
MINISTRY OF NATURAL RESOURCES

Fish and Wildlife Program

The mandate of the Ministry of Natural Resources is to achieve the sustainable development of the province's natural resources, including the development of the economies and communities that depend on these resources. The Ministry estimates that recreational fishing, hunting and wildlife viewing contribute more than \$5 billion annually to the Ontario economy and provide approximately 100,000 jobs.

The Fish and Wildlife program, governed by the *Game and Fish Act*, provides leadership and direction in the management of the province's fish and wildlife resources. This includes coordinating the development, implementation and improvement of fish and wildlife legislation, policies, programs and standards. The goal of the program is to maintain and, where possible, enhance the social, cultural, economic and environmental benefits derived from the province's fish and wildlife resources.

The major functions of the Fish and Wildlife program are the licensing of commercial fishermen, anglers and hunters; rehabilitating fish populations through stocking; habitat improvement; and regulating the fish and wildlife harvests through the establishment and enforcement of seasons and quotas and the allocation of tags to hunt wildlife. The program is delivered by the Ministry's Fish and Wildlife Branch, which operates several fish hatcheries and three Great Lakes management units. Program activities are also performed through the Ministry's 3 regional and 25 district offices and the Science and Information Resources Division.

Since April 1, 1996, all licence fees, royalties, fines and other revenues collected under the *Game and Fish Act* have been retained in a Fish and Wildlife Special Purpose Account and dedicated to expenditures for fisheries and wildlife management. For the 1997/98 fiscal year, total funding for fish and wildlife was \$72 million including funding from the Special Purpose Account.

In June 1997, the Ministry introduced new legislation entitled the *Fish and Wildlife Conservation Act* to replace the *Game and Fish Act*. As of March 1998, the Act was awaiting proclamation.

OBJECTIVES AND SCOPE

The objectives of our audit of the Fish and Wildlife program were to assess whether adequate systems, policies and procedures were in place:

- to measure and report on the effectiveness of the program and to identify areas where corrective actions are required;

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- to ensure compliance with legislation and ministry policies; and
 - to ensure that resources are managed with due regard for economy and efficiency.

The criteria used to assess the program were discussed with and agreed to by ministry management. These criteria related to the systems, policies and procedures that the Ministry should have in place, including: clearly defined goals and objectives for the program; fish and wildlife management plans for all major species and parts of the province; systems for generating reliable information for decision-making purposes; and a clear strategy for the enforcement of legislation.

Our audit was performed in accordance with the standards for assurance engagements, encompassing value for money and compliance, established by the Canadian Institute of Chartered Accountants, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

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The scope of our audit, which was substantially completed in March 1998, included a review and analysis of documentation and discussions with staff at the Ministry's head office and regional and district offices. In addition, we either interviewed or sent questionnaires to a sample of conservation officers regarding their enforcement activities.

Our audit also included a review of the activities of the Ministry's Audit and Evaluation Section. However, we did not reduce the scope of our audit work as the Section had not issued any relevant reports on the administration of the Fish and Wildlife program since 1989.

OVERALL AUDIT CONCLUSIONS

The Ministry did not have adequate procedures in place to provide the information necessary for measuring and reporting on the program's effectiveness in sustaining fish and wildlife resources or to identify areas where corrective actions were required. The Ministry also needed to improve its resource management and enforcement practices, to ensure compliance with legislation and ministry policies and to ensure that resources are managed economically and efficiently. Our specific concerns are cited below.

- The Ministry had not developed proper effectiveness measures to assess the program's success in achieving the sustained development of the province's fish and wildlife resources and lacked the information necessary for identifying areas requiring corrective actions.
- The Ministry needed to have in place adequate policies for the management of the big game species (moose, deer and bear).
- The Ministry did not have complete data regarding the populations of the three big game species. Consequently, decisions regarding the sustainability of the resources and the number of tags to be issued were made without complete information regarding the demographics of the big game species.
- Information from the assessment of fish populations and other data were often not available to assist management in managing regeneration, stocking and harvesting.

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- Over the past two years there has been a decrease in the amount of time spent on general deterrent patrols by conservation officers and in the number of charges laid under the *Game and Fish Act*.
 - The Ministry withdrew \$39.2 million from the Fish and Wildlife Special Purpose Account for fish and wildlife expenditures during the 1996/97 fiscal year. However, the Ministry's financial system recorded only \$34.7 million in actual program expenditures charged to the Account. The Ministry had not properly documented and recorded fish and wildlife program expenditures totalling \$4.5 million.

We found that the Ministry had adequate controls in place for ensuring that revenues from hunting and fishing licences were submitted by licence issuers on a timely basis.

DETAILED AUDIT OBSERVATIONS

MEASURING AND REPORTING ON EFFECTIVENESS

In a 1991 policy document termed *Directions '90s*, the Ministry stated that the sustainable development of natural resources would be the cornerstone of its future policy direction. Further refinements were incorporated in *Directions '90s – Moving Ahead 1995* whereby the Ministry recognized the need to state desired outcomes to measure success in achieving its objectives. In the latter document, the Ministry included general statements of desired outcomes such as securing a healthy ecosystem; planning for and managing land and natural resources in an orderly way; allocating natural resources in an efficient and fair manner; securing and enhancing economic development associated with natural resources; and protecting significant natural heritage features and landscapes.

Although desired outcomes were established, the Ministry had not defined performance measures to assess the effectiveness of the Fish and Wildlife program in meeting its goal. The Ministry's 1996/97 and 1997/98 business plans acknowledged the need to develop and refine outcomes and performance measures. Additionally, in July 1997 the Ministry carried out a pilot project to test performance measures for the program. However, the performance measures were activity- or output-based rather than relating to outcomes and included such items as:

- the number of fish and wildlife management information systems currently operational;
- the number of fish and wildlife assessments done;
- the number of commercial fishing licences under quota management and the total kilograms caught for each species of fish;
- the number of resource rehabilitation projects; and
- the number of fish stocked by species and survival rates.

Although these measures relate to the activities involved in achieving program objectives, the Ministry needs to develop them further in order to link the activities to the objectives and desired outcomes. Except for the pilot project and the evaluation of some individual projects,

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no province-wide assessments have been performed to determine whether the management of fish and wildlife resources was meeting the Ministry's goal of sustainable development.

Although ministry staff agreed that an overall assessment was needed to evaluate program effectiveness, insufficient information was available to measure achievement. Without such an assessment, the Ministry has limited information on how its policies and management practices are affecting the future sustainability of fish and wildlife resources.

Recommendation

To ensure that the program is effective in meeting its stated objectives and to identify areas where corrective actions are required, the Ministry should develop sound performance measures which are linked to the overall objectives, perform the necessary assessments and periodically report on the program's achievement in sustaining fish and wildlife resources.

Ministry Response

The Ministry agrees with this recommendation. We are committed to improving our current system of performance measurement to assess our success in achieving natural resource management objectives and the overall effectiveness of management strategies. Performance measures will be refined to assist in evaluating the achievement of desired outcomes for the Fish and Wildlife program—maintenance of healthy fish and wildlife populations and provision of a diverse range of fish and wildlife-related opportunities and benefits.

WILDLIFE MANAGEMENT

Moose, deer and bear are the big game species that are important commercially and most vulnerable to overharvesting. Consequently, a significant part of the Ministry's wildlife management efforts are devoted to these three species. Each species requires specific and often unique management policies, population management techniques, habitat protection and harvest data management. The Ministry has divided the province into wildlife management units to monitor populations, set seasons and allocate hunting tags.

The Ministry's primary method of deer and moose population management is harvest control by limiting the number of tags available to hunters. If fewer hunting tags are available, fewer animals will likely be harvested. The Ministry controls the total number of tags for hunting adult moose and antlerless deer (does and fawns). In addition, the Ministry limits the number of licences granted to hunt deer in specified areas of southern Ontario. The Ministry does not set quotas or restrict tags for moose calves, male deer or bears.

While the focus of the Ministry's wildlife management efforts are related to the three big game species, the Ministry also monitors furbearers, waterfowl and wild turkey populations along with vulnerable, threatened and endangered species.

WILDLIFE MANAGEMENT POLICIES

For proper management and decision making, the Ministry should have approved wildlife policies that relate to the current status of populations. However, we noted that ministry policies for the big game species were either outdated or non-existent. As a result, the Ministry is making decisions which may not contribute to its overall objective of resource sustainability. For example:

- The provincial moose policy was approved in 1980, whereby specific provincial population and harvest targets were established. Within the core moose range, the area of the province where most of the moose live, the population target was based on the number of animals that each wildlife management unit could support. About the same time, the Ministry implemented the selective harvest program which limited the number of adult moose that could be harvested each year.

In 1980 the Ministry set a provincial population target for the core moose range of 140,000 moose by 1995 and 160,000 by the year 2000. However, there has been little or no increase in the number of moose since the mid-1980s and in 1997 the provincial population was estimated to be 100,000 animals. A 1996 ministry study found that 93% of all wildlife management units within the core range were below their population target levels. Consequently, the Ministry needs to review its management practices and make changes to meet the sustainability objectives.

Since the moose population targets were set for the wildlife management units, the Ministry continued to gather research data on the population levels that the units can sustain. The data indicated that many of the units across the core moose range can sustain a higher population. This information is an important factor in determining the number of hunting tags to be allocated.

While population targets were originally set for only the core moose range, no such targets were set for the 16 management units in Central Ontario that are on the edge of the range. Over the past two decades the habitat in these units has changed, resulting in an increase in the moose population and an increase in hunting opportunities. For each of the past three years, approximately 2,200 moose hunting tags have been allocated to these units. Although the Ministry estimates that these areas now have a significant huntable moose population, there is no policy to assist field staff in managing this resource. Consequently, district staff have issued hunting tags without knowing whether the moose population in these units was at a sustainable level.

- The deer harvest averaged 51,000 annually between 1993 and 1995, and the herd is currently estimated at 350,000 to 400,000 animals. However, the Ministry does not have an approved deer management policy. The management policy currently being used is a 1991 draft. In 1998, the Ministry began a deer hunt review to identify areas where the deer population can support an increased harvest. This review is intended to facilitate the approval of a deer management policy.

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- The Ministry has a provincial bear policy, but does not set quotas or restrict licences for bear hunting. Instead, sustainability guidelines recommend the average harvest should not exceed one bear for every 50 square kilometres in the north and one bear for every 25 square kilometres in central Ontario. In addition, no more than 20% of the total harvest should consist of adult females. The current population is estimated at 75,000 to 100,000 bears, with an estimated annual harvest of 7,000 animals.

While tourist outfitters operating bear management areas are required to follow the sustainability guidelines, the Ministry was inconsistent in its efforts to monitor their activity. For example, staff in one district had informed operators in writing regarding their harvest levels as far back as 1994 and continued to monitor them against the sustainability guidelines. In another district, staff had only recently held informal discussions with the operators. The latter district had one of the largest operators in the province and based on the sustainability guideline was allowed to harvest 45 bears annually. However, from 1993 to 1996 an average of 75 bears was harvested every year in that operator's area.

Recommendation

To ensure that wildlife populations are maintained at sustainable levels, the Ministry should:

- **develop and implement the necessary wildlife management policies;**
- **update the desired population levels or status for each management unit; and**
- **set harvest targets based on reliable and current animal population and status information.**

Ministry Response

The Ministry agrees with this recommendation.

Wildlife management policies are currently being reviewed and revised in anticipation of the proclamation of the Fish and Wildlife Conservation Act in the fall of 1998. The policy review will include consideration of program objectives and targets related to population size and status of key wildlife species.

Annual harvest targets will reflect long-term wildlife objectives, and will be based upon reliable and current information. The Ministry has initiated improvements in the collection and analysis of population data for moose. Reviews have been conducted on the status of white-tailed deer and black bear populations. We will be acting on the recommendations resulting from these reviews, to improve our information base on these two species.

WILDLIFE POPULATION ASSESSMENTS

To properly manage wildlife, the Ministry needs accurate data on current populations and the number of animals harvested. Such information is necessary to determine the number of hunting tags to issue annually in order to maintain a sustainable population. However, we noted that the Ministry had not carried out population and harvest assessments for the three big game species frequently enough to enable managers to make informed decisions. For example:

- Assessing the moose population is to be done by carrying out aerial surveys for each wildlife management unit. The Ministry's standard in the core moose range is to survey each unit every three years. However, this cycle had not been maintained since 1990 and some units were only being surveyed every five years. Additionally, surveys had not been done for up to 13 years in areas that were not in the core range.

The Ministry reduced the number of tags in areas where surveys revealed a declining moose population. For example, in one management unit the moose population was 2,025 in 1992 and according to a 1997 survey had declined to only 727 animals. However, the target population was 2,200 animals. Rather than suspend hunting in this area, the number of tags issued was reduced from 370 to 248. More timely surveys as well as stronger and earlier intervention might have helped sustain this moose population.

District staff use the huntable population to calculate the number of moose tags to be issued. This population should equal the number of animals identified by the aerial surveys. However, we noted that the huntable population used by 10 of the 51 management units in the core moose range was higher than the number obtained from recent aerial surveys. Consequently, more tags were issued than the guidelines recommended for achieving the desired population. District staff were not required to use the results of the most recent survey. A different population figure was used to calculate the number of tags to be issued because district staff believed that the survey results did not reflect the current population. Without reasonably accurate and complete population trend information, district staff cannot determine the proper number of hunting tags to issue.

- The Ministry does not carry out any assessments of the deer population. Instead, district offices rely on hunters who receive an antlerless deer tag to complete a district mail survey and thus provide some indication of the deer herd status in the management units. However, hunters who hunt antlered deer are not included in the surveys. Moreover, prior to 1996 the Ministry obtained information on the antlered deer harvests through jaw collection or road check stations, but had since discontinued this practice. Therefore, the Ministry does not have complete information at the management unit level regarding deer harvested.
- Non-residents, who account for approximately 75% of the annual bear harvest, are required to report hunting results as a condition of the licence. These reports are a key mechanism for monitoring both the bear harvest on a management unit basis and compliance with the bear sustainability guidelines. Information from resident hunters is gathered through a provincial mail-in survey which is designed primarily to provide socio-economic data about hunting each big game species. However, a ministry report indicated that these surveys lacked the precision and accuracy necessary to be of any value in estimating the number of bears harvested by residents and did not provide information on

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a management unit basis. In addition, we noted that the information from the provincial mail-in survey was not compiled and analyzed on a timely basis. For example, the results of the 1996 survey were not available until March 1998. Consequently, the survey results are of little value for decision-making purposes or for controlling the total bear harvest.

Another method used to assess compliance with the bear sustainability guidelines is the collection and analysis of teeth from harvested bears. This helps in determining the age of the bear. Since the collection of teeth is not mandatory, the districts varied in their efforts to obtain the teeth. In many instances, the collection effort depended on the relationship that the district had with the tourist outfitter. We noted that in 1996 the Ministry had received teeth from only 22% of the total number of bears harvested throughout the province. In particular, for six management units in the northwest region, the Ministry received teeth from only 12% of the harvest. Without a representative sample of bear teeth from all wildlife management units, it is difficult for the Ministry to properly assess compliance with the sustainability guideline.

Recommendation

To properly manage wildlife and help ensure that the sustainability goal is achieved, the Ministry needs to:

- **carry out population assessments more frequently to accurately determine the populations of the various wildlife species;**
- **analyze the survey information and report the results on a more timely basis; and**
- **require district offices to use the results for decision-making purposes and the effective management of area wildlife resources.**

Ministry Response

The Ministry agrees that the collection, analysis and application of appropriate inventory and assessment information are essential for ensuring resource sustainability. The Ministry is implementing a number of changes in wildlife assessment which will address this recommendation.

A more regular schedule of aerial moose surveys is being carried out across the province and allowable moose harvests are being recalculated to reflect new information. When needed, the number of tags is being adjusted to reflect new population information. Reductions have been significant in some units in order to ensure that existing population levels are maintained.

A 100% survey of resident black bear hunters will begin in the spring of 1999 to provide a more accurate estimate of resident harvest on a management unit basis. This information, combined with mandatory reporting requirements for non-residents, will allow a more accurate assessment of total hunting mortality of bears. A detailed review of black

bear population status in each management unit will be completed in the fall of 1998. Based upon this review, any required changes in black bear harvest strategies will be implemented. The Ministry continues to support research on black bears, and has increased research activity in 1998/99.

Reviews have been completed of the status of white-tailed deer populations in southwestern and southeastern Ontario. Deer population models developed for forested regions have been modified for agricultural southern Ontario. These models will provide Ministry field staff in southern Ontario with improved information on which to base deer management decisions.

WILDLIFE HARVEST MANAGEMENT

We reviewed the Ministry's wildlife harvest management of the three big game species, namely, moose, deer and bear. According to the Ministry there is a need to maintain a balance between the sustainability of wildlife populations and the economic spin-offs generated by the annual hunts. As a result of our audit we were most concerned with the Ministry's management of moose because provincial population targets had not been met.

There is a delicate balance between sustaining the moose population and maintaining or increasing hunting opportunities. The provincial moose policy states that priority must be given to protecting the moose resource versus allocating hunting tags. Even though the number of hunters applying for a tag has increased by 40% (30,000) since 1983, the number of tags issued annually has decreased by approximately 64% (34,000). However, the moose population has not increased to the provincial target level.

District staff are required to use the "Guidelines for Moose Harvest Planning and Adult Moose Tag Quota Calculations" in determining the number of tags to be issued. The guidelines indicate that a planned harvest rate of 8% or less of the huntable moose population within each management unit is necessary to initiate growth of the herd. However, from 1996 to 1998, sixteen wildlife management units had a planned harvest rate of 10% or higher even though the population was below the unit's population target. Consequently, the number of tags issued to hunters was higher than prescribed by the guidelines. For example, the 250 tags issued for one wildlife management unit exceeded the 189 tags recommended by the guidelines.

A ministry study of tag allocations between 1983 and 1994 indicated that the moose population was being managed as a stable population. Consequently, tags were issued on that basis even though the numbers of moose in the management units were below the population targets. Specifically, 60% of all management units issued more moose hunting tags than recommended by the Ministry's harvest guidelines, and 50% of the units underestimated hunting success rates resulting in more animals being harvested than expected. Another report indicated that there were also variations in the method used by districts to set moose tag quotas. Staff in some districts set conservative tag quotas to increase the population quickly and achieve population objectives, whereas others set higher quotas to provide more hunting opportunities.

Recommendation

To assist in maintaining the proper balance between sustainable population levels and the demand for tags, the Ministry should implement procedures to help ensure that the number of moose tags issued by each management unit is within the sustainability guidelines.

Ministry Response

The Ministry agrees with the need for consistent application of procedures regarding moose tag allocations. Ensuring the proper balance between the sustainability of moose populations and the harvest of moose is a fundamental principle of the present moose management system.

Determination of the number of tags in a Wildlife Management Unit is based upon two key considerations—clear population objectives and sound information on population size or status.

The provincial target for moose was established in the early 1980s. The Ministry will be reviewing moose population objectives in light of the most recent inventory data. Where updated inventory information indicates that local moose populations within a specific Wildlife Management Unit have declined, action will be taken to reduce the number of tags and thereby reduce pressure on the local herd.

FISHERIES MANAGEMENT

The Fisheries Section of the Fish and Wildlife Branch is responsible for developing fisheries legislation, policies, programs and guidelines for assessments as well as managing habitats and monitoring the fish stocks across the province. Fishing involves both commercial and recreational fishing. The landed value of the commercial fishing industry harvest is over \$40 million annually and the industry contributes approximately \$1 million in royalties annually to the Fish and Wildlife Special Purpose Account. Recreational fishing activities also produce significant economic spin-offs for the province.

Ontario has over 250,000 inland lakes with 140 fish species that require management. In this regard the Ministry in 1992 issued a Strategic Plan for Ontario Fisheries, which is the blueprint for provincial fisheries management. The Plan is intended to help protect healthy aquatic ecosystems and rehabilitate those that have deteriorated in order to provide long-term benefits to the province.

COMMERCIAL FISHERIES MANAGEMENT

Most of the commercial fishing activity takes place in the Great Lakes with Lake Erie being the largest fishery. To manage the commercial fisheries, the Ministry works with American federal and state agencies in sharing the fish resource. International sharing formulas determine the total allowable catch of commercial fish, mainly walleye and yellow perch, by the United

States and Ontario. Based on the total allowable catch, the Ministry then sets the commercial fishing quotas by species for each licence.

Each year both Ontario and the United States carry out lake assessments to determine the fish population and the strength of the young fish to continue reproducing. These assessments are then used to adjust the fishing quotas in order to achieve a sustainable fishery. We noted that the Ministry has adjusted its quotas from year to year as a result of these assessments. In addition, the Ministry's management of the commercial fisheries promotes the sustainability of the commercial fish stocks.

RECREATIONAL FISHERIES MANAGEMENT

District offices are responsible for managing the fish resources in their areas. In the late 1980s, each district office prepared Fisheries Management Plans which were to be in effect until the year 2000. These plans included their fisheries program objectives, resource information such as harvest yields and limits by species, management strategies and an implementation schedule.

Unlike the use of quotas in the commercial fishery, recreational fishing harvests are managed through individual angler's catch and possession limits, defined fishing seasons, closed areas and size restrictions. Current, detailed assessment data is required to determine which fish populations need protection. Ideally, the Ministry selects for assessment a number of lakes that are representative of the general status of the fish population in surrounding lakes. If necessary, fishing regulations can then be changed if there is a need to protect or improve a specific fish population.

According to district Fisheries Management Plans and other reports on fisheries resources in central and northern Ontario, there is a lack of current fisheries data. Without such data, staff cannot make informed decisions regarding the resources in their areas. For example:

- One ministry study reported that since 1985 district offices in the northwest region had done little or no evaluation of the various factors affecting fish stocks, such as habitat, natural reproductive capability, stocking policies and harvest guidelines. In addition, the allowable harvest yield estimates in the district Fisheries Management Plans were outdated. Therefore, the study concluded, there was a need for assessments to determine the current fish stocks to help managers set proper yield harvest estimates.
- Since 1994, the Ministry has used the fishing regulations to impose restrictions such as season closures on approximately 200 lakes in Central Ontario due to declining lake trout populations. The public was opposed to the restrictions and requested the fisheries data supporting the Ministry's actions. However, the Ministry indicated that it had incomplete data on 56 of the lakes. Consequently, during the 1997/98 fiscal year the Ministry started to assess these lakes and found that 14 of the 32 lakes assessed could not support natural reproduction and 4 were not suitable for the survival of lake trout. The remainder had varying degrees of natural reproduction. As a result of the assessment information, the Ministry changed its fisheries management approach for these lakes.

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Recommendation

In order to make better informed decisions regarding the management of fish populations, the Ministry should undertake cyclical assessments of a representative sample of provincial lakes.

Ministry Response

The Ministry agrees with this recommendation. While the Ministry has been operating in this way since the late 1970s, we will ensure that major recreational fisheries are assessed on a timely basis.

The Ministry has adopted a “type lake” concept, with intensive monitoring and assessment carried out on representative water bodies. The information collected by these “fisheries assessment units” on the Great Lakes and selected inland waters is augmented by fisheries research programs and individual lake surveys. In addition, the Ministry has expanded efforts to support ministry partners in conducting inventory and assessment.

FISH STOCKING PROGRAM

The Ministry manages 10 fish hatcheries to provide fish for stocking in public waters. For the eleven species used for stocking, the Ministry produces over 7.5 million fish annually. In 1998, an additional one million fish are to be stocked to further stimulate the public’s interest in fishing and encourage economic spin-offs.

Approximately 60% of the stocking helps to rehabilitate existing fish populations with the hope that the species will start to reproduce naturally. The remaining 40% is “put-grow-take” stocking which creates fishing opportunities where naturally reproducing populations are too limited or non-existent. Both stocking methods could include the introduction of new species into lakes.

Each year, district staff determine the type and number of fish to be stocked and which lakes are to receive them and submit their requirements to the provincial fish hatcheries. The district staff determine the quantities of each species and the lakes to stock based on criteria which include accessibility, the reason for stocking (rehabilitative or put-grow-take), success of past stocking and public demand.

The survival rate of stocked fish is an important measure of the success of the fish-stocking program. We found that the Ministry had not carried out enough post-stocking evaluations to assess the success of the program and its long term impact on the fish stocks. For example:

- Since 1994, ten districts had requested the same type and quantity of fish each year without determining the survival rate of the fish stocked.

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- The Ministry has a General Policy of Stocking Fish in Ontario, which recommends that 10% of the lakes stocked or one lake per district should be assessed each year. For the six districts we visited, few or no assessments had been done. In one district, assessments were completed for only 2 of the 16 lakes where 175,000 brook trout had been stocked over the past six years.

District staff informed us that little funding is allocated to do post-stocking evaluations, resulting in few overall assessments being done. Also, district staff place a low priority on completing assessments for the put-grow-take stocking. However, there is a need to determine the survival rate of stocked fish since the Ministry plans to expand the stocking program, particularly the “put-grow-take” stocking.

The Ministry indicated that its fish stocking policy, dating back to 1982, has led to conflicting management practices such as allowing supplemental stocking of lakes where a naturally reproducing population already exists. Scientific research indicates that supplemental stocking can harm the naturally reproducing species rather than improving the lake’s overall fish stock. There is considerable pressure from outside interest groups to continue the supplemental stocking of certain species, and some districts still do so even though the Ministry discourages the practice.

Recommendation

To help ensure that the fish stocking program is rehabilitating natural populations and encouraging economic spin-offs, the Ministry should perform regular assessments to determine whether the lakes and species currently being stocked meet the objectives for rehabilitation, introduction and put-grow-take stocking.

Also, to help protect the natural fish stocks and to continue to provide a sustainable population, the Ministry should revise its fish stocking policy to reflect current scientific research.

Ministry Response

The Ministry agrees that the results of stocking should be evaluated to determine whether fisheries management objectives have been met.

On the Great Lakes, which receive large numbers of stocked fish, extensive stocking assessment studies have been carried out to monitor survival of stocked fish, contribution to rehabilitation objectives, and benefits associated with the recreational and commercial fisheries.

More consistent effort will be directed to stocking assessments on inland waters in the future. In addition to direct delivery of assessment programs, the Ministry has expanded the eligibility of projects that can be funded through the Community Fisheries Involvement Program to include stocking assessment.

The Ministry will continue to refine its guidelines for fish culture and stocking based on the best available science.

FISH STOCKING METHODS

The fish stocking guideline states that using the most practical means of transportation, as well as the minimizing of costs and travel distances, should be considered in keeping fish mortality levels at a minimum. Transportation methods used include truck, boat, snowmobile, helicopter and airplane.

Because of reduced financial resources, district staff have attempted to choose the most economical method of transportation. However, this often results in increased transportation time and higher fish mortality rates. In its 1997/98 work plan, the Ministry echoed this concern by indicating that “many districts no longer have the resources to support fish stocking, particularly aircraft stocking, resulting in a greater workload for fish culture staff or potentially greater post-stocking mortality.”

The Ministry invests \$4 million annually on advanced rearing techniques and fish diets to produce strong, healthy fish and thereby increase survival rates. However, this effort is diminished because the transportation methods chosen by districts may increase fish mortality and reduce stocking success. For example, one district reduced transportation costs by stocking brook trout through the ice using snowmobiles which are relatively inexpensive compared to aerial transportation methods. However, we were informed by ministry staff that the fish mortality would increase if the ice stayed on the lakes longer than expected.

Recommendation

To reduce the fish mortality rate when transfers are being made from the hatcheries to the lakes and streams, the Ministry should ensure that the most appropriate transportation methods are used.

Ministry Response

The Ministry agrees that every effort should be made to minimize the mortality of fish during transfer from the hatchery to receiving waters.

The Ministry has made improvements in the transportation of hatchery-raised fish. Upgrading of hatchery vehicles, equipping hatchery trucks with electronic temperature and oxygen monitoring equipment, and providing additional funding in the 1998/99 Fish and Wildlife budget to support stocking, will assist in making best use of valuable hatchery products.

COMPLIANCE WITH LEGISLATION AND MINISTRY POLICIES

The 280 conservation officers, appointed under the *Game and Fish Act*, are responsible for enforcing the Act and related provincial and federal legislation. Regulations under these acts control hunting and fishing by restricting harvests and limiting harvest seasons. A ministry report noted that only through sound management and effective law enforcement will the natural resources continue to be available to meet the needs of the people of Ontario.

During the 1997/98 fiscal year, 215 of the Ministry's conservation officers worked on enforcing the Act in the field and spent about 80% of their time on fish and wildlife activities. They are responsible for patrolling approximately one million square kilometres or an average of 4,650 square kilometres per officer. For the 1997 calendar year, the conservation officers laid 6,900 fish and wildlife charges, resulting in fines totalling \$615,000.

ENFORCEMENT ACTIVITY

Each district is divided into geographical areas which are assigned to conservation officers. As part of their enforcement efforts, to help ensure compliance with legislation, the conservation officers conduct general deterrent patrols to monitor resource users and maintain a strong visible presence in the communities.

The Ministry allocates operational support funding to the districts for enforcement activity based on \$11,000 per conservation officer. However, this amount does not take into consideration the geographic or resource pressures affecting each district. Additionally, this amount is reduced by office overhead costs and the cost of leased vehicles and computers. After deducting these costs, there is only \$4,000 to \$7,500 per officer left to carry out enforcement activities and to pay for vehicle operating costs, mandatory training, uniforms and meals.

From our review of the enforcement activities in the districts that we visited and the responses to the conservation officer questionnaire, we noted the deficiencies indicated below:

- Over the past two years, there has been a decrease in the time spent on general deterrent patrols. Over 70% of the conservation officers who responded to our questionnaire indicated that their assigned areas were not being effectively patrolled due to inadequate funding, poor vehicles and equipment, and, in some cases, because of increased patrol areas. As a result, the conservation officers have concentrated on those areas considered to be high risk because of their history of violations, seasonal activities and complaints.
- At the districts we visited, the funds budgeted for each conservation officer were insufficient to carry out enforcement activities. Funds ran out seven or eight months into the fiscal year. To make up the shortfall, some districts reallocated funds from other activities. Where reallocations were not possible, patrols would be reduced because conservation officers would share vehicles and work together until the funds ran out or would carry out only minimal enforcement activities. For example, one district in the Northwest Region used up its entire enforcement budget by November 1997 and for the remainder of the fiscal year, aside from responding to some complaints, did not carry out normal enforcement activity.
- At some of the district offices that we visited, conservation officers indicated that they were restricted to driving between 1,500 and 2,500 kilometres a month within their patrol areas. In such cases, it is questionable how effective enforcement activities are in safeguarding resources, inasmuch as the average patrol area is approximately 4,650 square kilometres. Therefore, conservation officers indicated that they concentrate primarily on high risk areas.

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- For 1996 and 1997 charges for wildlife infractions, laid by conservation officers under the *Game and Fish Act*, decreased by 12%. However, for the Northwest and Northeast Regions there was a 24% decrease in charges. The reduction in patrols may have resulted in violations not being detected and an increased risk of illegal activities putting pressure on the wildlife resources.

The reduction of patrols may have serious consequences for the province's fish and wildlife resources. For example, we were informed by the Ministry that the reduction of moose tags and reduced patrols may have resulted in increased poaching in the Northeast Region. However, no statistics are maintained on the known incidences of poaching throughout the province nor is the true extent of the problem known.

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Recommendation

To help sustain fish and wildlife resources and ensure compliance with legislation, the Ministry should review the level of enforcement activity in all areas of the province to determine whether sufficient deterrent patrols are being carried out by conservation officers.

Ministry Response

The Ministry agrees that there is a need for ongoing review of the level and nature of enforcement activity in the province. Such a review was conducted as part of ministry business planning. As a result, the overall level of enforcement in the province was maintained in terms of the number of conservation officer "badges." However, there was a change in focus to provide a more comprehensive approach.

Field patrols continue to be important as a deterrent to illegal activity and to detect violations. Other tools such as special investigations, intelligence gathering and analysis place additional emphasis on resource violations which have the greatest potential to have an impact on resource sustainability.

In order to ensure appropriate levels of enforcement activity, support funding for field conservation officers has been increased in fiscal year 1998/99.

Ministry Districts and Great Lake Units are in the process of developing local compliance plans which will assist them in directing their enforcement staff and resources in the most efficient and effective manner.

COMPLIANCE ACTIVITY AND VIOLATION REPORTING SYSTEM

Information on field enforcement activities is maintained on the Compliance Activity and Violation Reporting System (CAVRS). The system is designed to help management and conservation officers utilize enforcement resources more efficiently and effectively. It contains information on charges, warnings, convictions, penalties assessed and conservation officer activity. We reviewed the system and found that improvements were needed to give managers and conservation officers more complete and accurate information for better decision making. For example:

- The system does not include detailed activity codes to record the results of commercial fishing enforcement activities, such as the monitoring of industry port observers, the audits of daily catch reports, the inspections of processing plants, docks and boats, and the management of quotas. These are all important enforcement activities carried out by the conservation officers in the lake units.
- The system does not contain complete information on warnings issued to offenders because some conservation officers were not inputting the information. In the cases where the warnings were entered, the information was not detailed enough to enable the officers to identify repeat offenders. We were informed that this feature is important because conservation officers, knowing that an offender has already been warned, would charge the offender rather than issue another warning.
- Not all the patrol areas or zones were included in the system. Consequently, conservation officers have difficulty in entering the charges and activity information, resulting in incomplete information.

Recommendation

To help management and conservation officers in enforcing compliance with the *Game and Fish Act*, the Ministry should identify the enforcement information required and suitably modify the Compliance Activity and Violation Reporting System to provide complete and accurate information.

Ministry Response

The Ministry agrees with this recommendation. We will modify the Compliance Activity and Violation Reporting System as necessary to provide complete and accurate information in support of field enforcement programs. This will include incorporating activity codes for commercial fishing enforcement and designation of local patrol areas.

HUNTING AND FISHING LICENCE SUSPENSIONS

Residents who hunt and fish in the province are required to purchase an Ontario Outdoors Card to which are attached all valid hunting and fishing licences. Anyone suspended from hunting or fishing due to a conviction under the *Game and Fish Act* is not required to surrender the Outdoors Card because other licences could still be valid.

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When someone is convicted of an offence, a conservation officer is required to enter the conviction information and the Ontario Outdoors Card number into the Compliance Activity and Violation Reporting System (CAVRS). A survey carried out by the Ministry at 19 districts and lake units found that there is a need for conservation officers on patrol to be able to identify the Outdoors Cards of suspended individuals. However, when checking the validity of the licences of individuals who are hunting or fishing, conservation officers are not able to access the CAVRS to identify suspended persons. In order to alert other conservation officers about suspended persons, some officers have punched holes in the Outdoors Cards. However, the Ministry has no approved procedures currently available to conservation officers to help check for suspensions during patrols.

In addition, the Ministry has an Outdoors Card Information System (OCIS) that is used to issue hunting and fishing licences. The Outdoors Card numbers in OCIS and CAVRS are matched to ensure that individuals suspended from hunting and fishing do not obtain a licence. For the matching control to be effective, conservation officers must ensure that the Outdoors Card number for each convicted individual is entered into CAVRS. However, when an individual does not have an Outdoors Card, only personal information and the court order is entered into CAVRS. Consequently, OCIS cannot be matched with CAVRS to prevent suspended individuals from obtaining a licence.

We reviewed all 255 hunting and fishing suspensions as at February 1998 and found there was incomplete information on CAVRS to effectively control suspensions. We noted that 56 individuals had no Outdoors Card number recorded in CAVRS even though OCIS indicated that 9 of them had an Outdoors Card at the time of their conviction.

Additionally, three other individuals in our sample had obtained an Outdoors Card and licences after they were convicted. This is allowed as long as the individuals do not participate in the activity for which they were convicted. However, we noted that one of these three individuals had been convicted for fishing offences and was suspended from fishing all species until July 1998. Moreover, a court order had prohibited the accused from obtaining any recreational fishing licence. However, OCIS indicated that this individual had purchased a one-year fishing licence and an Outdoors Card in October 1997 when still under suspension. This situation occurred because an Outdoors Card and a licence can be obtained without the issuer performing a review of active suspensions.

Recommendation

In order to properly track suspended individuals and to make the suspension system more effective, the Ministry should:

- **enhance the system to help conservation officers on patrol identify suspended individuals;**
- **ensure that conservation officers input all the required information into the Compliance Activity and Violation Reporting System; and**
- **implement procedures to prevent suspended individuals from obtaining a licence.**

Ministry Response

The Ministry agrees with the intent of this recommendation.

The Compliance Activity and Violation Reporting System is currently able to provide conservation officers with information regarding licence suspension, provided that the information has been entered and is current. The Ministry has emphasized to all enforcement staff the requirement to enter compliance reports on a timely basis.

The Ministry is developing a mechanism, consistent with Freedom of Information and Protection of Privacy requirements, for staff to flag records in the Outdoors Card Information System (OCIS) where a licence should not be issued or renewed.

Since there is currently no direct electronic linkage between the OCIS system and outside licence issuer “point of sale,” persons with licence suspensions will not be detected by local licence issuers when they go to renew their licences. Given the number of licence issuers across the province, it would be an extremely difficult and costly initiative to establish direct “real time” communications with all issuers. However, as new technologies such as Integrated Voice Response are expanded, the Ministry will explore mechanisms for preventing the sale of licences to individuals who are under suspension.

THE FISH INSPECTION ACT

Under the provincial *Fish Inspection Act*, conservation officers are responsible for ensuring that no person can sell, or offer for sale, any fish intended for human consumption that is tainted, decomposed or unwholesome. Persons committing an offence under this Act are liable for a fine of not more than \$500. Fish for export are governed by the federal *Fish Inspection Act*.

In our 1989 report on the Fisheries and Wildlife Management Activities we noted instances of illegally caught, contaminated Lake Ontario walleye that were destined for Ontario markets and restaurants. During our current audit, we noted that a number of charges had been laid for the sale of contaminated Lake Ontario walleye. Ministry staff indicated that there is a large profit to be made from the sale of fish and that the fines under the *Fish Inspection Act* do not act as a deterrent. The fines have not been updated since 1955.

Recommendation

To help prevent the sale of contaminated fish, the Ministry should review the level of fines in the *Fish Inspection Act* and take the steps necessary to make the fines a more effective deterrent.

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Ministry Response

The Ministry agrees that the fines under the provincial Fish Inspection Act should be updated and will pursue this matter.

DUE REGARD FOR ECONOMY AND EFFICIENCY

ADMINISTRATIVE TIME

The administrative time of conservation officers relates to non-enforcement activities such as general administration, meetings and training. The proportion of total working hours spent on administration over the last three years has averaged 31%, which is consistent with other law enforcement agencies. However, in four districts the time spent on administration was significantly higher than the average, ranging up to 48% of the total time.

Conservation officers, responding to our questionnaire, indicated that their administrative time had increased. Consequently, the time available for deterrent patrols has been reduced. For example, a conservation officer at the lake unit having the highest volume of commercial fishing activity spent approximately half of the total working time checking the accuracy of the daily catch reports before they were input into the computer. Previously this function had been performed by office clerical staff. This supports concerns expressed by conservation officers, both at the districts we visited and in the questionnaire, regarding their inability to carry out general deterrent patrols.

Recommendation

The Ministry should fully explore alternatives for reducing the administrative time of conservation officers in order to increase their visibility in the field and thus help deter illegal activity and protect fish and wildlife resources.

Ministry Response

The Ministry agrees that time spent by conservation officers on administrative matters should be minimized wherever practical, consistent with sound business practice. Supervisors have been directed to ensure that conservation officers manage the time required for administrative functions in the most effective way possible.

FISH AND WILDLIFE SPECIAL PURPOSE ACCOUNT

Effective April 1, 1996 the Ministry established a Fish and Wildlife Special Purpose Account in the province's Consolidated Revenue Fund. All revenues received under the *Game and Fish Act* are deposited to the Account and used, as directed by the Minister, for making payments relating to fish and wildlife resource management and conservation. Specifically, the Act requires that funds from the Account can only be used for the management, perpetuation

or rehabilitation of fish or wildlife populations, and the activities of individuals interacting with or affecting fish or wildlife populations.

During the 1996/97 fiscal year, the Ministry estimated that \$39.2 million would be required from the Account for fish and wildlife expenditures, and withdrew this amount. However, the Ministry's financial system recorded only \$34.7 million in actual program expenditures charged to the Account. Ministry staff had not properly documented and recorded fish and wildlife program expenditures totalling \$4.5 million.

In addition, the Act requires the Minister to prepare an annual report on the financial affairs of the Special Purpose Account to be tabled in the Legislature. As of March 1998, the required report for the year ended March 31, 1997 had not been tabled.

Recommendation

To account for the funds charged to the Fish and Wildlife Special Purpose Account and to ensure that they relate to fish and wildlife activities, the Ministry should maintain proper accounting records.

In addition, the Ministry should submit the required report on the financial affairs of the Account for the 1996/97 fiscal year and ensure that future reports are tabled on a more timely basis.

Ministry Response

The Ministry agrees that expenditures charged to the Special Purpose Account (SPA) should relate to fish and wildlife activities and that proper accounting records should be maintained. The Ministry believes that there needs to be clear accountability for expenditures charged to the Fish and Wildlife SPA. The Ministry is reviewing the accountability framework for SPA management to strengthen the requirement for proper accounting and to establish processes to monitor the achievement of accurate record-keeping.

The Ministry agrees that annual reports on the financial affairs of the SPA should be tabled in a timely way. A combined report for fiscal years 1996/97 and 1997/98 is being developed and is targeted for completion in 1998.

HUNTING AND FISHING LICENCES

The Ministry received \$37 million in revenues from the various types of hunting and fishing licences issued during the 1997/98 fiscal year. Individuals purchase these licences through a network of approximately 2,100 issuing agents appointed by the Ministry. The majority of issuing agents are fishing tackle and hunting stores, hardware stores and various recreational outlets. Each year the Ministry sends issuers a supply of licences based on the preceding year's sales volume. Issuers are required to remit the monthly proceeds from the sale of licences.

During our 1989 audit of the Fisheries and Wildlife Management Activities, we concluded that controls over the issuing of licences were unsatisfactory. However, in our current audit we reviewed remittances from issuers at five district offices and found that proper controls were in place for ensuring that all issuers were submitting the required revenue on a timely basis.

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