



Jämförelse av planerade och verkliga responstider för kommunal räddningstjänst

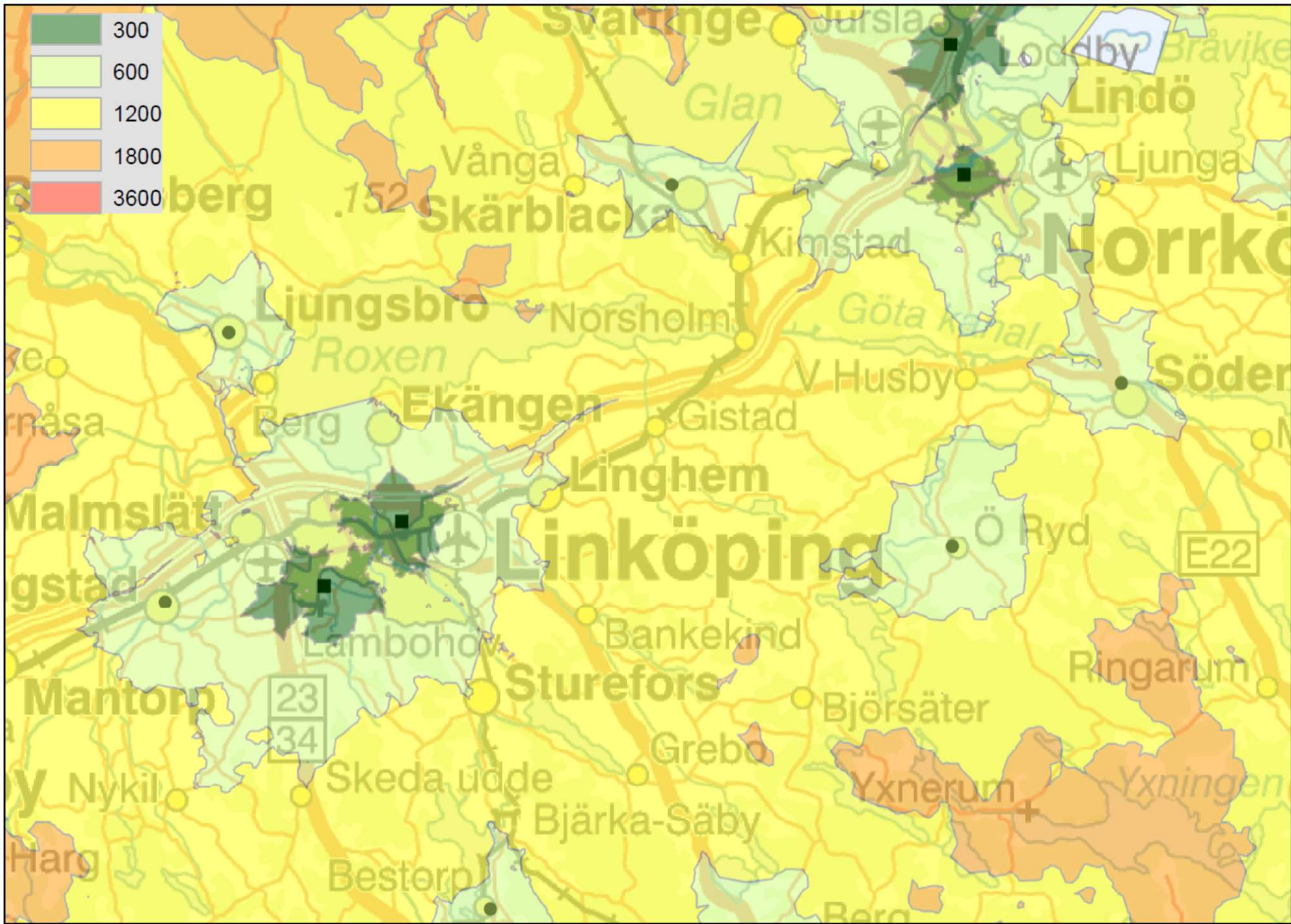
Tobias Andersson Granberg, LiU
Vania Ceccato, KTH



BLIGS

- Blue light in green surroundings
- Identifierar utmaningar och möjligheter med räddning och respons i glesbygd
- Blandning mellan kvalitativa och kvantitativa studier
- Projektleds av KTH
- Finansieras av FORMAS
- Idag: Utbud av kommunal räddningstjänst
 - I hela landet

• S

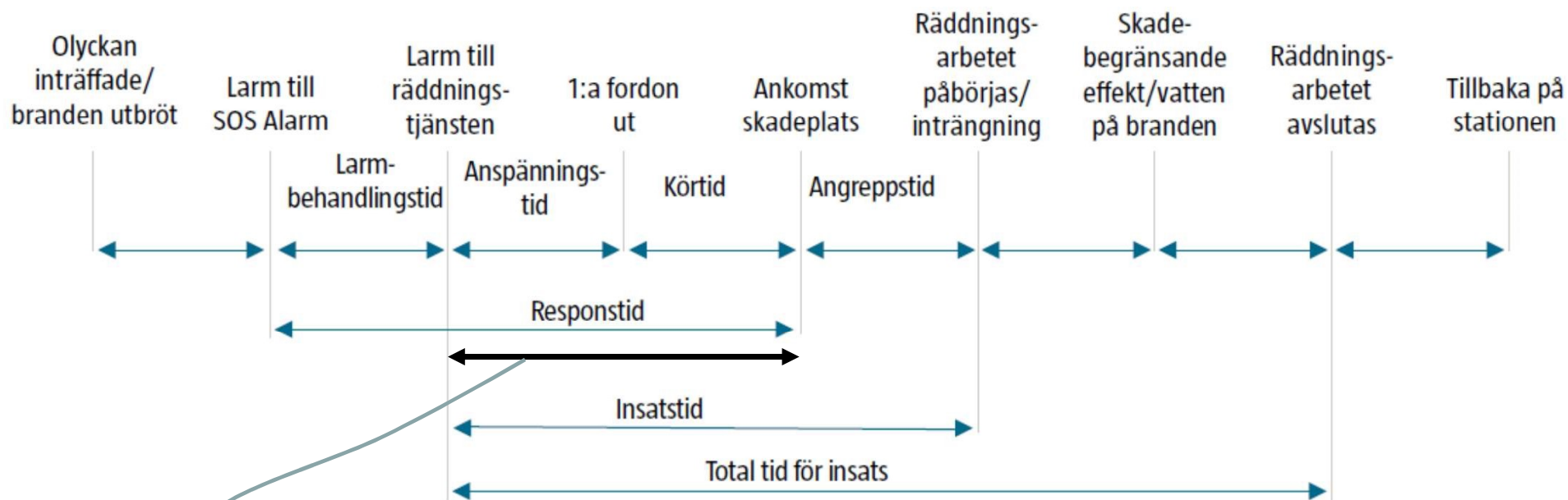


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Tidpunkter och tidsåtgång vid räddningsinsatser (larmkedjan)



Responstid i detta arbete

Från: MSB, Räddningstjänst i siffror 2015



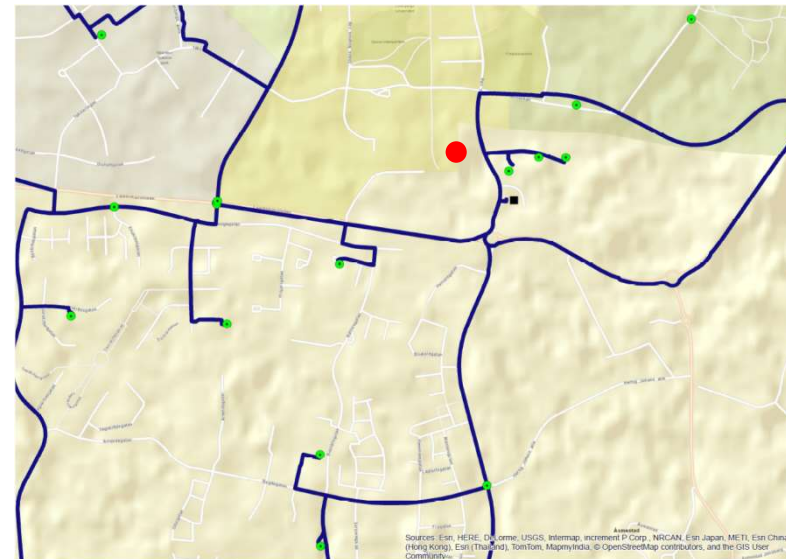
Frågeställning

- Hur väl stämmer de verkliga responstiderna med de planerade (förväntade)?

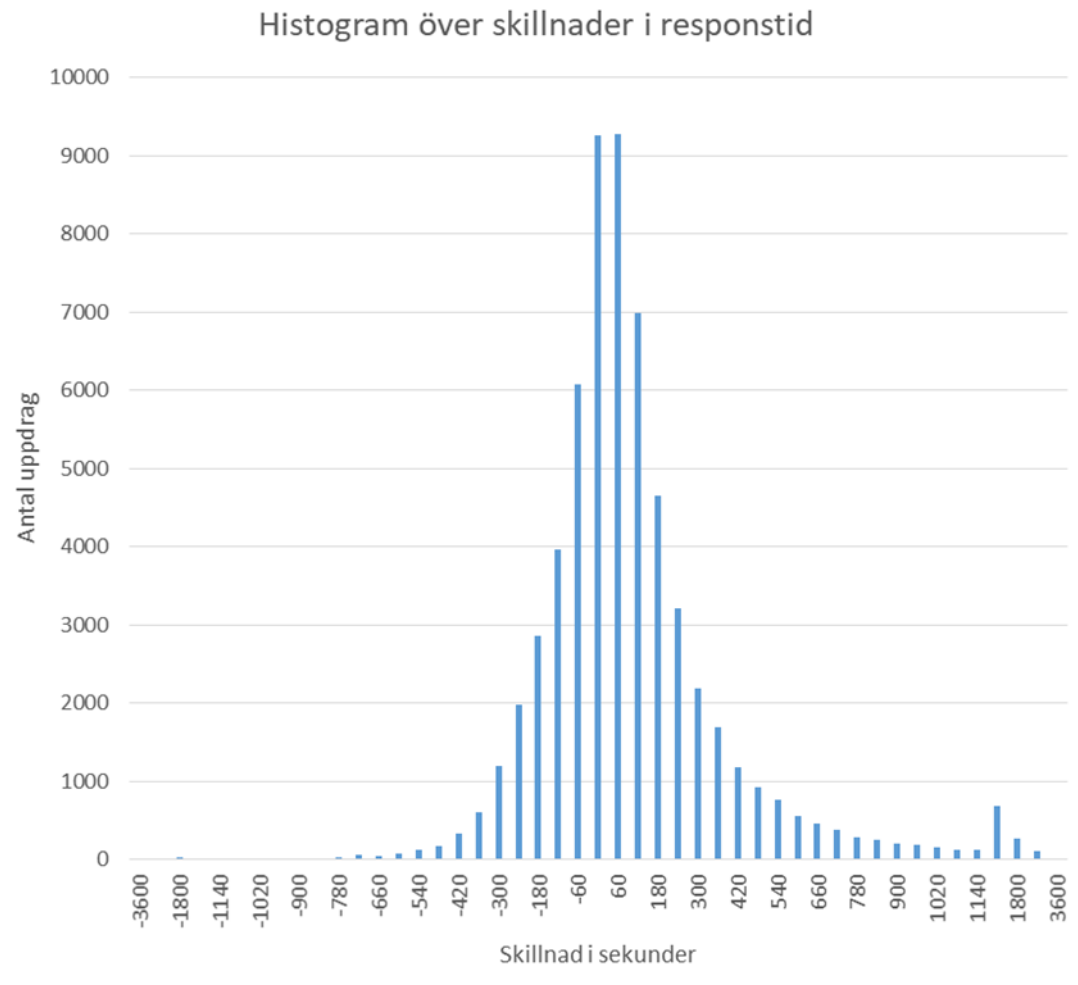
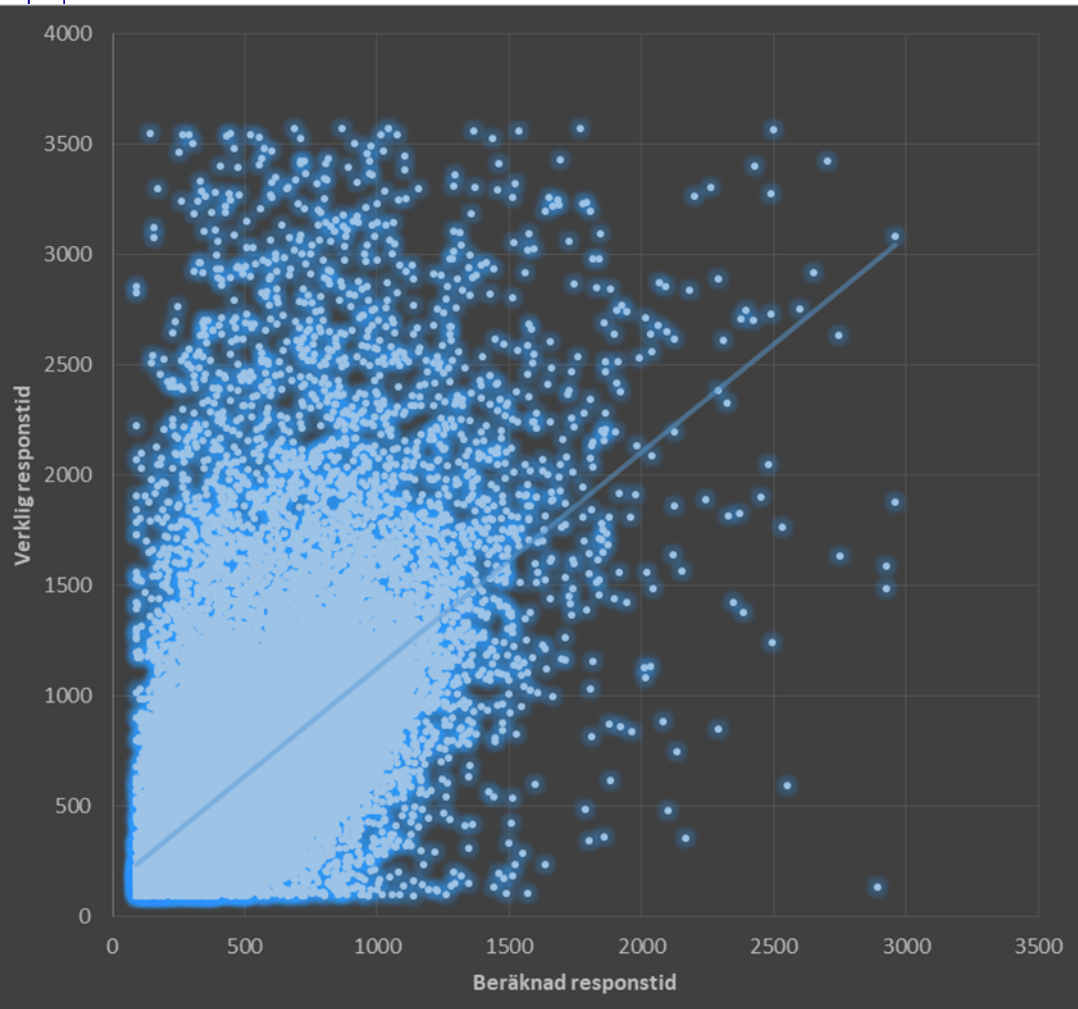
Metod

- Verkliga tider från händelserapporter för 2018
 - 133 702 st
 - Rensat för
 - Saknar koordinat
 - Händelse utan risk för skada
 - Utlösande händelse - övergripande: Inte tillämpbar
 - Responstid saknas, < 90 s, > 60 min
- Beräknade (planerade) tider
 - Tider beräknas i ArcMap till de historiska händelserna, från närmaste station
 - Snabbaste väg, skyltad hastighet
 - Bortfall för händelser på öar, etc
- Slutligt antal händelser i analysen
 - 61 444 st

- Stationer
 - Heltid, 90 s
 - Deltid, 300 s
 - Dagtid, 90 s
 - FIP, 90 s
 - Värn, 300 s



● Här är du

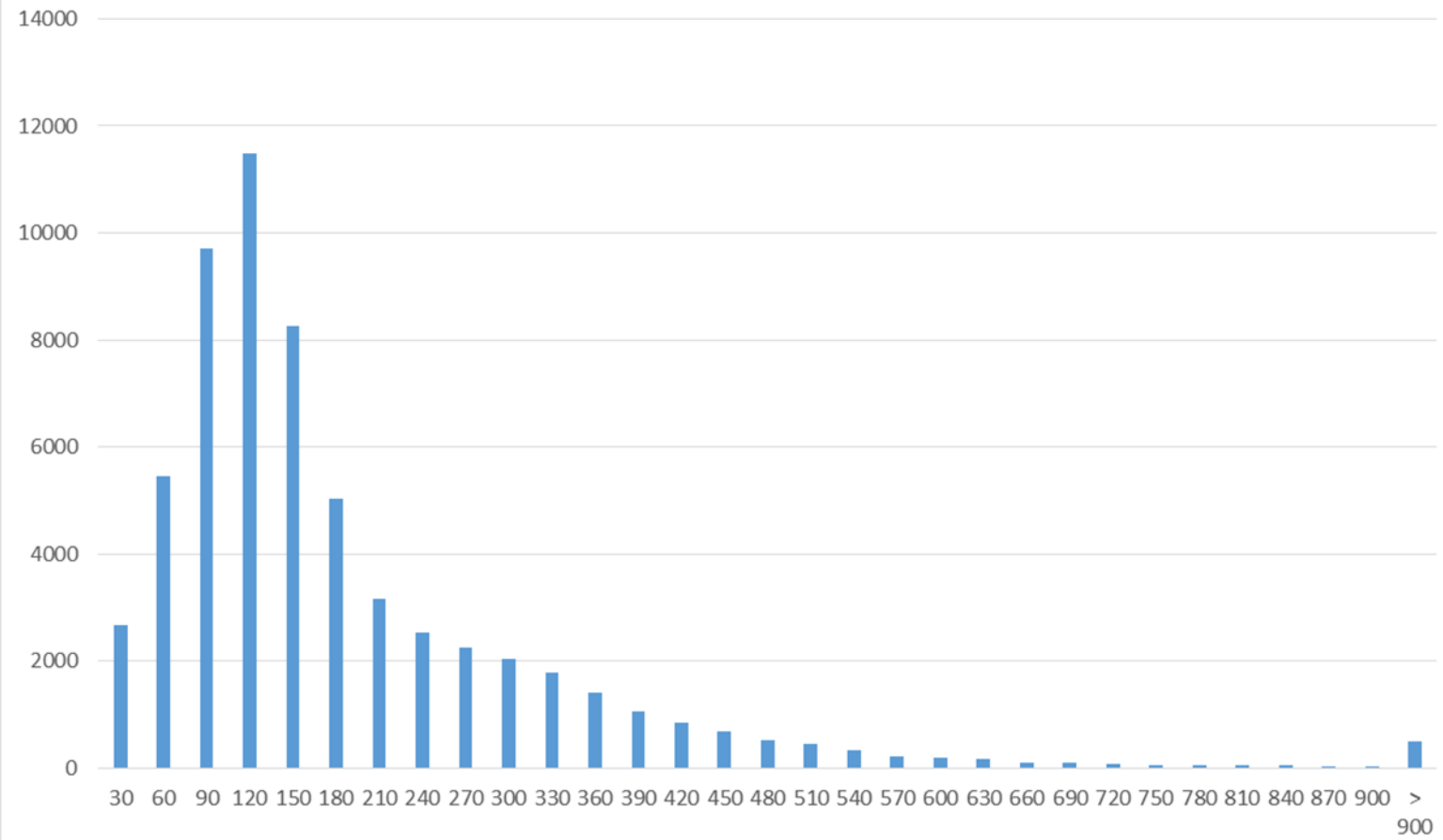


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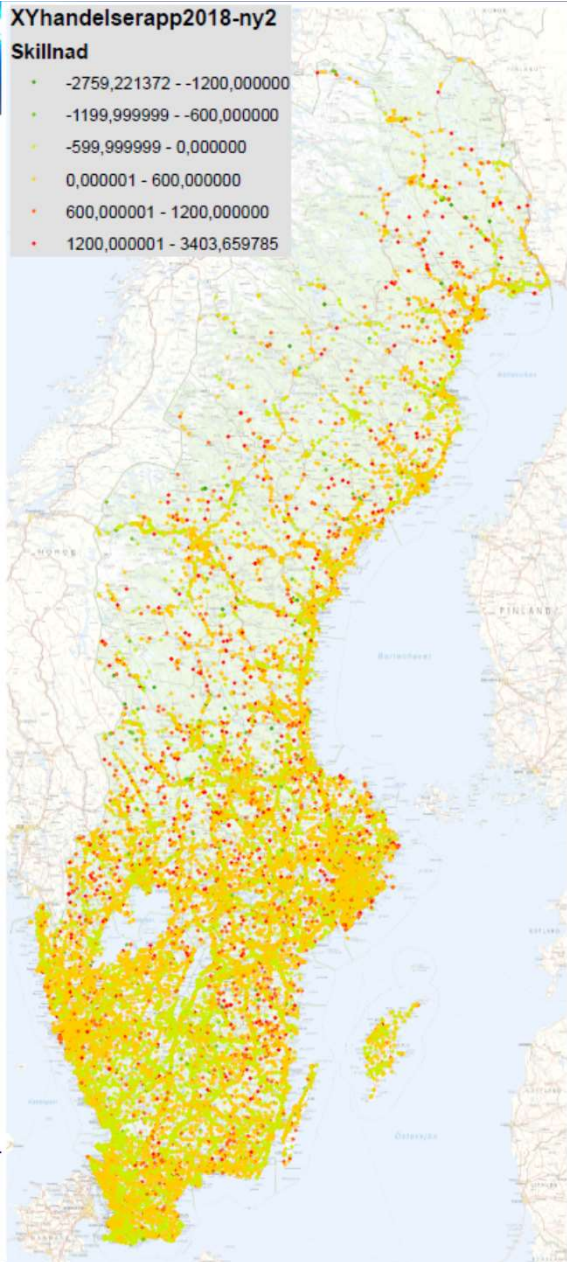
Anspänningstider



XYhandelserapp2018-ny2

Skillnad

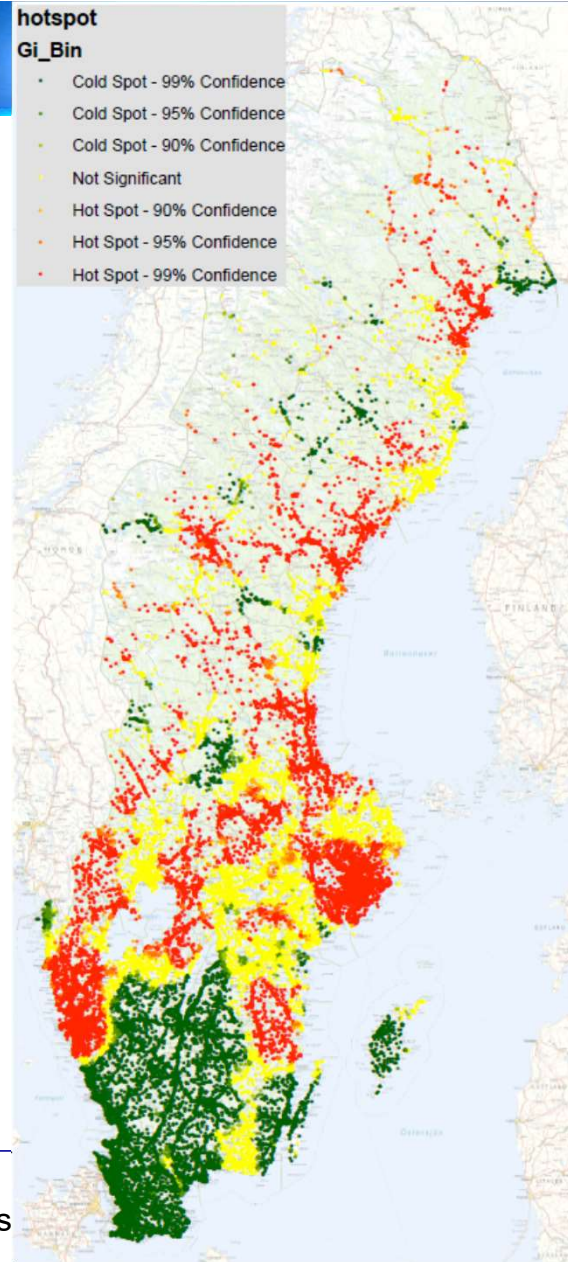
- 2759,221372 - -1200,000000
- 1199,999999 - -600,000000
- 599,999999 - 0,000000
- 0,000001 - 600,000000
- 600,000001 - 1200,000000
- 1200,000001 - 3403,659785



hotspot

Gi_Bin

- Cold Spot - 99% Confidence
- Cold Spot - 95% Confidence
- Cold Spot - 90% Confidence
- Not Significant
- Hot Spot - 90% Confidence
- Hot Spot - 95% Confidence
- Hot Spot - 99% Confidence



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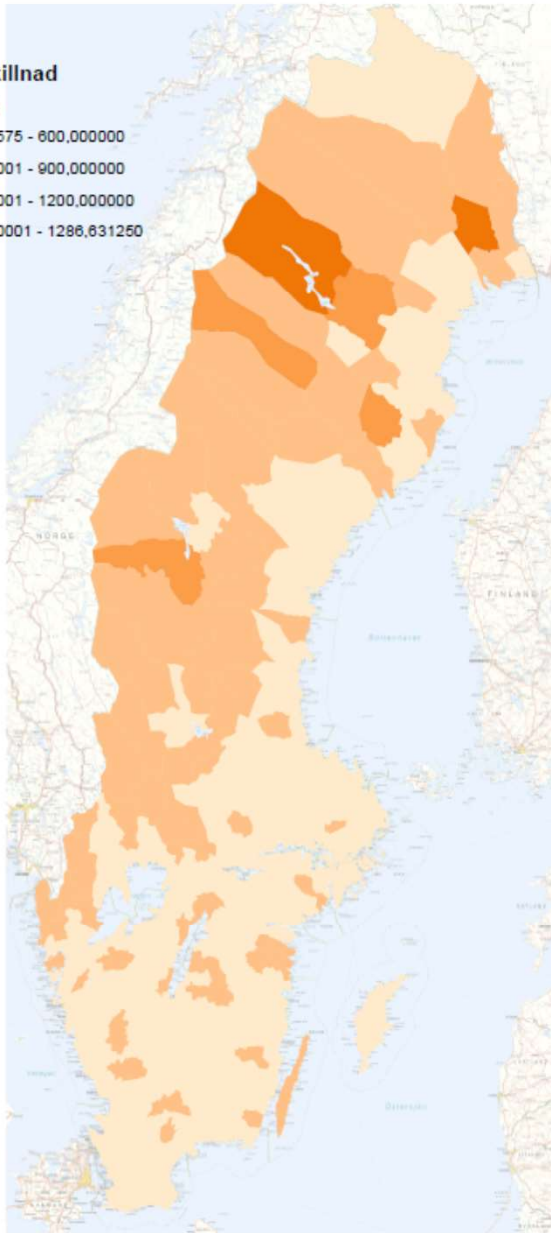
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Legend

kommun-skillnad

Avg_Beräkn

- 276,835575 - 600,000000
- 600,000001 - 900,000000
- 900,000001 - 1200,000000
- 1200,000001 - 1286,831260

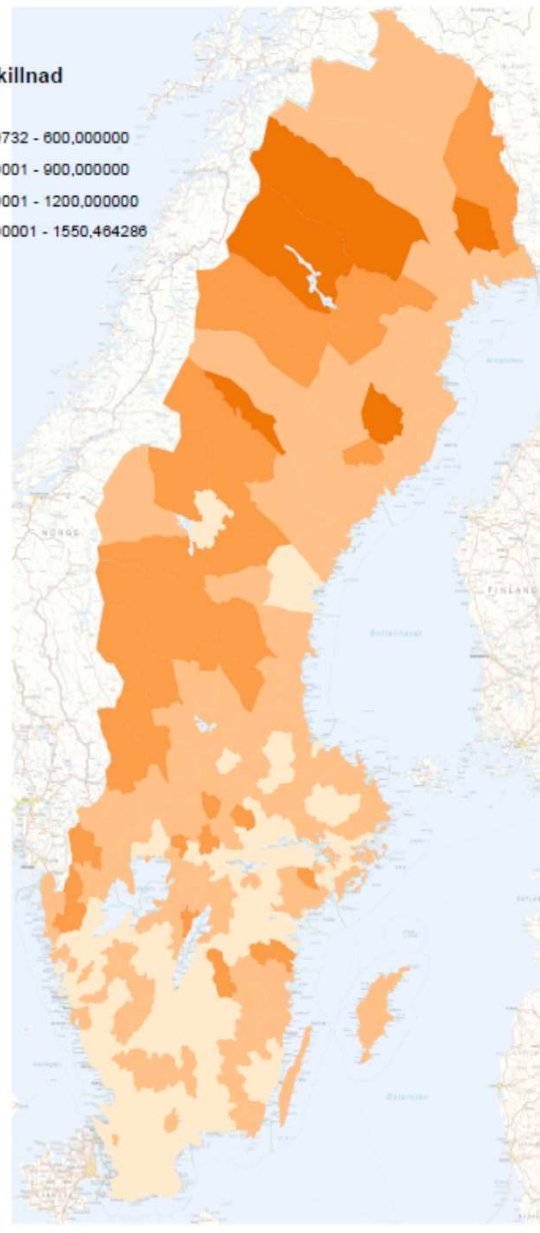


Legend

kommun-skillnad

Avg_Verkli

- 368,670732 - 600,000000
- 600,000001 - 900,000000
- 900,000001 - 1200,000000
- 1200,000001 - 1550,464286

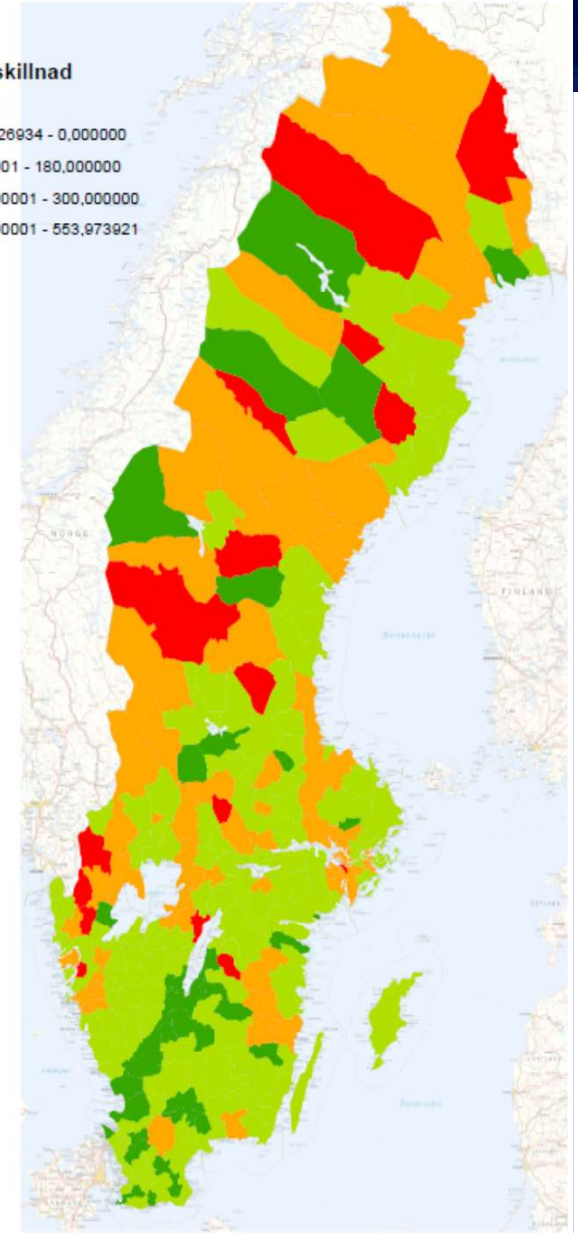


Legend

kommun-skillnad

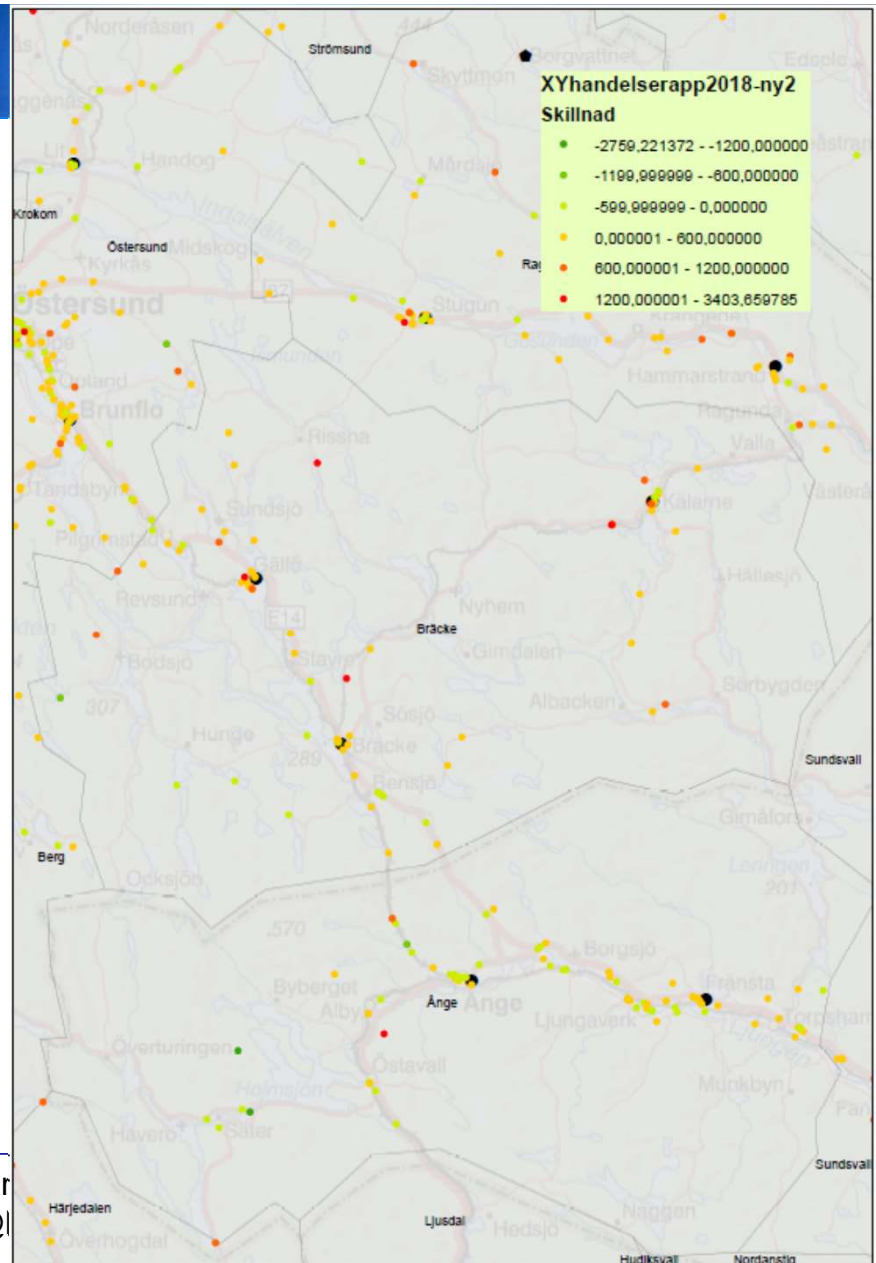
Avg_Skilln

- 144,726934 - 0,000000
- 0,000001 - 180,000000
- 180,000001 - 300,000000
- 300,000001 - 553,973921



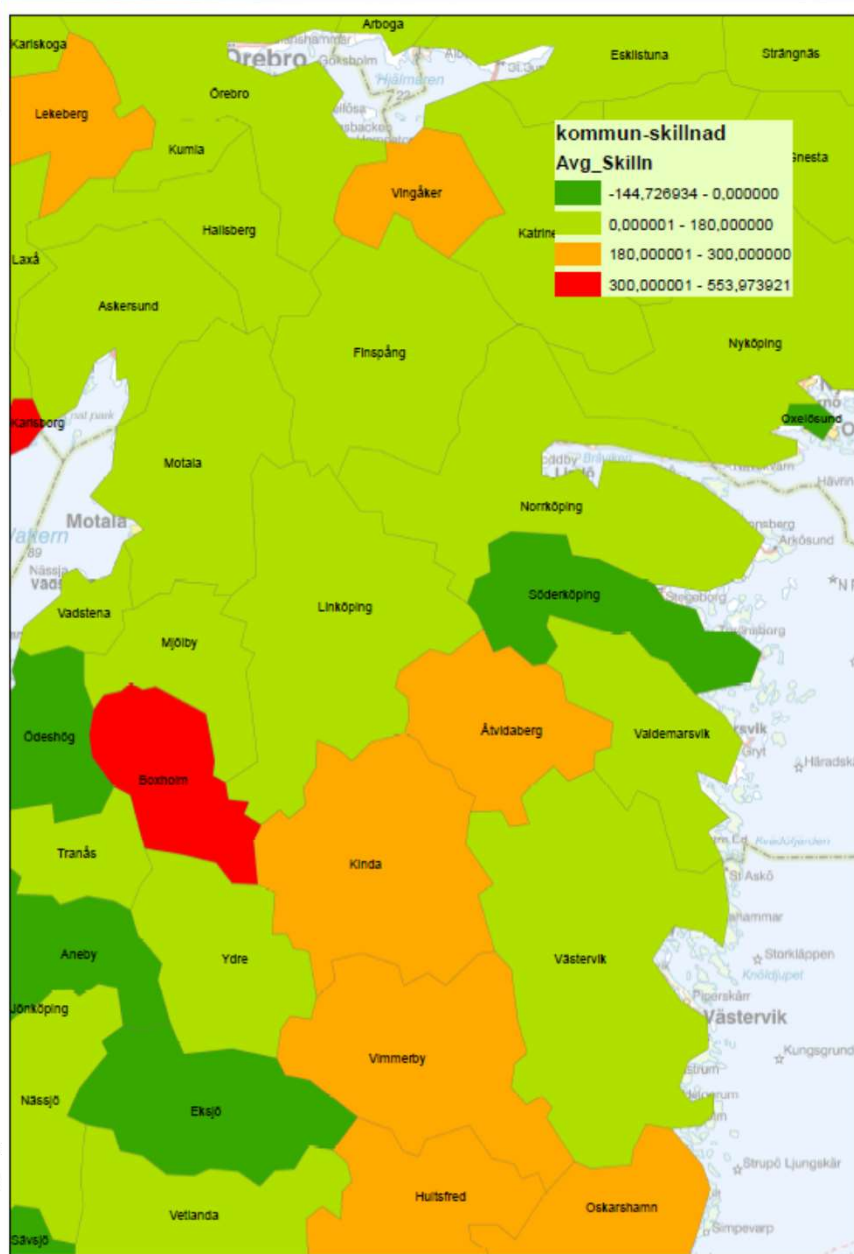


- Bräcke
 - Medelskillnad: 306 s
- Ånge
 - Medelskillnad: -64 s

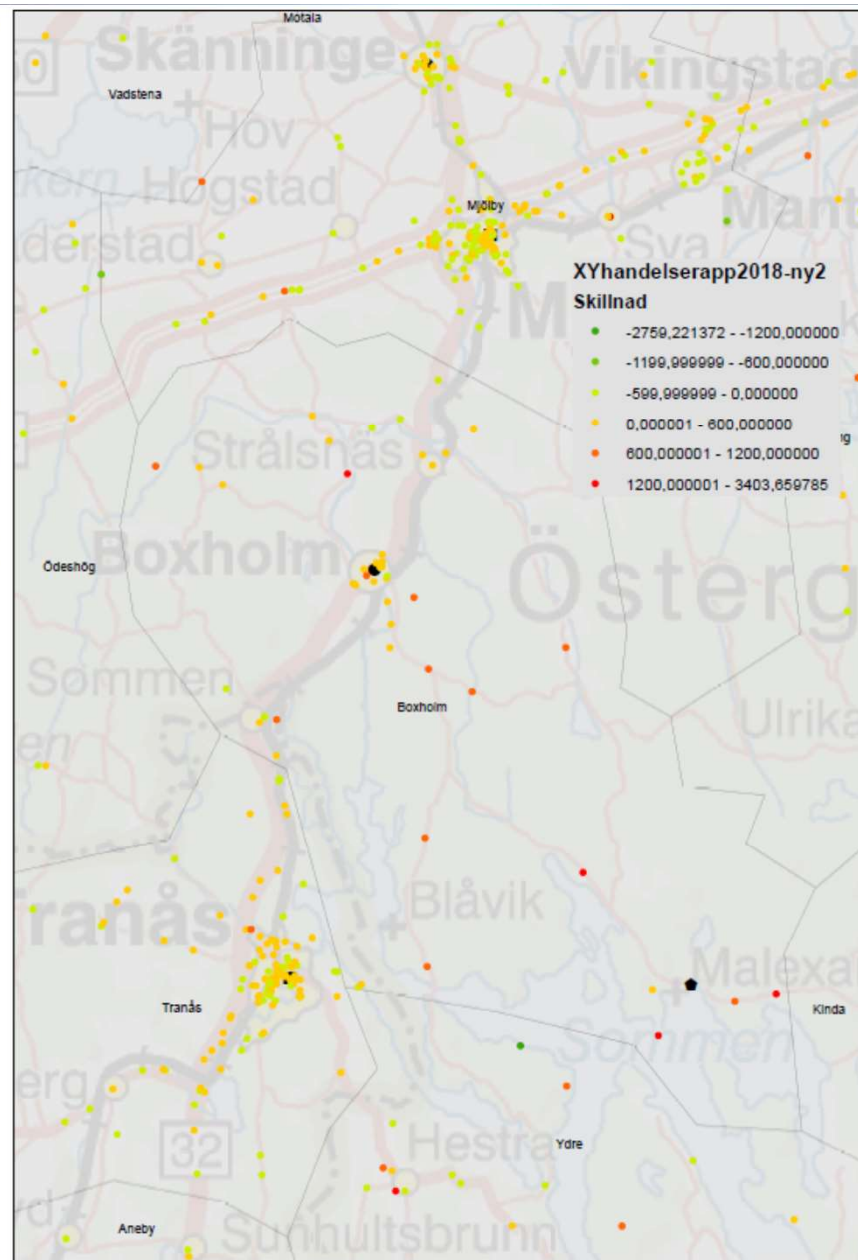


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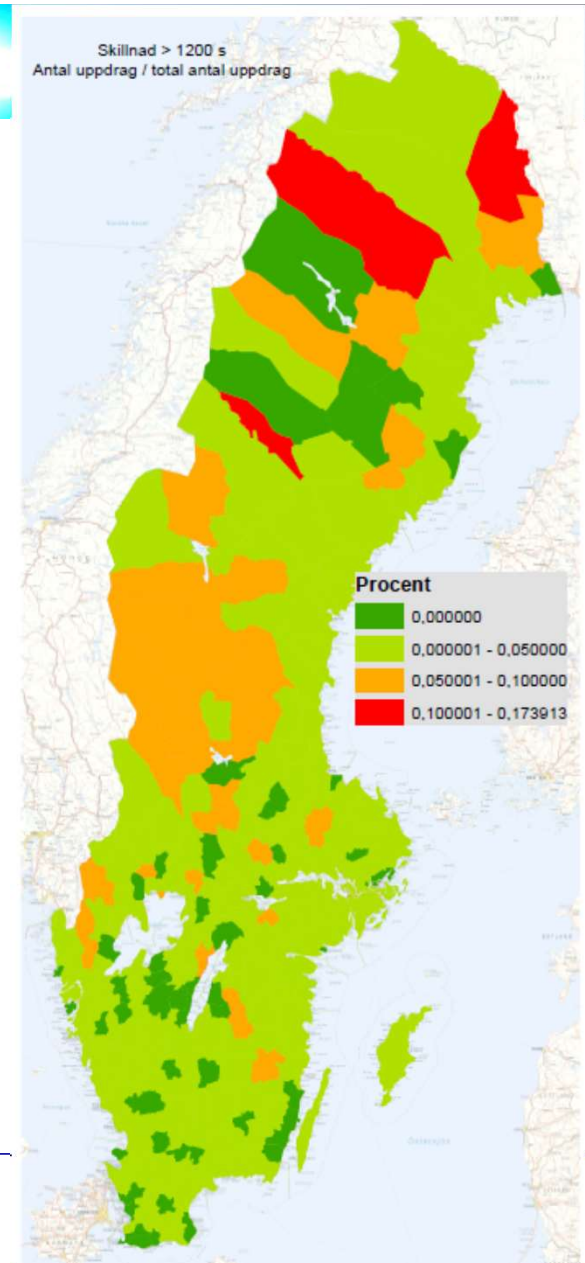


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- Procentuellt antal uppdrag med stor skillnad (> 20 min)

Kommun	Andel uppdrag med mer än 20 min skillnad
Dorotea	17.4%
Jokkmokk	17.0%
Pajala	12.8%
Storfors	10.0%
Krokom	9.9%
Härjedalen	8.9%
Arvidsjaur	8.6%
Boxholm	8.3%
...	...





Utlösande händelse - övergripande	Antal	Verklig tid	Beräknad tid	Skillnad
Brand eller brandtillbud	29764	610.41	461.35	149.06
Drunkning eller drunkningstillbud	614	584.39	506.82	77.56
Naturolycka	825	860.13	544.24	315.89
Nödständig person i andra fall	3436	523.73	373.96	149.77
Trafikolycka	19777	541.74	465.51	76.24
Utsläpp av farligt ämne (även tillbud)	3109	645.08	406.32	238.76
Övrig händelse med risk för skada	3919	682.25	444.32	237.93

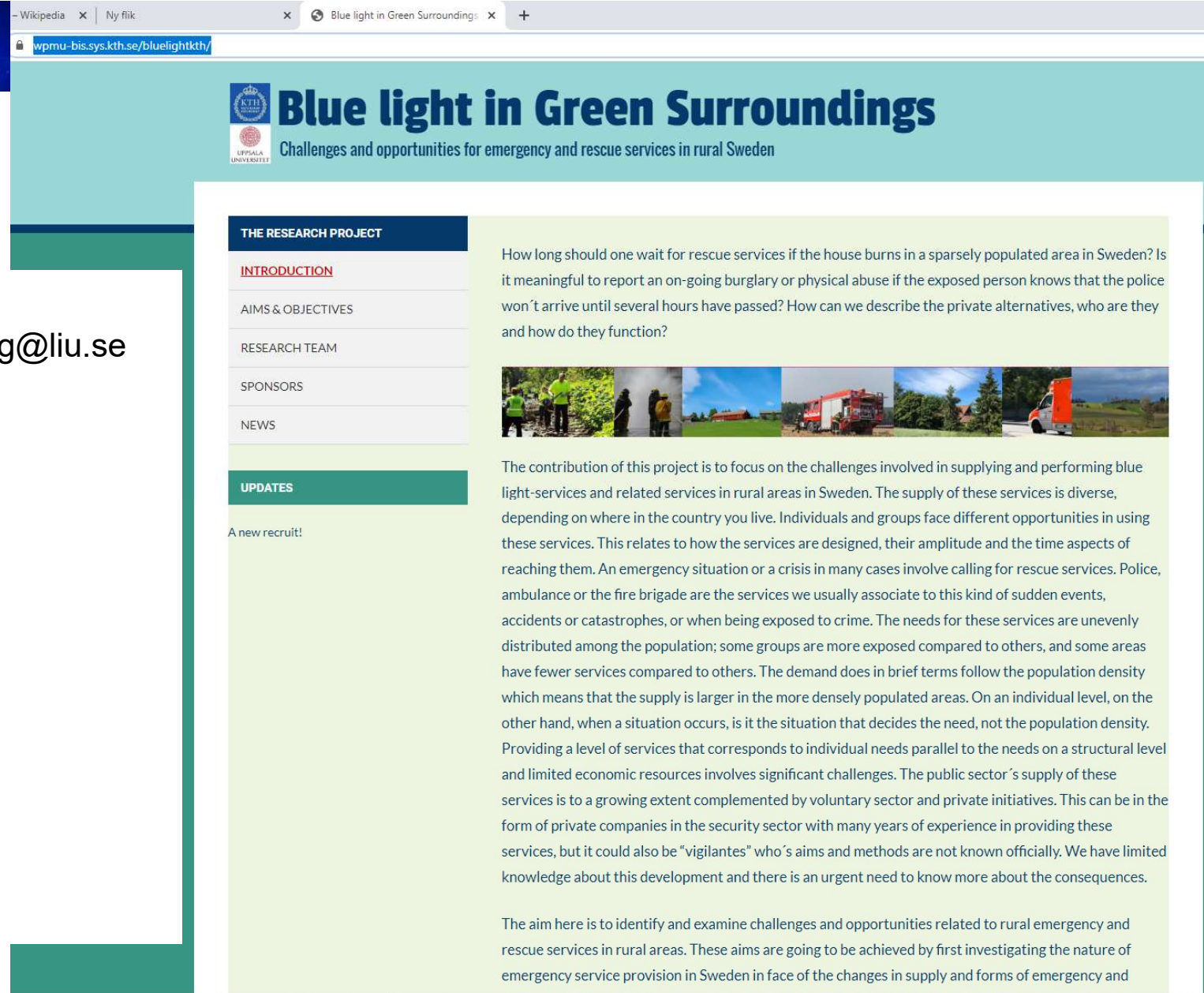


Slutsatser

- Verkliga responstider är något längre än planerade
 - Grov körtidsmodell (ej hänsyn till acceleration, hastighet, trafik, väder, etc)
 - Ingen hänsyn till samtidigt pågående larm
 - Lite hänsyn till mindre brådskande larm
 - Längre anspänningstid än planerat?
 - Liten hänsyn till icke-stationsbundna resurser (FIP, ev. CIP)
- Men, 80% av alla uppdrag inom 5 minuter av planerad tid
- Nästa steg
 - Identifiera vad de geografiska skillnaderna beror på
 - Undersöka fler år (inte bara 2018)

Tack!

- Tobias.Andersson.Granberg@liu.se
- <https://wpmu-bis.sys.kth.se/bluelightkth/>



The screenshot shows a web browser with the URL wpmu-bis.sys.kth.se/bluelightkth/. The page title is "Blue light in Green Surroundings" with the subtitle "Challenges and opportunities for emergency and rescue services in rural Sweden". The website is associated with KTH and Uppsala University. The main content area is titled "THE RESEARCH PROJECT" and includes a navigation menu with "INTRODUCTION" (highlighted in red), "AIMS & OBJECTIVES", "RESEARCH TEAM", "SPONSORS", and "NEWS". Below the menu is an "UPDATES" section with the heading "A new recruit!". The main text discusses the challenges of emergency services in rural Sweden, mentioning response times, reporting, and the role of private alternatives. It also mentions the project's aim to identify and examine these challenges and opportunities.

THE RESEARCH PROJECT

INTRODUCTION

AIMS & OBJECTIVES

RESEARCH TEAM


SPONSORS

NEWS

UPDATES

A new recruit!

How long should one wait for rescue services if the house burns in a sparsely populated area in Sweden? Is it meaningful to report an on-going burglary or physical abuse if the exposed person knows that the police won't arrive until several hours have passed? How can we describe the private alternatives, who are they and how do they function?



The contribution of this project is to focus on the challenges involved in supplying and performing blue light-services and related services in rural areas in Sweden. The supply of these services is diverse, depending on where in the country you live. Individuals and groups face different opportunities in using these services. This relates to how the services are designed, their amplitude and the time aspects of reaching them. An emergency situation or a crisis in many cases involve calling for rescue services. Police, ambulance or the fire brigade are the services we usually associate to this kind of sudden events, accidents or catastrophes, or when being exposed to crime. The needs for these services are unevenly distributed among the population; some groups are more exposed compared to others, and some areas have fewer services compared to others. The demand does in brief terms follow the population density which means that the supply is larger in the more densely populated areas. On an individual level, on the other hand, when a situation occurs, is it the situation that decides the need, not the population density. Providing a level of services that corresponds to individual needs parallel to the needs on a structural level and limited economic resources involves significant challenges. The public sector's supply of these services is to a growing extent complemented by voluntary sector and private initiatives. This can be in the form of private companies in the security sector with many years of experience in providing these services, but it could also be "vigilantes" who's aims and methods are not known officially. We have limited knowledge about this development and there is an urgent need to know more about the consequences.

The aim here is to identify and examine challenges and opportunities related to rural emergency and rescue services in rural areas. These aims are going to be achieved by first investigating the nature of emergency service provision in Sweden in face of the changes in supply and forms of emergency and