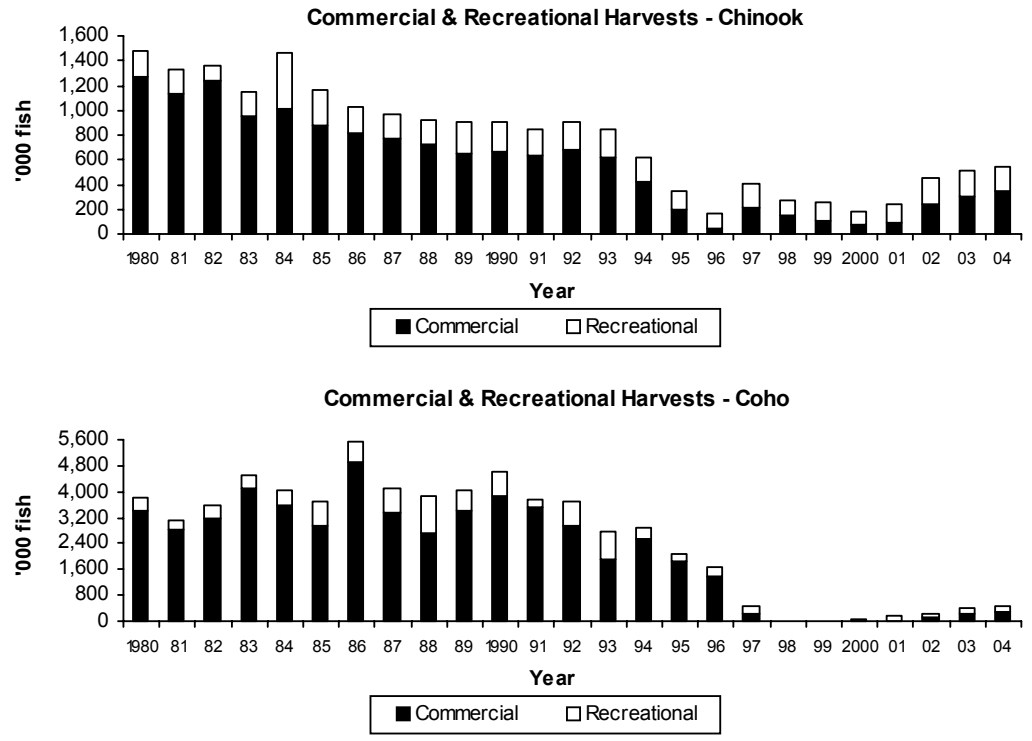
There are few concerns about the sustainability of the herring resource and its user groups as the fishery for many years has been managed conservatively, based on a 20% exploitation rate on stocks above a minimum or cut off biomass.

The herring recreational-commercial allocation system of today is one of the simplest in Pacific Canada – it harkens back to how recreational-commercial allocations for all fisheries were determined until quite recently i.e., expected recreational catch, as well as aboriginal FSC catch and other incidental use, were "taken off the top" with the residual allocated to the commercial sector.

CASE STUDY #2 – SALMON

The five species of Pacific salmon – chinook, coho, sockeye, pink and chum – are anadromous species. The commercial fishery uses net (seine and gillnet) and hook & line (troll) gear to catch salmon under "A", "N" and "F" licence categories whereas the recreational fishery uses hook & line (baited hooks or lures) gear. Traditionally the recreational fishery has focussed on chinook and coho whereas the commercial net fishery has focussed on sockeye, pink and chum – but coho and chinook are also important species to commercial trollers. Chinook and coho catches showed dramatic declines in the late 1980s, but catches have started to rebound slowly since then – Figure 2 (Irvine et al 2005).

Figure 2



Rights to all users are weak in that DFO does not set coastwide TACs for each salmon species due to the nature of the resource i.e., the fisheries are managed to an escapement target or number for fish reaching the freshwater spawning grounds and not a TAC.

All anglers must be licenced and observe catch limits (daily, possession and in some cases annual). There are no restrictions or limited entry on how many licences can be sold, how many individuals can fish recreationally, and how many angler-days can be expended. Individuals wishing to harvest salmon must purchase a salmon stamp. There are about 300,000 licenced recreational marine anglers in British Columbia. There are no special licence provisions for recreational fishing lodges or charters (guides) in marine waters. Recreational fishery expenditures in marine waters are $550 to $600 million CDN annually with one half to three quarters of these attributable to salmon angling (Gislason 2004).

There are 2,220 limited entry commercial salmon licences divided into eight gear-area combinations (2 for seine plus 3 for each of gillnet and troll). The licence holders operate in competitive or derby fisheries although a couple of pilot or demonstration IQ fisheries were implemented in 2005. Licences are transferable (except First Nation "N" and "F" licences). The landed value to commercial fishermen from salmon has ranged from $25 million to $60 million CDN over the past 8 years (processed value would be two to three times this), a 75% + decline from that in the early 1990s.

ALLOCATION PROCESS

The allocation of Pacific salmon between commercial and recreational interests in Canada has been a contentious issue for 20 or more years as the recreational catch of chinook and coho increased, and as Canada was faced with fishing restrictions under the 1985 Pacific Salmon Treaty (PST) – see Figure 2.

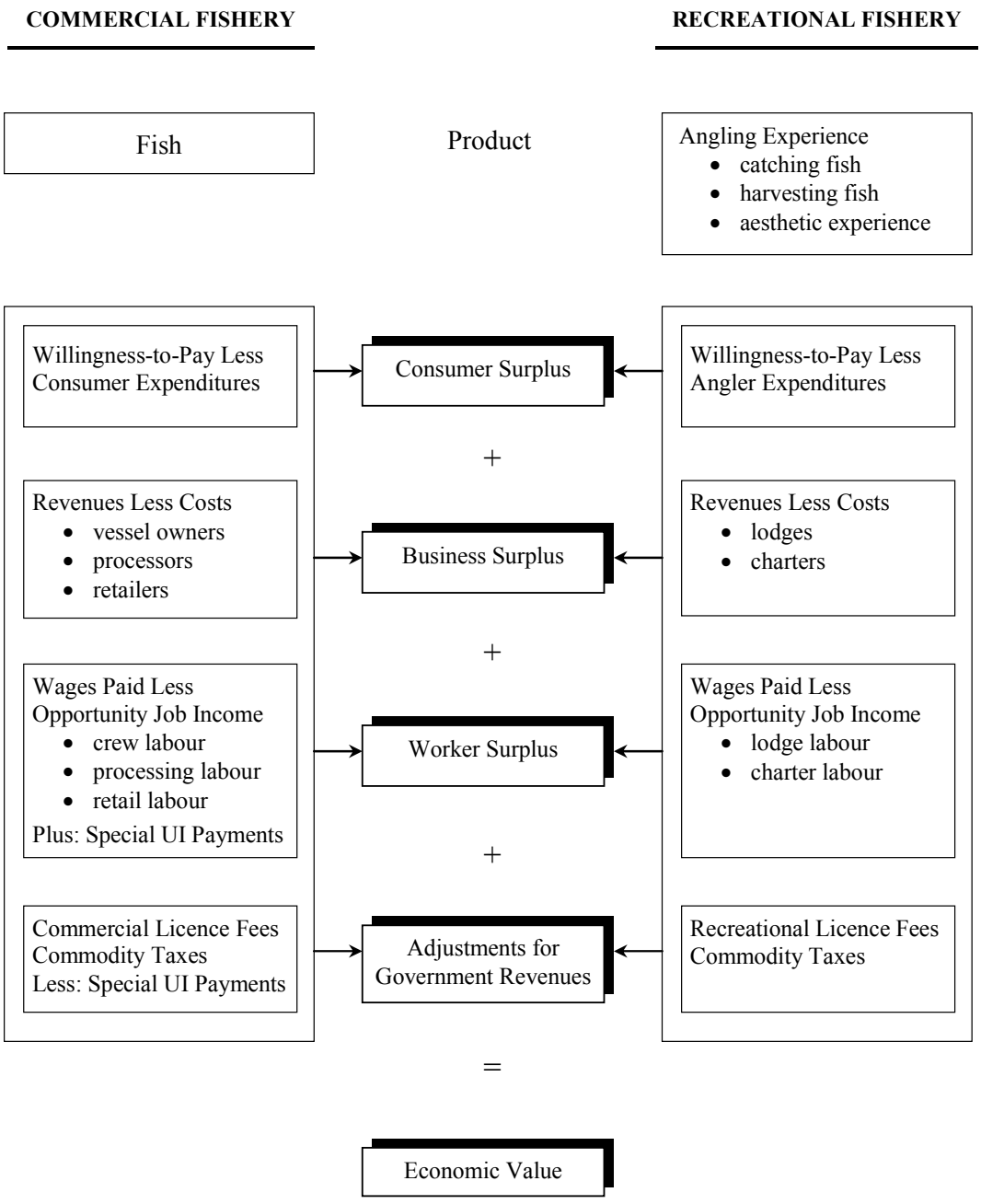
Traditionally DFO did not manage the salmon resource to achieve an intersectoral allocation objective. Since 1985 estimates of recreational harvest, as well as the aboriginal FSC harvest and escapement needs were subtracted from the projected return with the residual comprising a catch target for the commercial sector i.e., the target shares were notional only and often adjusted in-season. This process was viewed as an infringement of existing rights and/or use by the commercial sector. The recreational sector countered that the salmon resource is public property to which anglers should have unfettered access.

Two independent advisors were appointed in the mid to late 1990s to try to resolve the allocation issue (May 1996, Toy 1998), with each investigation involving a myriad of workshops, meetings, submissions and documentation (e.g., Blewett et al 1996). Not surprisingly, no consensus between sectors was reached. In 1999 DFO released *An Allocation Framework for Pacific Salmon 1999-2005* which spawned yet another round of reviews, comments and submissions. Finally in October 1999, DFO released the document *An Allocation Policy for Pacific Salmon,* a policy that is still operative today.

The key features of the recreational-commercial salmon allocation policy, after conservation needs are met and priority access for First Nations requirements is addressed, are:

- recreational – priority to directed fisheries on chinook and coho
  - 5% cap of the combined commercial-recreational harvest of each of sockeye, pink and chum
- commercial – allocated at least 95% of the combined commercial-recreational harvest of each of sockeye, pink and chum
  - the commercial harvest of chinook and coho will occur when abundance permits

Figure 3
Economic Value Framework



Notes: 1. Only values accruing to Canadian interests are relevant.
2. UI is Unemployment Insurance benefits.

Source: Gislason et al (1996), Gislason (2001).

For the directed commercial fishery on chinook and coho to occur, the recreational fishery must be at "full limits" i.e., 2 per day and 4 in possession for chinook, and 4 per day and 8 in possession for coho.

A key factor underpinning the allocation arrangements for chinook and coho was the greater value of an extra fish to the recreational sector as compared to the commercial sector. A consulting study, employing a rigorous and consistent methodology, provided the analysis (Gislason et al 1996, Gislason 2001) – see Figure 3 for the economic framework.

PERFORMANCE REVIEW, SUSTAINABILITY & EMERGING ISSUES

Since the allocation policy was announced in 1999, the health of chinook and coho stocks have improved. The result has been increasing opportunities to fish chinook and coho for both the recreational and commercial sectors. The recreational sector is very happy with the priority access provision in large part to their interpretation that the policy does not limit their catch. Regulatory uncertainty has been reduced and in fact, several angling business have used the DFO priority access policy as part of their marketing campaigns.

The commercial sector, in contrast, asserts that the priority access provision is inconsistent with the sustainability principle under which all user groups need to fish to a TAC. The commercial sector also sees that the lack of a more formal allocation formula could lead to further erosion of their historical catch shares, from whatever source, without compensation.

Nevertheless, the priority access allocation provision is working the way it was intended – at higher abundance levels the commercial sector share of total catch increases, at lower abundance levels the commercial share decreases (see Exhibit 2). And the chinook and coho resources appear to be rebounding, albeit slowly, in part due to selective fishing practices e.g., both recreational and commercial troll hook & line sectors adopted barbless hooks in the late 1990s. However, there are still concerns for selected stocks such as Interior Fraser coho.

The salmon resource consists of several distinct stocks which are highly variable – chinook and coho catches varied by 5 fold or more in the 1990s (much of the decline was due to changes in oceanographic conditions and reduced marine survival). As a result, it is very difficult for the recreational sector to fish to a fixed percentage of a TAC without incurring closures in-season and/or regulations which vary dramatically from year-to-year i.e., without affecting the "expectation and opportunity" of catching a fish recreationally.

In our view part of the reason that a more formal allocation framework was not struck lies in the fact that the property rights among individual licence holders within the commercial salmon fishery are weak i.e., there are no IQ, pool or other cooperative arrangements. In such a situation it is difficult to impose a more rigid formula to intersectoral allocation than exists to allocation within the commercial sector.

The 5% caps for sockeye, pink, and chum, when announced in 1999, were not expected to be approached in the forseeable future. This is still the case for pink and chum. But for sockeye the recreational catch has approached or exceeded the 5% cap in some recent years (there are no penalties for exceeding the 5% cap). This has occurred because selective fishing and precautionary management approaches have greatly reduced commercial fishing opportunities for sockeye. e.g., severe concerns for weak stocks such as Cultus Lake sockeye exist. It is unclear under the 1999 policy what actions would be taken if the 5% cap was reached.

Some other outcomes or issues not anticipated in 1999 have emerged:

- regional variations – do recreational "full limits" have to be in place coastwide before the directed commercial fishery for coho and chinook can commence in a particular region?

- change in economic value – if the commercial sector substantially improves their economic value through fundamental changes in operating practices e.g., bleeding fish under an IQ management system, would the priority access policy be revisited?
- Treaty issues – some First Nations are reluctant to receive commercial salmon licences in treaty settlement as they see the current recreational priority access policy as eroding commercial sector rights.

The terms "priority access", "cap" and other terms also are open to interpretation.

CASE STUDY #3 – HALIBUT

There are 50+ groundfish species caught by commercial and sport fishermen – a variety of soles, cod, rockfish, pollock, halibut, sablefish, etc. The main species of common interest to commercial and sport sectors are halibut, a variety of rockfishes, and lingcod.

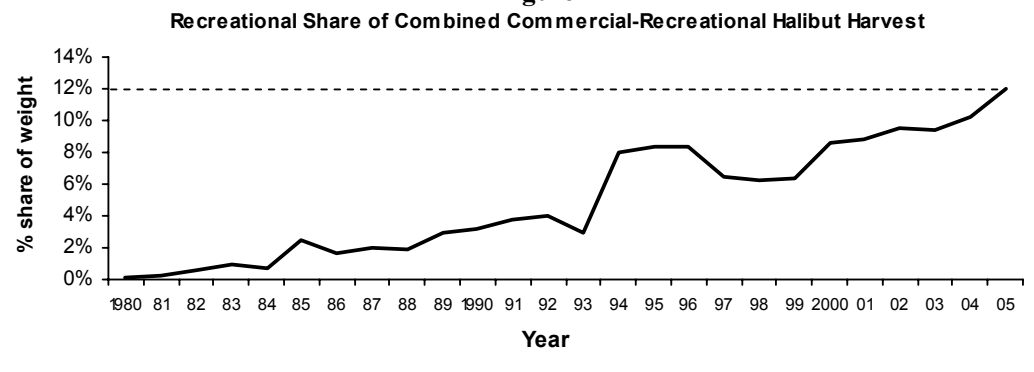
This section focuses on recreational vs commercial allocation of halibut and the innovative allocation process in place today. The total TAC of halibut has been about 6,000 tonnes in recent years – worth about $50 million CDN to commercial fishermen ($60 million CDN at the wholesale level) plus an indeterminate amount to the recreational fishery.

ALLOCATION PROCESS

The International Pacific Halibut Commission (IPHC) sets TACs for both the US and Canada for halibut. Prior to 2004, DFO subtracted estimates for Canadian FSC, recreational and bycatch mortality from this TAC to arrive at the commercial sector TAC for Canada. The halibut fleet of 435 licences has had an IQ management program since 1991.

In 2000 DFO hired a facilitator to negotiate an allocation agreement between recreational and commercial sector interests, an agreement that was needed since the recreational halibut catch was growing (see Figure 4 below). The process met an impass and an independent advisor was retained (Kelleher 2002). The advisor recommended a 9% share for the recreational sector, the current (2001) level.

Figure 4



The Minister subsequently announced late in 2003 a 12% recreational catch ceiling, higher than the 9% level, to allow for some growth in the sports sector (Canada Fisheries & Oceans 2003). He also announced that each sector should develop a suitable market-based mechanism for future allocation adjustments between sectors, and that he would not shut down the recreational sector in-season. These features gave substantial security to both sectors. The commercial sector reports that the announcement appeared to spur a slight increase in the trading (market) value of quotas.

Economic analysis had no influence on the commercial vs recreational allocation decision. The question – is halibut worth more to the recreational or to the commercial fishery – was never asked. One could argue that the commercial salmon sector did not operate under a strong property rights regime and according the best economic value of the resource was a legitimate question in the salmon allocation debate. In contrast, the commercial halibut fishery had much stronger property rights through their IQ management regime and therefore their existing rights trumped any notion that the halibut resource should be reallocated away to another sector, regardless of its value, without compensation. That is, the strength of property/access rights within the commercial sector can affect the allocation outcome.

PERFORMANCE REVIEW, SUSTAINABILITY & EMERGING ISSUES

DFO manages the recreational halibut fishery under the assumption that the catch in the previous year will be realized in the current year i.e., there is a one year lag in management actions. In both 2003 and 2004, the recreational sector was under their 12% allocation. Accordingly, DFO allowed the Pacific Halibut Management Association (PHMA), a non-profit representing commercial halibut licence holders, to purchase the projected recreational surplus through a bid system to its members in 2004 and 2005. Over the two years the amount transferred was approximately 320 tonnes which generated about $1.8 million CDN or 60% of the $3 million CDN landed value of the fish (the commercial sector also paid a per tonne resource royalty to the federal government plus dockside monitoring and other fees).

Since the recreational fishery sector does not have a legal entity to represent itself (the Sport Fish Advisory Board is purely "advisory"), the PHMA set up a separate trust account or endowment fund for the monies collected. The PHMA is awaiting directions from the recreational sector as to how to release the money.

The lack of a legal institutional structure for the sport fish sector is a serious impediment to effecting transfers between the two sectors. Without a legal institution, and if the sport fish sector pushes against the 12% cap, then DFO will be forced to reduce daily limits or to close selected fishing areas and times to constrain the recreational halibut catch.

This day of reckoning is at hand – the recreational sector is estimated to have caught almost exactly 12% of the total TAC in 2005. Accordingly, the 2006 recreational fishery will be managed as if the fishery will catch 12% of TAC, and there will be no surplus for sale to the commercial sector. If the recreational sector catches more than 12% of TAC in 2006, then under the current policy the recreational sector for 2007 will need to: 1) purchase quota from the commercial sector (the "market approach"), or 2) be subject to more stringent bag limits, fishing times and/or fishing areas (the "command and control approach"). But as noted earlier, the present lack of institutional structure for the recreational sector precludes the first approach. We suggest that it would be prudent for DFO to give the recreational sector one year's notice, prior to enacting regulatory change in April 2007, in order to adjust to the proposed regulations or to suggest alternatives. This would facilitate business planning.

Some elements of the recreational sector think the halibut allocation policy should be revised or abandoned, or that the government should purchase quota from the commercial sector to transfer to the recreational sector i.e., the recreational sector should be allowed to grow with a subsidy from the public purse (Kelleher 2002).

One alternative is to increase recreational licence fees and have the extra monies dedicated to purchasing commercial quota. But the 2004 federal *User Fees Act* prescribes a cumbersome process involving notification, consultation, an independent advisory board, a performance measurement system as well as debate in Parliament to change fee levels – this process likely would take a minimum of three years.

With formal allocation naturally comes increased scrutiny of catch monitoring systems for both commercial and recreational sectors. The commercial halibut sector has one of the best catch monitoring systems in the world with mandatory hail in, hail out of fishing trips, 100% Dockside Monitoring, tagging of all fish landed, and starting in 2006 observers and/or video cameras on all vessels. In contrast, the recreational fishery monitoring program consists of a variety of adhoc creel census, lodge and charter logbooks, and other programs – the recreational sector needs to improve its catch monitoring program substantially.

Many segments of the recreational sector agree and point to increased licence fees dedicated to catch monitoring as a natural way to address this issue - but again the provisions of the federal *User Fees Act* make this option difficult to implement. But apparently active investigation of this and other user pay options are underway.

The fact that now both commercial and recreational sectors are fishing to a prescribed TAC has enhanced sustainability of the resource, and the users dependent on it (see discussion of commercial sector benefits in Gislason 1999). Unlike the salmon situation, the halibut resource and its aggregate TAC does not fluctuate widely from year to year. Therefore it is feasible for the recreational sector to fish to a formal TAC and not incur mid-season closures or dramatic year-to-year regulatory changes. The transfer mechanism inherent in the halibut allocation policy allows for an orderly transfer from one sector to another.

In summary the intersectoral allocation process for halibut is innovative and unique in Canada, and perhaps in the world, as it involves both necessary conditions for efficiency, namely well-defined initial allocations and the ability to transfer these allocations. However, it is premature to ascertain whether or not this allocation process is working.

How the Department of Fisheries and Oceans deals with the need for the sports sector to adhere to the 12% halibut TAC ceiling and the need for better recreational catch monitoring will test its resolve, as well as the efficacy of the halibut allocation process overall.

CONCLUSIONS

The commercial vs recreational allocation question has been settled in different ways in Pacific Canada, depending on the circumstances of both the resource and the fisheries management system in place. The Canadian experience suggests several "lessons learned".

Lesson #1: Sustainability – biological, economic, social – can be enhanced with each sector having a formal, predetermined share of the allowable catch.

Lesson #2: A transfer mechanism between commercial and recreational sectors will allow fish to go to its highest and best use – but such a possibility requires that both the commercial and recreational sectors have legal entities to represent their constituents and to effect such transfers on behalf of these constituents.

Lesson #3: Formal allocation systems put pressure on the government authority to ensure that appropriate catch monitoring systems are in place, and to enforce any caps or ceilings prescribed in the allocation formula.

Lesson #4: Perhaps the best way for either the commercial or recreational sector to assert their case for greater allocation of a public resource is to increase the value of their own fishery and/or have strong property rights within their own fishery (these two attributes are related).

Lesson #5: The commercial vs recreational allocation debate may be misdirected – there can be bigger issues constraining fishing opportunities and values such as encroachment by other users, habitat degradation and the inability to meet the needs of consumers and anglers.

These lessons are broad and may apply to many other fisheries jurisdictions as well.

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