

20.1.2017

## Report of Raccoon Dog management in Finland for 2016

The Goal for 2016 in Finland was to continue the Actions of MIRDINEC LIFE project to prevent further invasion of Raccoon Dogs to Sweden and Norway, and to develop the work to be more cost effective while exploring the solutions for long-term financing.

In Finland the following Actions was carried out following the project working plan with practical adaptations where seen reasonable.

- 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
- Continued co-operative management and information activities with volunteer hunters
- Information about IAS and dissemination of project results
- 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.
- Legal permissions

### General overview and Raccoon Dog (RD) harvest

During 2016 the project achieved the set objectives and succeeded to manage the RD population in the Finnish Lapland. However, the harvest numbers has started to rise again compared to 2015 and 2014, but clearly lower than during 2011-2012. A possible explanation is that the interest of regular hunters to Raccoon Dog management has declined as they are catching less, which has led to lowered hunting pressure and increased survival and reproduction of Raccoon Dog.

Juha Mäkimartti worked for the project whole year with focus in South-Western Lapland. Additional EWS lines were set to Central Lapland by two contracted hunters.

The raised awareness among public and hunters has resulted observations and contacts from new areas improving our overall image of the RD situation in the project area, especially Central Lapland. The public support for the project has been on a relatively good level and media has treated the subject well.

Active co-operation with local voluntary hunters has continued and expanded well. The purchased trap materials, trap alarms, wildlife cameras and gift cards has played an important role as project has been able to provide new tools for RD hunting. As previous years, also in 2016 a significant number of hunters has participated education events and meaningful amount of live traps were built, set and maintained throughout Lapland by trained hunters, although there is tendency that some old traps are not used effectively anymore.

The RD harvest by project staff and involved voluntary hunters was 104 animals in 2016. In addition project staff has received information of additional 37 RD killed by other hunters and of 6 traffic kills. Total of 147 Raccoon Dogs has known to be killed in 2016 in the project area. Overall harvest had small increase compared to 2015, and the increase in traffic kills indicate small genuine increase in the population

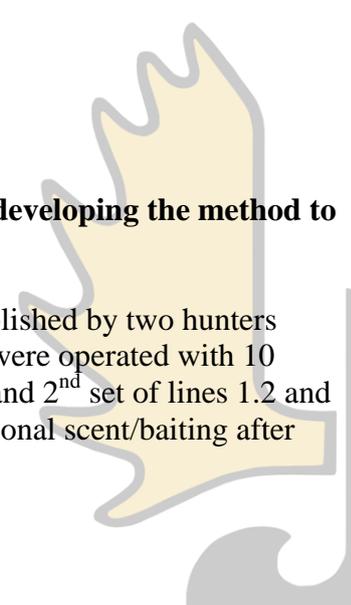
Table 1. Raccoon Dog harvest

<b>Raccoon Dog Harvest, MIRDINEC After Life</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<i>January</i>	0	0	0	3	2	4
<i>February</i>	6	4	0	10	4	8
<i>March</i>	27	40	10	9	2	10
<i>April</i>	2	22	23	4	9	12
<i>May</i>	1	9	14	3	4	12
<i>June</i>	8	15	0	3	7	8
<i>July</i>	4	7	15	1	17	11
<i>August</i>	17	8	9	5	10	12
<i>September</i>	22	27	17	14	16	13
<i>October</i>	24	33	28	27	19	8
<i>November</i>	5	26	30	15	7	4
<i>December</i>	6	2	3	3	3	2
<b>Total project/Mäkimartti</b>	<b>122</b>	<b>193</b>	<b>149</b>	<b>97</b>	<b>100</b>	<b>104</b>
<b>Other harvest known by Mäkimartti (actual harvests higher, this is and indicative figure)</b>	<b>128</b>	<b>40</b>	<b>39</b>	<b>32</b>	<b>32</b>	<b>37</b>
<b>Traffic kills (known by Mäkimartti)</b>	<b>19</b>	<b>12</b>	<b>9</b>	<b>4</b>	<b>2</b>	<b>6</b>
<b><u>Total killed Raccoon Dogs</u></b>	<b><u>269</u></b>	<b><u>245</u></b>	<b><u>197</u></b>	<b><u>133</u></b>	<b><u>134</u></b>	<b><u>147</u></b>

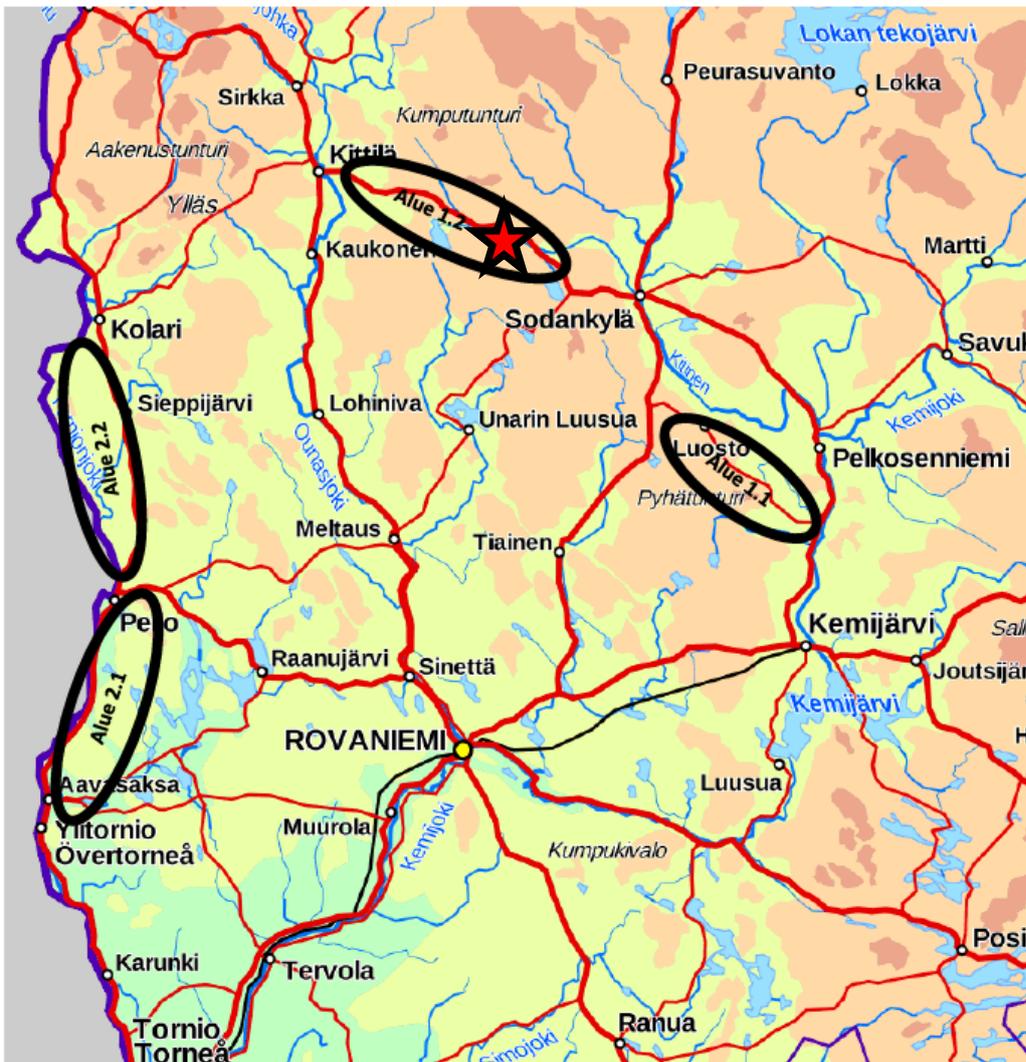
<b>Other small predators in projects live KaNu Traps ' the fox index'</b>	<b>9</b>	<b>13</b>	<b>12</b>	<b>18</b>	<b>30</b>	<b>30</b>
red fox	3	5	6	12	14	15
badger	5	6	4	3	10	6
mink		2	1		2	3
pine marten/stoat	1		1	3	4	6

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

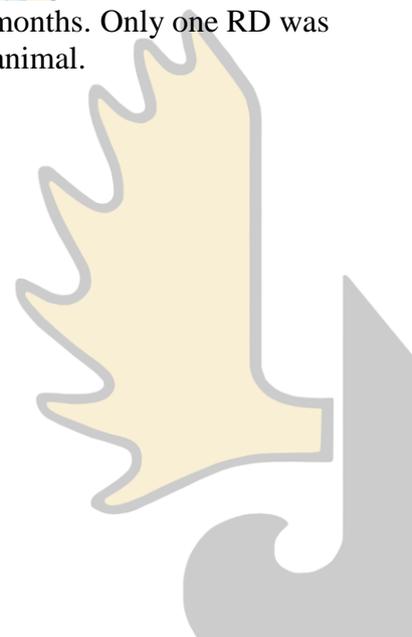
To monitor the RD situation in Central Lapland 4 new EWS lines was established by two hunters specially contracted to this task. Both hunters had 2 lines to operate. Lines were operated with 10 cameras and scent posts. 1<sup>st</sup> set of lines 1.1 and 2.1 were done in June-July and 2<sup>nd</sup> set of lines 1.2 and 2.2 in August-September. Each line was monitored for 2 months with additional scent/baiting after first 4-5 weeks.

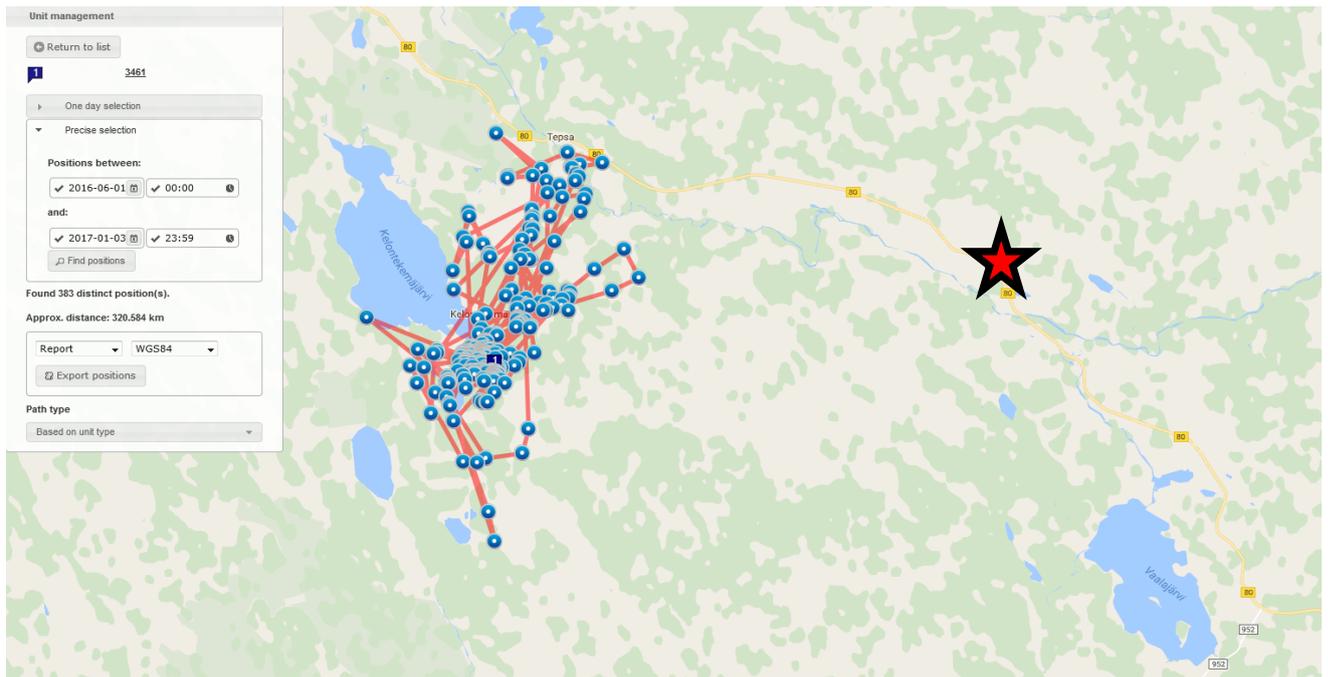


Contracted hunters provided in-detail reports of the observations of all predators. The results revealed a very strong fox population in all areas. Only 4 cameras out of 40 did not have fox pictures and many cameras had constant fox activity. The only Raccoon Dog observation was in camera 22.2 in mid-September. RD visited the sites on 3 nights and spent long times at the site. The same camera was visited by fox total of 14 different days. The observed Raccoon Dog was close to Judas animal staying approximately 10 km from the observed individual, which indicates that there is existing small population in that area.



2016 EWS lines in Central Lapland. Each line had 10 baited cameras for 2 months. Only one RD was observed in the area marked with a star. Location is close to existing Judas animal.



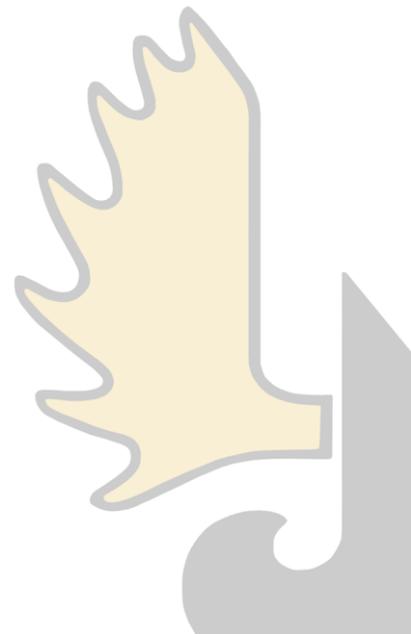


The locations of Judas 3461 and observed Raccoon Dog in camera 22.2. with distance of approximately 10 km.

In South-Western Lapland 15 game cameras were actively used by project staff to follow the RD situation and to assist eradication. In addition many cameras were used by voluntary hunters.

During 2016 it was found out that Raccoon Dogs has established to Valsörarna, just 25 km from closest islands in Sweden. Two game cameras were purchased and local hunter contacted to set the camera to Valsörarna.

This area is particularly difficult work as it is strict nature reserve and only people living in certain village can access the islands. There is existing conflict related to nature conservation and it is challenging to get the permits to do RD management in the area. Looking forward to have EWS set up to the area during 2017 and start targeted Raccoon Dog eradication.



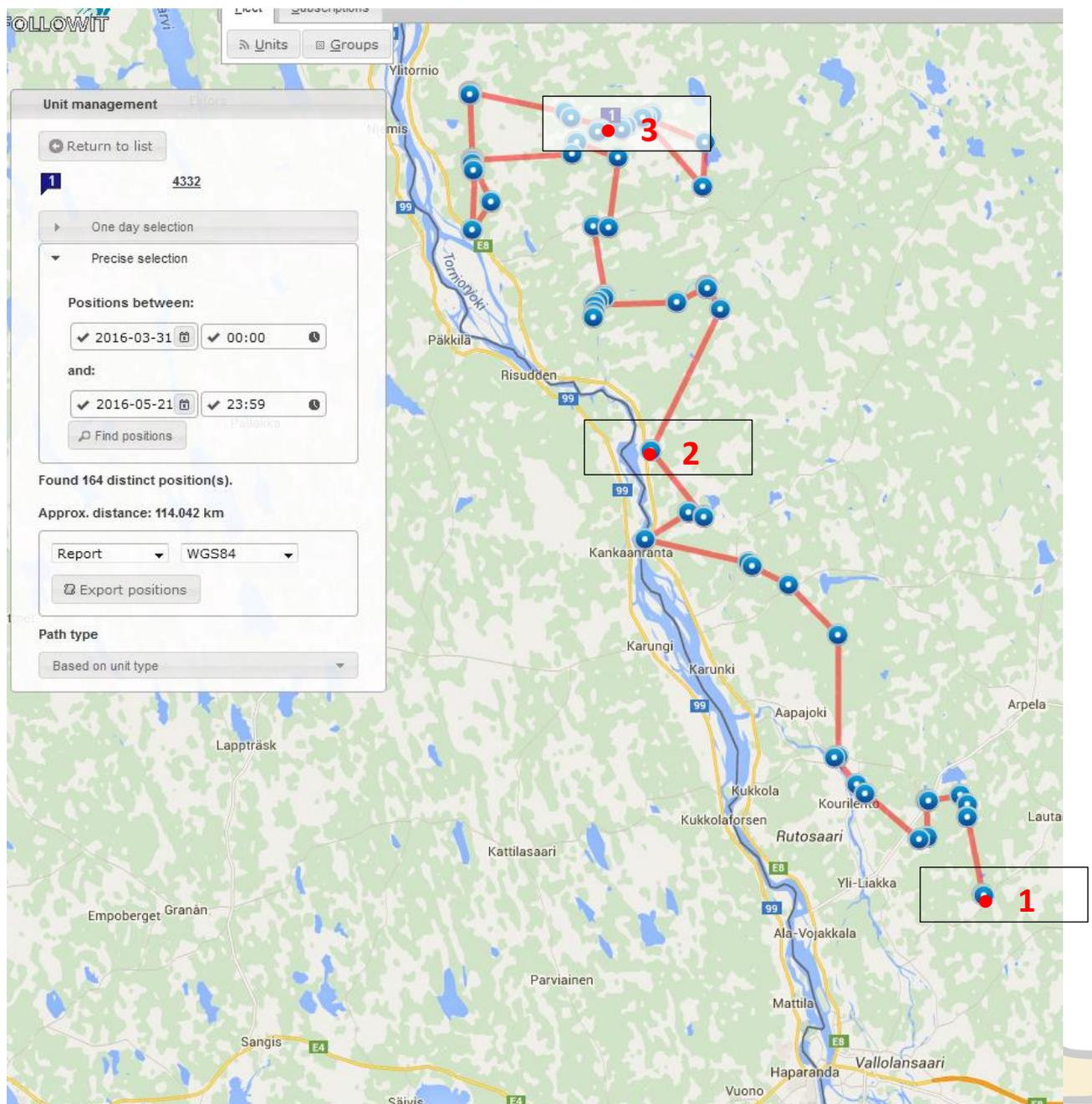
### Continued the use of Judas animals and develop the method to be more cost effective

Total of 8 Raccoon Dogs are currently used as Judas animals. In addition one Swedish Judas in currently in Finland.

Judas animals were recaptured 50-60 times by the project and either killed, re-collared or just checked for partners. Total of 14 Raccoon Dogs were killed from Judas-animals.

Judas animals were captured by voluntary hunters 6 times. In addition the Judas-data has been used to find key locations for traps and, which has been successful.

The Judas animals in Kemi-Tornio area seem to encounter hunters and traps frequently. Three examples of Judas movements in Lapland.



Movements of Judas 4332:

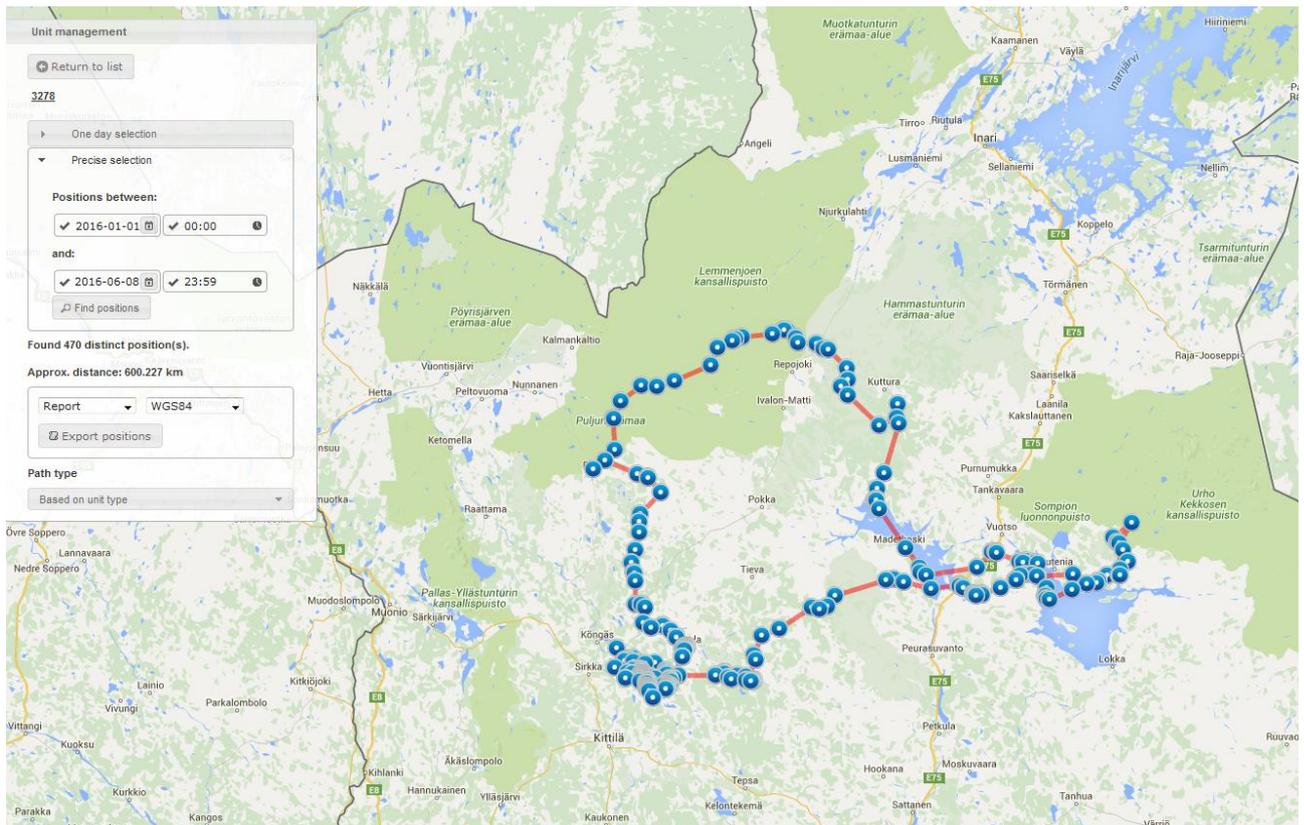
1. April 26<sup>th</sup>: Released nearby landfill
2. May 4<sup>th</sup>: Mink Police Trap alarm informed that Munatie Kanu Trap had gone off at 01:07 o'clock. At the morning of Juha checked location of 4332 at Followit and wondered that animal is close to the Munatie KaNu trap. Soon he received a phone call from local hunters that there is a RD in the trap. Juha drove up to collar the RD, but the hunters had not observed the collar covered by long winter fur. Hunters received 100 € gift card for trapping a Judas animal alive and RD was released at 11:00 o'clock to continue its work.
3. May 21<sup>st</sup>: Last received location

Total route from April 26<sup>th</sup> to May 21<sup>st</sup> 114 km.



Judas animal 4332 was trapped in Kanu trap at Korpikylä May 4<sup>th</sup> 2016

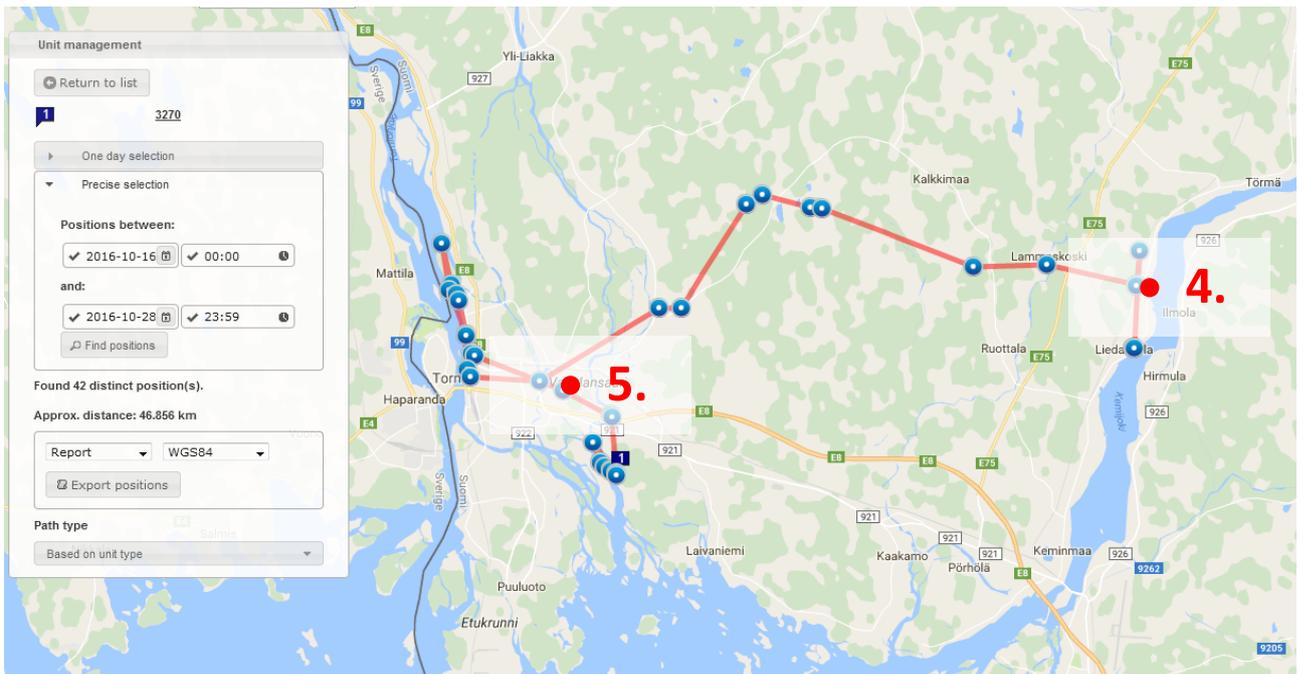
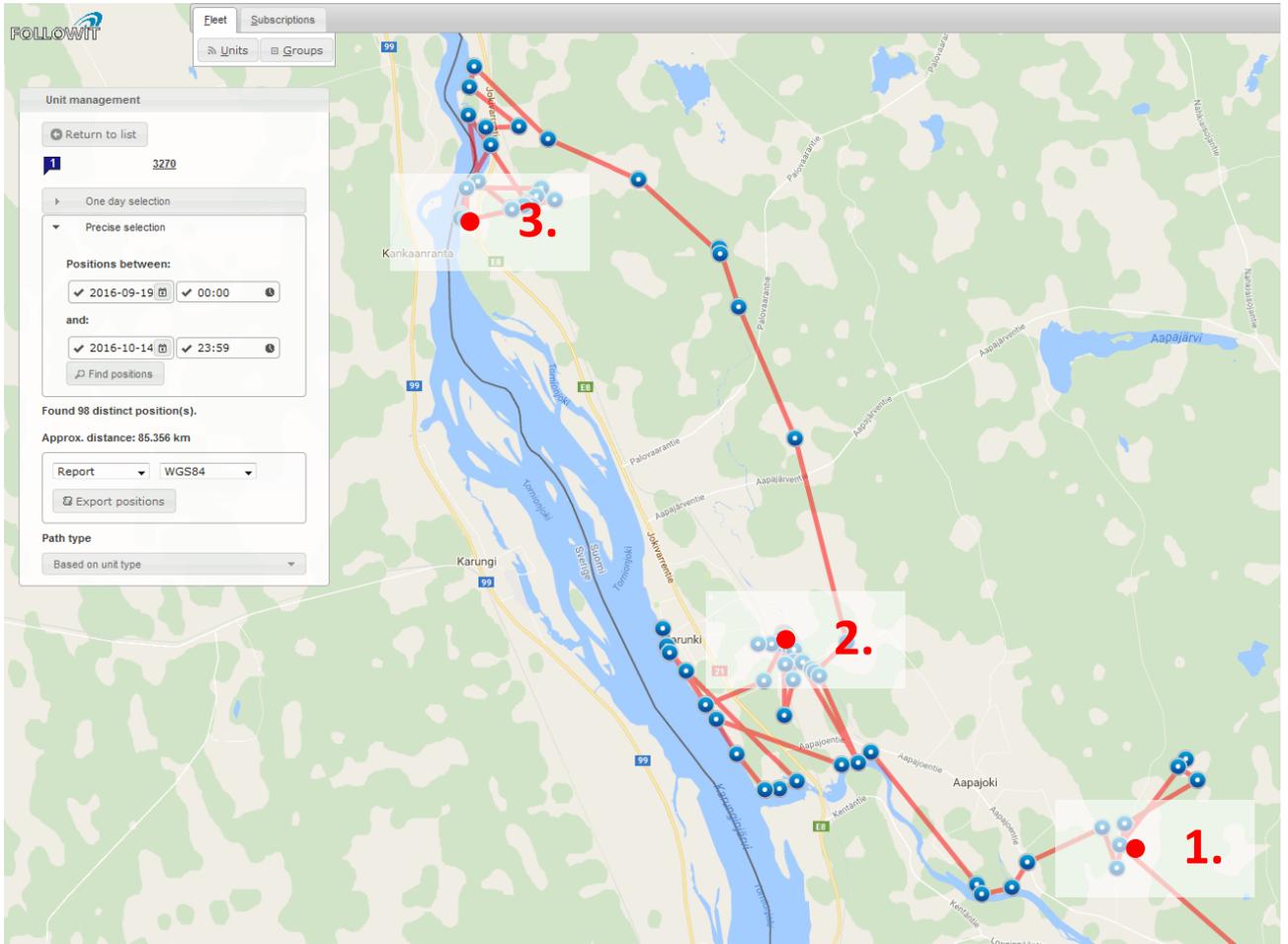




Judas 3278 made a 600 km loop in North-Central Lapland during January-May 2016 while looking for mate. Finally returned to area where it started the exploration.



Judas 3278 had eaten Wolverine killed reindeer at a mountain top treeless area at Lemmenjoki National Park in mid-March 2016. That's arctic for Raccoon Dog!



The collar 3270 had following movements:

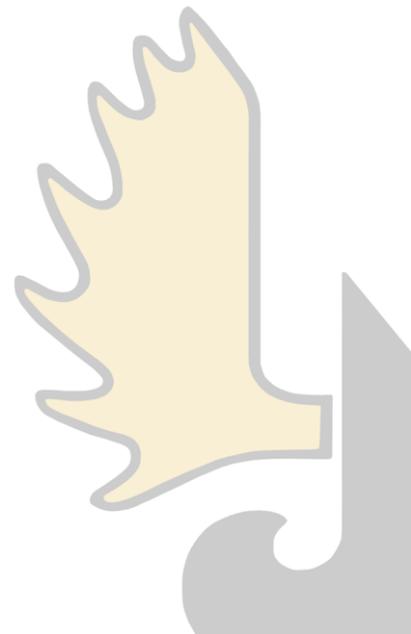
1. Sept. 19<sup>th</sup> Released
2. Oct. 4<sup>th</sup> Caught by a hunter with dogs, released

3. Oct 14<sup>th</sup> Caught in Kanu trap, killed
4. Oct 16<sup>th</sup> Collar set to new male caught with Kanu trap. Animal moved quickly to Tornio river
5. Oct. 25<sup>th</sup> Judas was caught in Kanu trap and released to continue its work.

As a conclusion, collar 3270 was carried by two Raccoon Dogs in 1,5 month period. These animals were caught 3 times: once by hunter with dogs and twice in Kanu traps. It seems that hunting pressure in Tornio is at adequate level.



1 Swedish Judas entered Finland and was caught in a trap set by voluntary hunter in Tornio river island. *Note: This trap has caught mostly Raccoon Dogs coming from Sweden to Finland*



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### 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. The hunters have participated the project actions well and interest towards educational events and reporting RD observations have been good. However, due to declining population it is becoming harder to keep up the RD hunting motivation. It is still hard to motivate to hunt for something that almost does not exist.

During 2016 total of 60 different events was organized or participated by the project with total of 3455 participants.

Wildlife cameras, KaNu traps and trap building material and trap alarms were provided for interested hunters in the project area. In some places the traps set during MIRDINEC project were moved to better places to increase the effectiveness. The model traps were built in the educational events and material for more traps was given to local hunting associations for further use.

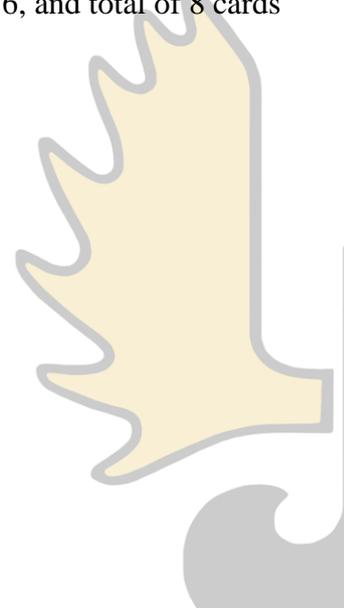
The project purchased 20 cameras, material for total of 120 KaNu –traps, 40 Uovision trap alarms. During 2016 143 traps were built in educational events, including the saved trap materials from 2015.

Table 2. Events and participants during 2016.

Type of event	number of events	number of participants
Hunter education/information/project presentation	49	571
Schools and Young hunters	7	354
Exhibitions/general public	4	2530
<b>TOTAL</b>	<b>60</b>	<b>3455</b>

### Gift card –campaign

The idea of Gift-Card campaign was to motivate the hunter to report and return GPS-collars. This is a way to reward active hunters providing animals for collaring and to retrieve the lost collars. It was estimated that 15 x 100 € cards and 30 x 50 € card are needed for 2016, and total of 8 cards was saved to 2017.



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### Information about IAS and dissemination of project results

Project media work during 2016.

7.1.2016	Article: Riista magazine
3.3.2016	Radio: Yle Lappi
11.1.2016	Radio: Radioperämeri
28.5.2016	Article in regional press Pohjolan sanomat
23.5.2016	Article in regional press Koillis-Sanomat
9.9.2016	Press release of Finnish Wildlife Agency
18.10.2016	Radio interview on regional channel
19.10.2016	TV news
19.10.2016	Article in local press Kittilän lehti
October.2016	Article in local press Sompiolainen
October.2016	Article in Riistan vuoksi/För viltet
1.11.2016	Article in regional press Pohjolan Sanomat
10.12.2016	Interview for Riista magazine

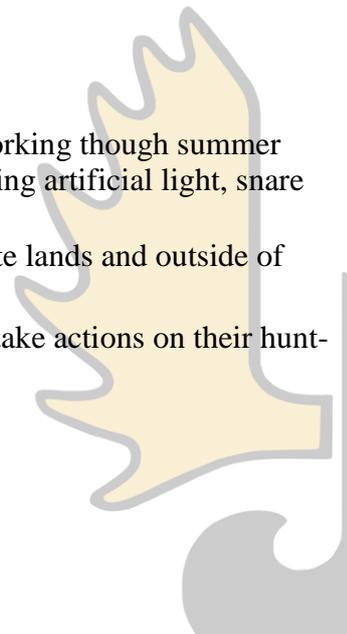
### Efforts to renew the current legal context of the raccoon dog and its status as an invasive species, in alignment with the Finnish management plan of the raccoon dog, produced during the LIFE project.

The Hunting Act was revised during 2014 but it did not provide major improvements for Raccoon Dog eradication. New revision is coming 2017 including the implementation of the AIHTS (Agreement on Humane Trapping Standards). A separate project is run by Finnish Wildlife Agency in cooperation with Swedish authorities to test and approve live traps for Raccoon Dog.

The Raccoon Dog is proposed for EU black list. If not voted for it, RD will probably be up listed to national black list in Finland which will have impact to management. The use of artificial light for example will be allowed through the IAS legislation. Details are all open.

### 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, using artificial light, snare etc.)
- Metsähallitus has issues permit to use ATV and Snowmobile on state lands and outside of designated trails.
- Virtually all key hunting associations have permitted the project to take actions on their hunting areas.



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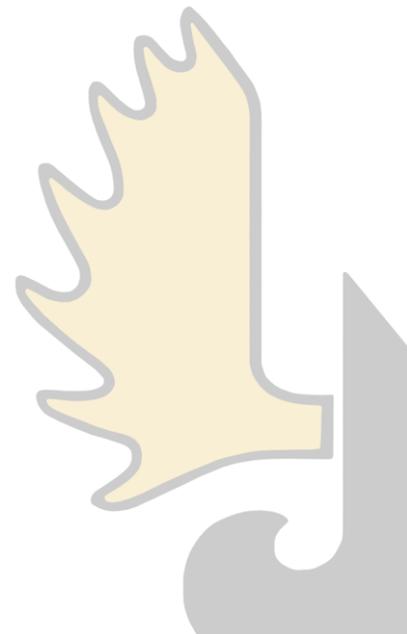
## Costs of Actions and realized funding

The total costs of project Actions in 2016 was 139 059,25 euro.

The project ended up with a positive budget balance of 1 440,75 euro, which is forwarded to 2017 activities and foreseen to be used to purchase a new collar for example.

The key main items for savings in costs were personnel costs where outsourcing of the EWS line operations in Central Lapland was cost-effective solution. The realized funding of Finnish Wildlife Agency was lower than expected, but results were achieved and project accomplished due to savings in personnel and travel costs compared to estimated.

<b>COSTS of 2016</b>		
<b>Cost item</b>	<b>Planned</b>	<b>Realized</b>
1. Salary costs:	50 000,00	42 698,55
2. Service, maintenance and necessary update/repair of satellite/GSM-GPS collars for Judas animals (~ 20 collars)	35 000,00	35 000,00
3. Materials and triggers for KaNu -live traps	13 500,00	12 653,27
4. Remote trap alarm 40	5 000,00	3 520,00
5. MMS wildlife camera+ GSM service	5 000,00	4 596,00
7. Motivating voluntary hunters. Gifts, Thanks giving dinners etc. Gift-Cards for Judas-animal co-operation	6 500,00	2 426,40
Batteries, timber, screws etc small items	3 000,00	7 189,03
8. Travel costs	30 000,00	26 476,00
Extrenal EWS line operations		4 500,00
<b>Total</b>	<b>148 000,00</b>	<b>139 059,25</b>
		-
<b>ANNUAL Funding: Country: cost item</b>		
<u>Finland</u>		
Finnish Wildlife Agency: 1	30 000,00	22 500,00
Metsähallitus: 8	10 000,00	10 000,00
<u>Sweden: 2</u>	35 000,00	35 000,00
<u>Norway: 1, 3, 4, 5, 6, 7, 8</u>	73 000,00	73 000,00
<b>TOTAL</b>	<b>148 000,00</b>	<b>140 500,00</b>
<b>BALANCE</b>	<b>SAVED</b>	<b>1 440,75</b>



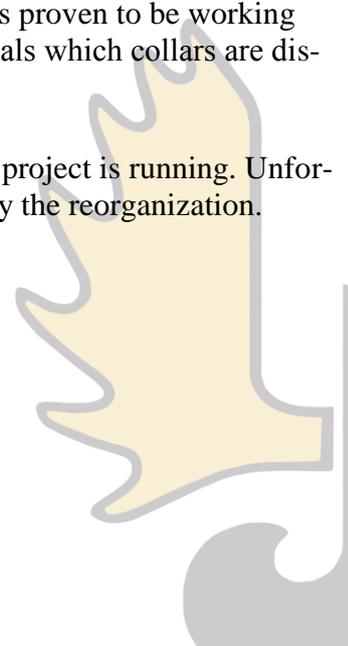
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### Conclusions

- The Raccoon Dog population of the project area in South-Western Lapland has stayed at low level compared to 2012, but compared to 2014-2015 the harvest level and observations started to increase.
- Raccoon Dogs are present throughout Lapland. North of Arctic Circle population is small and scattered to small cells, and Judas animals in these areas were often lost due to poor GSM coverage.
- 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.
- Additional contracted hunters operating EWS lines in Central Lapland were cost-effective solution to operate areas far from key spot in South-Western Lapland.
- All available means of Raccoon Dog management are needed and together different working tools (active hunting, Judas animals, cameras, trapping) create a frame to control the population

### Project Actions in 2017

- Due to administrative reasons the current project management model operated by Finnish Wildlife Agency ended at the end of 2016 and the project administration is under reorganization.
- It is foreseen that the project will be outsourced to a company, preferably continuing to use the expertise of Juha Mäkimartti. The project will be funded and supervised by Finnish Wildlife Agency and special contract and in-detail working plan will be developed for the company providing this service. It is foreseen that there is need to increase the budget of the management work to keep the activities at the same level. Continued funding and support from Norway, Sweden and Metsähallitus is essential for successful continuation of project actions
- The project Actions need to be continued at least on the current level. The relative importance of project staff will increase as the motivation of the voluntary hunters decline following the decrease of the Raccoon Dog population.
- The 'Gift Card' motivation scheme is foreseen to be continued. It has proven to be working tool to keep up the hunting pressure and to retrieve 'lost' Judas animals which collars are disfunctioning.
- Project partners will be informed as soon as new organization of the project is running. Unfortunately there will be 2-3 month gap in management action caused by the reorganization.



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January 20<sup>th</sup> 2017.  
Mikko Alhainen  
Finnish Wildlife Agency

