

THE STATUS OF THE FISHER, *Martes pennanti* (Erxleben), IN CANADA¹

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A DISTRESSFUL FUTURE for the fisher is forecast in Anderson's statement that "with every northern trapper after its pelt, unless the fisher becomes successfully acclimated on fur farms, this valuable species seems doomed to ultimate extinction" (1934, p. 4064). Allen (1942) includes the fisher in his volume on "Extinct and Vanishing Mammals". He lists state after state in the United States from which it is nearly or quite gone. Only in the Adirondack counties of New York state are these animals holding their own in spite of large catches (of up to 563 per year in the 1920-25 period). In eastern Canada Allen reports it as sadly depleted in recent years and only in British Columbia are they present in some numbers. In the 1936 report of the Department of Lands and Mines for New Brunswick the view is put forward that in a few years time the supply of important furs such as mink, marten, and fisher will be produced by fur farms.

However a survey of fisher status indicates that in Canada we still have a sizeable stocking of fisher in the wild, and though reduced from that number present in earlier times, the wild fisher should provide a perpetual supply of fine skins, if proper conservation is practiced. Fisher are being raised on fur farms, but as yet their yield of fisher fur is unimportant.

Ultimate extinction or relegation to captivity is a gloomy picture for any of our fur bearers, and the view that most of our fine fur be produced on fur farms overlooks the possibilities and resources of our vast land.

In evaluating the importance of the wild fur catch, it must be kept in mind, that over a large part of Canada the only economic products are from the wild life.

The figures from the Canada Year Book for 1942 are:-

Total land area of Canada

3,466,556 square miles

Total forest area

1,220,405 square miles

Unprofitable or inaccessible forest

450,000 square miles

Productive Forest

770,000 square miles

Agricultural land in Canada occupied

and available (including grazing)

549,660 square miles

It appears that only about one-seventh of Canada is suitable for agriculture or grazing; that about one-third is forested; and about four-sevenths of Canada's surface is at present not exploitable for either timber, agriculture or grazing. This is an area of about 2,000,000 square miles. On this area our wild life, as game, food and fur resources, are the chief factors that can make the country economically productive.

The necessity of conserving the wild life on 2,000,000 square miles gives an idea of the magnitude of our problem in conserving these biological resources to insure maximum production.

Gone is the time when fur and timber were exploited like coal and iron deposits. These biological resources differ in being renewable. And as Dr. Camsell has wisely said (1942, *Canadian Geog. Journ.*, 25, pp. 3-11) the basis of future progress is present research. One of the first steps is to make an inventory and see where we stand. This paper is in the nature of an inventory as to the present status of the fisher.

In number of pelts the fisher does not bulk large in the total Canadian fur output. In the 1939-40 season the total fur take was 9,620,695 skins; of these the fisher contributed 2,886 pelts, or about 0.03% of the total number of skins. The average value of fisher skins in the ten year period was \$48.92, with a range of average yearly price between \$40.03 and \$53.39. This high price makes the value of the fisher catch assume a larger share of the total. The 1940 value of the whole fur take was \$16,668,348.00; that of the fisher \$152,166.00 or about 0.90% of the total value.

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Comparing the fisher take with that of other furs, using 1939-40 season's figures; in total number of pelts taken the fisher stands nineteenth in the listed twenty-five "kinds" of wild-caught fur, falling just below the otter (10,917 skins), lynx (7,473 skins), wolf (6,429 skins), and badger (4,663 skins), while it is just above the blue fox (1,442 skins), wild cat (1,184 skins), black bear (1,037 skins), and wolverine (645 skins).

In total value the fisher stands fifteenth on the list, just below the coyote (\$179,616.00), and the otter (\$159,786.00) and just above the raccoon (\$54,028.00), and wolf (\$41,299.00).

In value of individual skins the fisher easily leads at \$52.73, followed by the lynx (\$35.70 per skin), marten (\$30.13), beaver (\$18.18), and silver fox (\$15.43).

The larger skins of the males have coarse fur and these bring a much lower price than the small, fine-furred pelts of the females.

In recent years in northeastern British Columbia I heard of an Indian trading a big, coarse fisher skin for \$12.00 at Lower Post; and talked with a trapper who had sold three for \$50.00; but during this same period, small, fine fisher skins brought \$75.00 to \$100.00 a piece to the trapper. Seton (1929, 2, p. 459) records choicest fisher skins bringing \$345.00 in 1920, presumably at a fur sale.

Most faunal papers state that an animal is rare or common, or some intermediate state. For an inventory that is hardly satisfactory. The chief figures available are the fur returns for the Dominion and for the provinces, published by the Dominion Bureau of Statistics. These give us the yield and an idea of the status of the animal. It is hoped that in future data will be available for smaller areas, and for individual trap lines, so that differences in density of population can be estimated.

In several of the annual reports of the Game Commission of British Columbia it is pointed out that the annual fur yield is not a good index to the status of the animals concerned. In a year when animals are plentiful, the price may be low and the trapper may take no more fur from his line than will pay his yearly expenses, conserving the rest of the animals on his trap line until prices are high².

Also in some sections heavy snowfall may restrict travel and cover traps, lowering the yearly take.

Factors such as these undoubtedly weigh the figures. But these figures still remain as the most satisfactory basis of comparison that we have.

The following are the data on the fisher take in Canada for the period 1920-21 to 1941-42 as prepared by the Dominion Bureau of Statistics:

Season	Average		Season	Average	
	Number of	Pelts value per		Number of	Pelts value per
	Pelts	skin		Pelts	skin
1920-21	4,866	\$58.86	1931-32	2,739	46.81
1921-22	5,680	74.45	1932-33	2,530	52.91
1922-23	3,976	69.84	1933-34	3,171	53.39
1923-24	4,158	70.07	1934-35	3,728	45.62
1924-25	4,230	48.46	1935-36	4,624	51.10
1925-26	5,899	37.27	1936-37	5,237	52.71
1926-27	7,893	51.32	1937-38	3,505	40.03
1927-28	8,641	57.35	1938-39	3,399	49.03
1928-29	6,606	60.12	1939-40	2,886	52.73
1929-30	4,274	56.32	1940-41	2,212	45.52
1930-31	3,282	\$45.83	1941-42	3,408	48.21

The average annual catch for Canada for the period 1930-40 was 3,510 fisher skins; for 1920-30 it was 5,622 skins.

For comparing the present fisher status with its earlier abundance we have Seton's (1929, Vol. 2, p. 458) data that the Hudson Bay Company's collection of skins over the eighty-five year period 1821-1905 averaged 4,439 skins per year, with the poorest year reporting only 974 pelts, and the best 8,917 pelts. Seton also gives the data for other American Companies as averaging 4,224 skins a year for the seventy-one years 1821-1891 (from Poland's list). Thus the average annual catch of fisher for the United States and Canada for this nineteenth century period was only about 8,600 skins.

As a proportion of these skins came from the United States, we can assume that the 1930-40 annual average catch of fisher in Canada is not below half the average annual catch for Canada during the nineteenth century. This fifty percent decrease is not nearly as great as is the marten catch, over a similar period and is about the same proportional decrease as Seton (op. cit. p. 679) postulated for the otter.

2. —This is possible in British Columbia, where there are large registered trap lines. In areas where registered trap lines are small, or where there are none, this spirit of conservation is not found.

However, comparing the 1920-30 period with the 1930-40 period it is seen that in recent years there has been a marked decrease in the numbers of fisher pelts taken; the highest yield in the former period was over 8,000 skins; in the latter period only something over 5,000 skins; the averages show the same thing.

This indicates that the take of the fisher is greater than its reproduction. The decrease is continuing slowly though there is evidently a

sizeable stocking of fishers left in Canada.

It might be thought that the take of fisher was influenced by prevailing prices; with higher prices the animals would be more sought after and the take larger. However, this does not seem to be the case, as may be seen from the above table.

Dominion Bureau of Statistics provides the following data on the fisher take by provinces for the years 1930-31 to 1939-40.

	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40
New Brunswick	33	27	27	44	63	85	53	40	19	26
Quebec	589	458	411	503	627	879	1,816	1,195	1,194	797
Ontario	1,544	1,258	1,203	1,309	1,495	2,123	2,052	1,418	1,353	1,372
Manitoba	160	284	289	521	682	692	461	250	213	157
Saskatchewan	28	15	13	31	15	5	9	17	12	10
Alberta	17	22	4	21	48	61	37	17	—none—	
British Columbia	681	663	562	721	763	759	668	520	590	504
N. W. Territories	230	7	18	21	24	2	136	22	8	9
Yukon Territory	—	7	3	—	11	18	5	25	10	17

Comparing the returns by provinces with Anderson's (1934, fig. 14) map it appears that the stronghold of the fisher is not in the far west or northwest, but in the east, in Quebec and Ontario, with British Columbia in third place as a fisher producing area. In Prince Edward Island and Nova Scotia there are now no fisher; in New Brunswick they are restricted to the northern third of the province, in Quebec to the southwestern third; in Ontario they are practically extinct south of the French and Mattawa Rivers, (*Prov. Ont. Game Report 1937-38*), but occur over perhaps three-quarters of the province; in Manitoba the range includes most of the province except the southwestern quarter; in Saskatchewan only the northern third; in Alberta, about two-fifths of the north and extreme west; in British Columbia about ninety percent of the province. It barely enters the southern Yukon, and occurs in perhaps a tenth of the southern Mackenzie District.

The fisher range does not extend nearly as far north as that of its close relative the marten.

The favourite habitat of the fisher seems to be lower and wetter forest country than that favoured by the marten, and the forests of the eastern provinces are thus more suitable for it.

In northeastern British Columbia the trappers say that fisher and marten often occur together in the lower country, along the rivers, but that only the marten goes into the higher country. In this area trappers who take two to four fishers a year are thought to make very good fisher catches, and in areas where such catches are made fisher are thought to be as common as they are anywhere in the country.

Though the fisher is not uniformly distributed over its range, it is interesting to calculate the total population and the average density per square mile. The average annual catch for the decade 1930-31 to 1939-40 was 3,510 pelts, and as fisher seem to be slowly decreasing we may assume that the catch represents a third of the population.

This would give an average annual population of about 10,530 fisher in Canada. This works out at about one fisher to every 110 square miles of fisher range.

Not only do the fisher populations vary in space but they vary in time. The figures for the twenty-two year period corroborate the theory, pointed out by Hewitt (1921), that there are periodic fluctuations in numbers of the fisher; a cycle with about a ten year period.

Even where the total fisher population is probably less than 300, as in New Brunswick,

this cyclic fluctuation is still seen.

One result of this cyclic phenomenon is evident. During the next few years the fisher will increase somewhat, until about 1947 or 1948. During this period, comparing one season's take with that of the immediately preceding year, it might be assumed that the animal's status was improving. This would be fallacious. A year's returns should be compared with that of the corresponding year in the previous cycle of abundance. In the above table 1936-37 is comparable with 1927-28, i. e. 5,237 skins as against 8,641 skins; presumably 1946-47-48 should also be compared with them. After about 1948 the fisher catch will decrease in size again. Without change in the protection the fisher receives the catch will probably drop below that of 1932-33.

Allee (1938) has pointed out that there is evidence indicating that if animals become too scarce, they are biologically unable to increase in numbers. We do not know what this point is for the fisher, but let us see to it that the fisher does not reach this probable danger point.

Allen (1942, p. 181) suggests that the fisher's scarcity is due to it being a solitary animal with a large home territory; to its forest habitat being limited, and being reduced by fire and axe; and to its low reproduction rate, one to four young being born after an eleven months gestation period. Correlated with the long gestation period is the fact that the fisher may breed at one year of age, but not until its second year are the young brought forth. This last factor alone makes a considerable difference, giving a lower rate of increase when compared with animals bringing forth young at one year of age.

In 1912 but two fisher farms were in operation on the continent. The shyness and nervousness of the animals has resulted in difficulty in getting the animals to breed. But it has been done successfully (see Hall, 1942). In 1940 twenty-three farms raising fisher were recorded in Canada. They were distributed as follows: New Brunswick 1 (with 1 animal); Quebec 5 (with 16 animals); Ontario 6 (with 23 animals); Manitoba 4 (with 61 animals); and British Columbia 7 (with 76 animals). The number of fisher on fur farms at the beginning of 1940 was 139; in that year 48 young were born, and eight adults and five young died. Fourteen fisher were sold

from fur farms in 1940, at an average price of \$75.00. Ten pelts were sold from fur farms, at an average of \$51.00. On Dec. 31, 1940 there were 177 fisher on fur farms, valued at \$13,990.00 or nearly \$80.00 apiece, (*Rept. on Fur Farms of Canada*, 1940).

On Dec. 31, 1941 there were only 145 fisher on fur farms in Canada; 15 animals and 15 pelts were sold from fur farms during the year, (*Rept. on Fur Farms of Canada*, 1941).

It appears that fur farms are not yet an important source of fisher fur.

CONCLUSIONS.

The fisher is one of our scarcest and most valuable wild-caught furs. It was never common and is slowly decreasing in numbers. However even now a sizeable stock of animals exists in the wild, a stock that deserves close attention. If it decreases much more it may become so scarce as to be unable to recover its number if given protection.

The total contribution of the fisher to the yearly fur output is so small that its temporary withdrawal from the fur trade for a few years, by protection, would work hardship on no one.

Though the total fisher yield is but a small portion of the total fur catch, the value of individual skins is such that a small increase in skins would mean a large increase in the value of the catch. One fisher skin might bring more than the average catch of a Nova Scotia trapper. The animal is worth strenuous efforts to increase its numbers, both for the substantial increase this would mean to trappers' incomes, and for the betterment of the status of the species in Canada.

The cyclic nature of its fluctuation in numbers suggests one type of management to enable the fisher to recover more quickly from periods of scarcity, and to provide a larger harvest over more years, in periods of abundance.

Fur farms are raising fisher, and successfully breeding them, but the yield from this source is as yet of little importance.

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CURRENT LITERATURE

MALLARD IN BRITISH COLUMBIA.—

Mr. J. A. Munro has given us another intensive study (Studies of Waterfowl in British Columbia, Mallard, 1943, *Can. Journ. Research, D*; 21, pp. 223-260). The mallard is the most important duck in the province, in places its numbers exceed those of all other ducks combined, and in the "Coastal Plain" area in southwest British Columbia and northwest Washington there is concentrated the largest winter population on the Pacific Coast. In 1941 there was an estimated investment of nearly \$2,000,000.00 in duck hunting equipment, and about \$1,000,000.00 spent in duck hunting by 39,932 licensed hunters, who took an estimated 20,221 mallards. Despite the mallard bearing the heaviest hunting pressure, it is the only duck that has maintained its numbers, and has actually increased in the last twenty years.

Through an analysis of some 3,387 returns of over 17,000 mallards trapped and banded, of 218 stomach examinations, and many field notes, a wealth of information is presented,

from which may be noted that mallards nest over most of the province in a variety of habitats; there are populations that migrate differently, and one probably does not migrate at all; some units of population remain together over a period of years; the arrival of the main fall flight in the Coastal Plain is determined by temperature changes. The time of breeding varies with the locality, being later inland and northward. Eating of shot may be a restrictive factor, but some birds apparently build up a resistance to lead poisoning; agricultural expansion especially grain growing, has had a beneficial effect on the mallard. The food may be nearly all animal, in which salmon eggs may bulk large, or plant such as weed seeds, aquatic plants, or grain. Mallards may conflict with agricultural interests by destroying forage plants in flooded fields, but do little damage to grain; the salmon-egg destruction is probably unimportant.

The data presented are not correlated with a vast amount of similar work done in other areas. — A. L. RAND.



Rand, Austin Loomer. 1944. "The Status of the Fisher, *Martes pennanti* (Erxleben) in Canada." *The Canadian field-naturalist* 58(3), 77–81.

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