

8.3.2023

Report of Raccoon Dog management in Finland for 2022

The Goal for 2022 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.

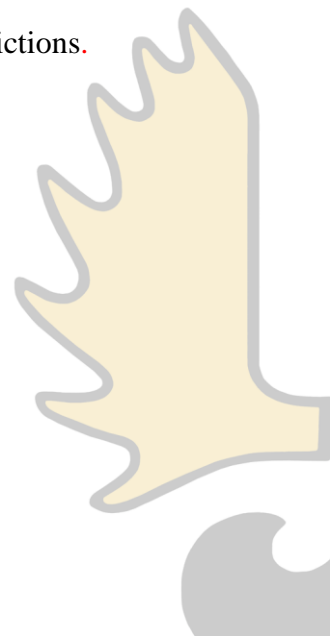
- Continued co-operative management and information activities with volunteer hunters
- Continue the use of monitoring cameras/early warning system EWS and develop the method to allow for rapid response from local voluntary hunters
- Continue the use of Judas animals and develop the method to be more 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
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

The project is recovering from the challenges caused by the COVID19 restrictions.





Working areas

General overview and Raccoon Dog (RD) harvest

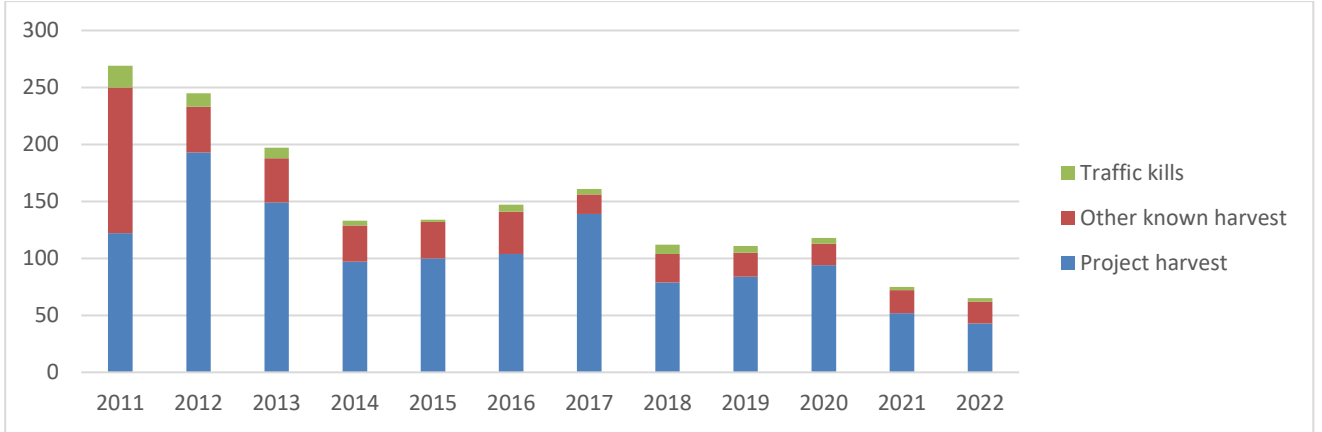
Lapland

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

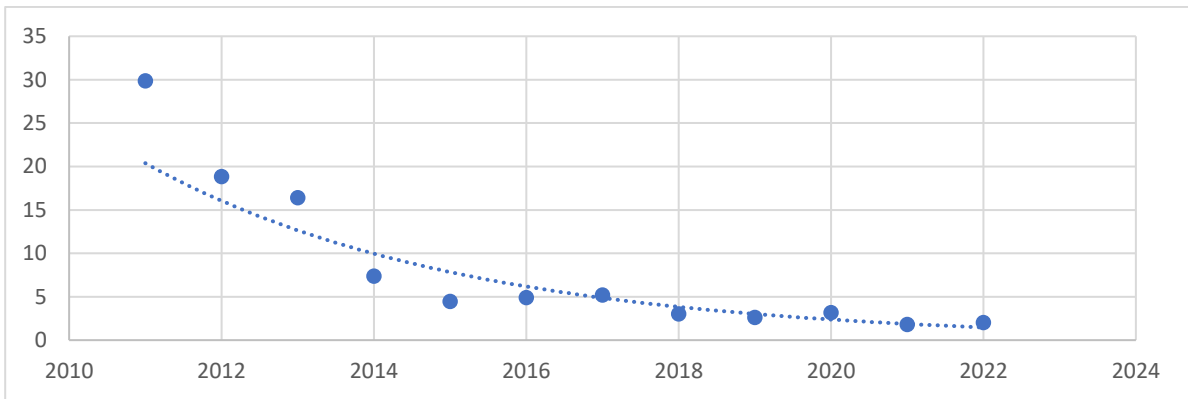
During 2022 the project achieved the set objectives and succeeded to manage the RD population in the Finnish Lapland. The harvest level known by project has been at all-time low 2021 and continued to decline during 2022. Harvest numbers are declining as the area effectively covered by project has been increasing. 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.

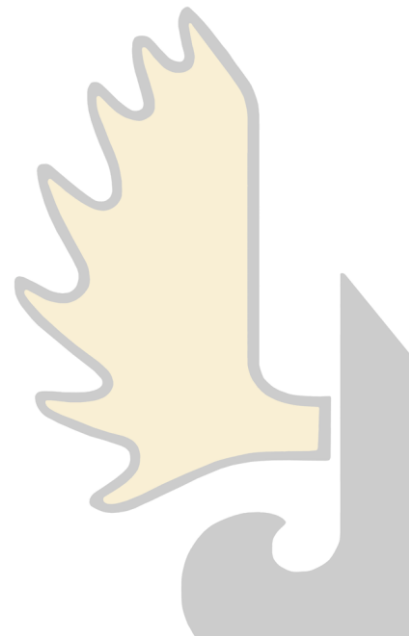
In Lapland, the Raccoon Dog harvest by project staff and involved voluntary hunters was 43 animals. In addition, project staff has received information of 19 RD killed by other hunters and of 3 traffic kills. Total Raccoon Dog mortality known by the project is 65 individuals.



Development of known total harvest and trend and Raccoon Dogs culled within the project framework



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



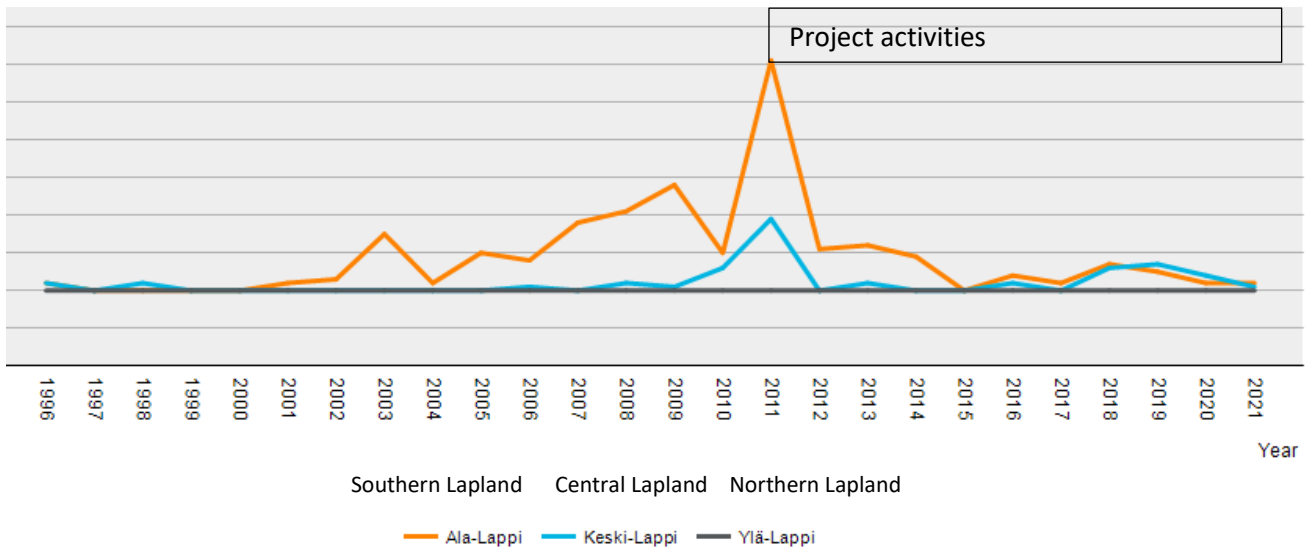
Raccoon Dog harvest of the project in Lapland

Raccoon Dog harvest MIRDINEC After LIFE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
January	0	0	0	3	2	4	20	5	1	2	4	0
February	6	4	0	10	4	8		3	1	4	0	2
March	27	40	10	9	2	10		5	6	12	3	5
April	2	22	23	4	9	12	12	9	6	12	3	0
May	1	9	14	3	4	12	14	2	7	5	4	0
June	8	15	0	3	7	8	7	16	17	2	13	16
July	4	7	15	1	17	11	20	0	0	1	0	2
August	17	8	9	5	10	12	13	2	8	12	1	1
September	22	27	17	14	16	13	15	18	14	15	7	5
October	24	33	28	27	19	8	30	13	15	15	10	9
November	5	26	30	15	7	4	8	4	9	8	4	4
December	6	2	3	3	3	2	0	2	0	6	3	0
Total for project	122	193	149	97	100	104	139	79	84	94	52	43
Other confirmed Raccoon Dog harvest	128	40	39	32	32	37	17	25	21	19	20	19
Traffic kills	19	12	9	4	2	6	5	8	6	5	3	3
Total culled Raccoon Dogs	269	245	197	133	134	147	161	112	111	118	75	65
Other small predators taken in project activities (traps)	9	13	12	18	30	30	31	37	42	37	41	32
Fox	3	5	6	12	14	15	17	11	23	21	25	21
Badger	5	6	4	3	10	6	4	11	9	9	7	3
Mink		2	1		2	3	4	4	4	3	2	4
Stoat, Pine Marten	1		1	3	4	6	6	11	6	4	7	4

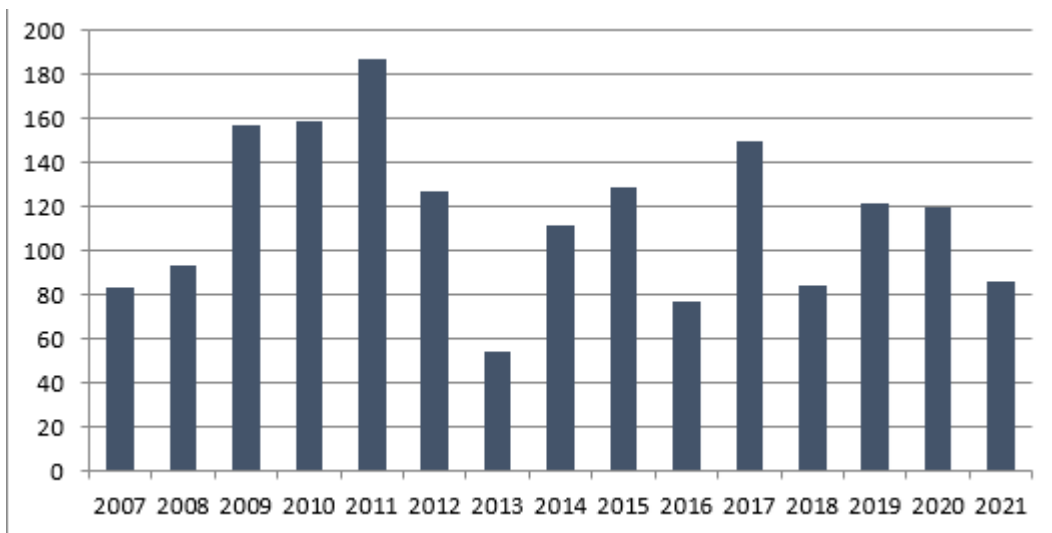
The official game bag statistics is based on hunter questionnaire with relatively small sample size. The official statistics in Lapland can be used as an index reflecting large-scale changes in the Raccoon Dog harvest development.

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.

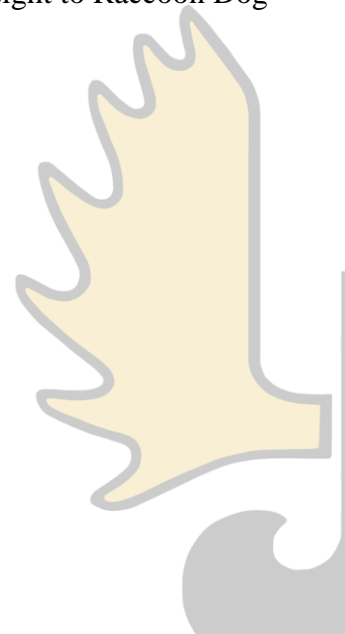


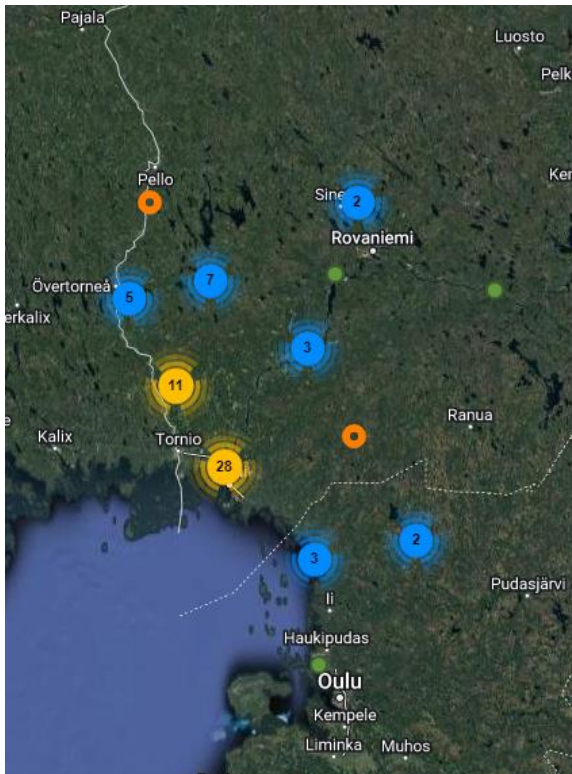


Raccoon Dog harvest in Lapland until 2021 based on official statistics. <http://stat.luke.fi/en/>. 2022 estimates will be available in summer of 2023. Data should be interpreted as an index of population development.



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. 2022 data is available in spring 2023. This is non-scientific casual data providing an additional insight to Raccoon Dog population and harvest development.





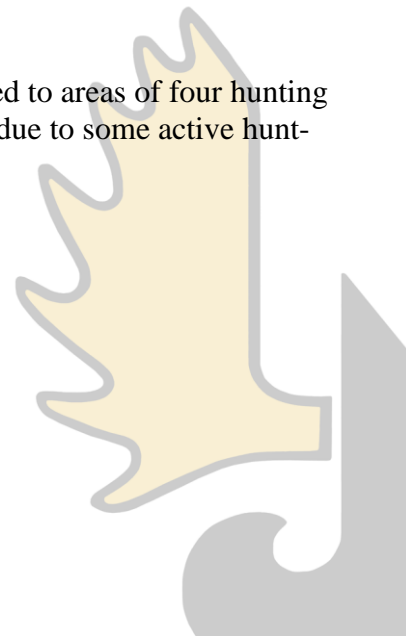
Network of Raccoon Dog traps within the project framework, either directly electronically supervised or managed by voluntary hunter in close coordination with the project. In addition, there is hundreds of traps managed by local volunteer hunters throughout project area. Source: Mink Police-web portal.

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 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 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.

Total Raccoon Dog harvest in archipelago is provided in table below, divided to areas of four hunting associations. Total harvest increased from 95 to 120. Changes are probably due to some active hunters who have increased their activities and caught more raccoon dogs.



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



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.

Four trips were made to the management area for assembling and checking of the GPS collars for the raccoon dogs in the area. One female was marked in 26.4.2022. This individual was removed 26.8.2022 and new collar was assembled to a male raccoon dog. This male is still collared and currently lives in the island called Halsö. Fig.x

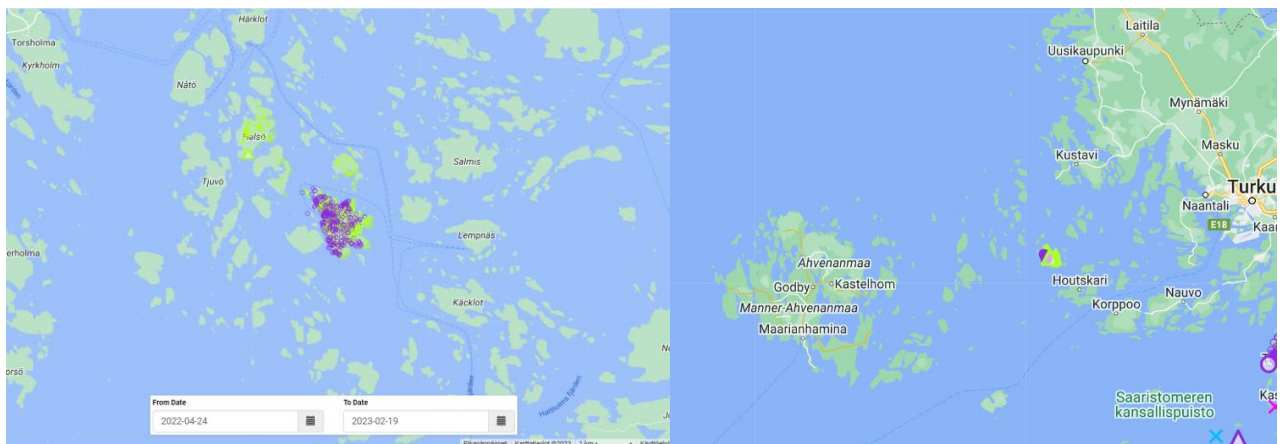
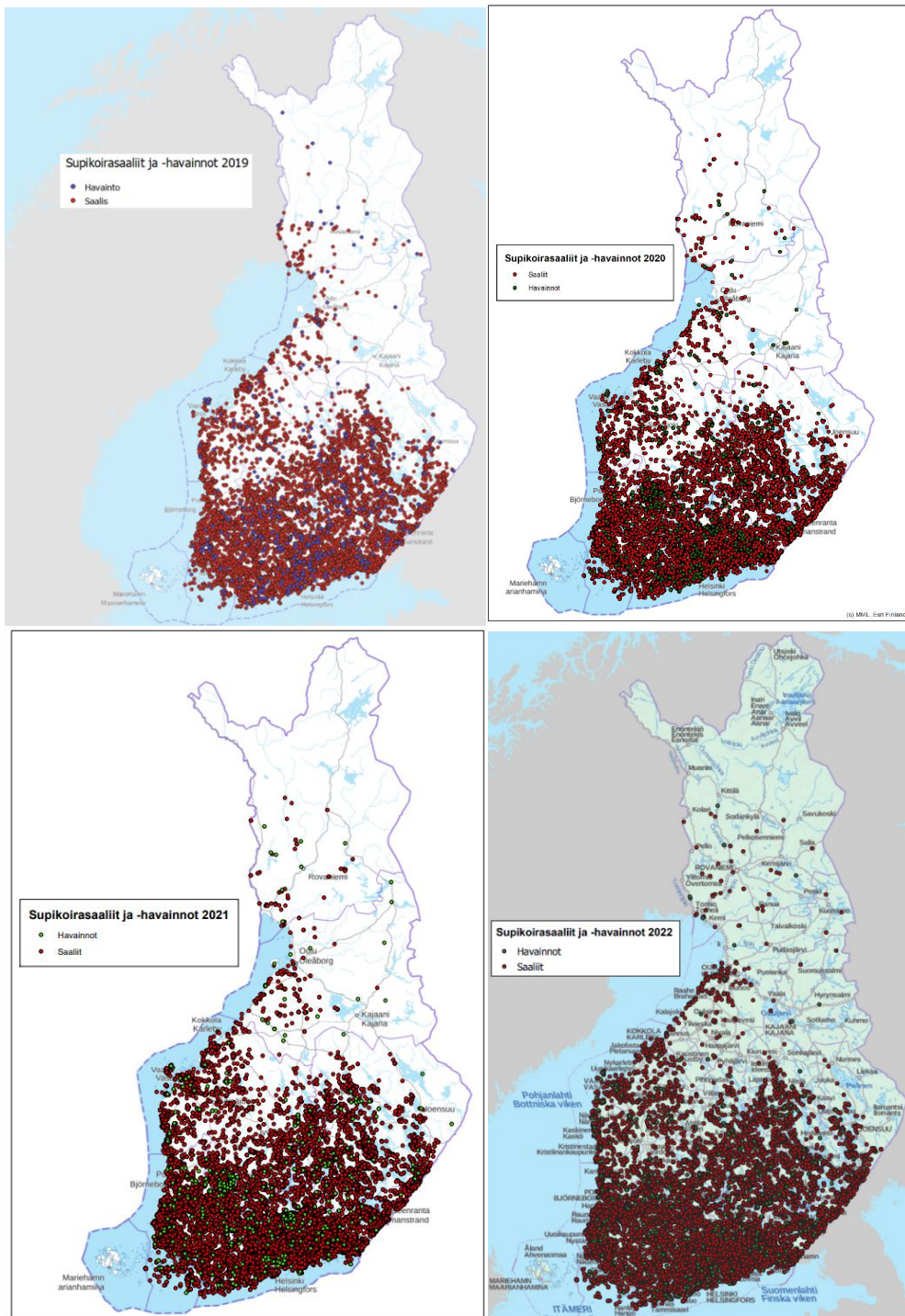
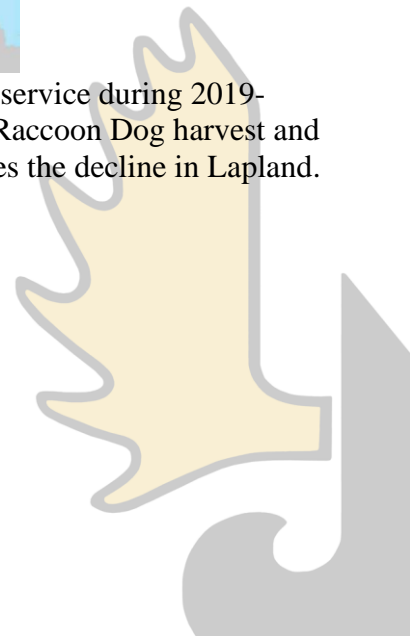


Fig. x Collared raccoon dogs (female purple & green male) in the south western archipelago of Finland

In the end of the year 2022 new contacts with the local hunting club was established and co-operation is building up to start more effective management of raccoon dog population in the area. There are two hunting clubs which border the Åland access and these are targeted to build up the activities. At the same time funding has been applied (<https://en.itameriprojekti.fi/>) to build up similar activities to the neighboring areas in Åland (Brändö archipelago).



Raccoon Dog harvests and observations voluntarily recorded in Oma riista -service during 2019–2022. *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.

Kvarken/Valsörarna

Approximately 30 functioning cameras in the area

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

Lapland

During 2021 there was 47 recorded Judas animal activities in Lapland. 10 adults and 14 pups were captured with this method. Judas raccoon Dog has been caught by voluntary hunters 3 times. In addition, Judas's were encountered and collared during regular hunting and management when Judas methods was not actively used.

Kvarken/Valsörarna

No Judas activities during 2022 due to changes in local project conditions. Reactivation of Judas-work in foreseen in 2023, if possible.

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. One raccoon dog (and Judas female) was removed from the home range of Judas male from the island Hålsö on the august 2022.

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 Lapland, Kvarken and Åland Access areas.

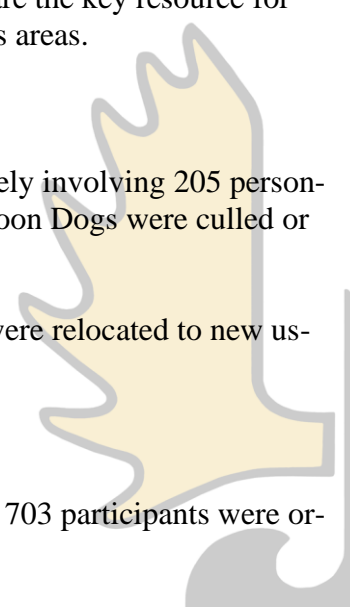
Lapland

Project recorded 114 working days or events of Raccoon Dog hunting actively involving 205 person-days by volunteer hunters in the project framework. 2 adult and 6 pup Raccoon Dogs were culled or collared in these activities.

16 new KaNu traps were set in field, 28 game cameras and 12 trap alarms were relocated to new users.

20 new trap alarms were purchased.

Education events were recovering from COVID restrictions. 23 events with 703 participants were organized and 15 Kanu traps built in these events.



13)

People of various background contact Juha Mäkimartti on Raccoon Dog related issues and advising and informing people is day-to-day work. In 2022 project recorded 94 events where hunters, farmers or public were informed and advised on Raccoon Dogs involving 311 people. 2 adults and 1 pup Raccoon Dog were recorded under this topic as well as one trap and game camera delivered to field.

Kvarken/Valsörarna

There are some active hunters dogs in all 4 hunter associations. One meeting in year 2022 with contact persons in local hunter associations to come up with new ideas how to inspire more hunters in their areas to hunt raccoon dogs.

In August education event was organized and thermal sight device given to local hunters for effective Raccoon Dog Management.

Åland Access

Four separate trips (April-November) were made to the management area of Iniö by the professional hunter of SLHSY and contacts were build up with the local hunters and landowners. Management efforts have also been targeted to the group of island in the southern Åland/Finland border zone (in the vicinity of Jungfruskär). Four raccoon dogs were removed from this island.

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 65 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.

Interview at Riista magazine 5.3.2022 and 10.8.2022, local interviews 1.9.2022 ad 3.10.2022.

Intervju to Sompiolehti 8.11.2022.

Metsästäjä/Jägaren magazine 11.10.2022

<https://metsastajalehti.fi/ajankohtaista/kolme-pantasupikoira-pohjoisesta/> <https://metsastajalehti.fi/sv/aktuell/tre-halsbandsmardhundar-i-norr/>

An informative video story was made about the removal of the raccoon dogs in the Åland/Finland border zone in co-operation of SLHSY/Yle [Removal of raccoon dogs in Jungfruskär](#) [Linnustoa pelastetaan aktiivisella suojelulla, Saaristomeren kansallispuiston helmen, Jungfruskärin, viimeinen supikoira poistettu – toistaiseksi \(yle.fi\)](#)

The Finnish Wildlife Agency has a new website for Invasive Alien Predators <https://vieraspeto.fi/sv/>

13)

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.

Costs of Actions and realized funding

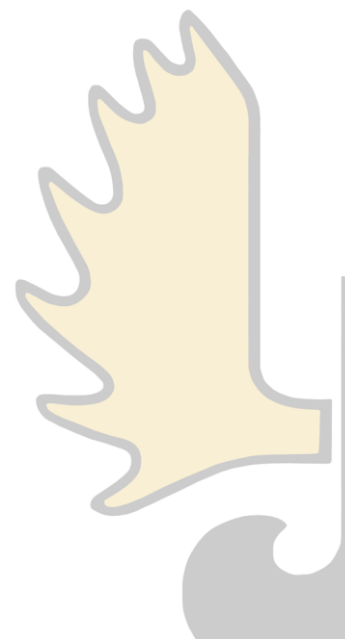
The total costs of project Actions in 2022 was 226 375,09 € with balance of -1 375,09 €.

Table 5 Realized costs and funding

Annual costs of Raccoon Dog management in Finland 2022					
	Cost item	€ piece/set	Number needed	Est. total cost	Realized 2022
LAPLAND	1. External assistance, Professional Hunter in Lapland to carry out project activities	8 500	11,5	97 750,00 €	119 714,56 €
	2. Travel costs, estimated total /month	2 000	11,5	23 000,00 €	29 066,87 €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	40	10 000,00 €	8 130,71 €
	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 €	2 175,00 €
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	3000	1	3 000,00 €	392,00
	7. GPS collars, annual replacement of lost&broke	2000	3	6 000,00 €	-
	LAPLAND TOTAL			142 000,00 €	159 479,14 €

13)

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 €	3 376,90 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	500	1	500,00 €	376,60
	5. Gift Cards for Judas-animals and good co-operation	50	10	500,00 €	500,00
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	1000	1	1 000,00 €	244,19
	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	-
	KVARKEN TOTAL			19 000,00 €	4 497,69 €
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 €	10 215,26 €
	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 €	-
	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 €	250,00 €
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	1000	1	1 000,00 €	- €
	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	1 933,00 €
	ÅLAND ACCESS TOTAL			14 000,00 €	12 359,26 €
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 €	226 375,09 €	
Balance, covered by Finnish Wildlife Agency				- 1 375,09 €	



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 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 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 (Tommy Arfman).
- 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.

March 8th 2023.

Mikko Alhainen, Sami Tossavainen, Stefan Pellas, Jaakko Hautanen, Mikko Toivola, Jarkko Nurmi, Carola Lönnfors
Finnish Wildlife Agency

Juha Mäkimartti, external contractor/coordinator, Lapland
Tommy Arfman, external contractor, Åland Access

