

EXECUTIVE SUMMARY

Wildlife holds great social, ecological, economic and recreational value for Canadians and Americans. Governments and regulatory agencies find themselves under intense scrutiny with expectations that they will respond to a vastly broadened and much more inclusive public interest in wildlife. Part of the expected response is effective fish and wildlife law enforcement. This report compares fish and wildlife law enforcement and protection capability in British Columbia and Alaska. The broad focus was enforcement and protection capability on a province and statewide basis. These political jurisdictions have in common a biogeographic region known as the coastal rainforest; a second level of study, encompassing 88,296 km² in British Columbia and 84,553 km² in Alaska, compared some aspects of fish and wildlife law enforcement capability in this ecologically distinct area.

- **HUMAN POPULATION GROWTH**

Growth in the number of people residing in British Columbia and Alaska is one of the major pressures on fish and wildlife law enforcement and protection capability. British Columbia and Alaska experienced a 51% and 53% increase, respectively, in human population between 1980 and 2002. There are now 4.1 million British Columbians and 640,000 Alaskans. The increase in the total number of people in British Columbia adds a component of enforcement responsibility that complicates enforcement well beyond rate of growth. The same rate of growth that saw Alaska add 221,032 people to its population saw British Columbia add a staggering 1,390,779 persons.

Human population change in coastal British Columbia and Alaska was distinctly different in two respects from that at the provincial and state level. In this region both the rate of human population growth and total population in Alaska exceeded that in B.C., increasing 19% from 61,162 people in 1983 to 73,888 in 2002. The B.C. coastal population has grown marginally, increasing from 66,672 in 1985 to 69,380 persons in 2002.

- **THE REGULATED USERS OF FISH AND WILDLIFE**

These users consist of hunters and anglers that require authorization to legally carry on their pursuits. As of 2000 resident and nonresident hunting and fishing license sales numbered 319,727 in B.C. and 489,351 in Alaska. Per capita participation by residents in Alaska is 4.4 times that of B.C. (31% vs. 7%). The total number of licenses sold declined 24% in B.C. in the 1990s while it increased 17% in Alaska. In B.C. residents and nonresidents are abandoning these activities on a relatively large scale. The pattern is somewhat different in Alaska. Resident participation is relatively stable but nonresident participation has skyrocketed 173%!

- **THE REGULATORY LOAD**

This is a measure of the number of authorizations required by traditional sport fish and wildlife resources users. In 2000 there were 932,199 authorizations issued in B.C. and 732,863 in Alaska. The regulatory load in B.C. has been declining since 1990 (-5%) but it has increased noticeably in Alaska (+39%). Enforcement

requirements relative to the regulated population continue to increase in complexity. The number of fishing and hunting license categories has increased from 26 to 73 in B.C. and from 27 to 51 in Alaska.

- **ENFORCEMENT BUDGETS, CURRENT DOLLARS**

In 2002 B.C. is projected to spend about \$9.0 million on fish and wildlife law enforcement and Alaska will spend about \$13.9 million without marine enforcement. Since 1983 budgets have increased 22% in B.C. and 30% in Alaska. B.C.'s budget has declined 19% from its 1995 high of \$11.1 million while Alaska's budget increased 9% in that period. B.C.'s budget will sink to a historical low by 2004 while Alaska continues to increase support. By 2004 it appears B.C.'s budget will be less than 50% of Alaska's.

Coastal B.C.'s enforcement budget today is essentially the same as in 1983 but it has declined 37% since 1996. Coastal Alaska's protection budget is up 18% since 1983 but it was out of step with the rest of the state in the 1990's when it was stable.

- **EROSION BY INFLATION**

A major setback to enforcement capability in British Columbia and Alaska has been the erosion of budgets by inflation. Between 1983 and 2002 the enforcement services budget in British Columbia deteriorated to 35% below expected. This represents a deficiency of \$4.8 million or 54% of the existing budget. By 2002 the gap in B.C. will widen to more than 104% of the existing budget. Alaska's Fish and Wildlife Protection budget has also suffered a setback; a deficiency of \$5.1 million has developed between current and inflation-adjusted dollars, a sum equal to 37% of the existing budget.

Coastal B.C.'s enforcement budget lost 10% to inflation in the 1990s, a deficiency of \$142,000 in 2002. The gap will grow to 58% and \$276,000 in just two years. Alaska's protection budget, with

marine enforcement, lost 34% to inflation, a deficiency of \$1.1 million by 2001.

- **ENFORCEMENT BUDGET PRIORITY**

British Columbia began the second year of the 21st century with a fish and wildlife enforcement budget essentially unchanged from 20 years previous. Over that period total provincial expenditures had grown by \$16.3 billion (+200%). Enforcement spending as a percent of total government spending fell to 0.00039% (1/26th of 1%) in 2001. In 2004 Enforcement services will receive 1/29th of 1% of provincial expenditures. Fish and Wildlife enforcement has suffered from government neglect for 20 years and its stature continues to erode.

Alaska's fish and wildlife protection budget has declined to 2/5ths of 1% of the state budget, down 32% since 1983. In that time the state's entire budget increased by \$2.2 billion (+90%). State expenditure on fish and wildlife protection reflects a priority that is out of synchrony with overall growth in state expenditures. Even at these low levels of support Alaska's fish and wildlife protection budget priority is ten times greater than enforcement priority in B.C.

- **PER CAPITA ENFORCEMENT EXPENDITURE**

British Columbia's per capita expenditure on fish and wildlife law enforcement is \$2.17. By 2004 it is forecast it will be \$1.71. At \$21.64 per capita Alaska spends 10.6 times as much as British Columbia. Coastal area expenditures are greater for both jurisdictions, particularly in B.C. which spends \$7.15 per person; AK spends \$27.85 per person. Per capita fish and wildlife enforcement budgets in both jurisdictions have lost ground to inflation; -54% in B.C. and -43% in AK. Coastal B.C. and AK are 25% and 44%, respectively, below expected expenditure.

- **ENFORCEMENT STAFF LEVELS**

The recent trend in fish and wildlife enforcement and protection staffing in British Columbia is

opposite that seen in Alaska. There was a sharp decrease (-15%) in the number of conservation officers (CO's) in B.C. in 2002 while Alaska has slowly been adding troopers (+6% since 1994).

In 1990 there were six conservation officers with responsibilities in the B.C. coastal area. This increased to eight in 1992 and it remains at this level. Alaska Detachment A (S.E. Alaska) had 18 troopers in place in 2002.

- **SUPPORT PER OFFICER AND TROOPER**

Support per officer and trooper: B.C. budgeted \$74,890 per officer in 2002, which represents no change since 1992. Alaska budgeted \$152,401 per trooper, an increase of \$21,114 per trooper since 1992 and more than two times the support provided B.C. officers. By 2004 B.C. will have cut officer support to a historical low and will be providing barely one third the officer support Alaska does.

Coastal per officer support in B.C. has been the same as province-wide but by 2004 it will be 20% lower. Alaska spends about \$30,000 less per trooper for the coastal area than it did statewide but it still supports coastal troopers at a level 2.5 times that of B.C.

- **POPULATION RESPONSIBILITY PER OFFICER AND TROOPER**

A significant percentage of the unregulated population interacts with wildlife on a regular basis. It was estimated that in 1996 60% of the B.C. populace was involved in wildlife-related activities. The ability of enforcement services to monitor and regulate interaction between residents and fish and wildlife can be partly measured by the ratio of residents to officers or troopers. B.C. has 43,441 residents per conservation officer and Alaska has 7042 residents per trooper. In the coastal study area B.C. has reduced historical officer per capita responsibility by 22% whereas it increased 39% in

Alaska. B.C. officers are still responsible for twice as many residents as Alaska troopers; 8667 vs. 4104, respectively.

- **GEOGRAPHIC AREA OF RESPONSIBILITY**

Alaska is much larger (+57%) than British Columbia but both are physically impressive jurisdictions. The size of the land base officers and troopers are responsible for in B.C. and Alaska presents a picture that has changed little in the last decade. Alaska troopers on a statewide basis are faced with a huge landscape; each is responsible for 16,234 km², an area larger than some states. B.C. conservation officers are responsible for 7854 km² each, an area 48% the size of AK's per trooper area. On a coastal basis, the above relationship is reversed. The land mass responsibility is 11,037 km² for each B.C. officer and 4697 km² for each Alaska trooper. This is a highly significant difference given the richness of fish and wildlife values associated with coastal rainforest regions.

- **ENFORCEMENT OPERABILITY**

The ability of enforcement officers and troopers to make contact with and monitor the activities of regulated and unregulated users of public lands in much of B.C. and Alaska, particularly in coastal areas, depends heavily on aircraft and boat access. For example, on the coastal mainland of Alaska 70% of successful brown bear hunters used boat (63%) or air access (7%) and 80% of the deer kill is estimated to be associated with boat access. On the Queen Charlotte Islands in the B.C. coastal study area it is estimated that 25% of bear and deer kill is related to boat access.

There is an extreme contrast in air and vessel enforcement capability between B.C. and Alaska on a province and statewide basis and in the coastal study area. The Alaska Department of Fish and Wildlife Protection owns and operates 17 vessels (>25 ft.), 38 aircraft and five helicopters. B.C. conservation

officers must charter private aircraft. Aircraft hours used and vessel days at sea for coastal Alaska (average 430 aircraft hours and 380 vessel days annually; 1999, 2000 and 2001) are estimated to be 400 to 500% greater than in coastal B.C. (<100 hours annually for each mode).

Even though logistical capability in Alaska far exceeds that available in B.C. the Division of Fish and Wildlife Protection lists 24 sport fish and 30 hunting areas that receive little or no patrol effort, areas that have been labeled “islands of neglect.”

- **DILUTION OF EFFORT**

A significant dilution of traditional wildlife enforcement practices occurred in British Columbia in 1995 with the introduction of the Forest Practices Code Act (FPC). When the FPC became law, the government added enforcement of its provisions to the existing responsibilities of the Conservation Officers. The role of conservation officers and the FPC in protecting fish and wildlife habitat and populations is negligible in the context of enforcement actions. After four years in existence the FPC resulted in 89 administrative rulings, charges and warnings being laid by CO's in 1999-2001; 3715 were laid using the federal Fisheries Act. The province's own enforcement staff recognize the inadequacy of the FPC and rely heavily on the Federal Fisheries Act to deal with violations affecting fish and their habitat.

As of 2002 the FPC diverted between 10 and 20% of conservation officer time that was formerly (pre-1995) available for fish and wildlife law enforcement.

- **COMPLICATIONS OF ESCALATING ROAD ACCESS**

Enforcement and protection services in British Columbia and Alaska are at the mercy of government programs that increase the vulnerability of fish and wildlife and their habitat to human impact. The major cause of elevated fish

and wildlife vulnerability is road access and road density both of which are intimately related to legal and illegal human-caused wildlife mortality and disturbance, harassment and displacement of wildlife. Government resource policies that promote road construction are closely linked with extractive industries, special interests that have a long history of overriding the public's interest in protecting wildlife and its habitat. It is conservatively estimated that there are 345,000 km of logging industry-related roads on British Columbia's public lands and more than 3200 km are being built annually. There are now 6400 km of roads, almost all resulting from logging, in the coastal study area of Alaska.

- **CONTACT BETWEEN THE PUBLIC AND ENFORCEMENT AND PROTECTION STAFF**

Compliance promotion is defined as any activity that prevents violation of fish and wildlife law and results in protection of fish and wildlife populations. Contact between officers and troopers and the regulated and unregulated population are a key element in achieving or elevating compliance with regulations and policy. Each trooper with the Alaska Department of Fish and Wildlife Protection made between 784 and 910 contacts yearly over a four-year period. B.C. officers are estimated to have averaged 423 contacts each in 1999, 54% fewer than Alaska troopers (910). Officers in B.C. each dealt with an average of 48 violations annually while Alaska troopers handled 80.

A strong swing to issuing more warnings than citations has accelerated sharply in Alaska and B.C. since 1990. Warning per 100 citations/charges rose from 46 to 144:100 in Alaska (2000) and 74 to 136:100 in B.C. (2001). This suggests that 1) enforcement is increasingly discretionary, i.e., has “softened” its approach, 2) staff capabilities at existing staff and budget levels are overloaded by the administrative demands of following citations and charges through the legal system, 3) dilution of

responsibility is consuming enforcement effort in areas where violations are more difficult to detect, investigate and prosecute, 4) growth in the unregulated population and the subsequent protection of human safety and property issues resulting from its interaction with wildlife is consuming a greater portion of enforcement effort, and/or 5) increasing volume and complexity of regulations requires greater effort on awareness and education, leading to utilization of less formal action against less serious violators. These are unsettling trends even though the overall high level of involvement in Alaska is encouraging. In B.C. particularly, they suggest a high-level strategy of formalized non involvement, imposed through long-term budget and staff limitations, leading to highly suspect fish and wildlife law enforcement on an institutional level.

• **AN INDEX OF ENFORCEMENT CAPABILITY**

An index was produced using nine components of fish and wildlife law enforcement capability. They included: 1) total enforcement or protection budget, 2) budget priority, measured as enforcement or protection budget as a percent of total provincial or state budget, 3) per capita expenditure on enforcement, 4) expenditure per officer or trooper, 5) human population size, 6) the number of officers and troopers, 7) human population per officer or trooper, 8) geographic area of responsibility per officer or trooper, and 9) the size of the regulatory load. The component values relevant to the index are shown in Table ES. A number of the components are likely to have a synergistic effect upon one another therefore the index should be considered a best-case estimate of capability.

TABLE ES Important components of effective fish and wildlife law enforcement and protection in British Columbia and Alaska, 2002.

	Province/State		Coastal	
	BC	AK	BC	AK
Officers and troopers, current/expected	120/161	91/150	8	18
Area (km ²) responsibility per officer/trooper (2002)	7,854	13,986	11,037	4,696
Residents per officer/trooper	34,442	7,042	8,672	4,104
Regulatory load (2000), authorizations x 1,000	932	732	—	—
Enforcement/protection budget, current/expected \$ x 1,000	8,986/13,811	13,868/19,052 ¹	496	2,047 ^{1,2}
Budget priority, 2002/1983	4/100 ³	32/100 ^{1,3}	—	—
Expenditure per capita (\$)	2.17	21.64	7.16 ²	27.85
Budget support per officer/trooper (\$)	74,890	152,401	62,050	113,700 ²
Enforcement capability index, percent of best case	69	69	—	—

¹Without marine enforcement ²Based on 2001 ³Fraction of one percent

Fish and wildlife law enforcement capability in British Columbia and Alaska has declined under consistent and widespread pressure from a wide range of influences. It has declined to 69% of historical level in B.C. and Alaska, and is forecast to sink to 56% of historical capability in B.C. by 2004. If dilution by Forest Practices Code activities was considered in B.C., capability would be less than half of what it was in 1983. A serious gap has developed between previously established enforcement standards and existing fish and wildlife law enforcement capability in British Columbia and Alaska.

A comparison of the two jurisdictions reveals an enormous gap in enforcement capability between British Columbia and Alaska; B.C. is in an unenviable class by itself, struggling at 49% of Alaska's present-day capability and 34% ($0.49 \times 0.69 = 34\%$) of Alaska's historical capability.

In every component compared fish and wildlife enforcement capability in coastal B.C. did not measure up to Alaska fish and wildlife protection standards. At only 41% of coastal Alaska's capability in 2002, and a forecast decline to 36% of Alaska's capability by 2004, fish and wildlife enforcement capability in coastal B.C. is severely compromised.

- **CONCLUSIONS**

Wildlife populations and biological diversity are endangered by chronic underfunding and marginalization of wildlife conservation-oriented enforcement programs in British Columbia and, to a lesser degree, in Alaska. This period of measurable political disinterest and low and declining priority now approaches 20 years in duration.

There is little evidence available to the British Columbia or Alaska public to indicate that current enforcement capabilities are sufficient to provide

effective compliance with fish and wildlife regulations, a problem being aggravated by escalating and uncoordinated land use activities. In every capability measure examined, capability today is significantly lower than it has been previously. Enforcement and protection staff are presently unable to effect widespread and long-lasting changes in resource user behavior in either Alaska or B.C.

While fish and wildlife protection capability in Alaska has slipped (-31%) the evidence indicates that B.C. has now crossed the threshold at which protection of fish and wildlife populations and their habitat by enforcement services has effectively and materially been abandoned.