



**NORSKE
REDNINGSHUNDER**
Norwegian Search and Rescu

Lost person behaviour

Evidence based statistical
analysis particular to Norway



Authors:
Olav Lie
Knut Skår



Abstracts

- Norwegian Search and rescue dogs
- Collection of data
- Statistics from our callouts
- Influencing factors that affect our operational tasking methods



Who are we?

Norwegian Search and Rescue Dogs is a humanitarian, non-profit organisation founded in 1956.

To cover our long and rugged country, the Norwegian Search Rescue Dogs are divided into 18 regional district and call-out units.

We have 3 different certification of our search dogs:

- Avalanche, wilderness (included tracking) and urban disaster

Our dog teams are mainly search teams, however, we do perform casualty care, for the overall functions needed in an operation, we cooperate with other Norwegian organisations with different specialities.

This is the Norwegian model for SAR operations



Numbers

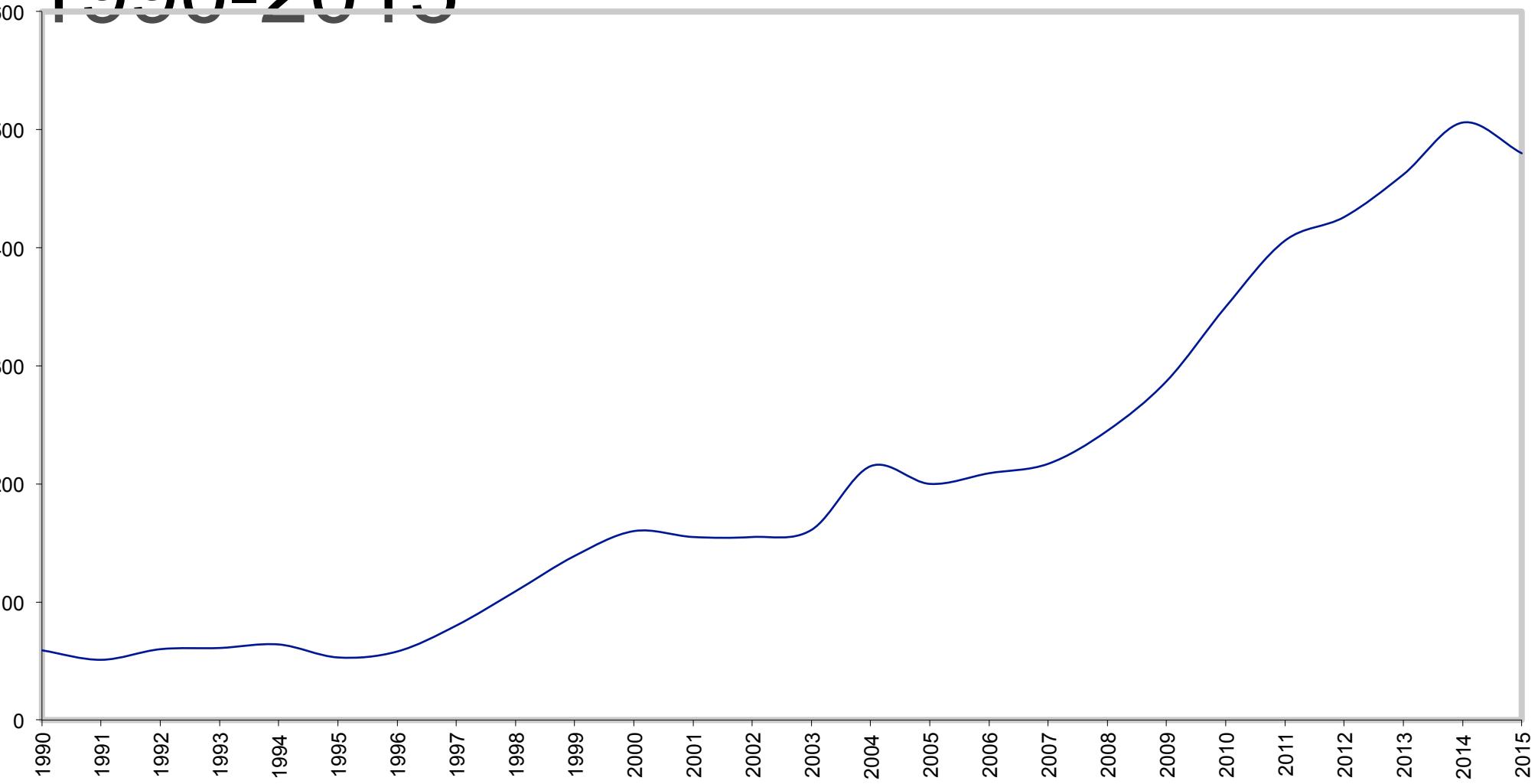
October 15th 2016

- Members: 1600
- Wilderness search dogs : 256
- Avalanche dogs : 112
- Urban disaster dogs : 34
- Number of callouts: 356





Number of callouts in the period 1990-2015



Callouts



Year	Number of callouts	Number of dog-handlers	Hours in search	Finds	Dead	Alive
2015	480	2796	11586	39	10	29
2014	510	2604	10305	31	8	23
2013	462	2685	10512	53	11	42
2012	426	2547	12028	39	8	31
2011	407	2440	11632	53	15	38
2010	308	1624	9927	35	8	27
2009	286	1440	9886	18	5	13



Documentation and collecting of data

- Operational leader (OL) for all callouts
- GPS tracking of dog and handler
- GPS Garmin standard software Basecamp
- The OL are responsible for delivering standard reports to the system, in addition to planning and logging the search's.
- SharePoint database (local and national), in 2015 we contributed to creation of a national SAR register.
- Report evaluation.

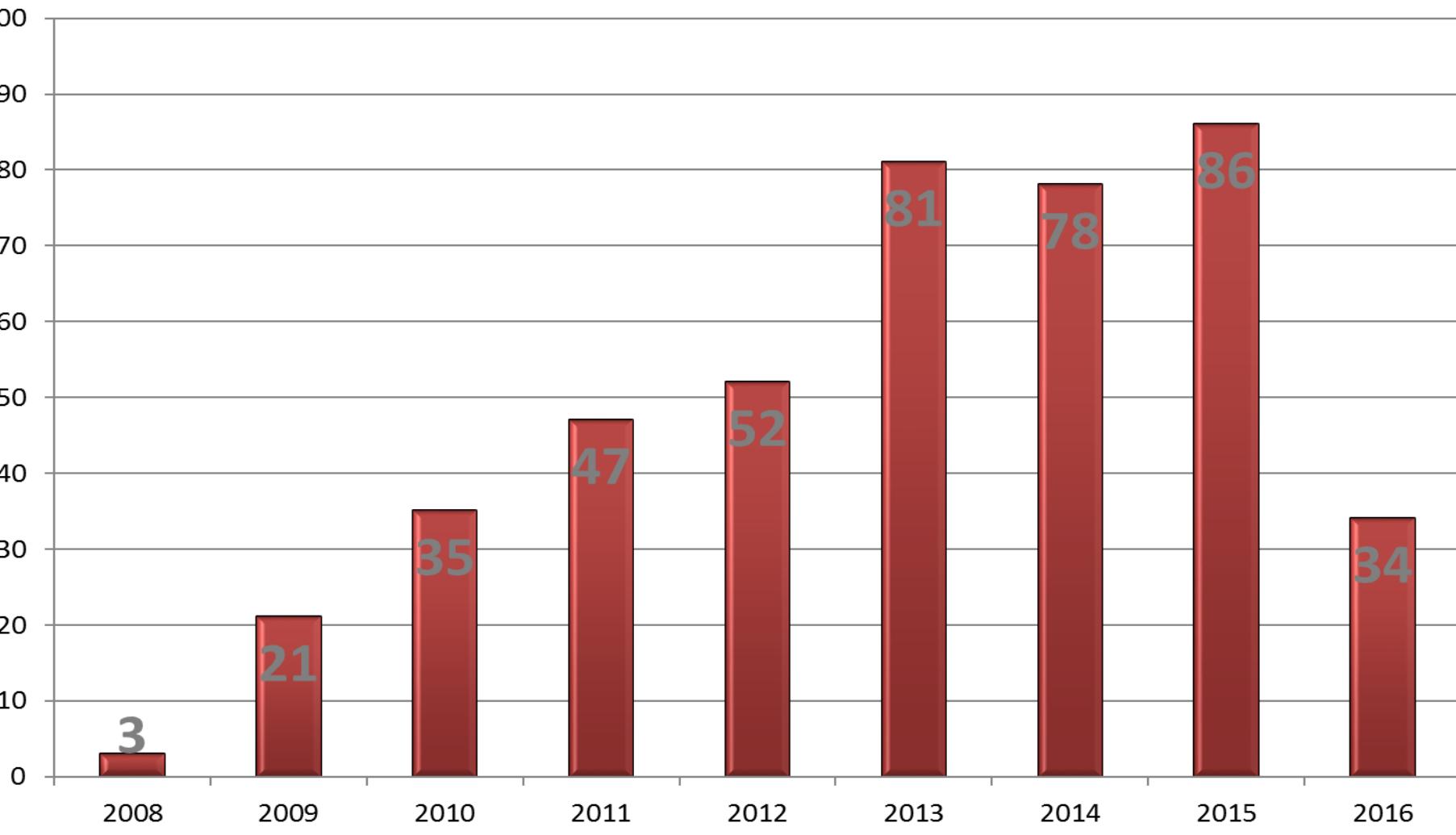


Data to be registered for the callout

- ✓ Category; (dementia, suicidal, hiker, hunter.....)
- ✓ IPP – map reference
 - ✓ Location the lost person probably will return to
 - ✓ What was IPP in this callout
- ✓ Location found - map reference
- ✓ Date missed
- ✓ Time missed
- ✓ Date found
- ✓ Time found
- ✓ Who made the find
- ✓ All logs and maps must be stored in SharePoint



Callouts in the statistics



Number of incidents	197	103	7	9	7	49	13	8	12
L.P.B. book	-4	72	13	27	16	225	81	457	3
	Suicidal/ Despondent	Dementia	Autism	Retarded	Mentally- ill	Hiker	Berries / mush- rooms	Hunter	Drugs
Distance from IPP in direct line									
	<i>Km</i>								

5 %	0,37	0,27	1,73	1,13	0,30	0,64	1,26	1,72	0,41
0 %	0,98	0,80	4,34	1,43	0,68	1,71	1,69	2,65	0,66
5 %	2,50	3,15	6,49	2,17	2,35	3,35	2,78	4,14	1,54
5 %	8,54	9,05	9,01	3,79	47,92	14,85	12,29	4,55	4,24
00 %	145,3	33,7	9,9	4,4	67,4	27,9	20,7	4,6	4,6
Person	17,3	12,8	15,2	11,8	17,8	9,9	12,9	13,7	9,7

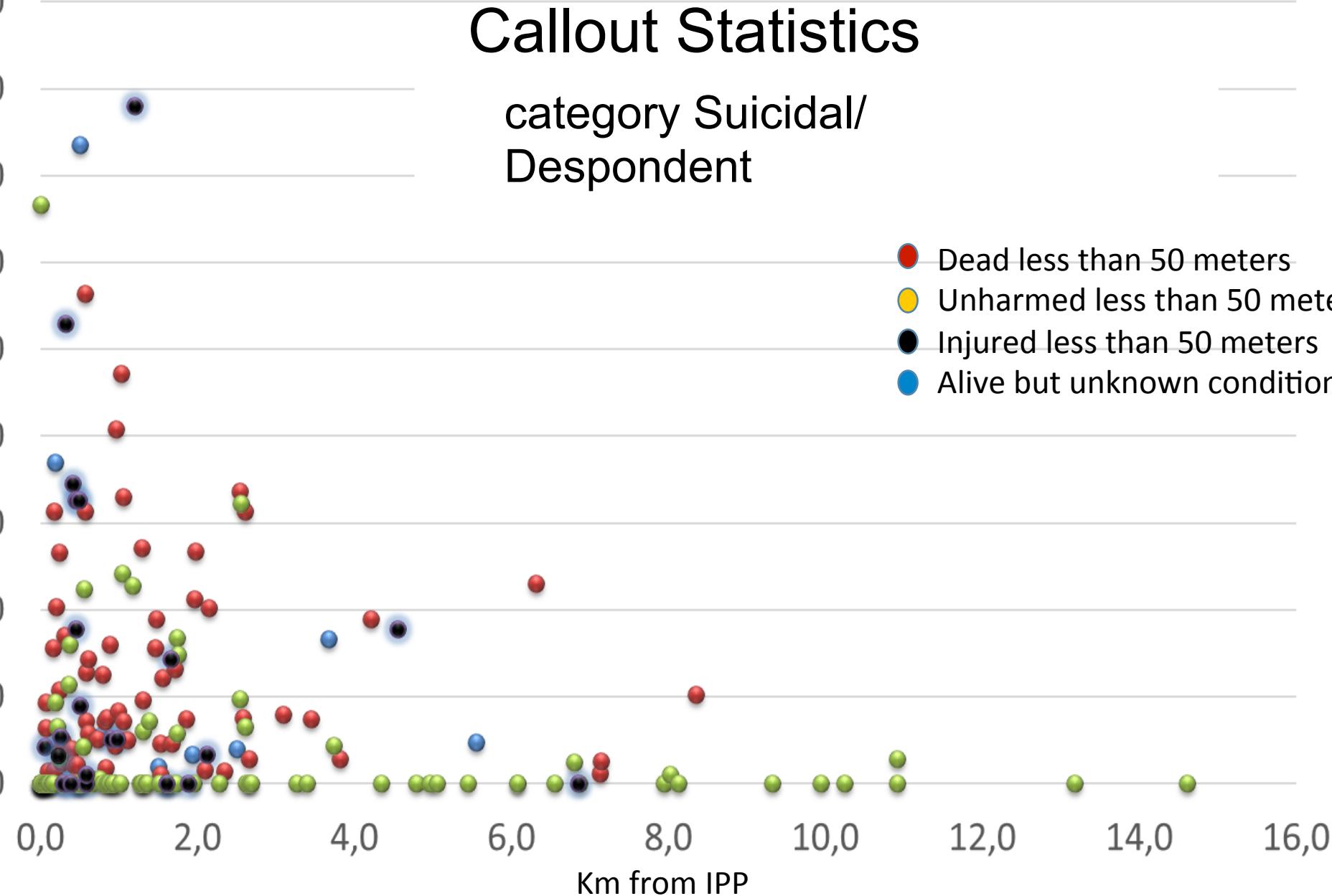
	Suicidal/ Despondent	Dementia	Autism	Retarded	Mentally-ill	Hiker	Berries / mush-rooms	Hunter	Drugs
Comparative analysis of missing person category and the distance from a road, track or path measured as a percentage									
0 meter	42 %	64 %	86 %	56 %	86 %	33 %	15 %	38 %	42 %
25 meter	62 %	81 %	86 %	78 %	86 %	47 %	31 %	38 %	58 %
40 meter	72 %	83 %	86 %	89 %	86 %	55 %	38 %	38 %	67 %
50 meter	76 %	86 %	86 %	89 %	86 %	61 %	38 %	38 %	83 %
60 meter	77 %	89 %	100 %	89 %	86 %	63 %	38 %	38 %	83 %
70 meter	80 %	93 %	100 %	89 %	86 %	67 %	38 %	38 %	83 %
80 meter	83 %	94 %	100 %	89 %	86 %	67 %	38 %	38 %	83 %
90 meter	85 %	94 %	100 %	89 %	86 %	69 %	38 %	38 %	83 %
100 meter	86 %	94 %	100 %	89 %	86 %	69 %	46 %	38 %	83 %



Callout Statistics

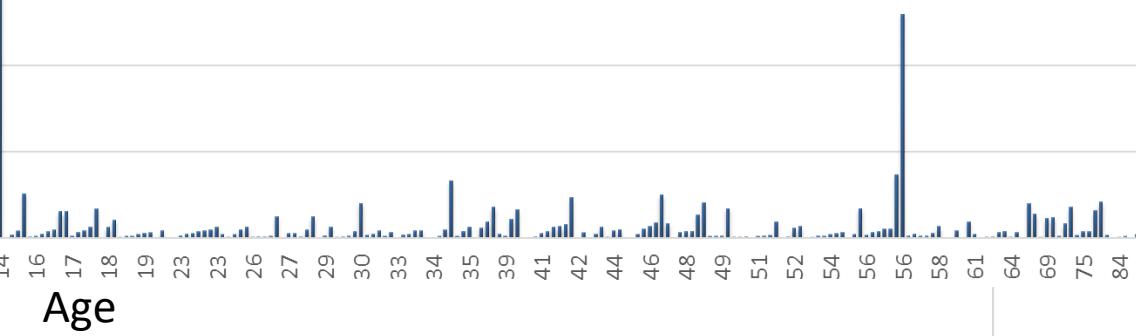
category Suicidal/
Despondent

- Dead less than 50 meters 62%
- Unharmed less than 50 meters 91%
- Injured less than 50 meters 61%
- Alive but unknown condition

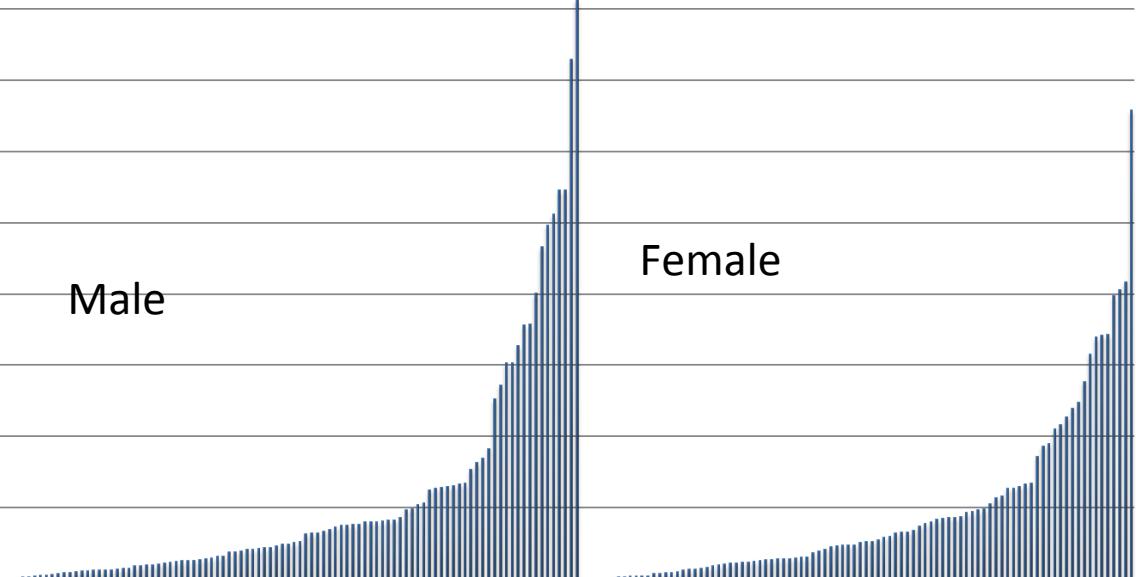




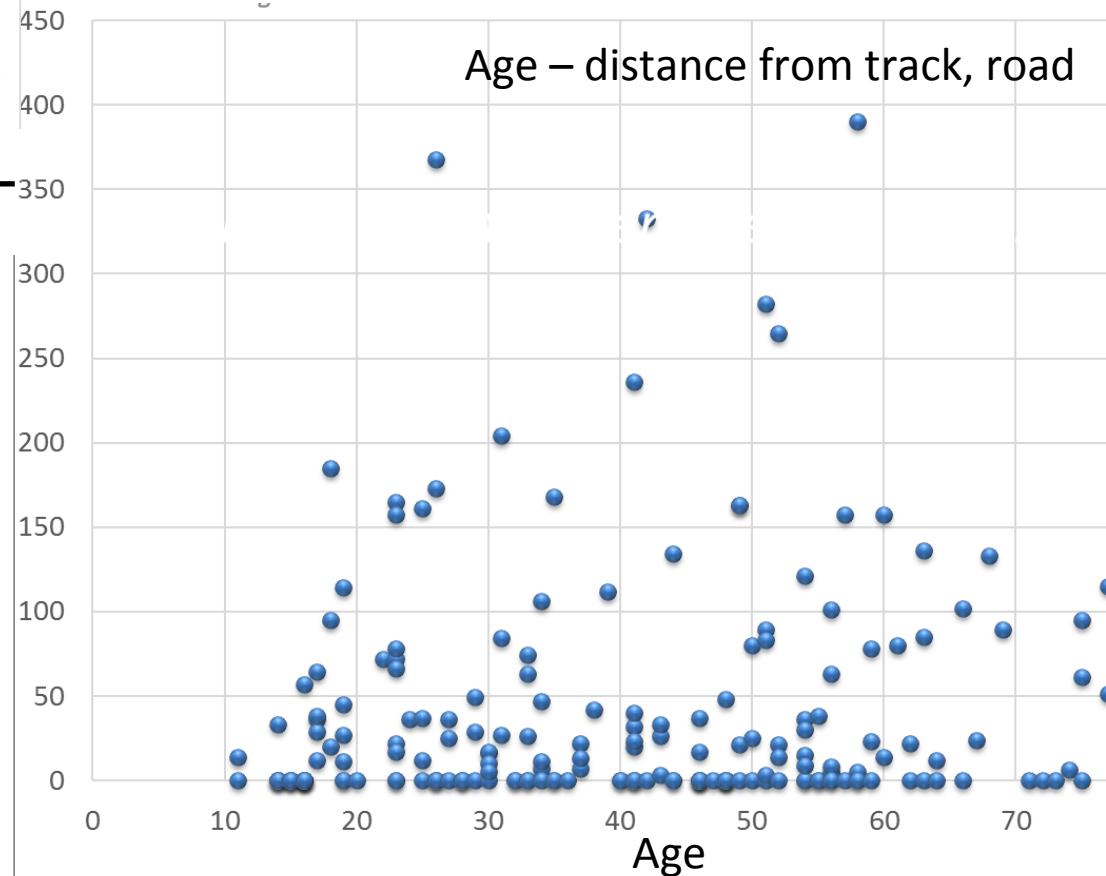
Age – distance from IPP



Sex – distance from IPP

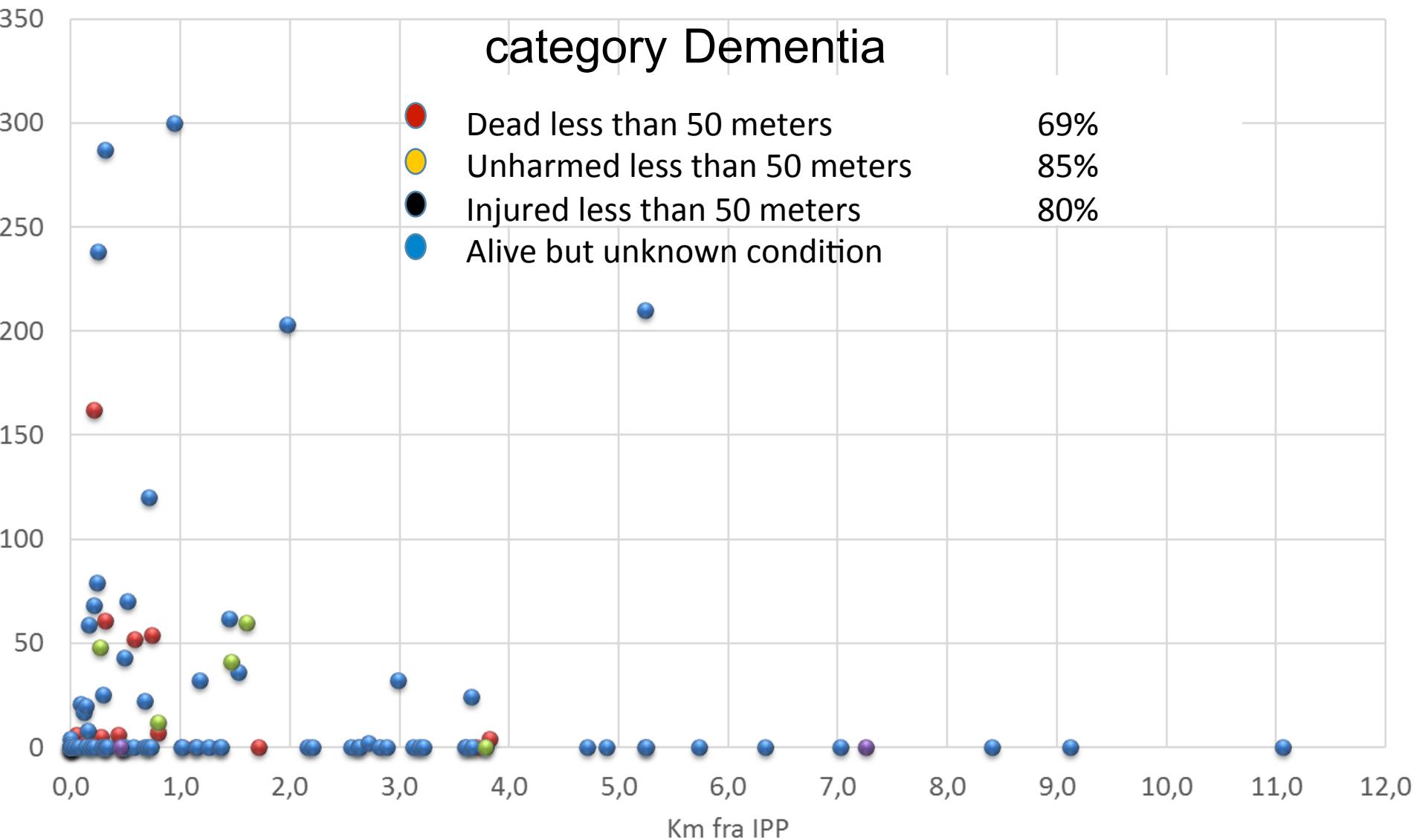


category Suicidal/Despond



Callout Statistics

category Dementia





Search tactics

Based on the statistics how should we search?

- Depending on who we are looking for we need different tactics.

Are we trained to do such search's?

- Dog search has to change to do quicker search, we have altered our programme to include this kind of search.

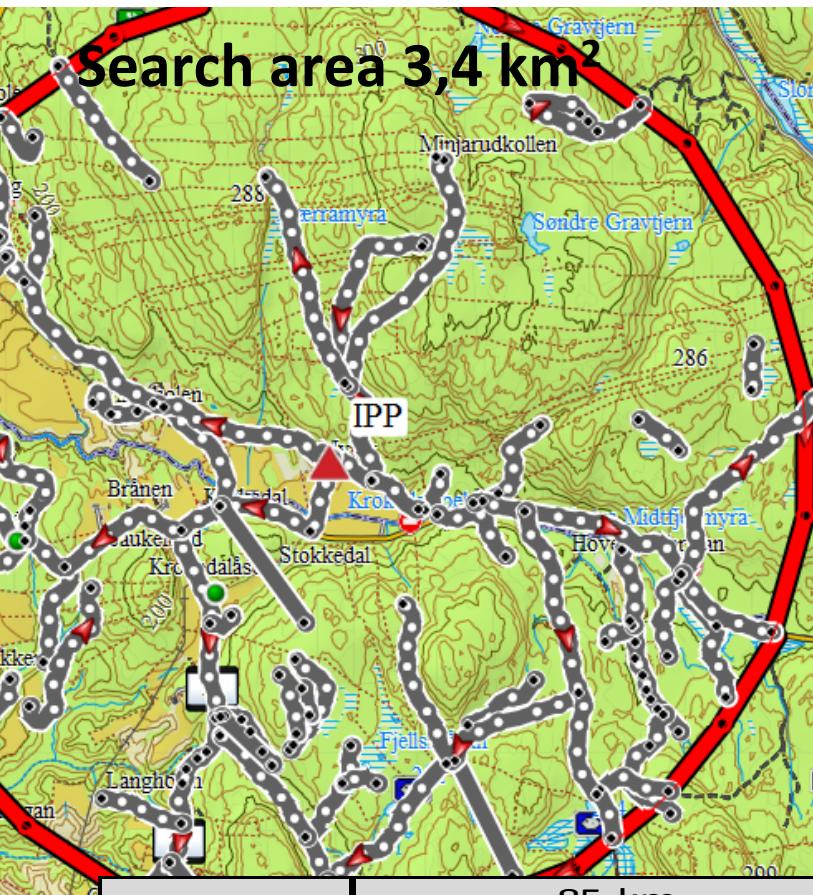
Operational leaders must make a plan based on information and statistic

- Be able to explain this to all different crews.
- Use of ATV, cars, bikes etc.
- Prioritise area of search and be able to justify the chosen tactics.

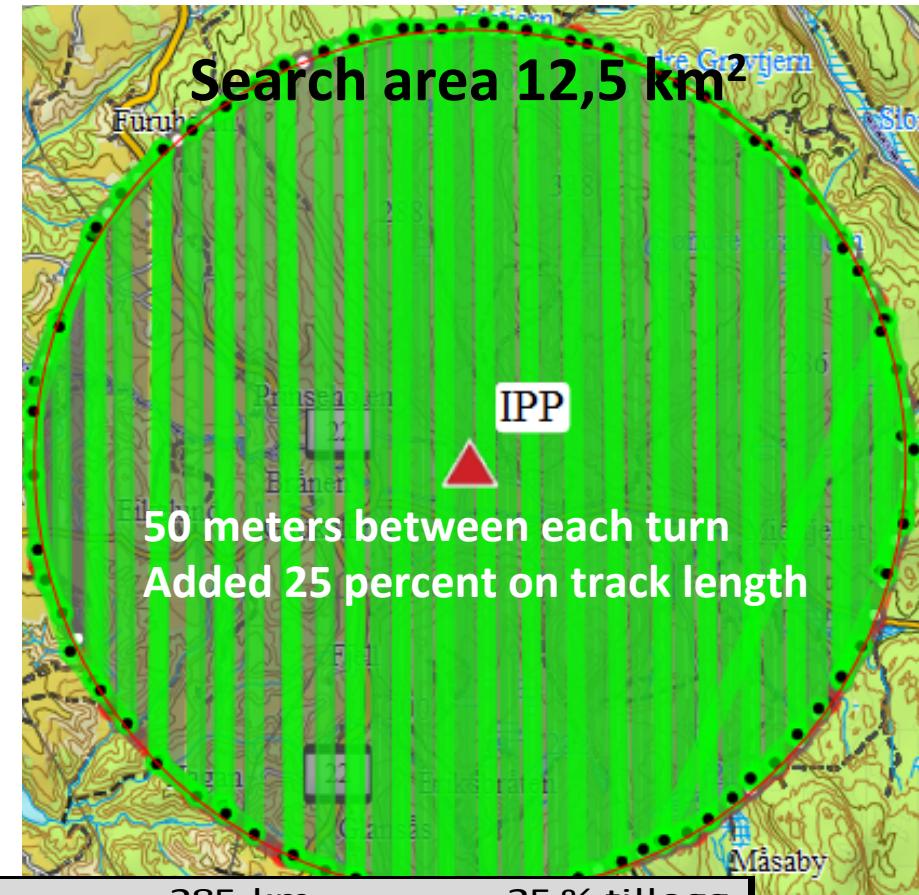


Task

- Two persons and two objects missed along the road:
- Road distance: 3,5 km
- Dogs distance: 8,1 km
- Time insearch: 53 m
- Time total: 65 m
- Speed total: 3,2 km/h
- Speed searching: 3,9 km/h



**Path-,
road-,
track-
search
50 meter
on each
side**



**Are
sea**

Number Dog- handlers	85 km Path-, road-, track-search			285 km Area search 2 km		
	2 Km/t	3 Km/t	4 Km/t	2 Km/t	3 Km/t	4 Km/t
4	10,6	7,1	5,3	35,6	23,75	17,8
6	7,1	4,7	3,5	23,8	15,8	11,9
8	5,3	3,5	2,7	17,8	11,9	8,9
10	4,3	2,8	2,1	14,3	9,5	7,1
12	3,5	2,4	1,8	11,9	7,9	5,9
14	3,0	2,0	1,5	10,2	6,8	5,1
16	2,7	1,8	1,3	8,9	5,9	4,5
18	2,4	1,6	1,2	7,9	5,3	4,0



Conclusion

- Combine search methods
- Start with rapid coarse search along roads, tracks ... with ATV, cars, bikes
- Dogs out to 70 meters
- Continue with fine search from IPP when we got more personnel.

rapid finds saves lives!