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# SILVA FENNICA

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FINNISH GAME AND HUNTING

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**SILVA FENNICA**

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**FINNISH GAME AND HUNTING**

by

V. M. KLEMOLA

*Suomen riista- ja metsästysolot*

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### **Natural conditions.**

The conditions necessary for hunting as a livelihood are closely dependent on the conditions under which game exists. First of all, climatic conditions have a direct bearing on the matter. This is apparent, for example, in the presence of certain game (willow-grouse ptarmigan and arctic-fox) and the absence of other game, (black-grouse, hazel-grouse, common partridge, badger, lynx and of the late comers the brown or field-hare and the polecat) in the most northern regions of Finland. The distribution of this game is directly affected in part by the low average climate; in the main, however, the climate has only an indirect effect, i. e. the effect of vegetation on the animals. This is particularly apparent in the distribution of herbivores, although it is met with as regards carnivores also.

Finland possesses the best possible climatic and botanic conditions for the presence and development of fur-bearing animals in particular; in this respect Finland is most closely akin to the most favourable parts of Canada. The climate has a direct effect on the thickness and quality of the fur-covering. In discussing the effect of climatic conditions special attention should be drawn to the uniform winter temperature, and the relatively large degree of cloudiness in Finland which assist in the forming of fur of an even quality and long maturity. The country is sufficiently fertile for the production of the nourishment necessary to fur-bearing herbivores and is also sufficiently rich in game for the supplying of fur-bearing carnivores with abundant and varied food.

In addition to climate and natural vegetation, there are many other factors necessary to the existence of game, especially the density of population and the extent of cultivated land in proportion to the forest areas, and also the special conditions of the forests. The species and abundance of game is therefore fairly varied.

### **General-Game.**

In this work the name »General-game» is applied to such species of animals, whose presence is more or less of the same abundance in all parts of the country, with the exception of the fell-regions of Northern Finland

and in general the areas north of the coniferous forest line. The following species of mammals can be considered as general-game: blue-hare, squirrel, red-fox, ermin, and the musk-rat, which latter nowadays continues to spread and thrive in all parts of the country. Only a few of the migratory birds of the duck species such as the mallard, teal, pintail, tufted duck, goldeneye, wigeon, and common pochard can be considered as general-game. The mallard is easily the most abundant of all the species of duck in all parts of the country; its relative percentage of prevalence is nearly 50, i.e., it forms mostly nearly a half of all the nesting water-birds to the south of the forest boundary. The prevalence-percentage of the teal and the pintail is about 10—15. The common shoveller and pochard are more rare — 3—5 percent, while the tufted duck is about 10—20 per cent. The remainder falls to the other species of waterbirds.

Of the forest birds the black-grouse comes under the general-game category; it has spread fairly uniformly over the areas to the south of the fell-regions, so that the area per every 10 killed black-grouse varies in different parts of southern and middle Finland between about 6—9 km<sup>2</sup>. For this reason the abundance of black-grouse can be suitably compared with that of other forest birds, which varies considerably in different parts of the country. In the later divisions of the game zones the proportion of capercaillie to black-grouse, as well as hazel-grouse and ptarmigan to black-grouse is the characteristic factor for the various zones.

#### The influence of cultivation on the distribution of game species.

The influence of natural conditions on the general composition of the fauna is remarkable. In addition to such natural factors hunting has also a great influence as a regulator and check on the increasing of game. Some hints on the influence of these factors may be necessary.

In its relation to cultivations game can be divided into two categories, viz. cultivation-seeking and cultivation-shunning. Of the cultivation-seeking game mention should be made of that newcomer from the South East, the brown or field-hare and the polecat whose northern boundary of distribution approaches the central portions of the Kuopio and Vaasa provinces. (Fig. 1) (Not only species of game animals have come from the South-East. For example, the blue jay, golden oriole and nightingale are all comers from the south-east.) Another obvious member of the cultivation-seeking species of game is the partridge, which arrived in Finland earlier, the distribution area of which stretches in the West as far

as the valley of the river Tornionjoki but comes to a halt in the East approximately at the border of the Kajaani district. The best example of cultivation-shunning bird-game is the ptarmigan and in a lesser degree, the capercaillie and hazel-grouse.

Of the mammals, the carnivores of the wild regions such as the bear, wolf, lynx and almost extinct marten have clearly entered the cultivation-shunning category, owing to severe persecution. At the same time they represent the valuable game of Finland which has become fairly rare. The protective influence of cultivation in developed cultural conditions is shown, on the other hand, by the prevalence of elk in the southern regions of the Turku and Uusimaa provinces. (Fig. 1).

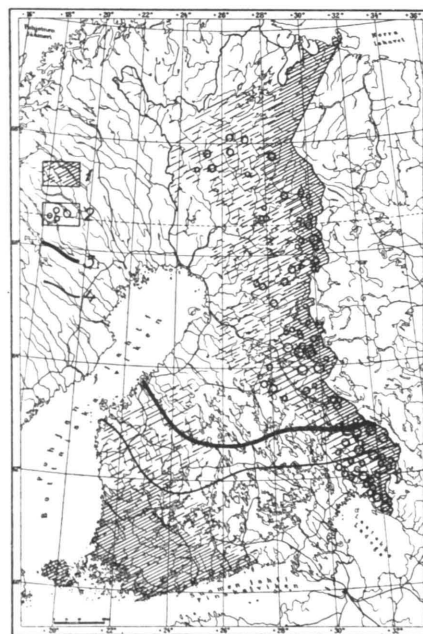


Fig. 1. 1. Abundance of elk (*Alces alces*) (density of lines indicates the relative prevalence of elk). 2. The presence of bear (*Ursus arctos*) shown according to damage caused to domestic animals. (The size and density of circles indicate the amount of damage caused). 3. The northern boundary of distribution of the brown-hare (*Lepus europaeus*) and 4. of the polecat (*Vison lutreola*).

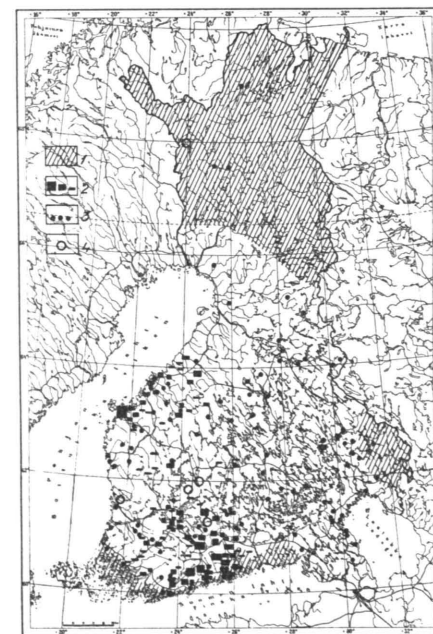


Fig. 2. The distribution of certain water mammals. 1. The areas regularly frequented by the otter (*Lutra lutra*). 2. Trapping areas of musk-rat (*Fiber zibethicus*) (size of rectangles indicate the relative amount of animals trapped). 3. Settlement areas of musk-rat. 4. Settlement areas of beaver (*Castor fiber*) in 1935.



### The influence of hunting on the abundance and variety of game.

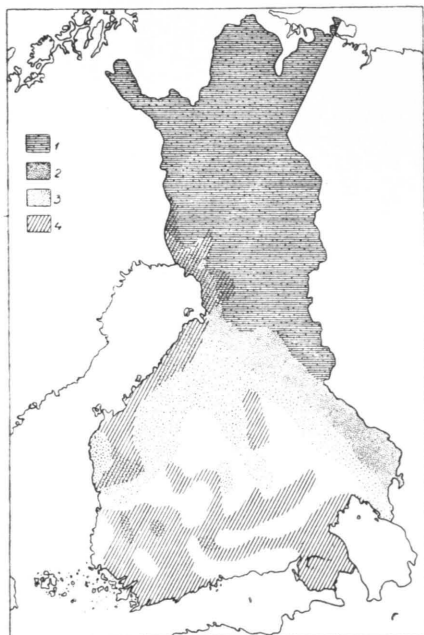


Fig. 3. Comparison between common-partridge (*Perdix perdix*) and willow-ptarmigan (*Lagopus lagopus*) areas of distribution. 1. Willow-ptarmigan predominating zone: willow-ptarmigan — black-grouse ratio 1: 1 or more; 2. willow-ptarmigan — black-grouse ratio 1: 1—2; 3. Willow-ptarmigan — black-grouse ratio 1: 3—5; (In other places willow-ptarmigan fairly irregular). 4. Regular distribution area of common-partridge.

general preservation laws or by founding sufficiently large game reservations. The preservation of such animals as the bear, lynx, wolf and wolverine is only possible by the latter method. The very varied presence of elk in different parts of the country can be considered as a good example of the prevalence of poaching. The presence of elk is practically independent on areas of cultivation, for the thickly populated southwest Finland, where there

Rational hunting in no way has a destructive effect on the presence of game species, for it is confined to species rich in number and endeavours to spare more rare game, even beasts of prey. It is to be regretted that game-protection conditions are nevertheless still so undeveloped in Finland that only in very rare circumstances does hunting merit the title of game-preservation hunting. For the main part hunting in Finland is still disorganised; real plundering of game and flourishing poaching, destroying without mercy all useful game available, is still practised. Attempts are being made nowadays to put hunting on a more commonsense basis by restrictive regulations. An example of the destructive influence of game-plundering on the more valuable game species is furnished by the total extinction of the beaver in the middle of the last century. The same fate now threatens other mammals, the artic-fox, marten, lynx, otter, bear, wolf and wolverine, unless they are protected by

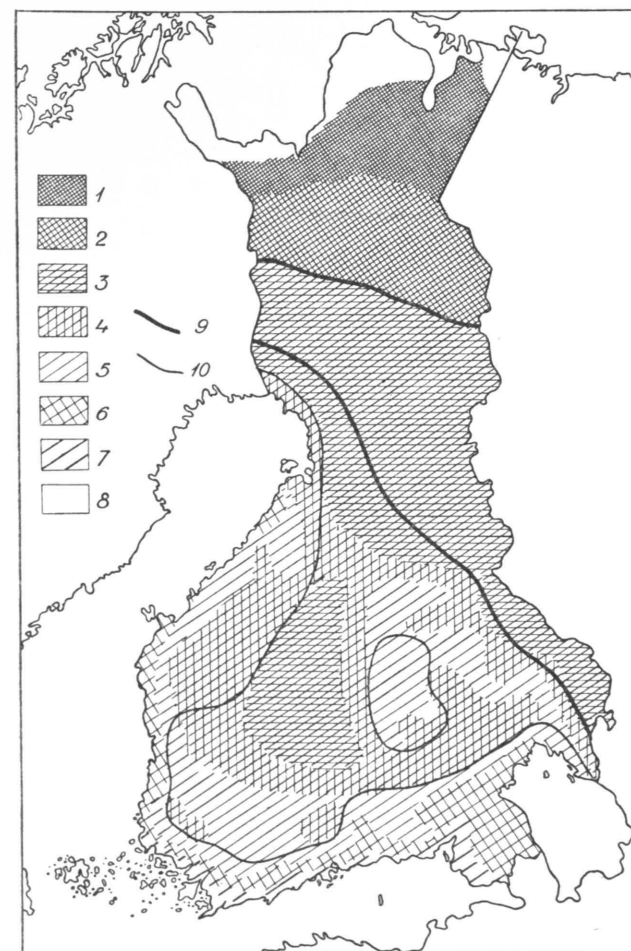


Fig. 4. Prevalence of capercaillie (*Tetrao urogallus*) and hazel-grouse (*Tetrastes bonasia*) compared with black-grouse (*Lyrurus tetrix*). 1. Black-grouse not regularly found; 2. Capercaillie twice as prevalent as black-grouse; 3. Capercaillie and black-grouse equally prevalent; 4. capercaillie — black-grouse ratio about 3: 5; 5. capercaillie-black-grouse ratio 1: 5; 6. capercaillie-black-grouse ratio about 1—2: 10; 7. capercaillie not regularly found; 8. bare of capercaillie. Hazel-grouse — black-grouse ratio 2—3: 3; 9. Southern and northern boundary of area rich in hazel-grouse; 10. The western and southern boundary of the area in which the hazel-grouse is an important game, being, however, less numerous than in the former area. The hazel-grouse — black-grouse ratio 1: 3 in places other than in central lake-district, where it is smaller.

is practically no poaching, is, similarly to the south coast of the Uusimaa Province, one of the areas richest in elk. It will be seen from the map indicating among other big game the distribution of elk (Fig. 1) that an »elkless belt» stretches through the central portions of Finland from the end of the Gulf of Finland, and Lake Laatokka to the Vaasa and Oulu districts. It is true that isolated elks are found in these areas, but before any permanent stock has been formed the hunter's bullet has killed them off or they have been driven either to the safer regions of western Finland or to the trackless wilderness of the East.

Similar signs are provided by the map (Fig. 4) showing the distribution and abundance of forest birds; compare for example, the regions of the Viipuri Province with the more northern regions of similar natural conditions. It is probable that without the existence of permanent, properly controlled game reservations, it will be impossible to preserve game in any abundance in those parts of the country where poaching is prevalent. Nowadays the discipline among the hunters is rapidly increasing by means of propaganda and control together with the organisation of hunting societies.

#### Game zones and areas.

The information recently obtained on game, the first of its kind dealing with the entire country, gives a fairly clear illustration of the game distribution in different areas and its prevalence. The results of the investigations deal with the hunting season 1933—1935. They appear to represent such normal conditions that they can be used as a basis for the following division of zones and areas. They are most closely allied to the division of vegetation determined by climatic and fertility condition, although all the game zones are not directly determined by the distribution of cultivated areas. As vegetation, however, is the natural basis for the presence of all game, many combined features can be understood, especially as the areas of cultivation at the same time indicate the intensity and extent of the cultivated regions in Finland, and as the game species determining the game zones are largely composed of either cultivation-seeking or cultivation-shunning fauna. (Fig. 5).

The most northern game zone, the willow-ptarmigan zone, is the fell regions of Lapland, where the willow-ptarmigan, together with its close relation, the ptarmigan, are almost the sole general game. In the centre of the inaccessible moss and moors of the Enontekiö,

Inari and Utsjoki fells the swan is also found together with its companions, the wild goose and the longtailed duck. The arctic-fox, wolf and wolverine have also found their last refuge in this region.

The Arctic coast of Finland varies from the rest of the country as regards the variety of its fauna and the number of water birds nesting in this area. As an area it belongs to a fauna zone not found elsewhere in Finland. The mammals which predominate in this region are nevertheless of the typical Arctic species, so that the fauna of the Arctic coast constitutes a sub-division of the Arctic fauna of the Finnish fell regions. The elk, blue hare, fox, otter and ermine are ubiquitous types found as far as the shores of the Arctic Ocean. The arctic fox is fairly common on the coast rich in fish.

The northern forest-bird zone can be reckoned as the forest zone, rich in bird life, of Peräpohjola, Kainuu and Lapland. This can be divided into the following game areas according to the principal northern boundaries of the various species of forest birds.

The capercaillie area, with a predominance of willow-ptarmigan, stretches from the southern boundary of the above mentioned willow-ptarmigan zone to the northern boundary of the black-grouse and hazel-grouse, thus embracing the forest area of Lapland. In this area the capercaillie is the predominating game bird whereas, on the other hand, the black-grouse and hazel-grouse are only met with as individuals in the southern parts of the area. The bear is comparatively abundant from the eastern to the western boundary of the country. The hare, squirrel and ermine are prevalent, also the red-fox and the otter, on the other hand, the black and hazel-grouse are only met with as individuals in the southern parts of the area. The hare, squirrel and ermine are prevalent, also the red-fox and the otter.

The black-grouse area, with a predominance of willow-ptarmigan, embraces the boundary zone of Peräpohjola and Lapland and extends from the northern boundary of the area where the hazel-grouse is a permanent dweller to the northern boundary of the hazel-grouse. In this area the black-grouse nests regularly although its abundance is only  $\frac{1}{4}$ — $\frac{1}{5}$  of the prevalence of capercaillie and white ptarmigan. The hazel-grouse is fairly common in the southern parts of the area. The bear, the roaming wolf and the wolverine have also found a refuge in the forest regions, valleys and large rocky crags of the area.

The Peräpohjola and Kainuu area extends from the southern boundary of the former area to the southern boundary of the area where the willow-

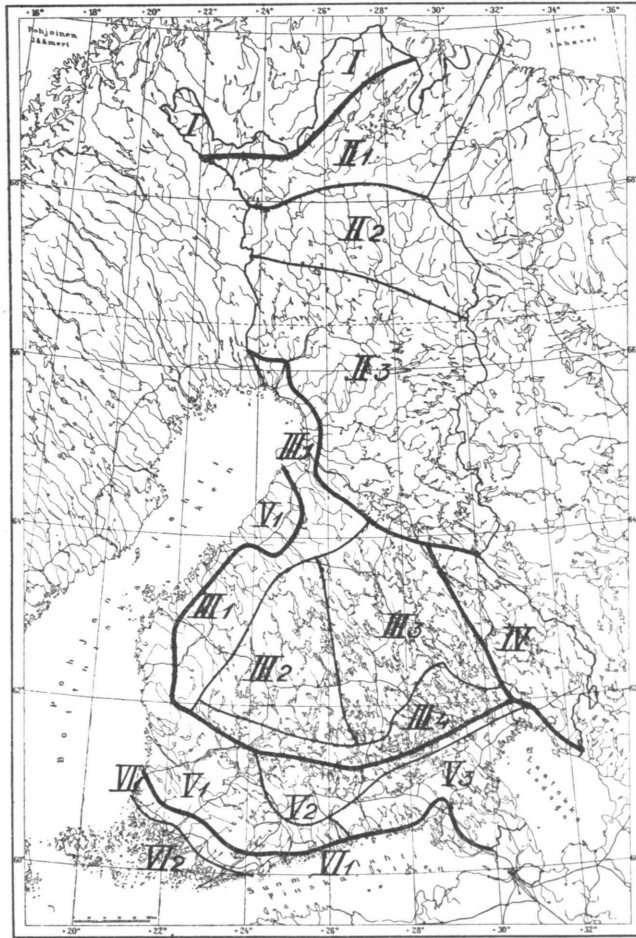


Fig. 5. Game zones and areas: I. Willow-ptarmigan — ptarmigan zone. II. Northern forest-bird zone. II<sub>1</sub>. Capercaillie area with predominating ptarmigan. II<sub>2</sub>. Black-grouse area with predominating willow-ptarmigan. II<sub>3</sub>. The Peräpohjola and Kainuu area. III. The Central Finland forestbird zone. III<sub>1</sub>. The Suomenselkä game area. III<sub>2</sub>. The Central-Finland game-area. III<sub>3</sub>. The Finnish lake district northern game-area. III<sub>4</sub>. The Finnish lake district southern game area. IV. The big-game zone of Frontier Carelia. V. The zone of the cultivation area, V<sub>1</sub> the cultivation area rich in common-partridge, V<sub>2</sub> the Salpausselkä game area, V<sub>3</sub> the south-eastern game area. VI. The south-western and southern game zone. VI<sub>1</sub>. The Vakka-Suomi and Southern Finland game area. VI<sub>2</sub>. The game area of the Finnish archipelago.

ptarmigan is prevalent. The last mentioned boundary more or less follows the southern boundary of the reindeer-breeding area and the annual 0° isotherm. This area thus embraces the vegetation region of Kainuu and the southern part of the Peräpohjola area. In this zone the willow-ptarmigan, the capercaillie and the black-grouse are equally prevalent. In addition to the permanent dwellers of this region, the common partridge also reaches its most northern boundary in the river valleys of the west of this area. The hazel-grouse exists over the whole area in denser forests.

The central-Finland zone of abundant forest birds stretches from the plains of Pohjanmaa to East Karelia. A characteristic feature of this zone is the prevalence of capercaillie, while the hazel-grouse also reaches the limit of its regular appearance at the western boundary of this area. The scarcity of the common partridge and extinction of elk are noteworthy. The game zone is fairly varied as regards natural conditions, which is also reflected in the divergencies between the presence of the main game species. For this reason this game zone must be divided into four game areas.

The Suomenselkä game area really in fact only embraces the southern half of Suomenselkä, the forest region between the watershed and the plain area proper, with which in this division is also combined — on account of the similarity in density of forest-birds of this area — the forest-covered strip of coast at the head of the Gulf of Bothnia. The relation between capercaillie and black-grouse in this area is about 3 : 5, and in addition to the hazel-grouse the willow-ptarmigan is also met with fairly frequently in the extensive swampy areas.

The Central-Finland game area extends as a triangle from Pohjois-Häme to the southern part of the Oulu Province. Its most prominent characteristic is the abundance of capercaillie which almost equals the prevalence of blackgrouse. The presence of the hazel-grouse and willow-ptarmigan is very varied in this area. The many forest lakes make this region suitable for flourishing water-bird life.

The northern game area of the lake district of Finland embraces the relatively sterile water system of northern Savo. Judging from the scantiness of the game shot, it appears that the capercaillie does not thrive in this lake-strewn area. The relation between capercaillie and black-grouse is only 2 : 5 in this area, and even the hazel-grouse is less frequent than in the other areas mentioned above. Water birds are also scarce in relation to the large water areas of this area, which is accounted for by the sterile rugged water system of northern Savo. Judging from the scantiness of

the game shot, it appears that the capercaillie does not thrive in this lake-strewn area. The relation between capercaillie and black-grouse is only 2:5 in this area, and even the hazel-grouse is less frequent than in the other areas mentioned above. Water birds are also scarce when one considers the numerous lakes of this area, which is accounted for by the sterile character of the lakes.

*The southern game area of the lake district*, which includes the lake areas to the north of Salpausselkä and forest areas more flourishing than in the former region, is richer in capercaillie. Water birds are also abundant but the willow-ptarmigan is only met with here and there.

The big-game zone of Frontier-Karelia has still preserved its natural typical wild character. The capercaillie and hazel-grouse compete in abundance with the black-grouse. Bears are met with in all parts along this zone, but are most abundant towards the frontier. They cross the frontier from Russia during the snowless periods as do the few lynx and many elk that are found in this zone. The wolf and wolverine are also sometimes occasionally found here, together with that rare visitor, the wild deer. Few areas are suitable for the common partridge and the brown-hare, despite the southern situation of this zone. The otter still thrives in the thinly populated desolate areas, and the elk is abundant especially in the frontier-zone. The migration of game over the Russian boundary is characteristic of this zone.

The cultivation area zone in which game bird life is scanty of species offers a clear illustration of how the density of cultivation and the presence of man decreases the cultivation-shunning and increases the cultivation-seeking game. Per area unit is the amount of game considerable more rich than in the former zones. Here the common partridge areas are extensive and dense; the brown-hare gradually wins more ground from the cultivation-shunning blue or forest-hare, while the capercaillie is found only in the extensive forest-lands. The relation between the abundance of capercaillie and black-grouse is only 1—2:5. The hazel-grouse, on the other hand, is fairly abundant in places, while the elk also adds to the game value of the area by its even abundant presence in some parts. These divergencies form a basis for a division of the zone into three areas:

*The area of cultivation in which the grey-partridge is abundant* stretches from the plain regions of Pohjanmaa to the cultivated areas of Satakunta and southern Häme. The species of game in this area are fairly varied owing to the prevalence of rivers, lakes and large forest-lands. The northern parts are notable for the absence of the elk and badger and scarcity

of water-birds in comparison with the southern regions. The hazel-grouse and capercaillie reach their western and southern limit of regular distribution in this area.

*The game area of Salpausselkä* differs from the above area principally owing to the scarcity of the common-partridge, hazel-grouse and brown-hare. It extends from the northern regions of the Viipuri province to the southern Häme and northern Uusimaa districts.

*The south-eastern game area* is large in size, embracing the greater part of the Viipuri province. Owing to the dense population and relatively extensive area of cultivation, the game of this region is fairly scanty, of species. Practically all the western parts of the isthmus of Carelia and the large areas around the city of Viipuri are almost without capercaillie and in general the whole region is noteworthy for its scarcity of this bird. The commonpartridge and brown-hare are fairly prevalent, while this region is also quite rich in water-bird life owing to very fertile eutrophic lakes.

With the local exceptions caper cailzie and hazelgrouse are only found as occasional visitors, in the south and south-west game zone. The forest-hare also is less frequent than the brown-hare in this zone. Two game areas, different in natural conditions and quantitatively richer of game are as follows: *The game area of Vakka-Suomi and the south coast*, where the capercaillie is only found in places. Elk are very abundant in this region, while the red-fox and otter are also fairly common.

*The game area of Saaristo-Suomi* embraces the southwestern tip of the peninsular of Finland. The capercaillie and hazel-grouse are entirely absent in this region, but water-birds are abundant and the otter is a regular dweller. The common-partridge is also found in some islands. Hazel-grouse have settled in some parts, such as Ahvenanmaa, while even a few capercaillie are also found.

As will be seen from the foregoing description, the game zones correspond in certain cases with the vegetation zones. The most southern vegetation zone, the oak zone, for example, also appears as a separate game zone in which the most abundant game are the capercaillie, and the black-grouse. As mentioned above, however, the conditions of cultivation and also the prevalence of certain types of forest are more suitable than areas of vegetation for the determining of game zones. Game has its own significance in areas where the field area is relatively large, compared with the little cultivated areas. It can be seen that in the east and north of Finland and even in Central Finland the field area is less than 2.5 per cent of the



entire land area in the real capercaillie areas, whereas the field area is in general more than 20 per cent of the entire land area in the regions, where the common-partridge and brown-hare are abundant.

The northern boundaries of certain game species correspond in places to the northern boundaries of cultivated crops in Finland. The northern boundary of barley cultivation corresponds to the boundary of the area where the black-grouse regularly nests, which naturally depends on the northern boundary of the spruce forests in the same region. The southern boundary of the willow-ptarmigan zone roughly corresponds to the northern boundary of oat and spring-rye cultivation.

The examples given above clearly indicate how closely dependent on climate, vegetation, cultivation and soil fertility are the presence and abundance of the different species of game and the amount of game on the whole.

#### **The methods of hunting and trapping.**

In common with other primitive peoples the ancient Finns employed *passive means* to a large extent in the trapping of game. Many kinds of traps, snares, game-pits and trapping enclosures were formally in general use all over the country. The employment of snares for hare and usual types of traps for birds is still legal in Kainuu and the extreme north of Finland during winter. These trapping methods are also allowed in the professional game areas of Russia and Canada, and it is only on the basis of the larger quantities of game ensured by the use of these methods that the inhabitants of the northern regions, poor in game, are able to obtain their food and means of livelihood during the winter. For example, the feathering of the white ptarmigan which must be clean and unspoiled for trading purposes, becomes useless if methods other than trapping are employed.

Of later origin are the various types of trapping irons with which large numbers of fox, mink, otter, polecat, muskrat and birds of prey are still caught in Finland. The poisoning of fox was introduced into Finland by emigrants so recently as the end of the last century. This method spread over a fairly large area until it was prohibited by law in all parts of the country except the northern district. Even there permission must first be obtained from the authorities. Poisoning has greatly reduced the stock of red-fox and has absolutely exterminated the Arctic fox. For this reason the total prohibition of this method is under consideration.

A unique type of game hunting is that utilising the Finnish cock-eared dog. This animal can be employed for a great number of purposes. In the first place it keeps the birds motionless on their perches by barking and attracting their attention while the hunter creeps up within shooting distance. This method is very suitable for capercaillie and black grouse, particularly in the autumn when they are not so timid. The professional hunter also derives great help from this dog in squirrel hunting, as the animal is found and its sitting tree nest located by the dog.

The Finnish cock-eared dog can also be trained to go after bear and elk. It halts these animals by barking and attacking until the hunter is in position for shooting.

Of the game hunting methods proper the eastern European method of hare and fox hunting with hounds has spread to Finland, also the hunting of the grey partridge, pheasant and capercaillie with setters and pointers. Hunting with hounds and beaters is now confined to elk in southern Finland. In former times entire communities and parishes used to turn out for wolf hunting.

The wolf, wolverine, and during the last good skiing in the spring, the bear, are hunted on skis. During the period of deep snows the heavy elk is no match for the poacher on skis.

Seal hunting is carried on in all seas circling Finland and in Lake Ladoga. About 6—10 000 seals are killed annually. Special groups of seal hunters are formed to follow the water channels between the ice in their boats or to push the boats for long distances across the ice in their search for good sealing localities. During the late winter the seal hunters also imitate the cry of the young seal or use live captured seals for decoy purposes. The hunters also sometimes disguise themselves as seals and lie on the rocks by the holes in the ice in order to attract the inquisitive seal within shooting distance. Seal hunting from a sporting point of view has many devotees.

#### **Hunting as a economic factor.**

Hunting belongs to that group of pursuits which have played a decisive part in the livelihood of different nations during their period of development and have aided them in their struggle for existence. Finland lies in one of those zones where hunting as a livelihood partially exists even to this very day.

The history of colonizing in Finland tells that hunting and the former abundance of game played a decisive part in spreading civilisation in the

Finnish wildernesses. Game lands and waters rich in fish tempted the ancient pioneering Finns, with their knowledge of natural means of livelihood, to build their dwellings in the wilds. The northern game lands have called the Finns to the far distant Swedish backwoods and to the shores of the Arctic Ocean.

As a memento of the abundance of game in former times, it should be remembered that taxation was levied on the basis of units of fur-game.

Signs of this thriving game period are preserved only in the eastern frontier zone and in the desolate forest and fell-regions of northern Finland. Game plundering, the development of cultivation and forest utilisation, and increasing density of population throughout the country have indeed reduced the possibilities for game life to such an extent that Finland must now be considered as a country where the game has extremely decreased. This is particularly true as regards that valuable game, the fur-bearing animal. The great decrease in the principal species of fur-bearing animals in Finland is shown in the following table:

Table I Fur bearing animals killed annually.

Year	Bear	Wolf	Lynx	Red-Fox	Wolverine	Otter
1880	114	293	183	3 477	91	275
1900	73	12	91	4 806	51	486
1910	32	21	46	3 016	55	270
1920	21	18	20	1 590	45	108
1930	52	2	29	1 701	21	189
1933	55	5	32	1 769	15	77
1934	42	6	21	?	17	?

Some further information is given here in respect of other fur-bearing animals. Finnish mink are trapped annually to the amount of about 2 000, polecats 2—3 000, of which latter the annual number trapped is on the increase; hare about 200—250 000 annually and ermine about 10 000. The squirrel, which is so difficult to preserve, has decreased to such an extent that, whereas in 1932, the first year after the termination of its years of protection, some 2 000 000 animals were trapped, the number had fallen by 1933 to 400 000 and by 1934 to 280 000. It is therefore now protected for 3 years. That newcomer to Finland, the musk-rat, has been allowed to develop more or less in peace, and during a period of about 15 years has increased to such an extent that some 200 000 animals are now trapped annually.

The number of forest birds shot varies over different years, depending on the quality of the brood. The following table indicates the number of forest-birds obtained in the various provinces:

Table II Information in respect of game obtained during the hunting season 1933—34.

(According to information supplied to the Ministry of Agriculture.)

Province	Black-grouse	Capercaillie	Ptarmigan	Hazel-grouse	Common-Partridge	Duck-species	Hare	Red-fox	Otter	Ermine	Badger
Uusimaa . . . .	20 500	7 100	240	4 350	5 650	15 760	18 020	322	16	66	5
Turku & Pori . . . .	26 200	4 500	600	6 250	3 060	18 100	42 400	287	6	166	18
Häme . . . . .	24 600	12 960	450	8 530	3 650	18 010	24 620	248	—	177	35
Mikkeli . . . . .	25 200	13 350	740	9 250	1 460	13 460	16 670	54	—	40	36
Viipuri . . . . .	40 500	12 560	900	7 620	2 320	33 300	43 310	136	20	45	32
Kuopio . . . . .	46 800	18 000	2 200	15 120	850	29 320	25 780	121	1	181	13
Vaasa . . . . .	41 160	22 510	4 650	10 290	2 090	27 450	37 330	224	8	424	2
Oulu . . . . .	31 110	31 780	88 160	15 960	720	26 230	25 960	377	26	2 220	1
Whole country (ex. Ahvenanmaa) . . . . .	259 070	125 760	97 940	77 370	19 800	182 020	234 090	1 769	77	3 318	142

Table III The prevalence of the more general game in different provinces calculated on the basis of black-grouse units.<sup>1</sup>

	Uusimaa	Turku and Pori	Häme	Mikkeli	Viipuri	Kuopio	Vaasa	Oulu	Whole Country
	Area in which the following game was killed (km <sup>2</sup> .)								
	5.7	8.1	6.3	6.6	7.7	7.7	9.7	53.3	
Black-grouse . . . .	10	10	10	10	10	10	10	10	10
Capercaillie . . . . .	3	3	5	6	3	4	5	11	5
Hazel-grouse . . . .	2	2	3	4	2	4	2	5	3
Waterfowl . . . . .	8	7	6	6	7	6	6	8	7
Hare . . . . .	9	15	9	7	12	6	9	8	8
Squirrel . . . . .	8	9	8	5	3	3	7	12	7
Black-grouse . . . .	100	100	100	100	100	100	100	100	150
Ptarmigan . . . . .	1	2	2	3	2	5	10	250	34
Grey-partridge . . . .	30	12	12	6	6	2	5	1	9

<sup>1</sup> In this table the *black-grouse unit* signifies the number of various game species killed in ratio to black-grouse.

The following table indicates the comparative abundance of certain game species in the different provinces:

The monetary value derived from game is estimated at about 30—40 million Finnish marks annually, which sum must be considered small when Finland's game possibilities are taken into consideration. About  $\frac{2}{3}$  of this sum is derived from fur-bearing animals, but the revenue from hunting could be greatly augmented by increasing the quantities of fur-bearing animals, if only the present game-plundering and poaching could be restricted and hunting conditions put on an altogether commonsense basis. The annual value of killed game represents an interest on capital of about one thousand million marks.

The State grants compensation for damage caused by bear to the value of about 100 000 marks annually, principally on the eastern frontier and in Lapland. Damage to growing and harvested corn is caused by elk, principally in the south-western parts of Finland where the elk is abundant. The annual compensation made by the State averages about 400 000 marks. The State does not compensate for damage done to forests by elk. Bounties paid on beasts of prey, wolf, wolverine, bear and seal amounts annually to about 450 000 marks, of which about  $\frac{9}{10}$  is in the form of bounties on seal, which are harmful to fishing.

Hunting still possesses a considerable significance as a means of livelihood among the local inhabitants of the thinly populated regions of eastern and northern Finland during the winter months. The inhabitants add to their food supplies, especially by bird shooting, and the hunters of northern Finland by trapping, although the method used is often illegal. It is to be regretted that the game preservation habit of thought has not yet gained ground among these professional trappers; they owe the abundance of game in the trapping regions to the great game reserves of Russian-Karelia, as considerable quantities of both birds and mammals trek across the frontier.

#### The organising of game preservation and hunting control.

Up to recent times organising work as regards game preservation and the control of hunting has been almost solely undertaken on private initiative. Special mention should be given to the active and energetic central organisation of the hunting clubs, Suomen Yleinen Metsästäjäliitto, (The General Hunters League of Finland), which has now over a hundred

clubs as members in different parts of the country, especially in the south and West, with a total of more than two thousand sportsmen. As, however, it is estimated that there are at least 70—80 000 hunters in Finland it will easily be seen that the private form of organisation has met with but little success. In preparing the new game law from 1934, this defect has been taken into consideration and compulsory membership of game preservation associations is imposed on all hunters. Every hunter must pay a membership fee, a so-called game-preservation fee, of Fmks. 20 (ca 2 sh.) per hunter; if there is more than one hunter in the same family the others pay a fee of only Fmks. 5. This game-preservation fee is paid to the State, but a corresponding amount of the State's funds is devoted to the furthering of game preservation measures, principally in the form of assistance granted to the general game-preservation associations prescribed by law. Members of these associations are entitled to hunt only in those areas for which they have a hunting permit. The official game-preservation associations have not to be confused with hunting clubs or other private organisations of hunting and game-breeding, who are working on their own or rented areas. The monetary value of hunting licences amounts annually, after the cost of hunting permits and their distribution have been subtracted, to about one million Finnish marks.

The number of hunters in Finland was over 74 000 in 1936. This number is divided up according to districts as follows: (the table also gives the average dry land area per hunter)

Table IV.

Province	number of hunters	percentage of inhabitants	average area for every hunter
Uusimaa .....	8 932	1.8 %	1.3 qkm
Turku & Pori .....	8 330	1.6 »	2.6 »
Häme .....	8 441	2.2 »	2.2 »
Mikkeli .....	6 292	3.0 »	2.8 »
Viipuri .....	11 303	1.8 »	2.9 »
Kuopio .....	11 083	2.9 »	3.4 »
Vaasa .....	10 953	1.9 »	3.6 »
Oulu .....	8 322	1.9 »	20.3 »
Whole country (excluding Ahvenanmaa)	74 186	2.0 %	4.7 qkm

The official game-preservation associations average about three parishes in size, although the law provides for their formation even for a smaller area. The organising work of these game-preservation associations has now been brought to a conclusion and they will amount to about two hundred in all parts of the country. The work of these associations is conducted by a local board. The duties of this board consist of the appointing of game-wardens and the directing of several game-preservation measures etc. which are more closely prescribed in their regulations and instructions.

A inspector of hunting has been appointed to the control of game-preservation activity by the Ministry of Agriculture in accordance with the game laws. The duties of this inspector also include the presenting of information on the subject to the Ministry and State Council. The Ministry of Agriculture and the General Hunters' league of Finland have appointed so-called game preservation advisors to the control of game-preservation associations. These advisors work in co-operation with the General Hunters' League of Finland and the inspector of hunting. There are eight of these advisors in Finland and the country is divided, into their working districts.

#### Close seasons and game laws.

The first properly defined game laws in Finland were passed in 1868. The following game laws and amendments are for the years 1898, 1923 and 1934.

The following prohibitions are made by the present game law:

- 1) poaching,
- 2) hunting during the close season,
- 3) hunting without a State licence,
- 4) hunting with a rifle,
- 5) hunting with a light as decoy,
- 6) hunting from an automobile or motor-boat, or hunting while the game is on a public highway
- 7) hunting by means of traps, snares and poisoned bait in southern and central Finland; exceptions to this clause for northern Finland.
- 8) the loosing of dogs in spring and summer (they can be killed by the landowner or authorities if found loose on hunting grounds during the close season).
- 9) the selling of game during the close season unless the carcass or skin of the game be marked by the authorities as prescribed by law.

In addition this law also contains regulations in respect of registration, the activities of game-preservation associations, hunting on State-owned land etc.

#### Close season for game in Finland.

Elk hunting is only permitted in districts rich in elk under special licence granted by the District Governor and the Board of Forestrd.

Table V.

		Close Season for game	
		in Southern and	in Northern
		Central Finland	Finland
Arctic-fox	<i>Vulpes lagopus</i>	} closed totally	} closed totally
Pine-marten	<i>Martes abietum</i>		
Beaver	<i>Castor fiber</i>		
Wild reindeer	<i>Rangifer tarandus</i>		
Flying squirrel	<i>Pteromys volans</i>		
Squirrel	<i>Sciurus vulgaris</i>		
Swan	<i>Cygnus cygnus</i>	} closed totally	} closed totally
Sheld-duck	<i>Tadorna tadorna</i>		
Razorbill	<i>Alca torda</i>		
Black-guillemot	<i>Uria g. grylle</i>		
Quail	<i>Coturnix coturnix</i>		
Coot	<i>Fuliga a. atra</i>		
Smew	<i>Mergus albellus</i>		
Blue-hare	<i>Lepus timidus</i>	1/3—31/8	1/4—31/8
Brown-hare	<i>Lepus europaeus</i>		
Muskrat	<i>Fiber zibethicus</i>	15/5—31/12	
Male-capercaillie	<i>Tetrao u. urogallus</i>	1/1—31/8	1/4—41/8
Female-capercaillie		1/11—31/8	1/12—31/8
Maleblack-grouse	<i>Lyrurus t. tetrix</i>	1/3—31/8	1/4—31/8
Femaleblack-grouse		1/11—31/8	1/12—31/8
Hazel-grouse	<i>Tetrastes b. bonasia</i>	1/1—31/8	1/4—31/8
Ptarmigan common	<i>Lagopus mutus</i> <i>Lagopus lagopus</i>	1/3—31/8	1/4—31/8
Ptarmigan white			
Partridge	<i>Perdix perdix</i>	20/10—15/9	
Male-pheasant	<i>Phasianus colchicus</i>	1/12—1/10	
Stock-dove	<i>Columba oenas</i> <i>Columba p. palumbus</i> <i>Scolopax r. rusticola</i>	1/3—31/8	
Wood pigeon			
Woodcock		1/1—31/8	



Great-snipe	<i>Capella media</i>	}	1/3—20/8	
Common-snipe	<i>Capella g. gallinago</i>			
Mallard	<i>Anas p. platyrhyncha</i>			
Teal	<i>A. c. crecca</i>			
Garganey	<i>A. querquedula</i>			
Wigeon	<i>A. penelope</i>			
Pintail	<i>A. a. acuta</i>			
Shoveller	<i>Spatula clypeata</i>			
Goldeneye	<i>Bucephala c. clangula</i>			
Goose sp.	<i>Anser &amp; Branta sp.</i>			
Velvet-scooter	<i>Oidemia f. fusca</i>	}	1/3—31/8	
Common-scooter	<i>O. n. nigra</i>			
Tufted-duck	<i>Nyroca fuligula</i>			
Scaup-duck	<i>Nyroca m. marila</i>			
Common-pochard	<i>N. f. ferina</i>			
Ferrugineous-duck	<i>N. n. nyroca</i>			
Longtailed-duck	<i>Clangula hyemalis</i>			
Goosander	<i>Mergus m. mergansor</i>	}	1/3—31/8	on the sea-side, no closing on the inland
Redbreasted-merganser	<i>M. s. serrator</i>			
Common-eider Male	<i>Somateria m. mollissima</i>	}	1/3—31/5	in Petsamo (arctic coast)
Common-eider Female				
Young from the same year				
Arctic-puffin	<i>Fratercula a. arctica</i>	}	1/3—31/8	

The game law also provides for the extended Spring hunting licenses in the archipelagos by forming so-called water-bird protection associations. About thirty of these have been formed in different parishes along the coast of southern Finland. Permission for extended spring hunting is granted comparatively rarely, and the Ministry of Agriculture has proposed the formation of game-reservations in the areas belonging to the associations as breeding-grounds for water-birds and as a protection for migratory birds.

The archipelago of Ahvenanmaa (Åland) has its own game legislation, and game-preservation measures are vested in the Provincial Government. One of the most material exceptions to the new State game law are the fairly extensive spring hunting rights and the lack of the game-preservation associations and system of hunting licences.

### Literature.

MELA & KIVIRIKKO: Suomen luurankoiset 1909.

KOLTHOFF & JÄGERSKIÖLD: Nordens fåglar (2th edition) 1911—19.

KUJALA, V.: Suurriistan esiintymisestä Suomessa v. 1930. Luonnon Ystävä N:o 1 1931.

Shorter notices in following periodicals, printed in Finland:

*Memor. of Soc. pro Fauna & Flora Fennica, Luonnon Ystävä, Metsästys ja Kalastus, Finlands Jakt- och Fisketidskrift, Finnish statistical Yearbook, Atlas of Finland, — Material collected for Game section in Ministry of Agriculture during 1934—1936.*

## Suomen riista- ja metsästysolot.

Suomella on edelleenkin luontaisia edellytyksiä kehittyä uudelleen sellaiseksi riistariikkaaksi maaksi, jollaisena se esiintyy vieläkin ulkomaalaisten tietoisuudessa. Verraten harva asutus ja maan sijaitseminen ilmastollisesti, geologisesti, kasvistollisesti ja eläinmaantieteellisesti Itä-Euroopan ja Skandinavian välisenä välittävänä kannasmaana tarjoaa riistaeläimistölle ja sen levinneisyydelle varsin paljon etuja. Erityisesti on tämä huomattavissa turkisriistamme lajirunsaudessa ja sen laadun tunnistetussa hyvydessä. Mutta myöskin riistalinnusto ja sen levinneisyys on varsinkin biologis-ekologisesti mielenkiintoa tarjoavaa. Suomen sijainti yli 10 leveysasteen ulottuvana varsin erilaisia ilmastollisia ja kasvillisuusalueita sisältävänä pitkänomaisena alueena antaa sille erityistä biologista merkitystä siinä, että tällä alueella monen eteläisen riistaeläimen pohjoisraja ja arktisten lajien eteläraja antaa perusteita varsin erilaisten riistavyöhykkeitten muodostumiselle. Häiritsevänä tekijänä on kuitenkin mainittava varsin innokas metsästyks ja riistanpyynti, mitkä ovat saaneet monen lajin joko kokonaan sukupuuttoon hävitetyksi tai ainakin vähentäneet niitä tuntuvasti. Kuitenkin on metsästyksen intensiteetti melko tasaista kautta maan, joten varsinkin pienriista tulee täten varsin tasaisesti vähennetyksi kautta koko alueen. Koska juuri pienriistan esiintymissuhteet on sopivin peruste riista-alueitten jaoittelemiselle, saammekin maamme riistavyöhykkeille varsin luonnollisen pohjan. Siinä on silmiinpistävää yhtäläisyyttä erityisesti kasvistollisten jaoittelujen, kasvimaantieteellisten ja viljavuusalueitten kanssa.

Maassa esiintyy useita sellaisia lajeja, joiden esiintymistiheys on siksi tasaista suurimmassa osassa maata, että voimme pitää sitä yleisriistana. Metsäjänis, orava, kettu, kärppä ja nykyään leviämisaletaan yhä laajentava uusi tulokas piisamimyrrä ovat tällaisia lajeja. Muuttolintujen joukossa esiintyvät yleisriistana mm. sinisorsa, tavi, jouhisorsa, telkkä, haapana, ja narskulajit. Metsälinnuista on teeri levinnyt varsin tasaisesti pohjoisimman tunturialueen eteläpuolelle, ollen sen yleisyysmäärä 20—30 % metsälinnuista lääneittäin laskettuna. Muiden metsälintujen, kuten metson, pyyn ja riekon esiintyminen on vyöhykkeittäin vaihtelevaa, joten tässä kirjoituksessa esitetystä vyöhykejaossa onkin pidetty näiden ja teeren esiintymistiheyden välistä suhdetta, eri vyöhykkeissä tunnusmerkkinä.

Viljelysaluettien laajuus ja asutuksen tiheys vaikuttavat yhdessä varsin huomattavassa määrin riistaeläimistön laatuun maamme eri seuduilla. Kuten seuraavassa tulemme huomaamaan, on myöskin tällä seikalla vaikutusta riistavyöhykkeitten muodostumiseen.

Riistaeläimistön suhtautumisessa viljelykseen voidaan eroittaa kahta eri päätyyppiä eläimiä, viljelyspakoisia ja viljelyshakuisia riistaeläimiä. Edellisistä ovat esimerkkeinä riekko I. metsäkana, metso ja pyy; nisäkkäistä suuret petoeläimemme ja näätä sekä

jossain määrin metsäjänis. Viljelyshakuisia ovat taasen selvästi rusakkojänis ja hilleri, siis maaehme viljelyksen mukana levinneet kaakkoiset tulokkaat, samoin kuin edellisiä vanhempi tulokas, peltopyy.

Asutuksen tiheyden ja olojen kehittyneisyyden suojaavaa vaikutusta liiallista tuho- metsästykseltä vastaan osoittaa runsaan hirvikannan muodostuminen maamme vanhimille viljelysseuduille: Uudenmaan, Turun ja Porin sekä Hämeen läänin. Toisaalta on asutus karkoittanut muun suurriistan etäisten kivelöitten asukeiksi.

Useilla metsänhoidollisilla toimenpiteillä on varsin huomattava vaikutus riistakannan elinehtoihin. Liiallisuuteen pyrkivä harvennus ja aluskasvillisuudesta vapauttaminen, mitkä raivaustoimenpiteet vielä takavuotina pyrkivät muuttamaan metsiämme puistomaisiksi, ovat useimmille riistaeläimille epäedullisia ja karkoittavat ne liiaksi raivatuilta alueilta. Sensijaan hakkausalueet saavat jo muutaman vuoden kuluttua riistakantansa takaisin, kun runsaasta jälkikasvusta on pidetty huolta ja alueelle on muodostunut sopivaa tiheähköä nuorennosta.

Tarkempia tietoja ei meillä vielä ole eri riistalajien viihtyvyydestä erilaista aluskasvillisuutta sisältävillä alueilla, mutta yleisenä piirteenä voidaan mainita, että metso ja riekko elävät mielellään kaikkein karuimmilla seuduilla, edellinen suurissa havumetsissä ja usein, samoin kuin riekkokin, soitten ja rämeitten reunamilla. Pyy hakeutuu rehevampiin laaksoihin ja lehtimetsiin. Teeri on tyypillinen sekametsien asukas, vaikkakin se on elinehdoiltaan kaikkein mukautuin metsälinnuistamme.

Liiallinen metsästyks on muuttanut riistan tiheysuhteita miltei kautta koko Suomen. Metsästäjien lukumäärän ja saadun riistasaaliin perusteella laskettuna on kuitenkin metsälinnuista teeren esiintymistiheys melko tasaista eri lääneissä, vaihdellen pinta-alan suuruus, jolta 10 teertä on ammuttu, noin 6—9 km<sup>2</sup> välillä muissa lääneissä paitsi Oulun läänissä. Siellä käy se teeren levinneisyyden pohjoisrajalla luonnollisesti yhä suuremmaksi.

Kirjoituksessa on käytetty riistaeläimistön lajikokoomusta ja runsaussuhteita vertailevasti esittämään ns. *teeriyksikkömenetelmää*, jolla tarkoitetaan sitä, että teerisaaliin suuruuteen verrataan samansuuruiselta pinta-alalta pyydettyjen muiden riistalajien saaliin suuruutta. Tällöin on tietysti edellytettävä, ettei metsästyksen intensiteetissä ole suurempia eroja eri alueilla. Juuri teerisaaliin samoin kuin jänissaaliinkin suuruuden tasaisuus osoittaa, että näin on asianlaita. Samoin edellämaintulla tavalla laaditut metson pyyn, riekon ja peltopyyn levinneisyyttä näyttävät kartat osoittavat, että näiden levinneisyydessä on varsin suurta säännönmukaisuutta huomattavissa, ja että näiden esiintymisvyöhykkeet käyvät pääpiirteissään yhteen sekä ilmastollisten että kasvistollisten tekijäin kanssa. Varsinkin viljavuusalueittain laskettuna on riistavyöhykkeitten riistamäärissä ja riistaeläinten levinneisyydessä selviä yhtymäkohtia. Eteläisempien riistavyöhykkeitten rajat käyvät jyrkemmin ja pohjoisten loivemmin luoteesta kaakkoon, kuten muutkin luontaisrajat, esim. keskilämpökäyrät, kasvillisuusalueitten ja viljavuusalueitten pohjois-etelärajat, viljelyskasvien levinneisyyden pohjoisrajat, lintujen pesintäaikakäyrät jne.

Luontaisten tekijäin joukkoon, jotka vaikuttavat riistaeläimistön kokoonpanoon, on myöskin laskettava vesistöalueitten ja yhtenäisten kuivamaa-alueitten väliset pinta-alasuhteet, samoin kuin vesistöjen rehevyysuhteet eri puolilla maata. Maamme eteläisissä ja läntisissä osissa esiintyy runsaammin reheviä eutroofisia vesistöjä, jotka ovat vesilinturikkaampia sekä lajien lukuun että vesilintujen paljouteen nähden. Vesilintujen joukossa on rehevillä alueilla varsinaisten sorsalintujen lukuisuus silmään-

pistävä, kun sensijaan karuimmissa vesistöissä vallitsevat sukeltajasorsat ja koskelot. Viimeksimainitut ovat myöskin selkävesien vallitsevana riistalinnustona.

Kuten kirjoituksessa olevista kartoista näkyy, voidaan maassamme sopivasti eroittaa kuusi riistavyöhykettä, jotka taasen paikallisten erikoispiirteittensä mukaan voidaan jakaa luontaisiin riista-alueisiin. Riistavyöhykkeet, jotka tässä tutkimuksessa on haluttu eroittaa, ovat:

1) *riekko-kiirunavyöhyke* pohjoisimpana. Siihen liitetään Jäämeren rannikko erikoispiirteisenä alueena, jolla on tyypillinen, arktinen leima;

2) *pohjoinen metsälintuavyöhyke* Peräpohjolan, Kainuun ja Lapin havumetsäalueen yhteisten pääriistalajien lukuisuussuhteitten mukaan erotettuna;

3) *Keski-Suomen metsälintuavyöhyke*, jossa on runsaimmin paikallisia erikoispiirteitä, mutta yhdistävänä seikkana on tällä alueella metso/teeri-suhteen samankaltaisuus sekä pyyn säännöllisen levinneisyyden länsi- ja etelärajan sijainti;

4) *Raja-Karjalan suurriistavyöhyke* on erityisesti tyypillinen erämaaluonteensa ja suurriistan runsaamman esiintymisen vuoksi, johon vaikuttaa myöskin suuressa määrin rajan yli Venäjän puolelta tuleva riistamäärä; peltopyyn, rusakon ja hillerin miltei täydellinen puuttuminen sen eteläisestä sijainnista huolimatta osoittaa niinkään tämän vyöhykkeen erikoisleimaa;

5) *Viljelysalueen riistavyöhyke* on selvästi köyhempää viljelyspakoista eläinlajeista edellisiin vyöhykkeisiin verrattuna; metso ja pyy sekä ennenkaikkea riekko alkaa vähentyä suuresti tällä vyöhykkeellä ja rusakkojänis sekä hilleri yhdessä peltopyyn kanssa korostavat alueen viljelysvaltaisuutta; kuitenkin vaihtelevat riistalajien esiintymissuhteet siinä määrin, että alueella on välttämätöntä eroittaa useita eri riista-alueita;

6) *Lounais-eteläinen riistavyöhyke* on kadottanut miltei tykkänään luontaisen leimansa maamme erämaa-takamaaseutuihin verrattuna. Metso ja pyy esiintyvät vain satunnaisina vaeltajina tällä alueella ollen ainoastaan poikkeustapauksissa pesivänä riistana siellä tavattavissa. Eri alueena tässävyöhykkeessä esiintyy Saaristo-Suomi. Yleensä koko tätä riistavyöhykettä vastaa ns. tammivyöhyke kasvillisuuden vyöhyke-jaossa. Riistamäärän runsaus on melkoinen maan muihin osiin verrattuna.

Useimmissa paikoin soveltuvat viljelysalueitten rajat yhteen edellämainittujen riistavyöhykkeitten ja niiden alajaoituksien riista-alueitten kanssa. Yleensä on niillä seuduilla, missä alkuperäinen riistaeläimistö ts. viljelyspakoiset riistalajit ovat runsaimmin edustettuna, kuten Keski-, Itä- ja Pohjois-Suomessa, siellä on viljelykseen sopivaa ja siihen otettua maata vähimmin, nousten esim. peltoalan osa keskimäärin alle 2.5 % koko maa-alasta vastaten viljelysalueitten riistavyöhykkeitten osalta aina 20 % koko maa-alasta. Onkin varsin luonnollista, että riistaeläimistöllä on oma leimansa varsinaisilla viljelysalueilla.

*Metsästyksen elinkeinollinen merkitys* on säilynyt puhtaimpana Lapin, Peräpohjolan ja Kainuun laajoilla selkosilla, jossa mm. ansa- ja loukkupyynnin säilyttäminen tekee ammattimaisen metsästyksen mahdolliseksi. Osittain myöskin Itä-Suomen rajakiveliöissä on metsästyksellä vielä elinkeinollista merkitystä, samoin kuin paikoin Keski-Suomen vedenjakajaseutujen harvaan asutuilla takamilla.

Elinkeinollinen metsästyksen on ollut varsin järjestymätöntä ja ryöstömetsästyksen luontoista, joten sen kannattavuuden suurimpana uhkana on tiheydeltään yhä vähenävä riistakanta. Turkisriistan vähentymistä osoittaa vuodesta 1880 lähtien laadittu kaatomääriä näyttävä taulukko I. Siinä on esitetty järjestyksessä karhun, suden,

ilveksen, ketun, ahman ja saukon kaatomäärät. Oravaa ei nähtävästi ole nykyisin vielä mahdollista saada säilymään ilman aika ajoin tapahtuvaa rauhoitusta. Lupaavin ammattimaisen metsästyksen kohde, jolla Etelä-Suomen rehevissä, eutroofisissa vesistöissä on ehken parhaat viihtymismahdollisuudet, on uusin, ensikerran v. 1922 istutettu riistaeläimemme, piisamimyyrä. Sen vuotuisen saaliin suuruus on oussut jo lähes 200,000 kpl:seen. Riistalintujen vientiarvo nousee noin 3—5 miljoonaan markkaan vuodessa.

Taulukko II esittää tärkeimpien pienriistaeläinten pyyntimääriä vv. 1933—34 metsästyskaudella, jolloin riistalla oli yleensä suotuisa lisääntymisvuosi ja se oli taudista varsin vapaata verrattuna edellisiin ja sen jälkeisiin vuosiin. Taulukossa on esitetty järjestyksessä lääneittäin teeren, metson, riekon, pyyn, peltopyyn, sorsalintujen, jäniksen, ketun, saukon, karpän ja mäyrän pyyntimäärät. Taulukossa III on laskettu edellämainituissa teeriyksiköissä pienriistalajien yleisyys eri lääneissä.

Metsästyksen vuotuinen tuotto nousee maassamme noin 30—40 miljoonaan markkaan, edustaen siis lähes miljardin markan suuruisen pääoman vuotuisuuskorkoa.

Metsästyksen ja riistatalouden kanssa läheisessä yhteydessä ovat seuraavat valtion vuotuisesti suorittamat menoerät. Petoeläinten tapporahoja suoritetaan noin 450,000 markkaa, joista  $\frac{9}{10}$  menee hylkeen tapporahoihin. Hylkeestä maksetaan 50 mk., karhusta, sudesta ja ahmasta 500 mk. tapporahaa. Karhujen kotieläimille tekemistä vahingoista suoritetaan noin 100,000 mk. korvausta vuodessa. Hirvien kasvavalle viljalle, korjatuille eloille ja rehuille tekemistä vahingoista on maksettu vuosittain noin 400,000 mk. korvausta.

Viimeisissä luvuissa selostetaan metsästyksen valvonnan ja riistanhoidon edistämistoimenpiteitä. Metsästäjien lukumäärä oli v. 1936 yli 74,000 henkilöä. Taulukko IV esittää metsästäjäluvun jakautumista eri läänien osalle, metsästäjäin prosenttimäärää koko väestöstä lääneittäin ja keskimäärin yhtä metsästäjää kohti tulevaa kuivan maan pinta-alaa. Taulukossa V on lueteltu meidän hyötyriistalajimme ja niiden rauhoitusajat.

### **Publications of the Society of Forestry in Suomi:**

**ACTA FORESTALIA FENNICA.** Contains scientific treatises dealing with forestry in Suomi (Finland) and its foundations. The volumes, which appear at irregular intervals, generally contain several treatises.

**SILVA FENNICA.** Contains essays and short investigations in the subject of forestry in Suomi. Published at irregular intervals. Each essay appears as a separate volume.

**COMMENTATIONES FORESTALES.** Contains investigations and other essays regarding forestry and other spheres connected with it in other countries than Suomi. Published at irregular intervals. Each volume generally contains only one treatise.

### **Die Veröffentlichungsreihen der Forstwissenschaftlichen Gesellschaft in Suomi:**

**ACTA FORESTALIA FENNICA.** Enthalten wissenschaftliche Untersuchungen über die finnische Waldwirtschaft und ihre Grundlagen. Sie erscheinen in unregelmässigen Abständen in Bänden, von denen jeder im allgemeinen mehrere Untersuchungen enthält.

**SILVA FENNICA.** Diese Veröffentlichungsreihe enthält Aufsätze und kleinere Untersuchungen zur Waldwirtschaft Suomis (Finnlands). Sie erscheint in unregelmässigen Abständen. Jeder Aufsatz erscheint als besonderer Band.

**COMMENTATIONES FORESTALES.** Enthalten Untersuchungen und Beiträge zur Waldwirtschaft und damit zusammenhängenden Fragen für andere Länder als Suomi. Sie erscheinen in unregelmässigen Abständen. Jeder Band enthält im allgemeinen nur eine Untersuchung.

### **Publications de la Société forestière de Suomi:**

**ACTA FORESTALIA FENNICA.** Contient des études scientifiques sur l'économie forestière en Suomi (Finlande) et sur ses bases. Paraît à intervalles irréguliers en volumes dont chacun contient en général plusieurs études.

**SILVA FENNICA.** Contient des articles et de petites études sur l'économie forestière de Suomi. Paraît à intervalles irréguliers. Chaque article constitue habituellement un volume.

**COMMENTATIONES FORESTALES.** Contient des études et des articles sur l'économie forestière et les branches connexes dans les pays autres que Suomi. Paraît à intervalles irréguliers. En général, chaque volume ne contient qu'une étude.