

8.3.2022

Report of Raccoon Dog management in Finland for 2021

The Goal for 2021 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.

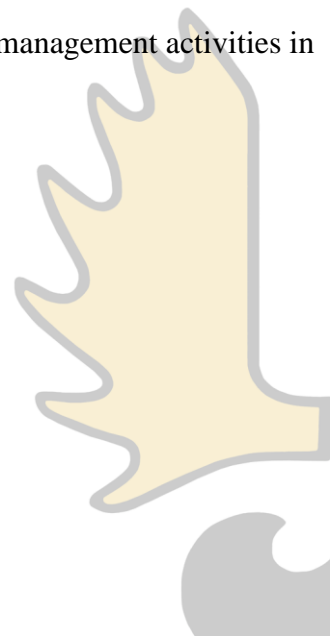
- Continued co-operative management and information activities with volunteer hunters
- Continue the use of monitoring cameras/early warning system EWS and develop the method to allow for rapid response from local voluntary hunters
- Continue the use of Judas animals and develop the method to be more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

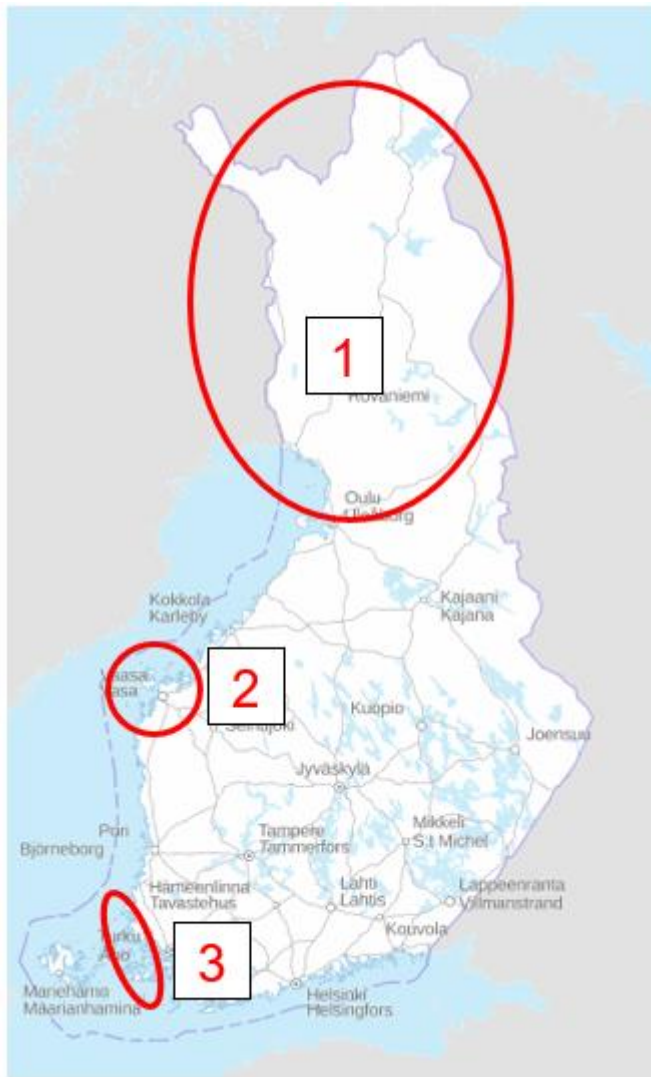
The legal context of the Raccoon Dog was changed from game species to an invasive species in 2019, in alignment with the Finnish management plan of the raccoon dog which was produced during the LIFE project.

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

Despite COVID19 restriction the project was able to carry out the essential management activities in the field.





Working areas

General overview and Raccoon Dog (RD) harvest

Lapland

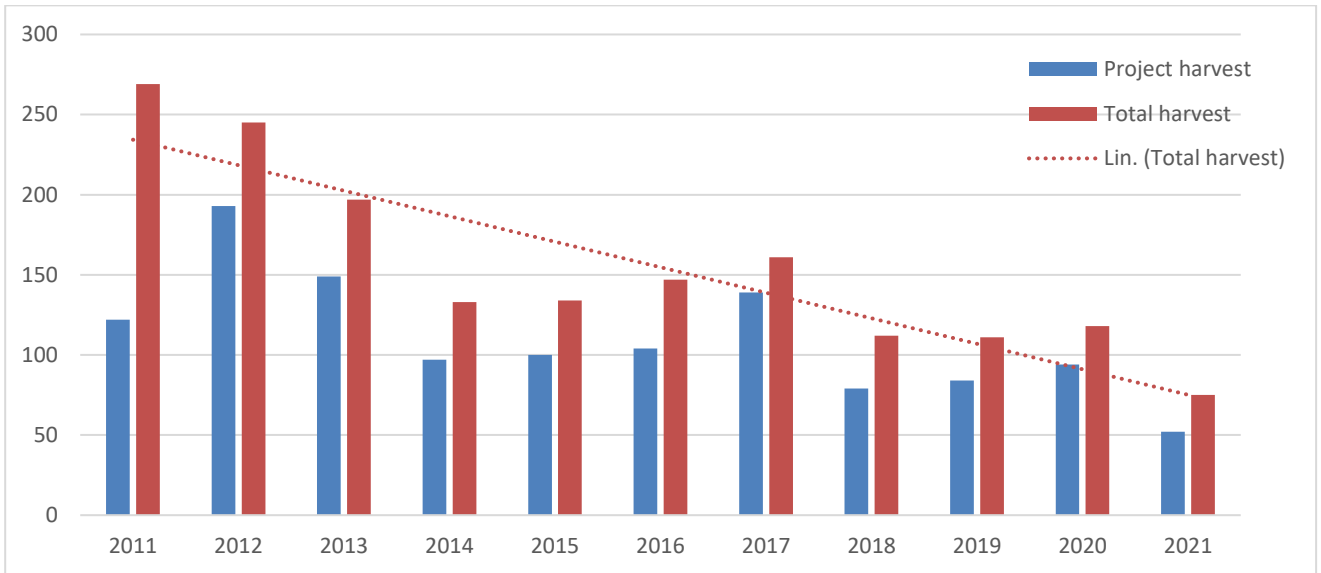
Juha Mäkimartti implements project activities in Lapland as external contractor for 2017-2024. The annual level of service depends on available funding.

During 2021 the project achieved the set objectives and succeeded to manage the RD population in the Finnish Lapland. The harvest level known by project had slightly increasing trend from 2014 to 2017 while harvest was at all-time low from 2018 to 2019. Harvest remained low during 2020 and was all-time low in 2021. Harvest numbers are declining as the area effectively covered by project has increased significantly. The messages from hunters of observed or caught Raccoon Dogs in Lapland reflect a clear and continued decrease compared to numbers in 2011-2012.

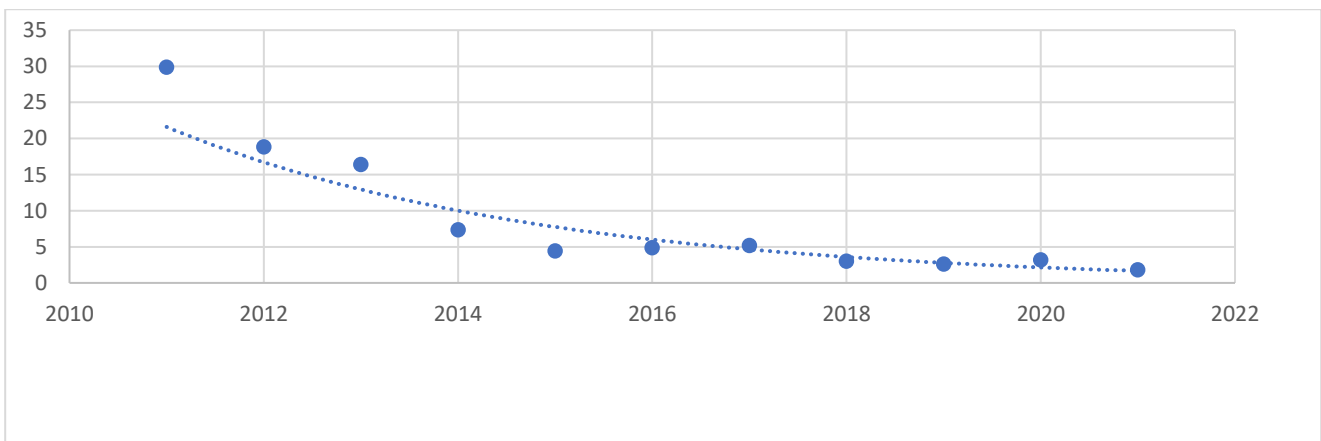
The non-scientific 'fox index' indicates that work has been successful and relative proportion of Raccoon Dogs in project traps has continuously decreased while the know-how and number of traps has increased. Number of foxes in the project traps indicate that traps are functioning well.

The COVID19 restrictions severely affected the face-to-face communication, educational events and training of hunters. Despite the challenges, the project was able to deliver expected results in management, thanks to active work of voluntary hunters in the field and dedicated project staff.

In Lapland, the Raccoon Dog harvest by project staff and involved voluntary hunters was 52 animals. In addition, project staff has received information of 20 RD killed by other hunters and of 3 traffic kills. Total Raccoon Dog mortality known by the project is 75 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

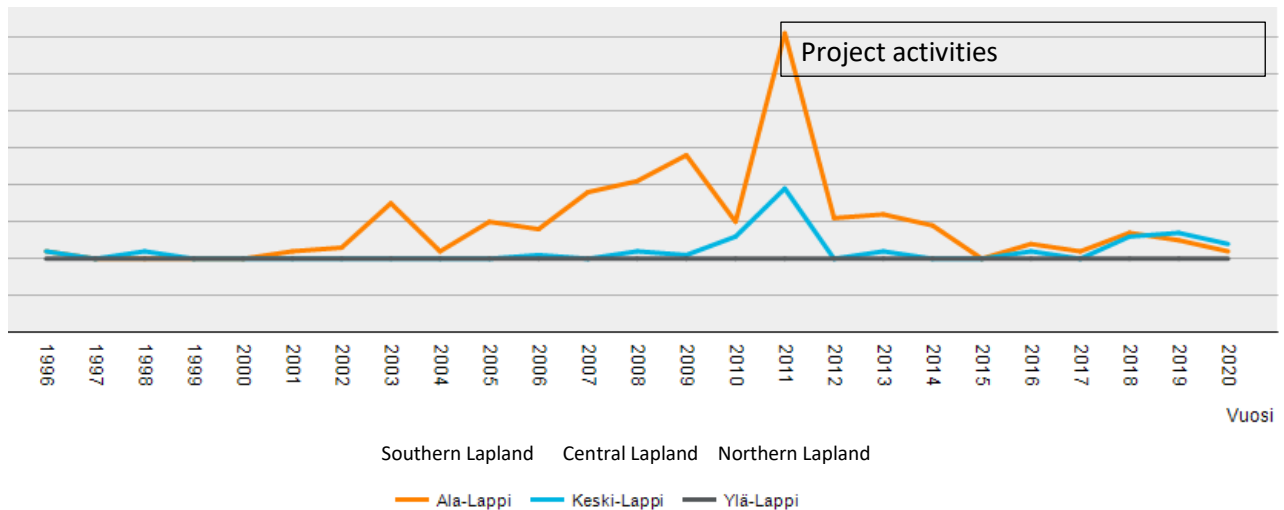


Raccoon Dog harvest of the project in Lapland

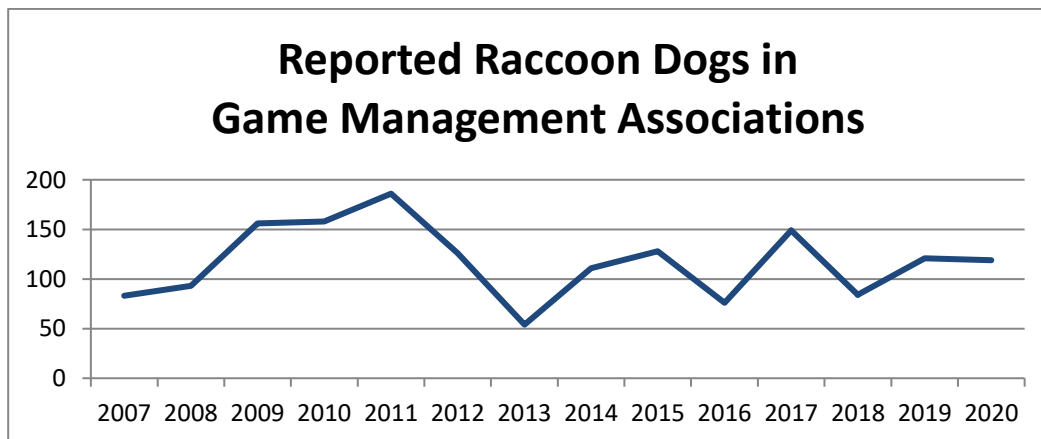
Raccoon Dog harvest MIRDINEC After LIFE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<i>January</i>	0	0	0	3	2	4	20	5	1	2	4
<i>February</i>	6	4	0	10	4	8		3	1	4	0
<i>March</i>	27	40	10	9	2	10		5	6	12	3
<i>April</i>	2	22	23	4	9	12	12	9	6	12	3
<i>May</i>	1	9	14	3	4	12	14	2	7	5	4
<i>June</i>	8	15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

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.

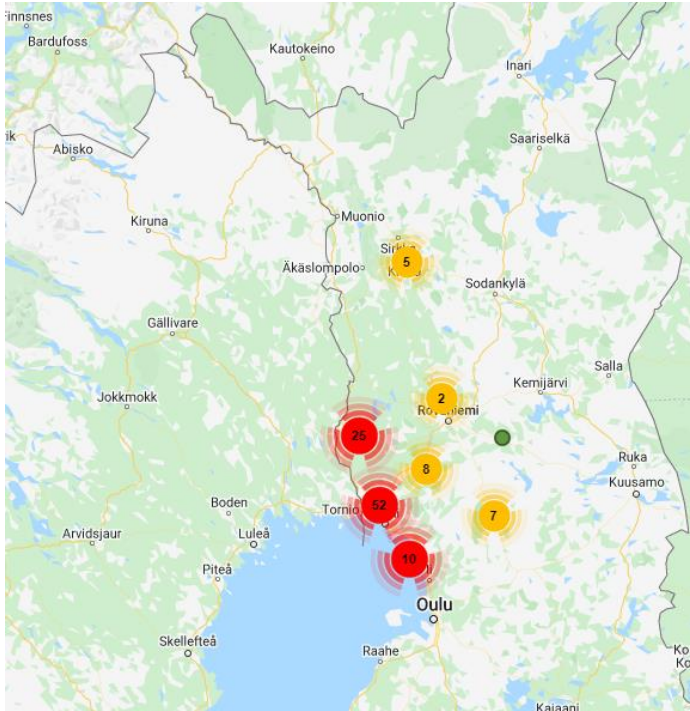
At large the Raccoon Dog population and harvest increased until 2011, when record harvest, thanks to project activities, lead to significant decline of the population and the harvest.



Raccoon Dog harvest in Lapland until 2020 based on official statistics. <http://stat.luke.fi/en/>. 2021 estimates will be available in summer of 2022. 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 (blue line). 2007 four associations provided data and 2019 data is from 12 associations, number of associations in dataset in brown line. 2021 data is available in spring 2022. 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.

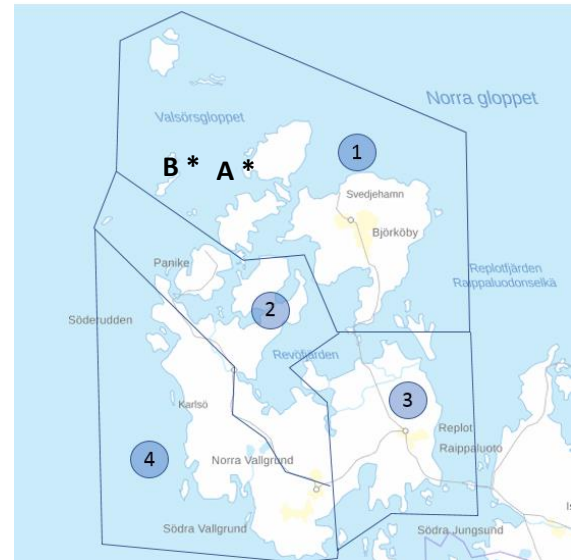
The Kvarken area, Korsholm Archipelago and Valsörarna in particular, is a focus area since 2018. Good co-operation is established with all four hunting associations in Korsholm Archipelago. Network of solar-powered scout cameras, baiting sites and live traps are operative throughout the area by volunteer hunters using trained dogs.

In addition to voluntary management a group of local hunters with hunting dogs were contracted to carry out professional level Raccoon Dog eradication in Valsörarna and adjacent islands. Five Raccoon Dogs were taken from outer edge of the Lappörarna (A) and 1 from Björkögrundet (B) in November 2021 (see map below). Raccoon Dogs were not observed at Valsörarna.

Total Raccoon Dog harvest in archipelago is provided in table below, divided to areas of four hunting associations. Total harvest decreased from 112 to 95. It is probable that increased management activities have started to impact the population size. It is expected that harvest numbers will continue to decrease in following years due to decline of the population.

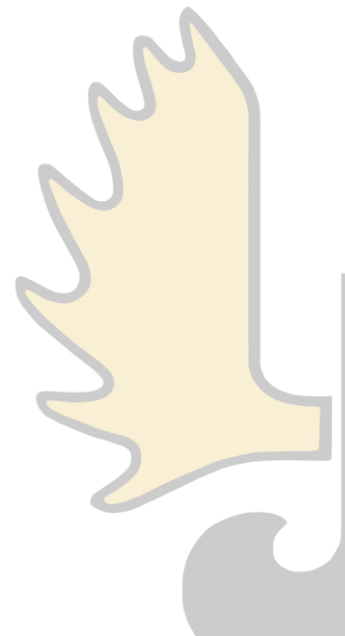


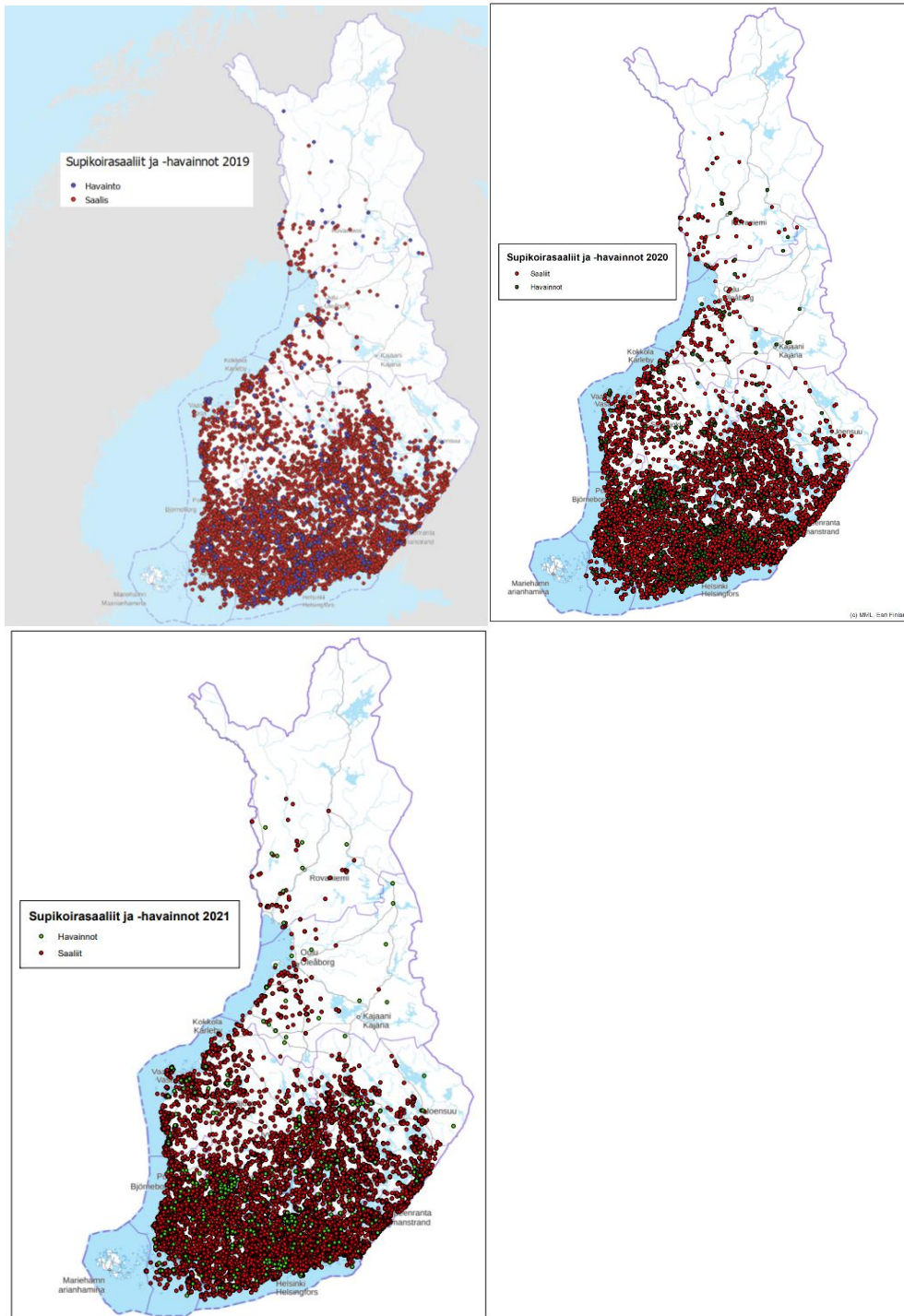
<u>Village/hunting area</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
1 Björköby	44	50	31	13
2 Norra Vallgrund	34	25	38	28
3 Replot	27	29	29	18
4 Södra Vallgrund	25	33	14	36
<u>TOTAL</u>	<u>130</u>	<u>137</u>	<u>112</u>	<u>95</u>



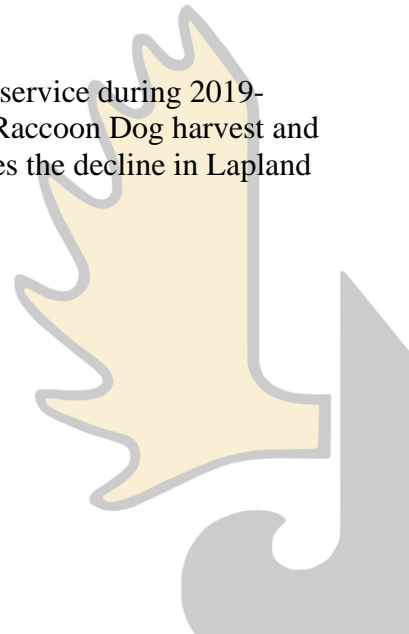
Åland Access

In the Åland Access area the project activities were initiated in close co-operation with parallel project in the region. Mr Tommy Arfman started the co-operation with the local hunting association, preparing the effective working from 2022 onwards.





Raccoon Dog harvests and observations voluntarily recorded in Oma riista -service during 2019–2021. *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



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.

39 new cameras were purchased.

Kvarken/Valsörarna

Total of 10 new game cameras provided by the project are used in the area, to improve the surveillance coverage to the existing 22 cameras.

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. 14 adults and 11 pups were captured with this method. Judas raccoon Dog has been released from project traps 6 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 2021 due to changes in local project conditions. Reactivation of Judas-work in foreseen in 2022, if possible.

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 and in Kvarken area. The hunters have participated the project actions well and despite challenges of COVID 19 the reporting of RD observations and management actions have been good.

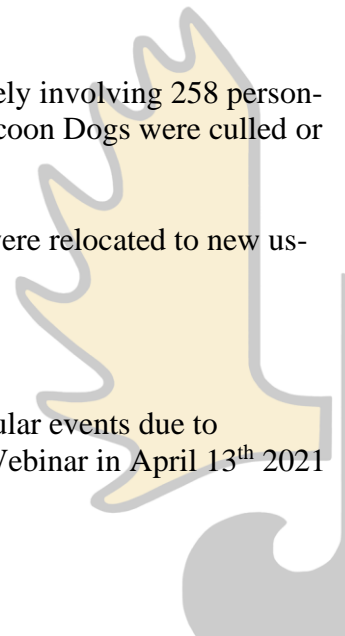
Lapland

Project recorded 127 working days or events of Raccoon Dog hunting actively involving 258 person-days by volunteer hunters in the project framework. 19 adult and 4 pup Raccoon Dogs were culled or collared in these activities.

24 new KaNu traps were set in field, 29 game cameras and 19 trap alarms were relocated to new users.

10 new trap alarms were purchased.

The planned project activities in hunter education was reduced to 3 regular events due to COVID. The meeting restrictions were compensated with a Raccoon Dog Webinar in April 13th 2021 with more than a 100 participants.



14)

People of various background contact Juha Mäkimartti on Raccoon Dog related issues and advising and informing people is day-to-day work. In 2021 project recorded 119 events where hunters, farmers or public were informed and advised on Raccoon Dogs involving 301 people.

Kvarken/Valsörarna

There are 7 active Raccoon Dog hunters with two well trained dogs in Björköby. Both Replot and Södra Vallgrund have about 5 hunters specialized in Raccoon Dog hunting. In Norra Valgrund there is well-established and active Raccoon Dog hunting tradition in which majority of members are involved. 20 new traps and 10 game cameras were purchased to support local management.

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 Ase&Erä magazine 16.2.2021

Jahtikuksa TV show and Maaseudun Tulevaisuus national paper 7.9.2021

Two articles in the Metsästäjä/Jägaren magazine

<https://metsastajalehti.fi/sv/vilt/mardhundsuppfoljning-fran-falld-alg/>

<https://metsastajalehti.fi/sv/aktuellt/laplandsk-mardhund-soker-partner-i-tyrnava/>

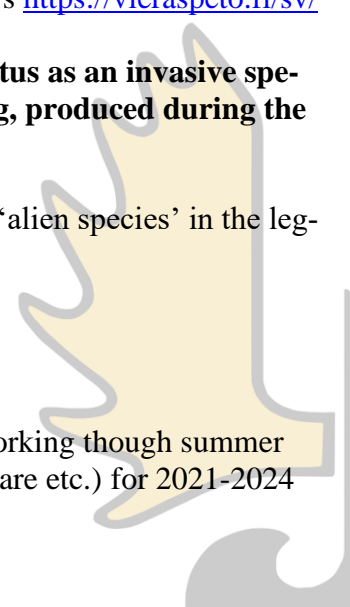
The Finnish Wildlife Agency has a new website for Invasive Alien Predators <https://vieraspeto.fi/sv/>

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



14)

- 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 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.



14)

Costs of Actions and realized funding

The total costs of project Actions in 2021 was 230 274,17 €.

Table 5 Realized costs and funding

Annual costs of Raccoon Dog management in Finland 2021					
	Cost item	€ piece/set	Number needed	Estimated Cost	Realized Costs
LAPLAND	1. External assistance, Professional Hunter in Lapland to carry out project activities* <i>including project funding already provided by Norway in 2020 funding, which explains the difference to 2021 budget</i>	8 500	11,5	97 750,00 €	107 215,36 €
	2. Travel costs, estimated total /month	2 000	9	18 000,00 €	23 244,63 €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	40	10 000,00 €	9 486,75 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	750	1	750,00 €	0,00 €
	5. Gift Cards for Judas-animals and good co-operation	50	30	1 500,00 €	1 750,00 €
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	3000	1	3 000,00 €	410,26 €
	7. GPS collars, annual replacement of lost&broke	2000	3	6 000,00 €	19 159,01 €
	LAPLAND TOTAL	-	-	137 000,00 €	161 266,01 €
KVARKEN	1.2. Part-time external assistance, professional hunters, to carry out focused project activities supporting local volunteer hunters	8500	1	8 500,00 €	4 960,00 €
	2. Travel costs, estimated total	2000	1	2 000,00 €	472,94 €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	10	2 500,00 €	4 324,00 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	500	1	500,00 €	0,00 €
	5. Gift Cards for Judas-animals and good co-operation	50	10	500,00 €	1 000,00 €
	6. Batteries, timber, screws etc small items, pre-paid services. Estimated total	1000	1	1 000,00 €	358,27 €

	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	4 280,00 €
	<u>KVARKEN TOTAL</u>	-	-	<u>19 000,00 €</u>	<u>15 395,21 €</u>
ÅLAND ACCESS	1.2. Part-time external assistance, Professional hunter, to carry out focused project activities supporting local volunteer hunters	8500	1	8 500,00 €	3 112,95 €
	2. Travel costs, estimated total per month	3000	1	3 000,00 €	0,00 €
	3. Equipment, traps, trap materials, scout cameras and accessories, trap alarms	250	21	5 250,00 €	0,00 €
	4. Motivating voluntary hunters. Thanks giving dinner etc.	500	1	500,00 €	0,00 €
	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 €	0,00 €
	7. GPS collars, annual replacement of lost&broke	2000	2	4 000,00 €	0,00 €
	<u>ÅLAND ACCESS TOTAL</u>	-	-	<u>22 750,00 €</u>	<u>3 612,95 €</u>
	<u>General, Followit service</u>	<u>35 000</u>	<u>1</u>	<u>35 000,00 €</u>	<u>35 000,00 €</u>
<u>Project administration Finnish Wildlife Agency</u>	<u>5 000</u>	<u>3</u>	<u>15 000,00 €</u>	<u>15 000,00 €</u>	
<u>TOTAL FINLAND</u>			<u>228 750,00 €</u>	<u>230 274,17 €</u>	

ANNUAL Funding	
Savings from 2020	2 476,76 €
<u>Finland</u>	
Finnish Wildlife Agency:	85 000,00 €
Metsähallitus:	20 000,00 €
<u>Sweden:</u>	35 000,00 €
<u>Norway:</u>	67 500,00 €
Norway, 2020 funding for Jan-Mar	19 400,00 €
<u>TOTAL</u>	<u>229 376,76 €</u>

<u>Overall Balance 2021, covered by Finnish Wildlife Agency</u>	-897,41 €
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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 initiated 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.
- The reorganization of the project to external contractor Tmi Juha Mäkimartti has proven to be successful and project has continued the activities as planned. The framework contract was tendered during 2020 and Tmi Juha Mäkimartti was selected to continue the forthcoming 4 years.
- Service contracts were made on the professional level field-work in Kvarken (group of local hunters to cover outer islands) 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 2022.

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Finnish Wildlife Agency

Juha Mäkimartti, external contractor/coordinator, Lapland
Johan Sten, voluntary coordinator, Korsholm Archipelago
Tommy Arfman, external contractor, Åland Access

