

4.3.2024

Report of Raccoon Dog management in Finland for 2023

The Goal for 2023 in Finland was to continue the Actions of MIRDINEC LIFE project to prevent further invasion of Raccoon Dogs to Sweden and Norway.

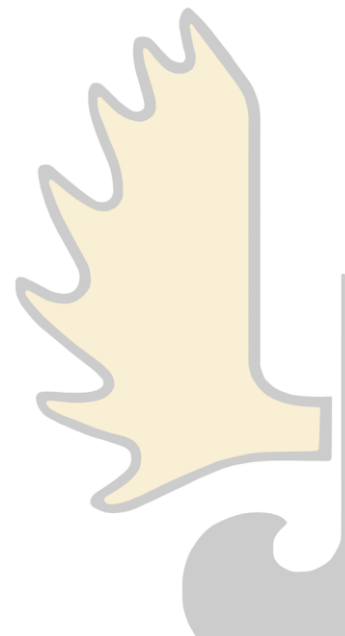
In Finland the following activities were carried out following the project working plan with practical adaptations where needed.

- Continued co-operative management and information activities with volunteer hunters
- Continue the use of monitoring cameras/early warning system EWS and develop the method to allow for rapid response from local voluntary hunters
- Continue the use of Judas animals and develop the method to be more cost effective
- Information about IAS and dissemination of project results
- Legal permissions to allow effective eradication of Raccoon Dogs

The legal context of the Raccoon Dog was changed from game species to an invasive species in 2019, in alignment with the Finnish management plan of the raccoon dog which was produced during the LIFE project.

The project activities were carried out in

1. Lapland, focus areas
 - Tornio River Valley
 - Bothnian Sea coast
 - Inland Raccoon Dog population hotspots
 - Areas of Oulu / Northern Ostrobothnia areas which are adjacent to Lapland and relevant for management from the project perspective.
2. Kvarken area, focus
 - Korsholm archipelago, to decrease the risk of invasion through this potential corridor.
 - especially Valsörarna
3. In South-west archipelago preventing the Raccoon Dog to disperse to Åland supporting effective management in Åland Islands, focus areas
 - Kustavi, Iniö, Keistiö, Houtskari, Korppoo





Working areas

General overview and Raccoon Dog (RD) harvest

Northern Finland, Lapland and Oulu

Juha Mäkimartti implements project activities in Lapland and adjacent areas in Oulu as external contractor for 2017-2024. The annual level of service depends on available funding.

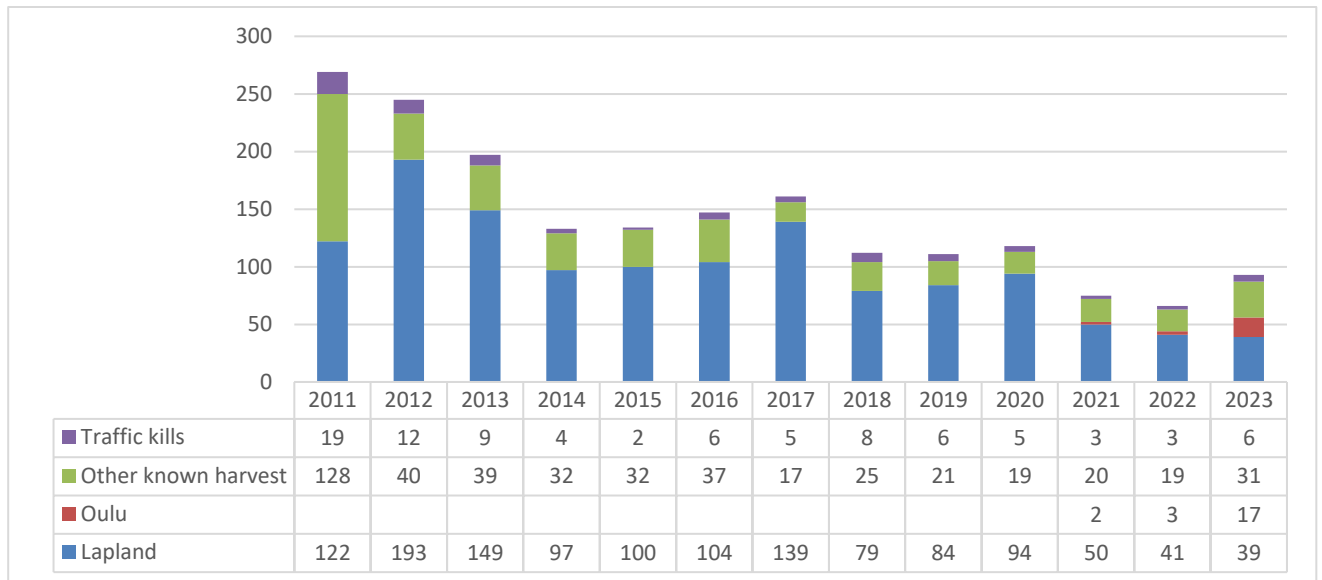
During 2023 the project achieved the set objectives and succeeded to manage the RD population in the Finnish Lapland. The harvest by the project in Lapland has been at all-time low during 2023. The project harvest numbers are declining as the area effectively covered by project has been increasing in Lapland. As described by Mäkimartti, *“the management front has been pushed down to Oulu River level”*. The messages from hunters on observed or caught Raccoon Dogs in Lapland reflect a clear and continued decrease compared to numbers in 2011-2012. Co-operation with the HELMI-IAS project operating on selected SPA bird areas is successful and strengthens overall impact in Northern Finland.

The non-scientific ‘fox index’ indicates that work has been successful and relative proportion of Raccoon Dogs in project traps has continuously decreased while the know-how and number of traps has increased. Number of foxes in the project traps indicate that traps are functioning well.

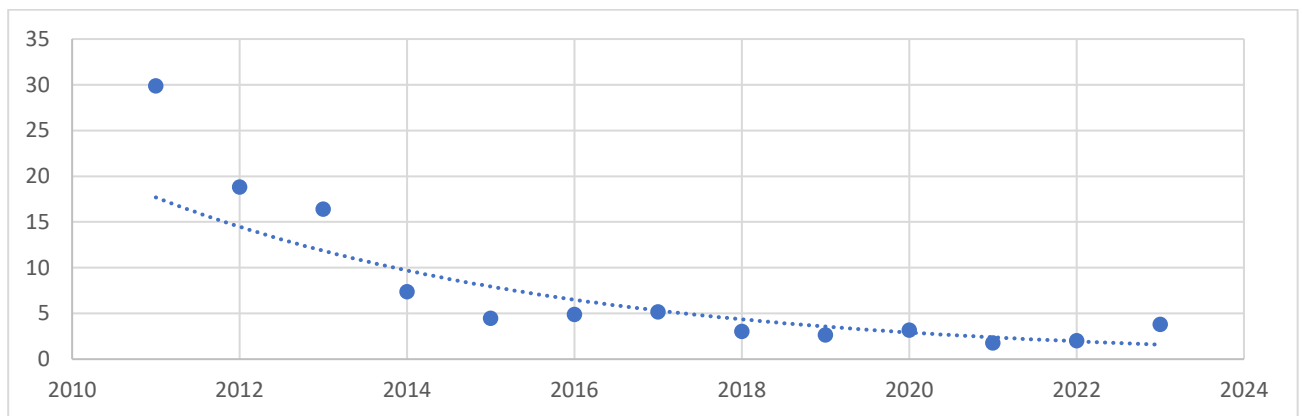
In Lapland, the Raccoon Dog harvest by project staff and involved voluntary hunters was 39 animals. In addition, project staff has received information of 31 RD killed by other hunters and of 6 traffic kills. Total Raccoon Dog mortality known by the project in Lapland was 76 individuals.

Compared to 2022 the number of Raccoon Dogs outside of project framework and traffic kills increased. Also the ‘fox index’ indicates that relative abundance of Raccoon Dogs is slightly higher than in previous years, while in general at comparable low level.

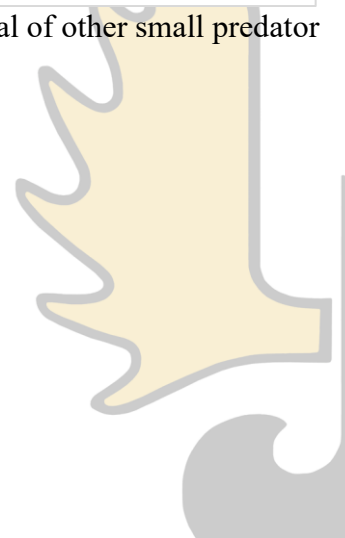
In addition the project recorded 17 Raccoon Dogs culled by project activities in Oulu region.



Development of known total harvest and trend and Raccoon Dogs culled in Northern Finland within the project framework.



The ‘fox index’ development. Number of caught Raccoon Dog per individual of other small predator in project activities.



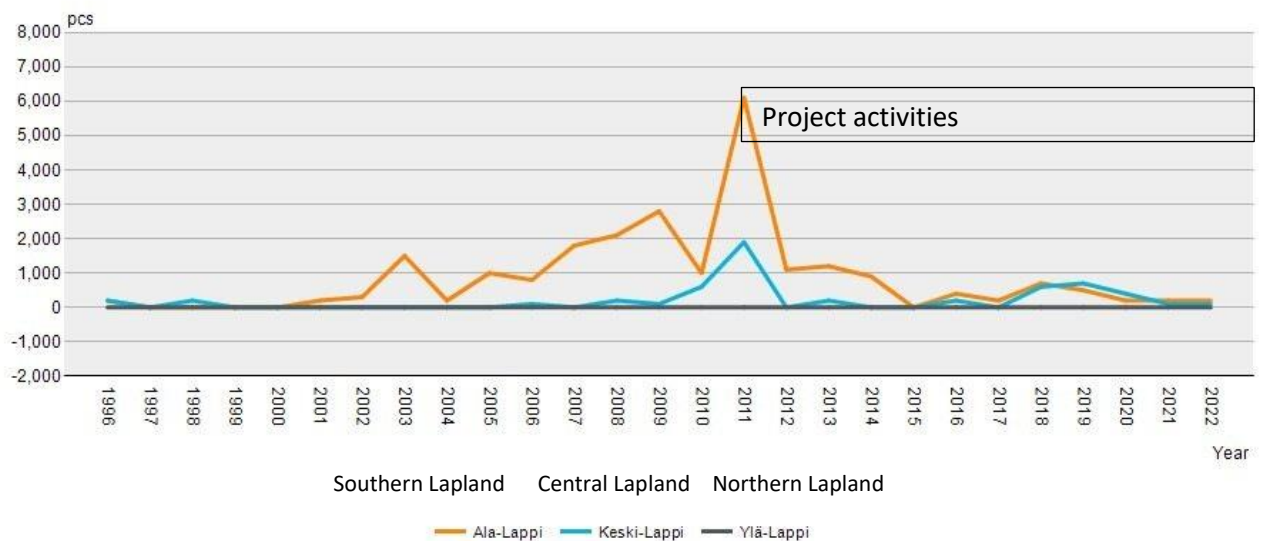
Raccoon Dog harvest of the project in Northern Finland

MIRDINEC After LIFE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
January	0	0	0	3	2	4		5	1	2	4	0	0
February	6	4	0	10	4	8	20	3	1	4	0	2	6
March	27	40	10	9	2	10		5	6	12	3	5	3
April	2	22	23	4	9	12	12	9	6	12	3	0	4
May	1	9	14	3	4	12	14	2	7	5	4	0	0
June	8	15	0	3	7	8	7	16	17	2	13	16	1
July	4	7	15	1	17	11	20	0	0	1	0	2	16
August	17	8	9	5	10	12	13	2	8	12	1	1	2
September	22	27	17	14	16	13	15	18	14	15	7	5	6
October	24	33	28	27	19	8	30	13	15	15	10	9	13
November	5	26	30	15	7	4	8	4	9	8	4	4	5
December	6	2	3	3	3	2	0	2	0	6	3	0	0
Total project	122	193	149	97	100	104	139	79	84	94	52	44	56
in Oulu region											2	3	17
in Lapland	122	193	149	97	100	104	139	79	84	94	50	41	39
Other known harvest, Lapland	128	40	39	32	32	37	17	25	21	19	20	19	31
Traffic kills, Lapland	19	12	9	4	2	6	5	8	6	5	3	3	6
Total removed Raccoon Dogs Lapland	269	245	197	133	134	147	161	112	111	118	73	63	76
Total removed Raccoon Dogs Lapland + Oulu in project framework	269	245	197	133	134	147	161	112	111	118	75	66	93
Other small predators, Lapland	9	13	12	18	30	30	31	37	42	37	41	31	20
Fox	3	5	6	12	14	15	17	11	23	21	25	20	14
Badger	5	6	4	3	10	6	4	11	9	9	7	3	2
Mink		2	1		2	3	4	4	4	3	2	4	1
Pine marten, Stoat	1		1	3	4	6	6	11	6	4	7	4	3

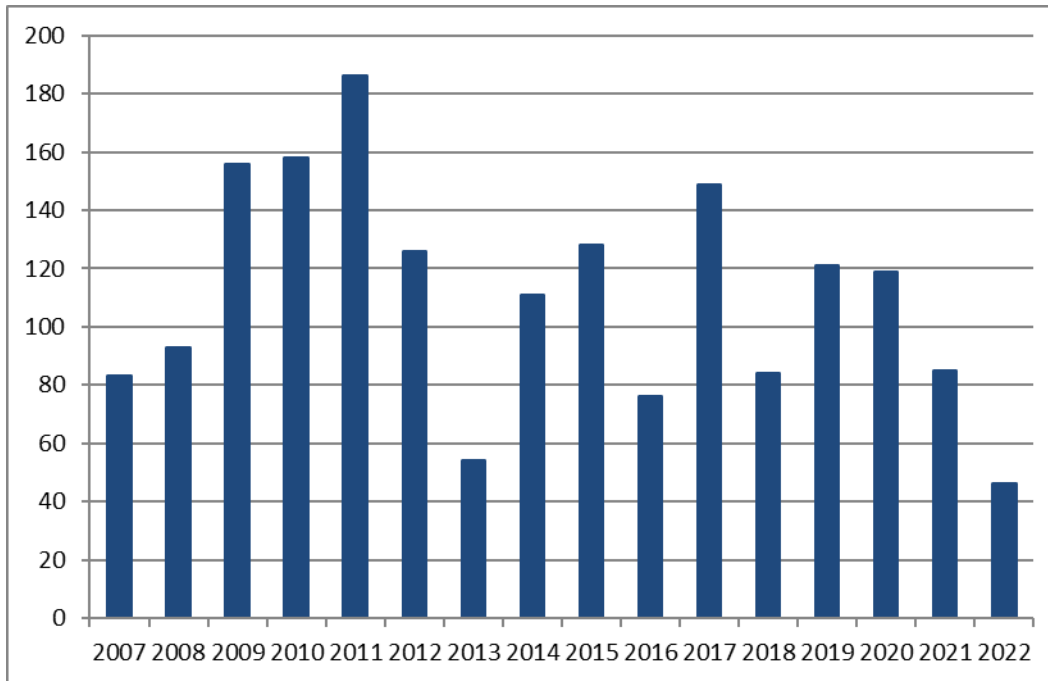
The official game bag statistics is based on hunter questionnaire with relatively small sample size. The official statistics in Lapland can be used as an index reflecting large-scale changes in the Raccoon Dog harvest development.

At large the Raccoon Dog population and harvest increased until 2011, when record harvest, thanks to project activities, lead to significant decline of the population and the harvest.

Game bag by Area and Year. Raccoon dog.



Raccoon Dog harvest in Lapland until 2021 based on official statistics. <http://stat.luke.fi/en/>. 2022 estimates will be available in summer of 2023. Data should be interpreted as an index of population development.



Local Game Management Association organize annual small predator hunting competitions. Raccoon Dogs reported to small predator hunting competitions of Game Management Associations in Lapland. In 2007 four associations provided data and 2021 data is from 14 associations. 2023 data is available in spring 2024. This is non-scientific casual data providing an additional insight to Raccoon Dog population and harvest development.

Valsörarna, Kvarken area.

The Kvarken area, Korsholm Archipelago, and Valsörarna in particular, is a focus area since 2018. Co-operation is established with all four hunting associations in Korsholm Archipelago. Network of solar-powered scout cameras, baiting sites and live traps are operative throughout the area along with volunteer hunters using trained dogs. In 2022 and 2023 thermal cameras, which can also be used as a sight, was provided to Björköby and Norra Vallgrund hunting clubs. These devices help local hunters to locate Raccoon Dogs.

In addition to voluntary management a group of local hunters with hunting dogs were planned to be contracted to carry out professional level Raccoon Dog eradication in Valsörarna and adjacent islands. Unfortunately, this did not realize during 2022 and 2023 due to several underlying reasons at local level. Among the challenges during 2022 was presence of wolves in the outer archipelago, which affected the use of hunting dogs in the key areas. In 2023 the wolves were not present in the area, and effective management with the hunting dogs was again possible. There were no Raccoon Dog observations in the Valsörarna.

Total Raccoon Dog harvest in archipelago is provided in table below, divided to areas of four hunting associations. Total harvest increased from 120 to 210 Raccoon Dogs. Changes are probably due to some active hunters who have increased their activities and caught more Raccoon Dogs and accompanied by Raccoon Dog populations increase during period of wolves in the area.

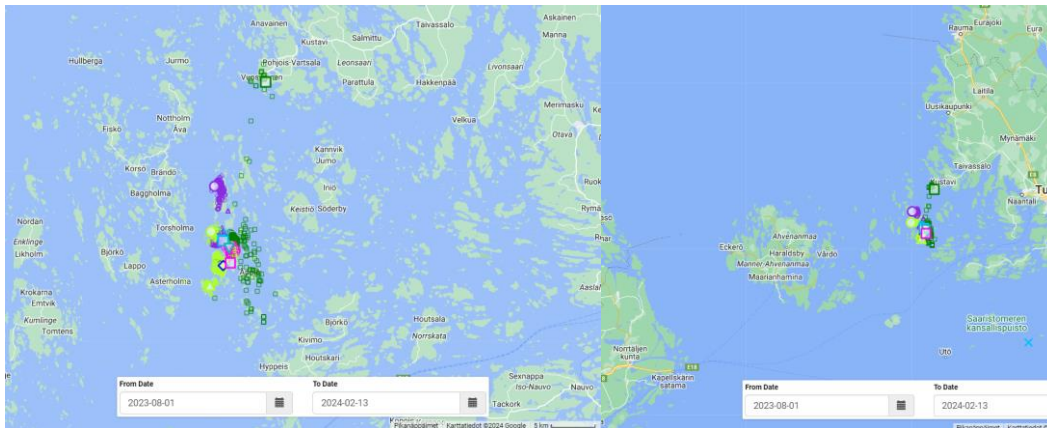
Village/hunting area	2018	2019	2020	2021	2022	2023
1 Björköby	44	50	31	13	23	52
2 Norra Vallgrund	34	25	38	28	33	85
3 Replot	27	29	29	18	35	33
4 Södra Vallgrund	25	33	14	36	29	40
TOTAL	130	137	112	95	120	210



Åland Access

In the Åland Access area the project activities were continued in close co-operation with parallel projects in the South-West Archipelago. Responsible association (SLHSY/Tommy Arfman) continued to build the co-operation with the local hunting association, building up the effective working model. Year 2023 was a big step ahead in building a network of local co-operation in the management area.

Three trips were made to the management area for assembling and checking of the GPS collars for the raccoon dogs in the area. Altogether nine different individuals were marked with GPS-collars in the Iniö area. four of them were juvenile (2 females and 2 males) and four were adults (4 males and one female). At the autumn and early winter (September-December) 2023 thermal drone was tested for the mapping of the raccoon dog occurrence in the reed beds of management area. During this testing videos were recorded to map raccoon dog occurrence in the reed beds and also as a purpose to see how hunting dogs and raccoon dogs behave in the hunting situation in this tricky environment. At the same occasion some of the gps-collared young individuals were removed and new adult individuals were adjusted with GPS-collars. At the end of the year 2023 five GPS-collared animal remain in the area. There is heavy ice cover and animals have started to use ice for dispersing. One collar has stopped sending signal and one animal has probably drowned to channel opened up by ice-breaking vessel. One young individual has dispersed over 30 km to north and two old males remain in their established home ranges.

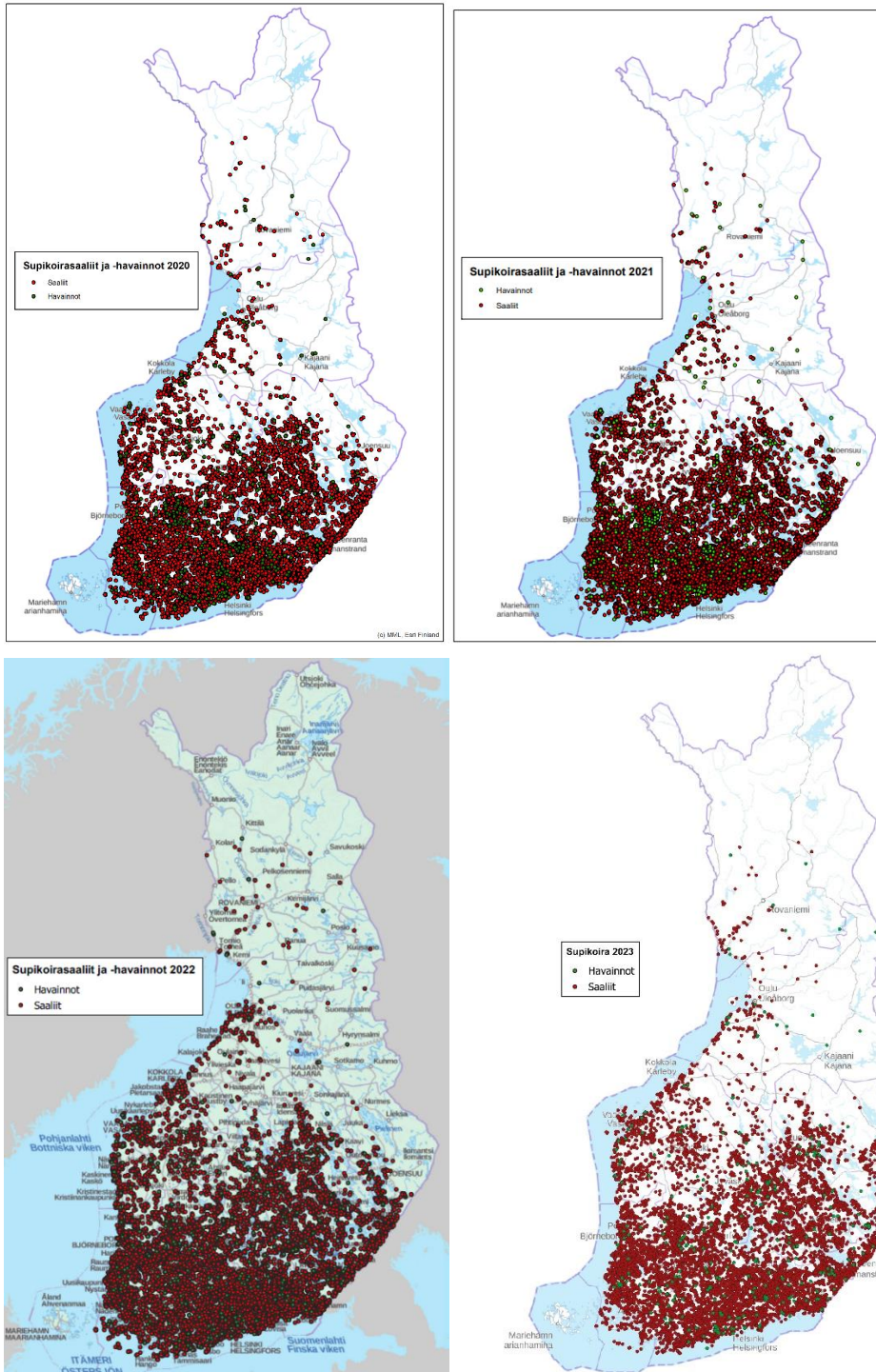


Collared raccoon dogs (nine individuals) in the south-western archipelago of Finland

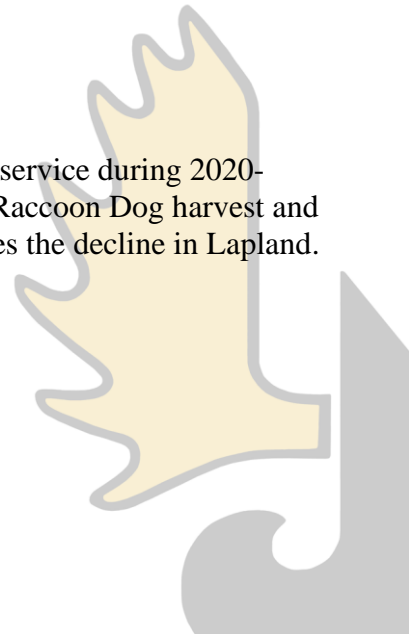
In the end of the year 2023 many new contacts with the local hunting clubs and landowners were established. In the island of Nåtö feeding station with game camera surveillance was also set up. Local landowner has promised to manage the station. Feeding station is tested as a “magnet” to gather dispersing raccoon dogs for easy removal operations. Four individuals were removed from the station with dogs in November 2023. More stations are planned to put in the area. Funding that was applied (<https://en.itameriprojekti.fi/>) in February 2023 wasn't successful but new funding is applied again to the same activities with improved application on 2024.

Drone testing was very promising. Totally new perspective opened for the fast eradication of Raccoon dogs from the reed beds. Different types of dogs have been tested, (Hounds, retrievers and spitz) for finding hiding raccoon dogs. Drone flights have been done even in the Åland mainland with the local hunters in the dense inland lake reed beds. Testing of the drone will be continued during the early winter 2024 in the search of raccoon dog couples that are preparing to breed next spring.





Raccoon Dog harvests and observations voluntarily recorded in Oma riista -service during 2020–2023. *Havainto* – observation. *Saalis* – harvest. The overall distribution of Raccoon Dog harvest and observations has been relatively stable in recent years, while dataset indicates the decline in Lapland. Maps produced by Ville Hokkanen & Holtti Hakonen.



Continued use of monitoring cameras/early warning system EWS and developing the method to allow rapid response from local voluntary hunters.

Lapland

In South-Western Lapland 20 game cameras were actively used by project staff to follow the RD situation and to assist eradication. In addition, around 40 older, still functioning, cameras were used by voluntary hunters. 10 cameras were in Salla, Eastern border, with no Raccoon Dog observations.

The hunters were also asked to provide picture in a picture lottery and winner gets a 50 € gift card. 50 € gift card was also given to northernmost observation. One picture was received.

<https://metsastajalehti.fi/ajankohtaista/tunnetut-ovat-supikoiran-tiet/>

Kvarken/Valsörarna

Approximately 30 functioning cameras in the area and managed by local hunters.

Continued the use of Judas animals and develop the method to be more cost effective

Lapland

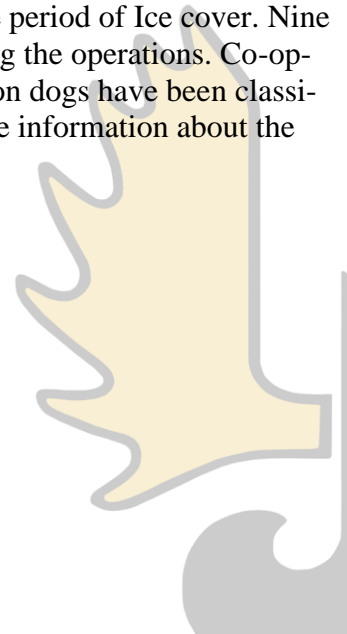
During 2023 there was 35 recorded Judas animal activities in Lapland. The Judas-method has not been used as intensively as before, due to decrease in the number of functioning collars and also Raccoon Dogs to be collared. Re-evaluation of the effectiveness of the method and optimal collars is needed for 2025 onwards.

Kvarken/Valsörarna

No Judas activities during 2023 due to changes in local project conditions. Reactivation of Judas-work is foreseen in 2024, if necessary local commitment is available.

Åland Access

Main goal in the Judas activity is to demonstrate the local people the movements of the raccoon dog in their sensitive archipelago area. Goal is also to map movement during the period of Ice cover. Nine animals were collared and this also resulted for removal of 15 animals during the operations. Co-operation is also done with Turku University and data from the collared raccoon dogs have been classified and sent to further analysis. Purpose is to draft an article that gives more information about the habitat use of raccoon dogs that are inhabiting archipelago areas.



14)

Continued co-operative management and information activities with volunteer hunters

Project continued active working with voluntary hunters. The local people are the key resource for effective Raccoon Dog management in Northern Finland, Kvarken and Åland Access areas.

Lapland

Project recorded 100 working days or events of Raccoon Dog hunting actively involving 327 person-days by volunteer hunters in the project framework.

19 new KaNu traps were set in field, 30 game cameras and 4 trap alarms were relocated to new users.

20 new game cameras were purchased.

30 education or project presentation events with 1349 participants were participated or organized.

Kvarken/Valsörarna

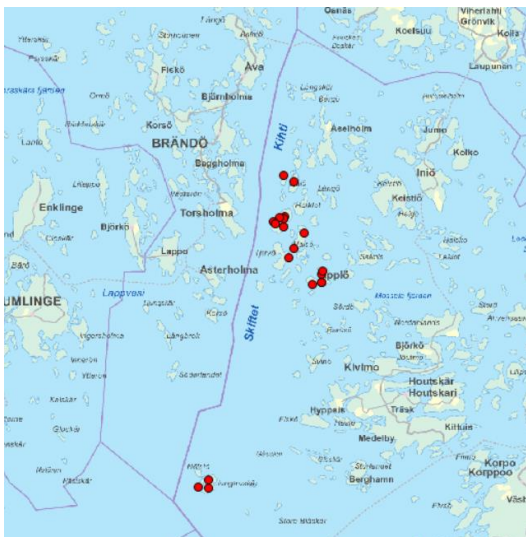
There are some active hunters with dogs in all 4 hunter associations.

The Finnish Wildlife Agency regional office kept regular contact with local hunters and the new thermal sight was provided 2023 for Norra Vallgrund.

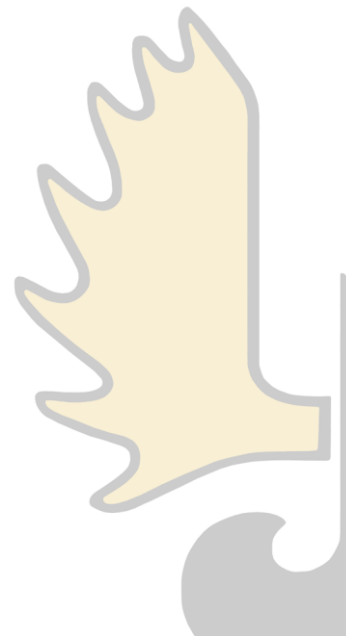
Åland Access

Three separate trips (April-November) were made to the management area of Iniö by the professional hunter of SLHSY and contacts were built up with the local hunters and landowners. New hunting clubs and many landowners have joined the efforts during the year 2023.

Management efforts have also been targeted to the group of islands in the southern Åland/Finland border zone (in the vicinity of Jungfruskär). Altogether 19 raccoon dogs were removed from the area. One new thermal scope was bought for the removal operations at feeding stations.



Removed raccoon dogs in the Management area of Iniö



14)

Gift card –campaign

The idea of Gift-Card campaign was to motivate the hunters to report and return GPS-collars. This is a way to reward active hunters providing animals for collaring and to retrieve the lost collars or to reward hunters who has shown remarkable activity. The planned motivation dinners for hunters were cancelled and resources reallocated to gift cards.

Total of 70 Gift Cards were purchased and delivered as rewards. The campaign has proven successful and raises the awareness amongst hunters and collars has been returning better.

Information about IAS and dissemination of project results

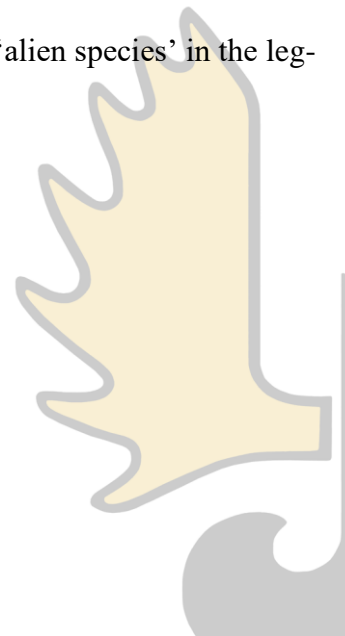
Project was presented in media several times. The project activities were not as actively raised in the channels of the Wildlife Agency as in the previous years due to other IAS management projects with active media work.

SLHSY has founded their own [web pages](#) which present information about the work that is aimed to eradicate raccoon dog and mink from the archipelago areas. Pages have been translated also in Swedish and both Swedish version of the pages will be published early at 2024. SLHSY have also their own [Facebook pages](#). Updates to these pages about the GPS-work, drone searches of raccoon dog, birdlife development and management principals of alien predators have been published during the year 2023 altogether 37 updates have been published on year 2023.

The Finnish Wildlife Agency has a new website for Invasive Alien Predators <https://vieraspeto.fi/sv/>
<https://riista.fi/sv/vilthushallning/verkstallande-av-forvaltningsplanerna/projektet-helmi-frammande-rovdjur/>
<https://www.metsa.fi/tiedotteet/saariston-vieraspetopyynnit-ottavat-edistysaskelia-koko-rannikolla/>
<https://metsastajalehti.fi/ajankohtaista/tunnetut-ovat-supikoiran-tiet/>

Efforts to renew the current legal context of the raccoon dog and its status as an invasive species, in alignment with the Finnish management plan of the raccoon dog, produced during the LIFE project.

The Raccoon Dog, American Mink and other similar species were listed as ‘alien species’ in the legislative change in June 2019 as reported in 2019 report.



Legal permissions

- The project was issued a derogation of Hunting Act for effective working though summer and to use forbidden hunting methods (shooting close to vehicle, snare etc.) for 2021-2024
- Metsähallitus issued permit to use ATV and Snowmobile on state lands and outside of designated trails.
- Project was issued a special permit until 31.12.2024 by Metsähallitus Nature Conservation and the Ministry of the Environment for culling Raccoon Dogs in National Parks and Strict Nature Reserves with some area-specific limitations.
- All key hunting associations have permitted the project to take actions on their hunting areas.
- In Finland Drone is currently legal only for the search of Raccoon dogs. However, Ministry of agriculture and forestry have now began legal work for allowing drone use for tracking of the racoon dog and also for the surveillance of the hunt. This has been greatly influenced by the experiences from the work that has been done with drones in the Åland access during the year 2023.

Costs of Actions and realized funding

The total costs of project Actions in 2023 was 221 469,51 € with balance of + 3 530,49 €. Saving will be forwarded to 2024 budget.

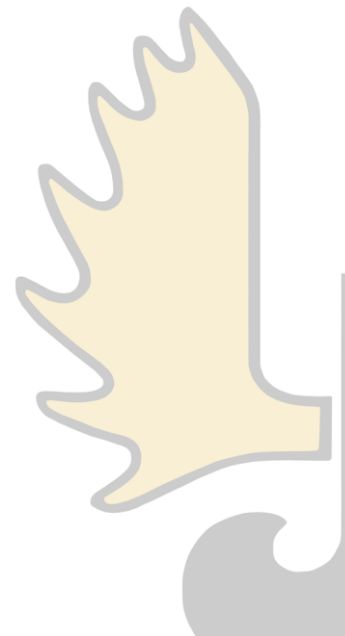
Table 5 Realized costs and funding

Annual costs of Raccoon Dog management in Finland 2023					
	Cost item	€ piece/set	Number needed	Est. total cost	Realized 2023
LAPLAND	1. External assistance, Professional Hunter in Lapland to carry out project activities	8 500	11,5	97 750,00 €	110 756,80 €
	2. Travel costs, estimated total /month	2 000	11,5	23 000,00 €	30 660,34 €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	40	10 000,00 €	7 764,51 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	750	1	750,00 €	
	5. Gift Cards for Judas-animals and good co-operation	50	30	1 500,00 €	2 500,00 €
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	3000	1	3 000,00 €	986,30 €
	7. GPS collars, annual replacement of lost&broke	2000	3	6 000,00 €	
	LAPLAND TOTAL			142 000,00 €	152 667,95 €
KVARKEN	1.2. Part-time external assistance, professional hunters, to carry out focused project activities supporting local volunteer hunters	8500	1	8 500,00 €	- €
	2. Travel costs, estimated total	2000	1	2 000,00 €	- €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	10	2 500,00 €	2 400,00 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	500	1	500,00 €	
	5. Gift Cards for Judas-animals and good co-operation	50	10	500,00 €	500,00 €

14)

	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	1000	1	1 000,00 €	266,38 €
	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	
	KVARKEN TOTAL			19 000,00 €	3 166,38 €
ÅLAND ACCESS	1.2. Part-time external assistance, Professional hunter, to carry out focused project activities supporting local volunteer hunters	8500	0,5	4 250,00 €	6 466,18 €
	2. Travel costs, estimated total per month	3000	0,5	1 500,00 €	
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	10	2 500,00 €	2 250,00 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	500	1	500,00 €	
	5. Gift Cards for Judas-animals and good co-operation	50	5	250,00 €	500,00 €
	6. Batteries, timber, screws etc small items, pre-paid services and collar service Followit for old Finnish collars. Estimated total	1000	1	1 000,00 €	1 817,00 €
	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	4 602,00 €
	ÅLAND ACCESS TOTAL			14 000,00 €	15 635,18 €
	General, Followit service	35 000	1	35 000,00 €	35 000,00 €
	Project administration Finnish Wildlife Agency	5 000	3	15 000,00 €	15 000,00 €
	TOTAL FINLAND			225 000,00 €	221 469,51 €
	Balance, forwarded to 2024 budget				3 530,49 €

ANNUAL Funding	
Finland	
Finnish Wildlife Agency:	85 000
Metsähallitus:	20 000
Sweden:	35 000
Norway:	85 000
TOTAL	225 000



Conclusions

- The Raccoon Dog population of the project area in Lapland has stayed at low level compared to 2011. Raccoon Dogs are present throughout Lapland. North of Arctic Circle the population is small, or almost non-existing, and scattered to small cells. Special attention is needed on South-Western Lapland to keep up with achieved results. Declining Raccoon Dog populations makes it increasingly difficult to motivate voluntary hunters to continue their activities.
- New establishment of Raccoon Dog in Kvarken area, Valsörarna, is under management and the whole Korsholm Archipelago is under project activities by local hunting associations supported by the project. Active motivation and championing are required to keep the motivation of local hunters at a good level.
- Project activities were successfully developed at Åland Access in close collaboration with parallel projects and local hunting associations.
- Project actions have been cost-effective and generally well accepted thanks to hands-on working model that is easy to contact and participate for the local hunters.
- Service contracts were made on the professional level field-work in Lapland (Juha Mäkimartti) and Åland Access (SLHSY). In Kvarken area service contract was not made 2023 due to local circumstances.
- All available means of Raccoon Dog management are needed and different working tools (active hunting, Judas animals, cameras, trapping) together create the frame to control the population.
- New IAS legislation significantly improves the possibilities of regular hunters to carry out effective management.
- Project activities 2025 and onwards will be planned during 2024.

February 28th 2024.

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