

CITIZEN SCIENCE

TICKS AND TICK-BORNE PATHOGENS

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NorthTick

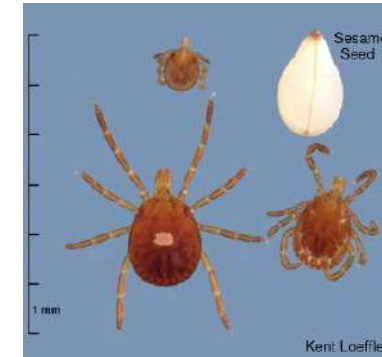
TICKS:
OVER 800
SPECIES
WORLD WIDE

WHAT DO
WE HAVE IN
DENMARK ?

WHERE?



Blacklegged Tick or Deer Tick (*Ixodes scapularis*)



Lone Star Tick (*Amblyomma americanum*).



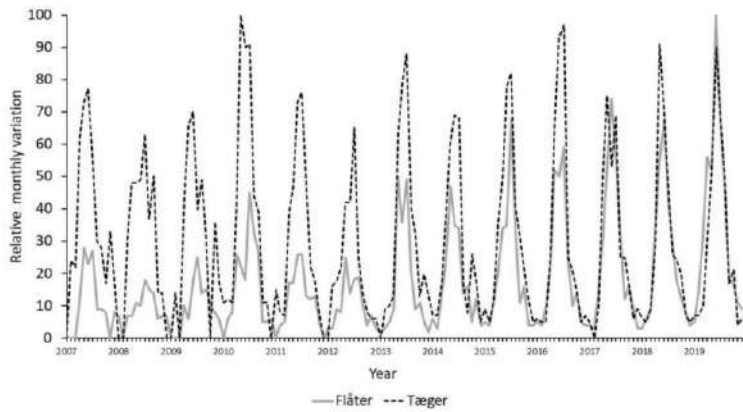
American Dog Tick (*Dermacentor variabilis*)



Brown Dog Tick (*Rhipicephalus sanguineus*).

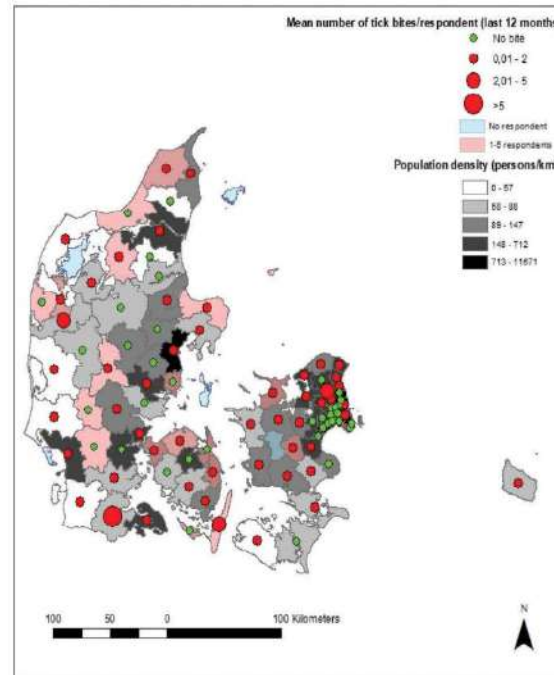
METHODS FOR MONITORING TICKS AND HUMAN-TICK ENCOUNTERS

Google searches



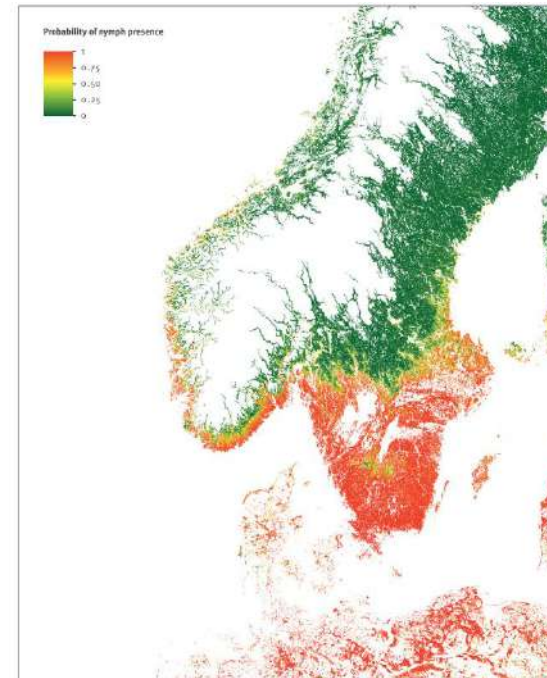
**TICK ACTIVITY
BASED ON GOOGLE
SEARCHES**

Questionnaires



**TICK BITES BASED ON
AN ONLINE
QUESTIONNAIRE**

Modelling



**A MODELLING
APPROACH BASED
ON FIELD SAMPLING
AND LANDCOVER**

Public registration



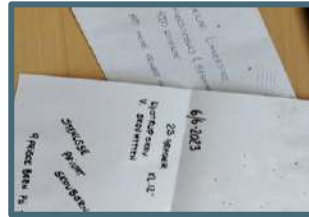
**REGISTRATION BY
CITIZENS IN REAL-
TIME**

SURVEILLANCE OF TICKS AND TICK-BORNE PATHOGENS

PASSIVE SURVEILLANCE

Receiving ticks or animal samples collected by citizens

Retrieving data about patients from hospitals etc.



ACTIVE SURVEILLANCE

Field collection of ticks or animal samples



SEROPREVALENCE STUDIES (INDIRECT)

Detection of antibodies against pathogens of interest

Humans or animals



DETECTION OF PATHOGENS (DIRECT)

Detection of pathogen DNA

Humans or animals



FLÅTINFO.DK - A WEB-BASED TOOL FOR MONITORING HUMAN-TICK ENCOUNTERS BY CITIZEN REGISTRATIONS

NORTHTICK

The screenshot shows the Flåtinfo website interface. At the top, there is a navigation bar with the logo and menu items: Registrering, Indsend flåter, Undervisningsmaterialer, Nyheder, Om skovflåten, Forebyggelse, and Kontakt. The main content area features a map of Denmark with various colored markers (red, orange, blue) indicating tick encounters. The sidebar on the right contains the following sections:

- Registrerede flåter i DK**: A text block explaining the registration process: "Registrer dine, dine børns eller dit kæledyr's flåtbid ved at klikke på den grønne knap under kortet. Du kan også uploade et billede, hvis du får det røde udslæt erythema migrans efter et flåtbid. Det kan give os et indtryk af, hvor forskellige de kan være i udseende. Du kan også uploade et billede af de flåter du støder på - så kan vi se, hvilken art det er."
- Se registrerede flåter**: A section for searching registered ticks, including a "Lokalitet" search box and a "Datointerval" section with "Fra dato" and "Til dato" input fields.
- Markering**: A section for marking ticks, with options for "Bid" (bitten) and "Kraviende" (tick).

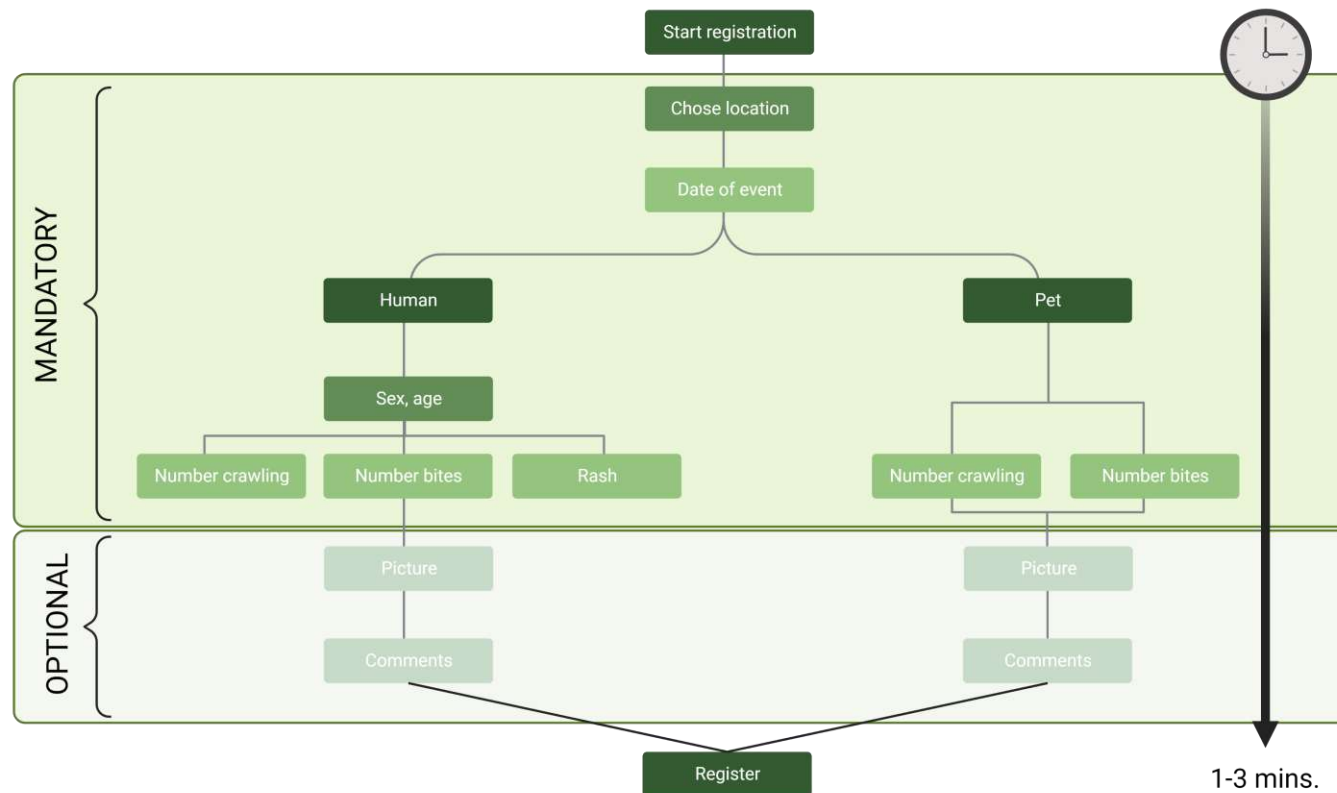
AIMS

- To inform the public about ticks and symptoms of tick-borne diseases, as well as how to prevent tick bites
- Collect data on encounters with ticks, thereby mapping tick-human interactions in Denmark

Registration of ticks and tick bites on humans and animals

EASY AND QUICK

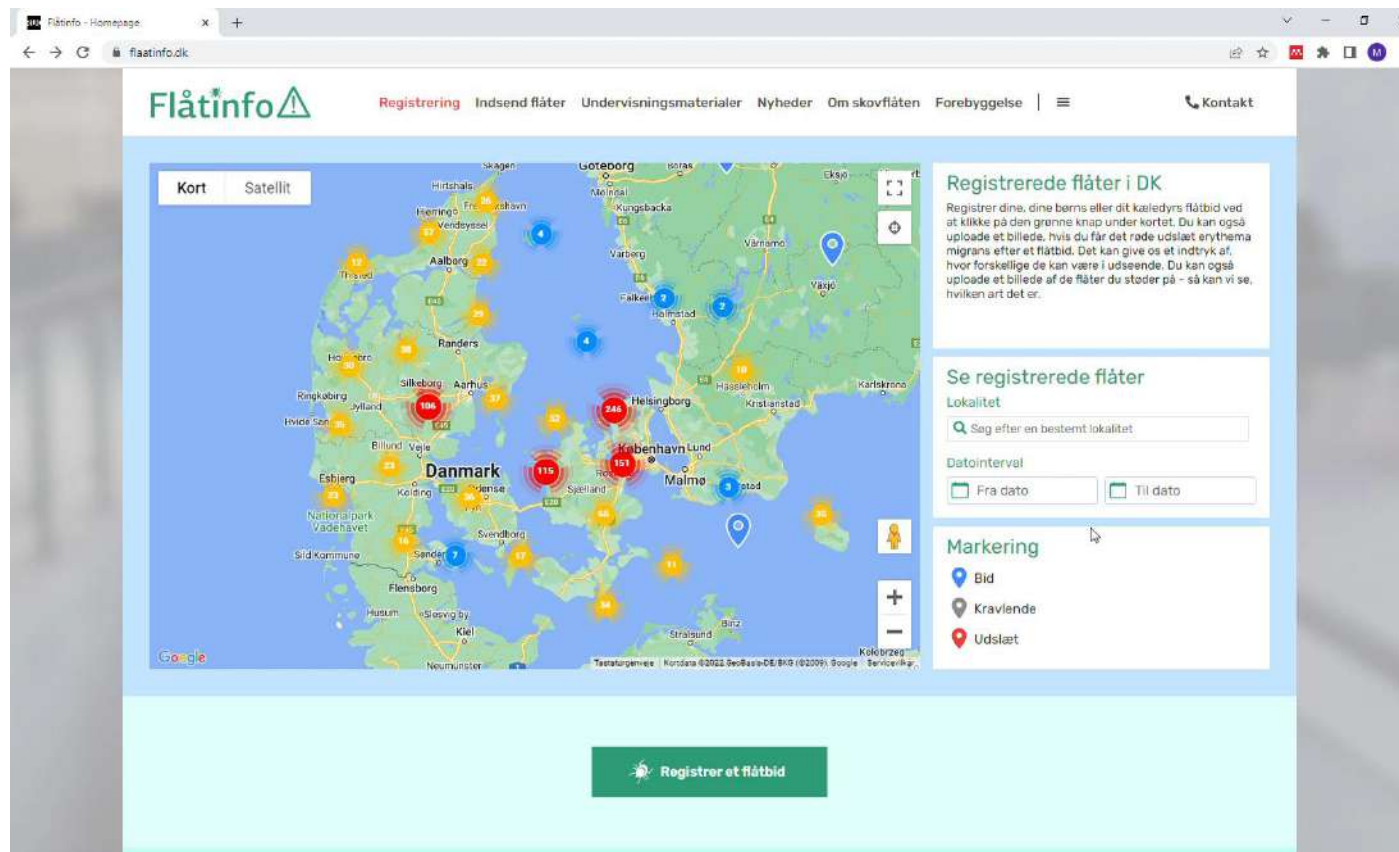
ANONYMOUS



Registration of ticks and tick bites on humans and animals

EASY AND QUICK

ANONYMOUS



PROMOTING FLÅTINFO.DK IN THE PUBLIC

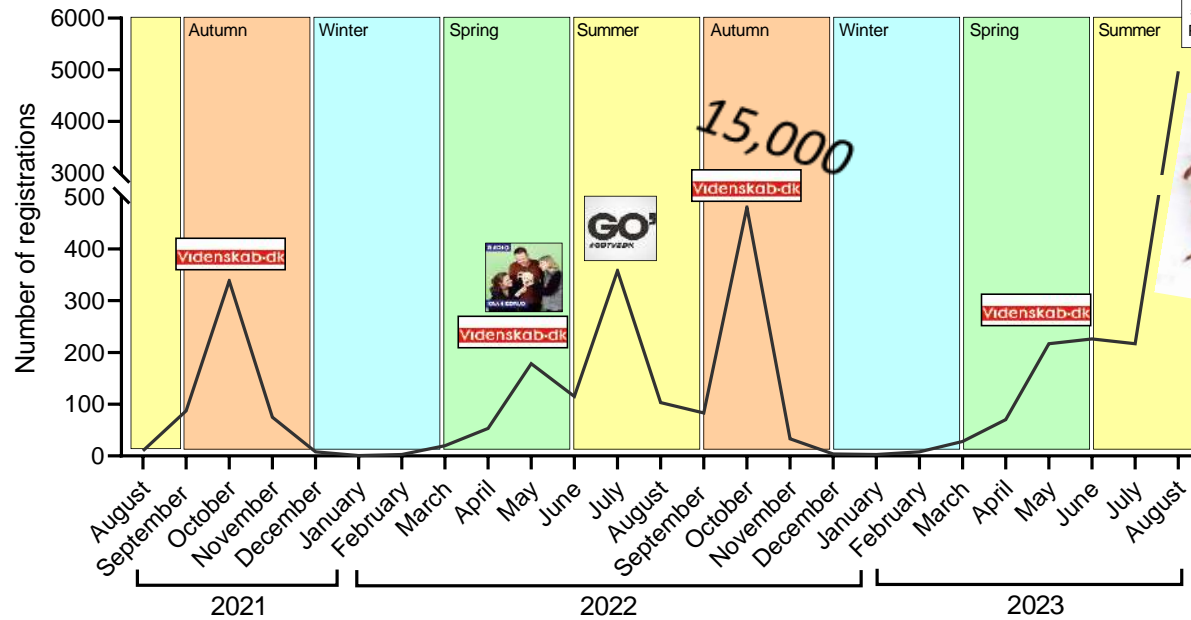
- Four popular science articles in 2021
- Several newspaper articles and interviews
- National and regional TV and podcast
- National **scout camp 2022** in Hedeland, Roskilde (over 50.000 delegates)
- Two press releases generating articles in more than **80 media** both times – great help from RUC communication



FLÅTINFO.DK REGISTRATIONS

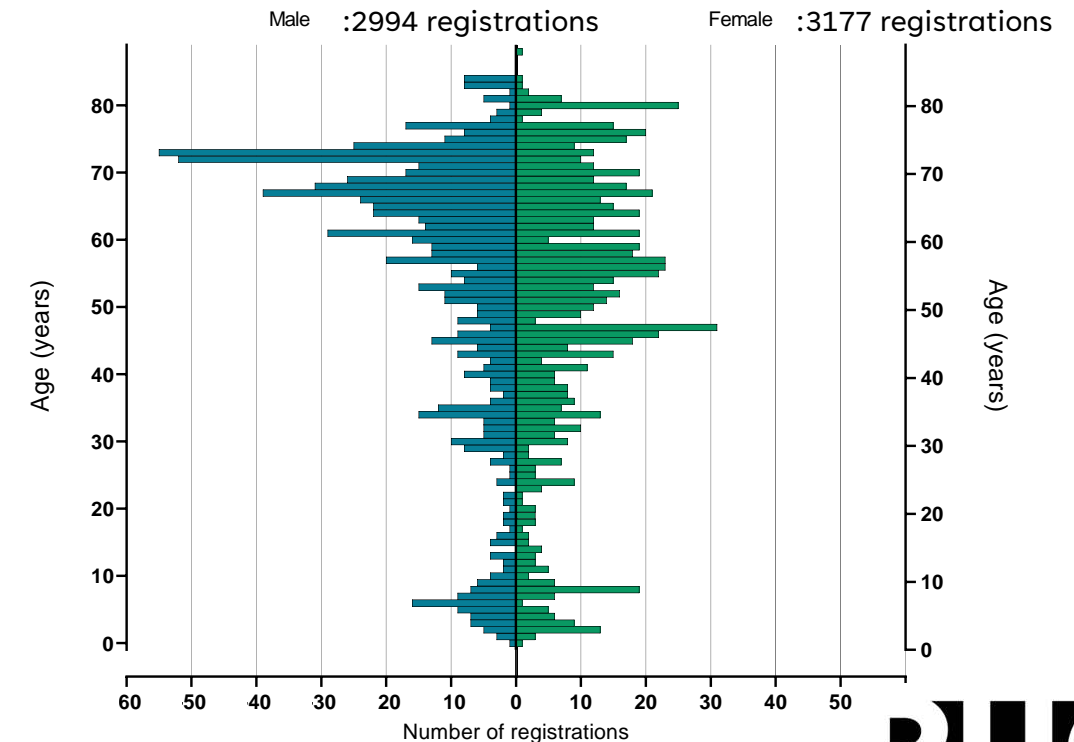
8528 registrations per December 2023
(6176 human reg. and 2352 pet reg.)

REGISTRATIONS PER MONTH AUGUST 2021 TO AUGUST 2023

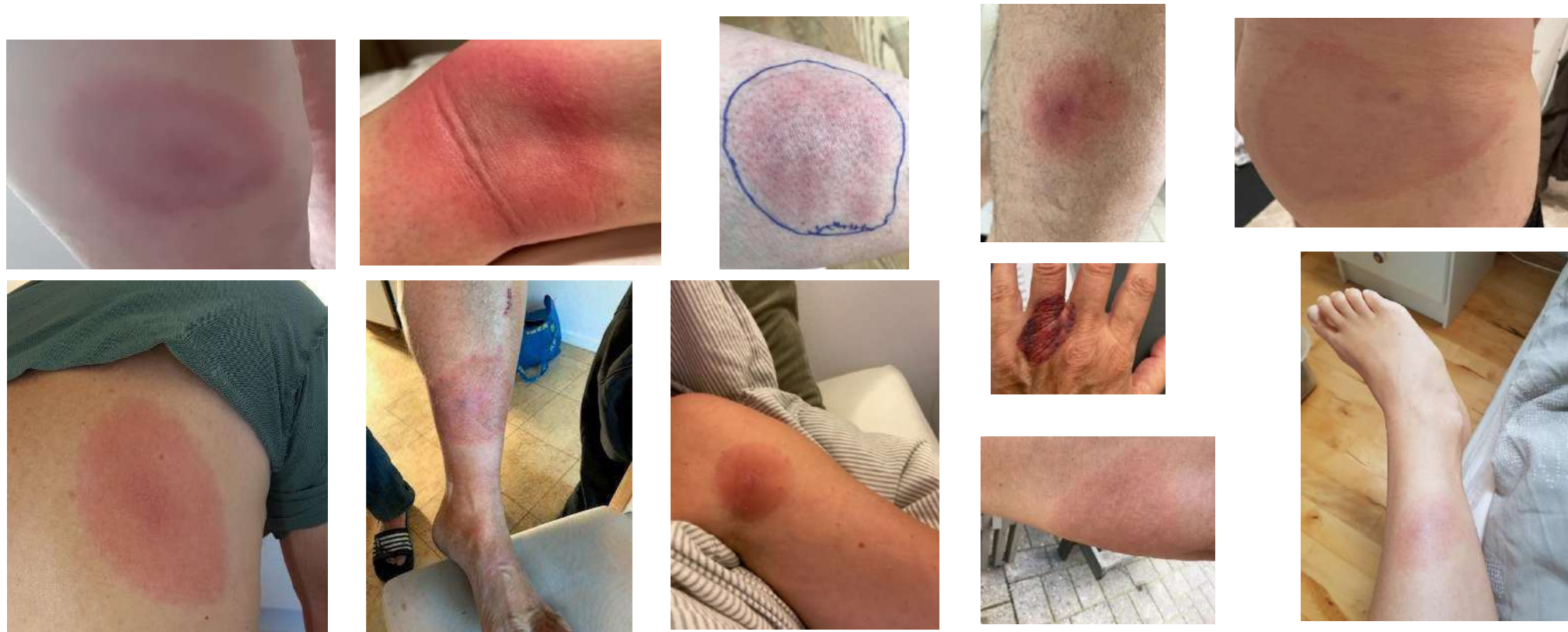


Press release
58 national media
Printed, online, TV

REGISTRATIONS PER GENDER AND AGE



GREAT PUBLIC INTEREST IN TICKS IN DENMARK



PRIVATE PHOTOS FROM FLÅTINFO.DK

MAINTAIN PUBLIC INTEREST IN TICKS IN DENMARK

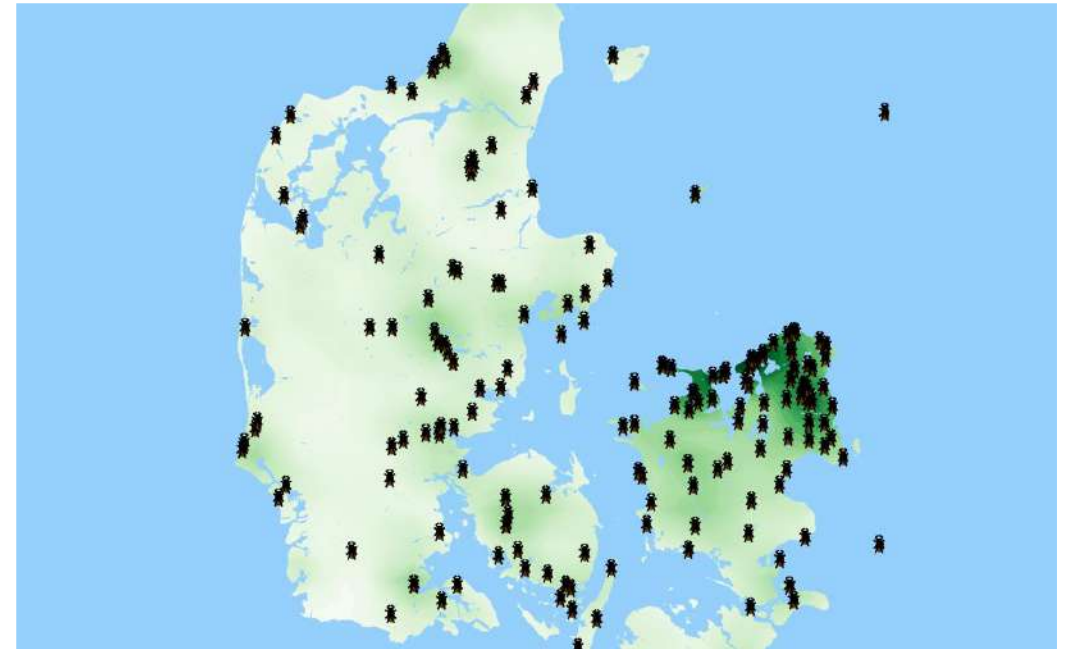
28. MAJ. 2024\
FORSKERNE FORMIDLER

VIDENSKAB DK

Hvor gemmer flåterne sig?

På siden flåtinfo.dk kan borgere indberette, når de møder en flåt. Det giver forskerne vigtige data om flåtbid i Danmark.

Et forsimplet kort der viser, hvor flest mennesker har registreret, at de har set flåter. Det er dog ikkeensbetydende med, at der er flere flåter i Nordsjælland end i eksempelvis Midtjylland. (Illustration: Rasmus Kristoffer Pedersen)



Forskerne formidler:
Månedens mest læste (både nye og gamle artikler)

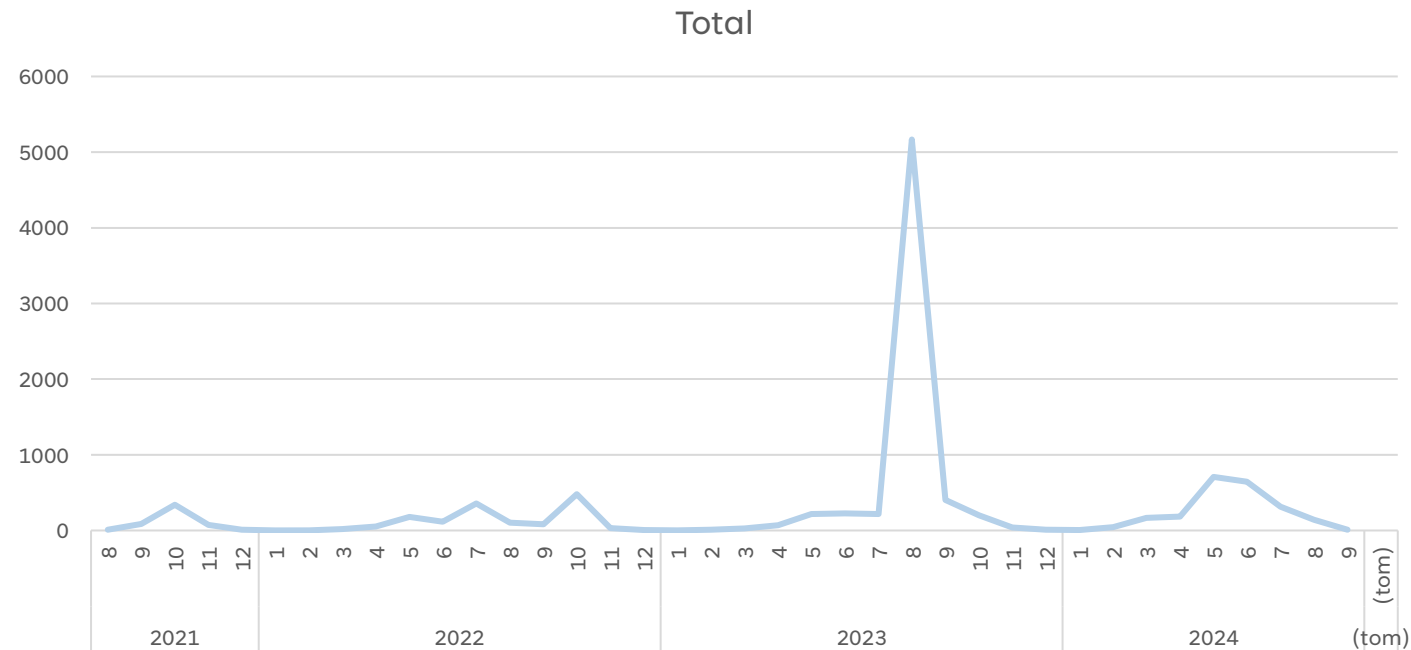
May 8, 2024 - Jun 7, 2024

Sessionskil de

Sidesti	Visninger
1. /naturvidenskab/hvor-gemmer-flaeterne-sig/	8,335
2. /krop-sundhed/hvad-skal-jeg-spise-for-at-passe-bedst-paa-mine-nyrer/	8,072
3. /krop-sundhed/tid-foan-skaermen-kan-goere- alvorlig-skade-paa-dine-oejne/	7,419
4. /naturvidenskab/toejvask-bidraeger-i-stor-sti-til-mikroplastforureningen-saadan-vasker-du-mere-miljoeventigt/	6,923
5. /krop-sundhed/kaj-ringede-112-flere-end-100-gange-paa-et-aar-hvorfor/	6,856
6. /naturvidenskab/kan-du-kende-forskell-paa-en-flaaz-og-en-taegel/	6,147

A GREAT INTEREST IN TICKS IN DENMARK

FLÅTINFO.DK CONTINUES.... 3.200 REGISTRATIONS IN 2024



MAINTAIN PUBLIC INTEREST IN TICKS IN DENMARK

Kraniebrud på Radio torsdag 27/6 /24 .

Programmet sendes klokken 12.10 til 13.00.

Du kan lytte her: <https://radio4.dk/podcasts/kraniebrud>

*Der ligger det også **til podcast/download** efterfølgende.*

[Se listen: Her er Danmarks 50 mest citerede eksperter i 2023 - Akademikerbladet \(dm.dk\)](#)

KA Krogfelt : En ud af 5 mest citereret kvindelige forsker af de danske medier

International peer reviewed publications ??

MAINTAIN PUBLIC INTEREST IN TICKS IN DENMARK

Education -dissemination to schools

Nat-dag 2022-24 School classes (2-3 Gymnasium/per event)
attending presentations about ticks

Projects at RUC 2-6 students per semester since 2020 have conducted
research projects on ticks and TBD

MAINTAIN PUBLIC INTEREST IN TICKS IN DENMARK

- Registration
- Sendt ticks to the Lab
- Education
- Disease & prevention
- NEWS LETTERS



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HOW TO KEEP PUBLIC INTEREST IN TICKS IN DENMARK

FLÅTINFO.DK

- Difficult to maintain users at flåtinfo.dk
- Sharing our results can lead to more and continuous registrations
 - An app?
- Useful for informing about tick research and gain insight into tick presence and encounters
- Several types of media should be used to promote flåtinfo.dk
- FUNDS



THANKS TO

Mette Frimodt Hansen
Camilla Adler Sørensen

Anne-Mette Lebech
Lukas Frans Ocias

Eva Lykke Jørgensen
Kirstine Crenzien Pedersen
Kokoe Anna Brinkmann Lawson
Sara Moth Jedari

THE PUBLIC for their support



THANK YOU FOR YOUR
ATTENTION



**New tick on the
block?**