

Dragehode

Table of contents

Velkommen

Dette er nettstedet for overvåkingsrapporten for Dragehode i 2024.

Denne nettsiden er og vil alltid være gratis, lisensiert under CC BY-NC-ND 3.0-lisensen.

1 Introduksjon

Denne nettsiden presenterer resultater fra overvåking av dragehode *Dracocephalum ruysciiana* i Norge. Dragehode er kategorisert som sårbar (VU) på den norske rødlista for arter, og dragehode er en prioritert art, med egen forskrift og handlingsplan.

Du kan lese mer om dragehode og overvåkingsprosjektet på [NINAs nettsider](#)

Årsrapporten for 2023, som denne nettsiden refererer til, finner du [her](#)

1.1 Finansiering

Overvåking av dragehode finansieres av Statsforvalteren i Oslo og Viken.

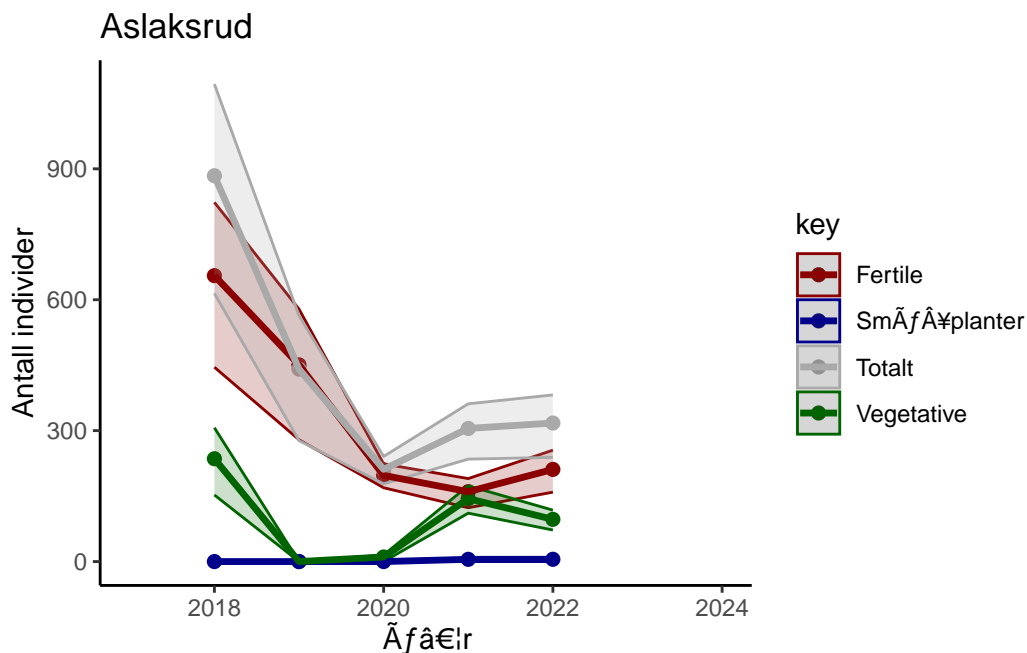
2 Lokale estimater av populasjonsstørrelse

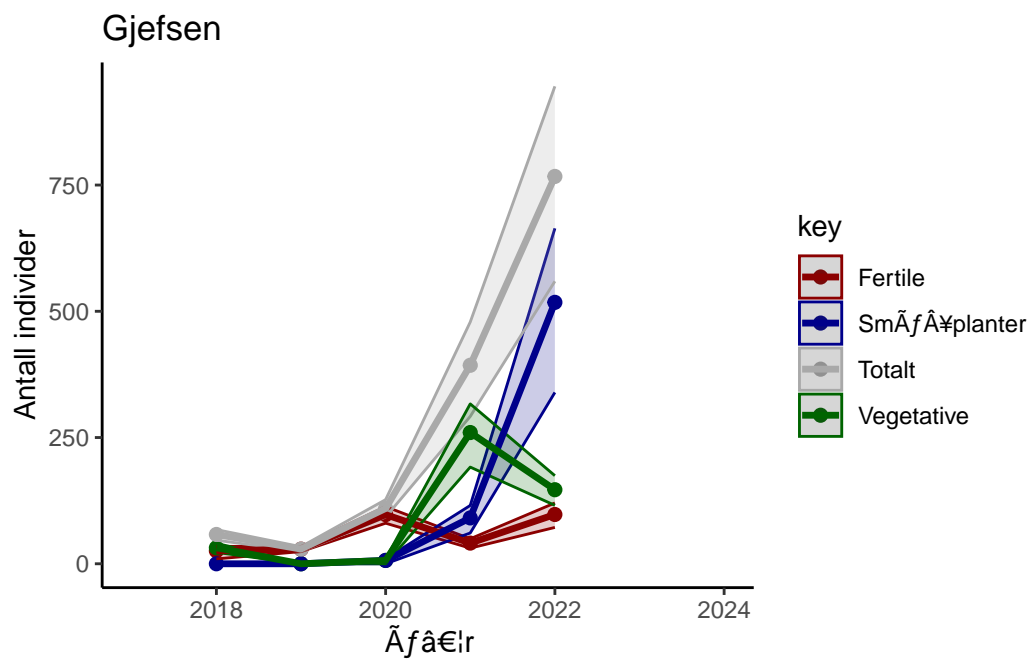
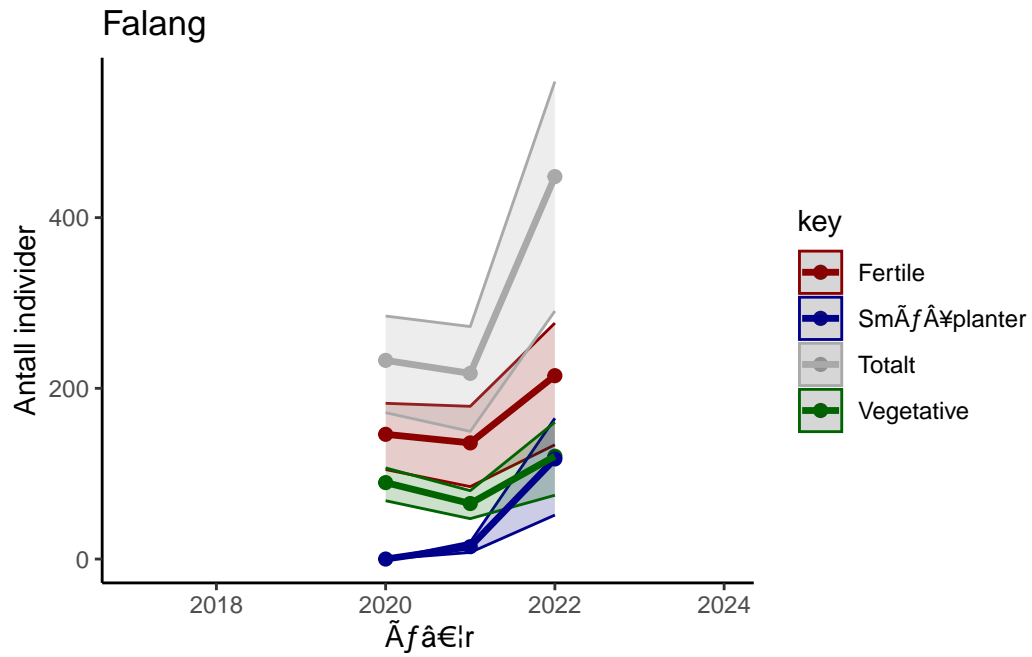
Disse figurene viser estimert populasjonsstørrelse, totalt og fordelt på de tre størrelsesklassene fertile, vegetative og småplanter, for hvert år i lokalitetene som inngår i overvåkningen.

Populasjonsstørrelse er estimert ved å bruke tettheten av individer i overvåkrutene, samt arealet dragehode forekommer på (registrert i forekomstruter langs transekter) innenfor lokaliteten. Usikkerheten i populasjonsestimatene ble beregnet ved tilfeldige trekninger av forekomstruter og overvåkruter (“bootstrapping”) med 2000 gjentak. Bootstrapping er en re-samplingsmetode som gjør det mulig å beregne usikkerhet rundt en gjennomsnittsverdi. Strekene viser gjennomsnittsverdi, mens de skravede feltene viser 95 % konfidensintervaller.

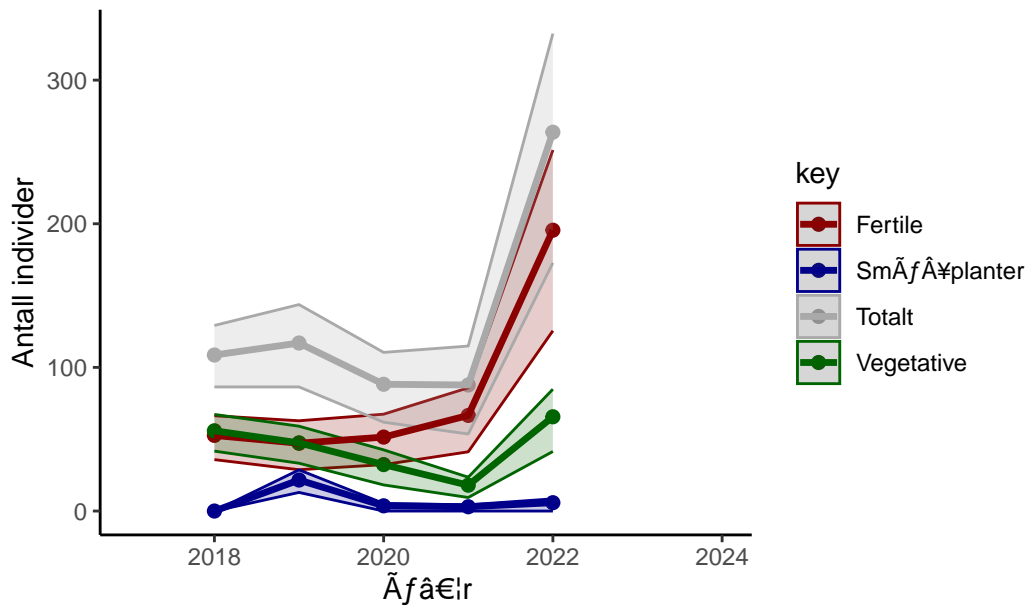
Fordi vi bruker tettheten av individer i overvåkrutene, er populasjonsstørrelse bare beregnet i 2023 for de lokalitetene der detaljert overvåking, med både overvåkruter og transekter, ble gjennomført. Se rapporten for detaljer.

2.1 Hadeland

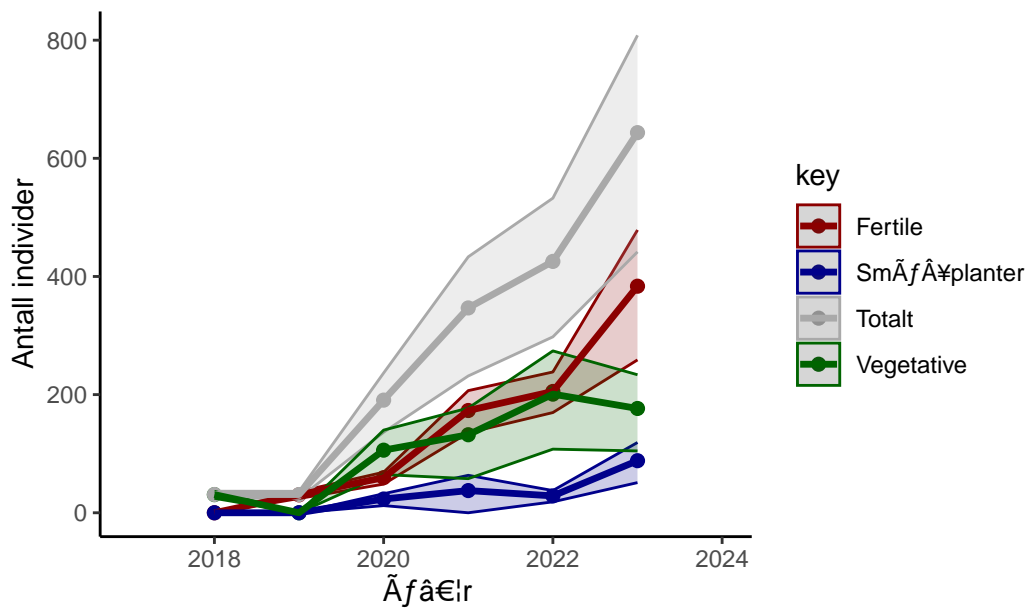


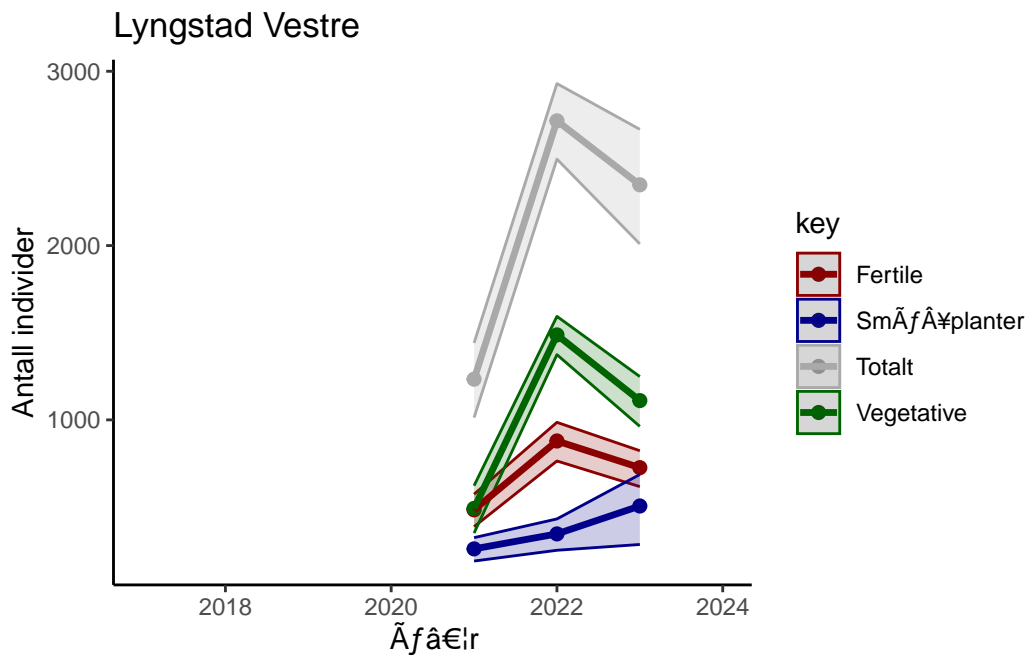


Gran sykehjem

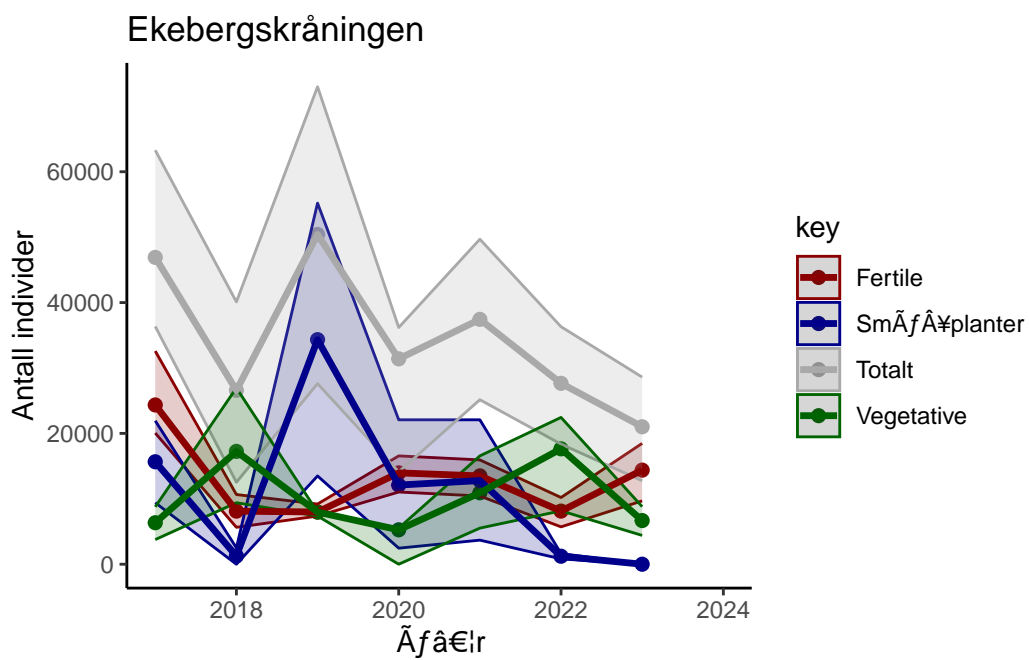


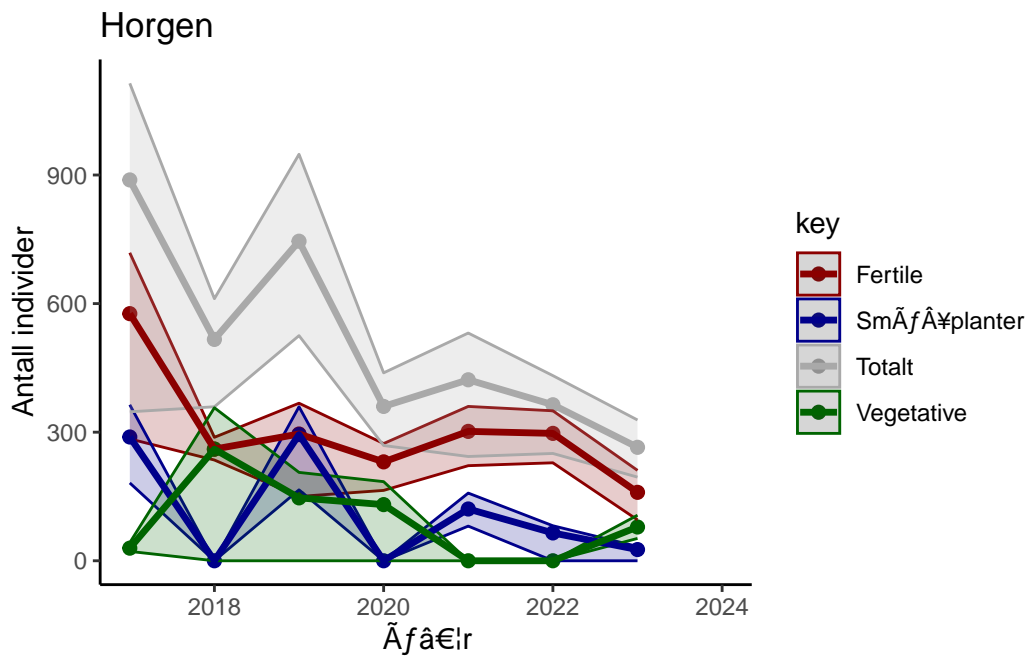
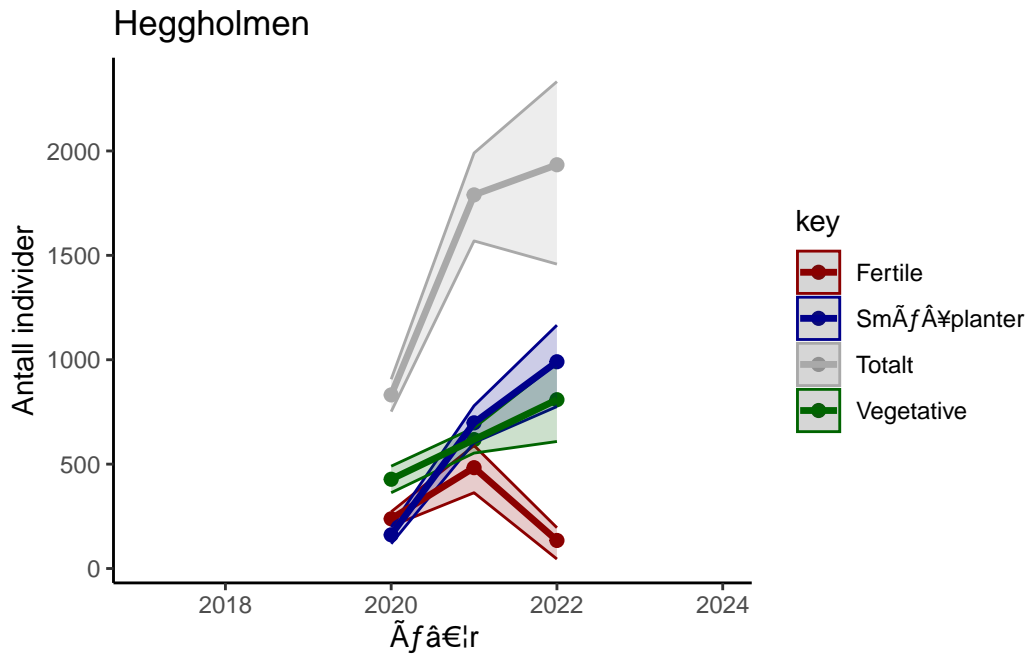
Grindaker

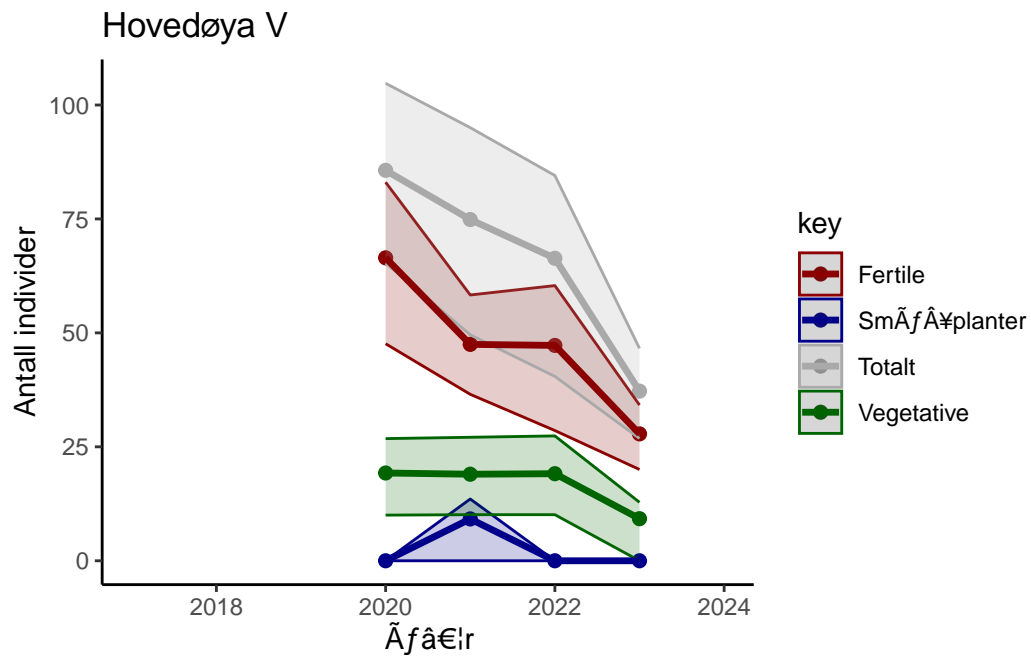
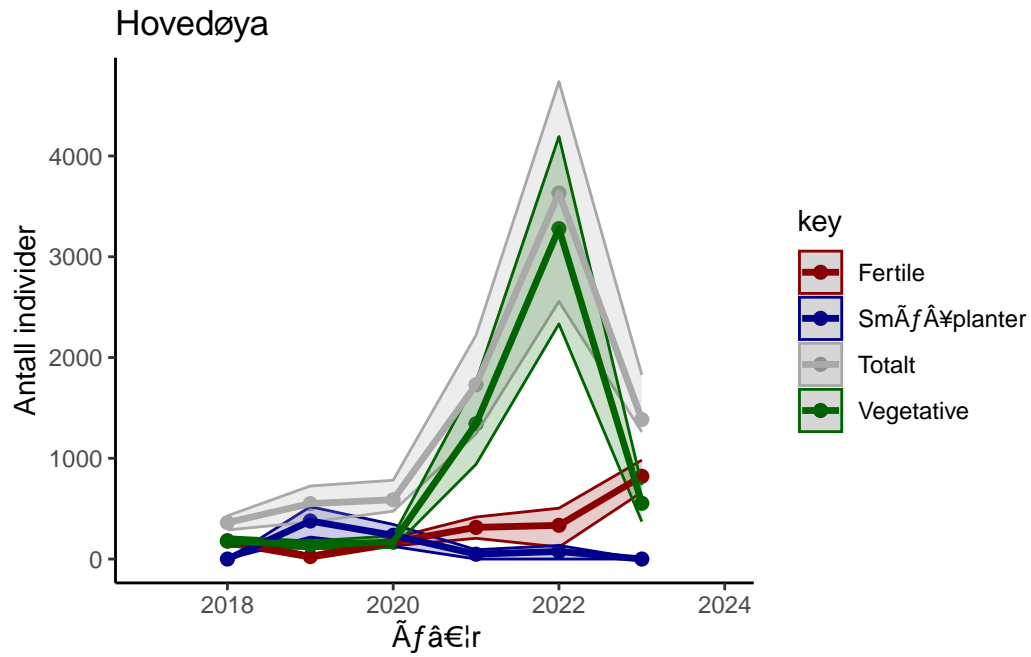


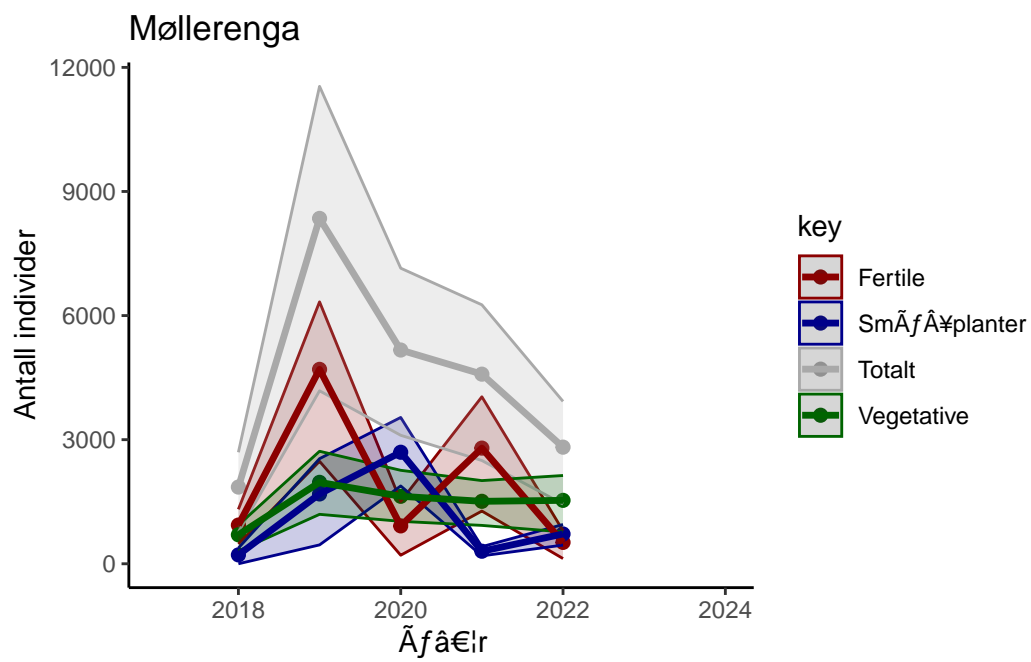
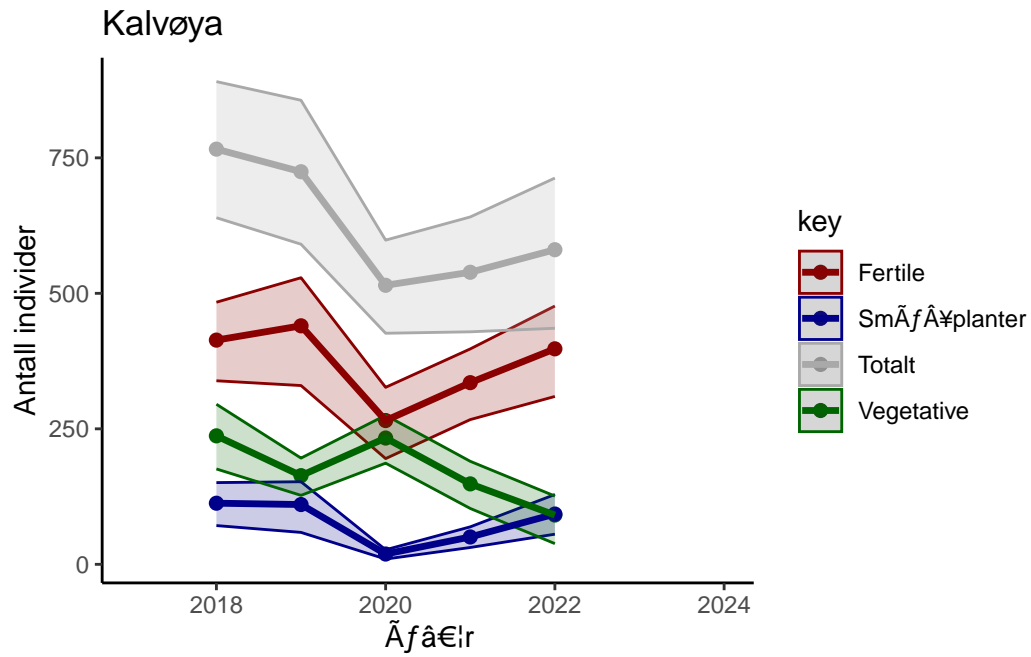


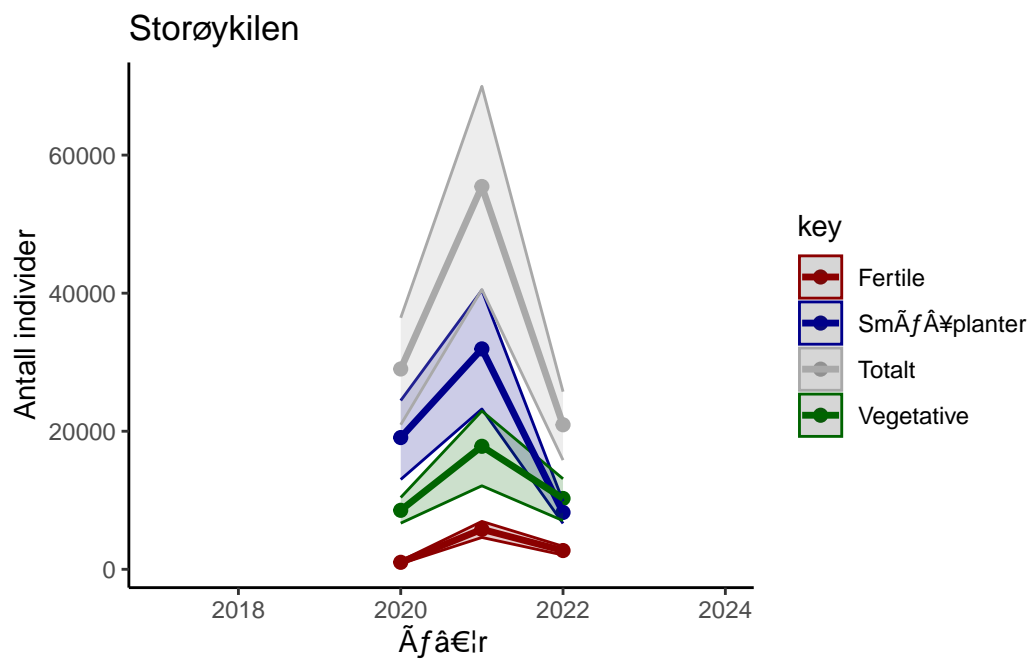
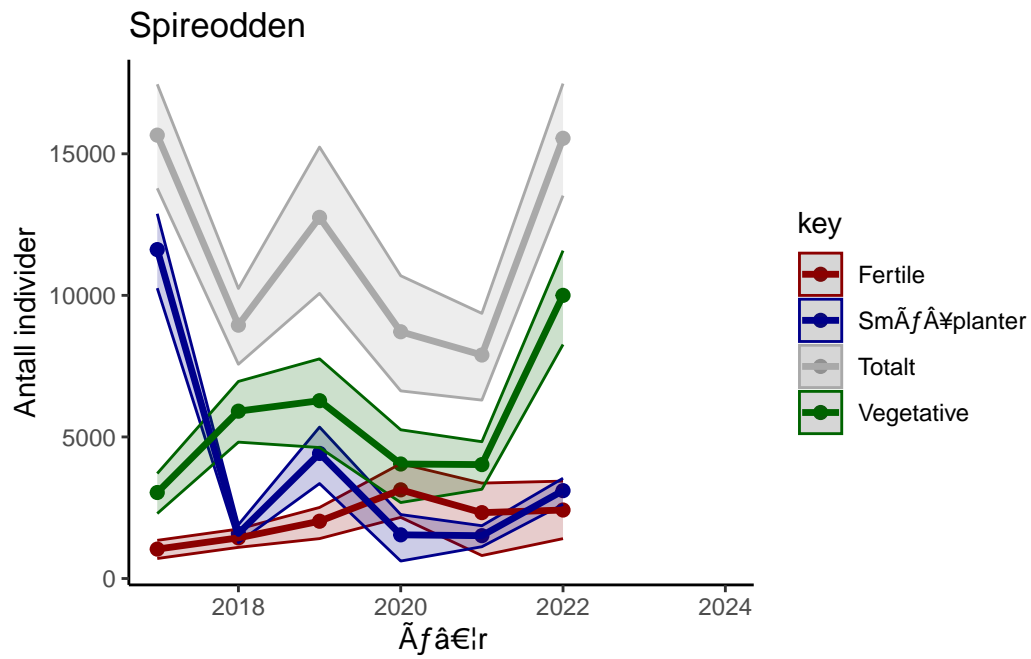
2.2 Oslo

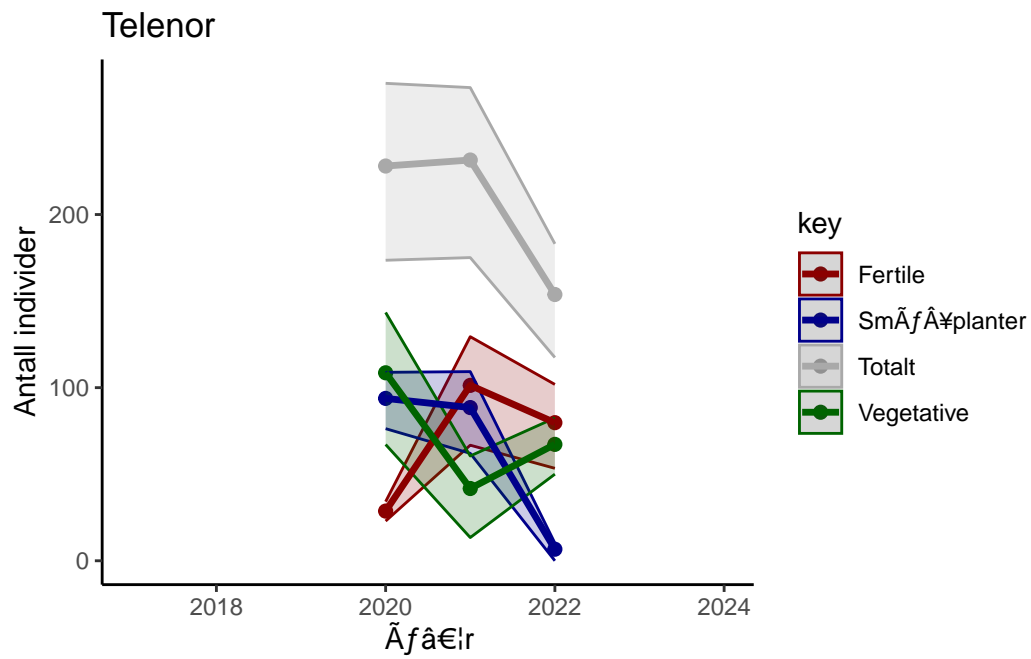
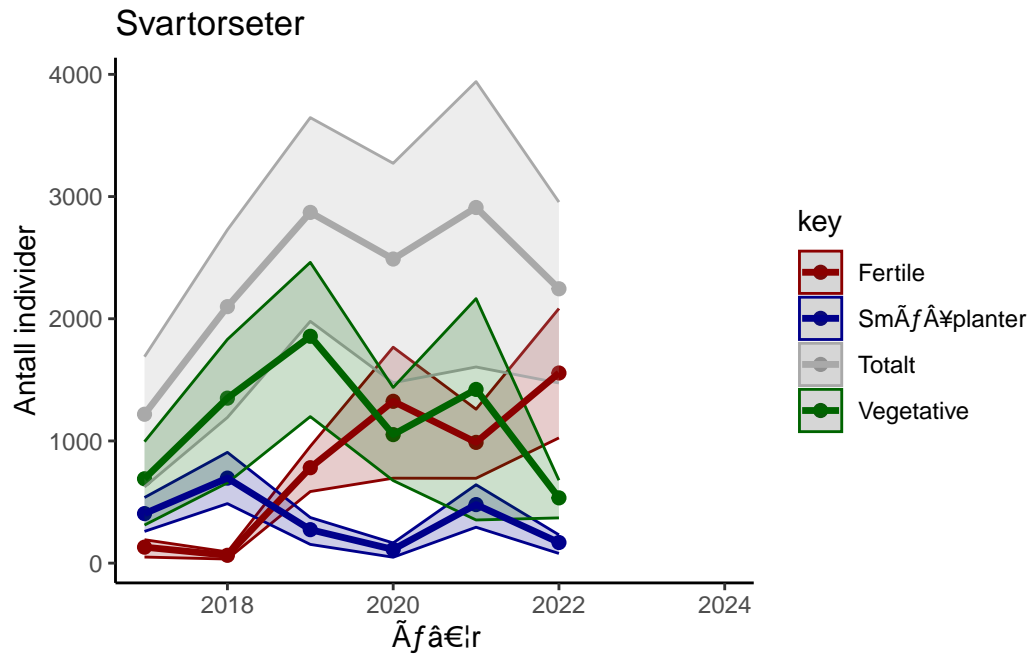


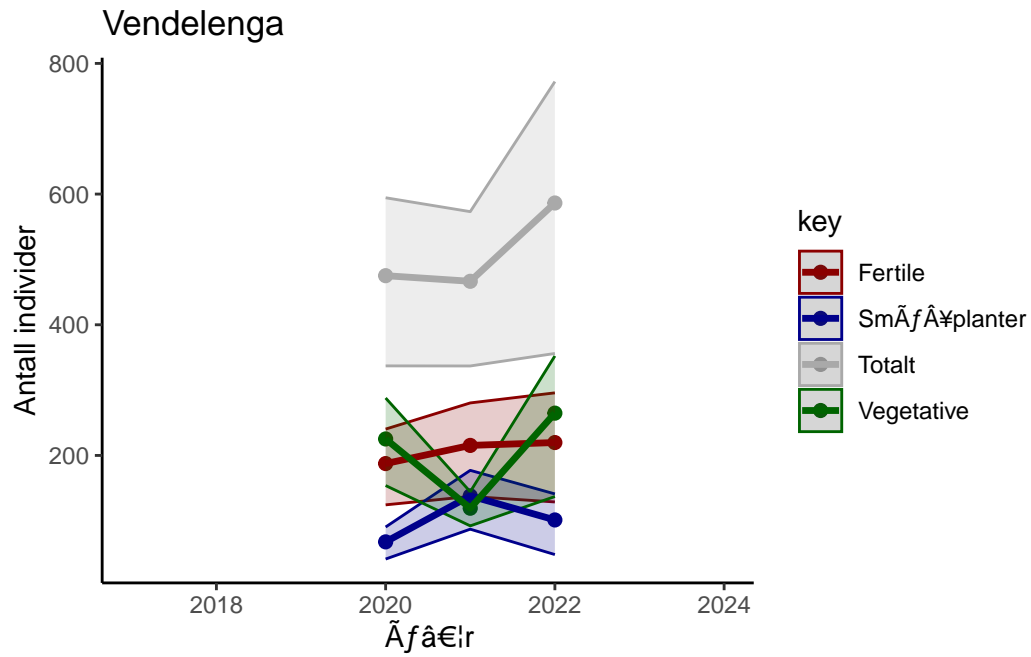




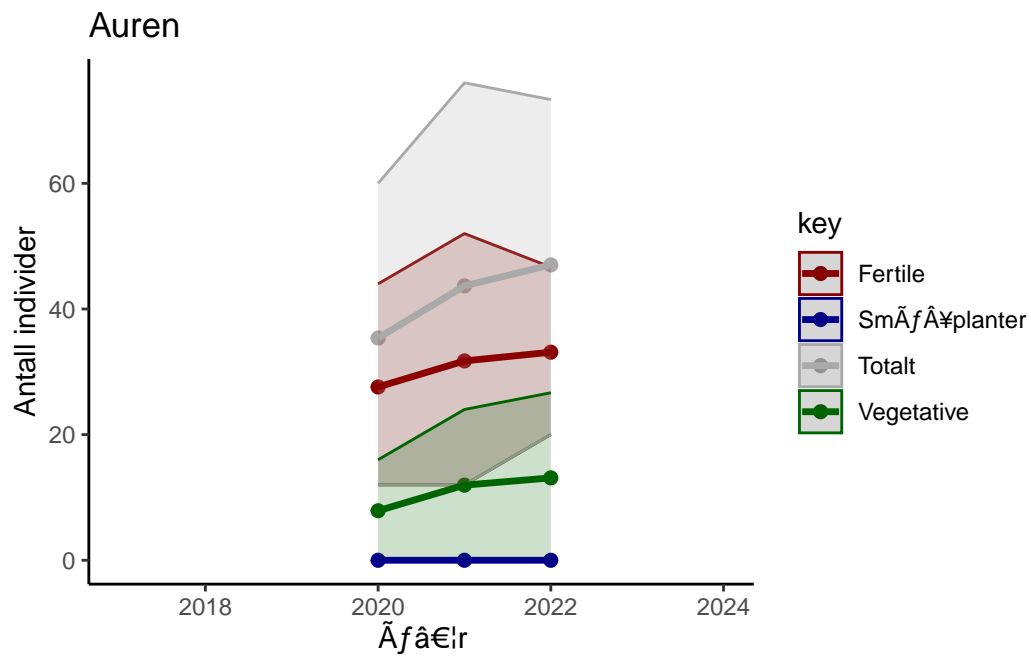


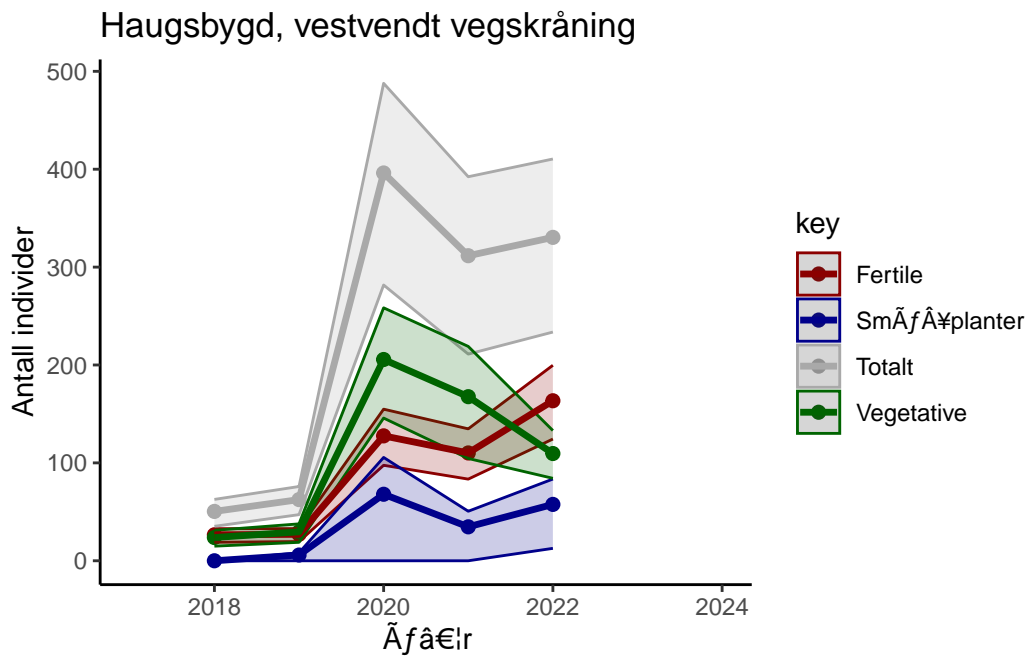
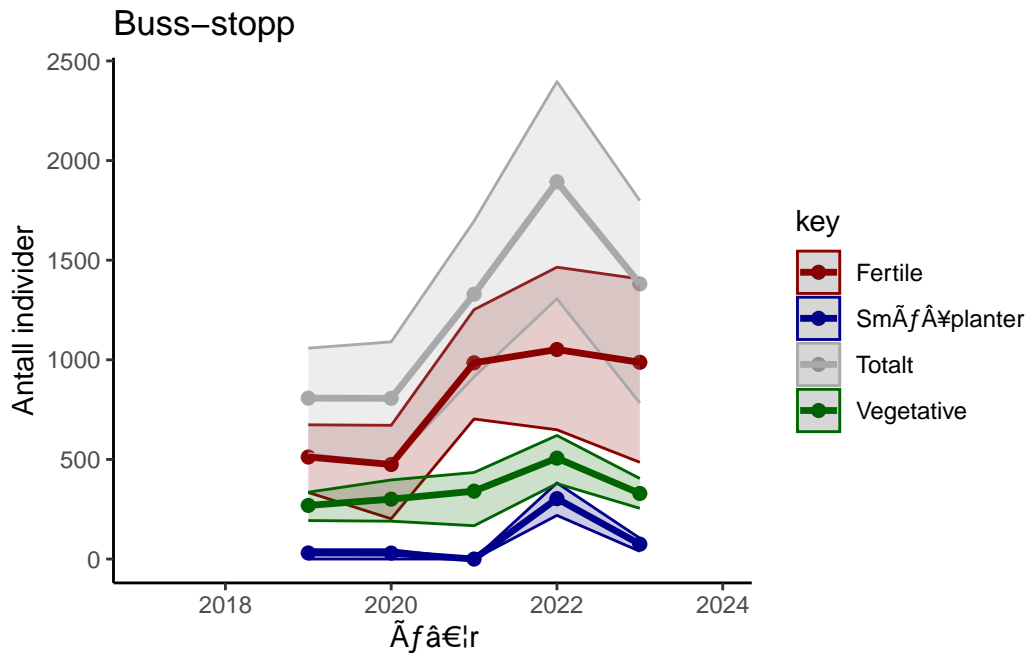


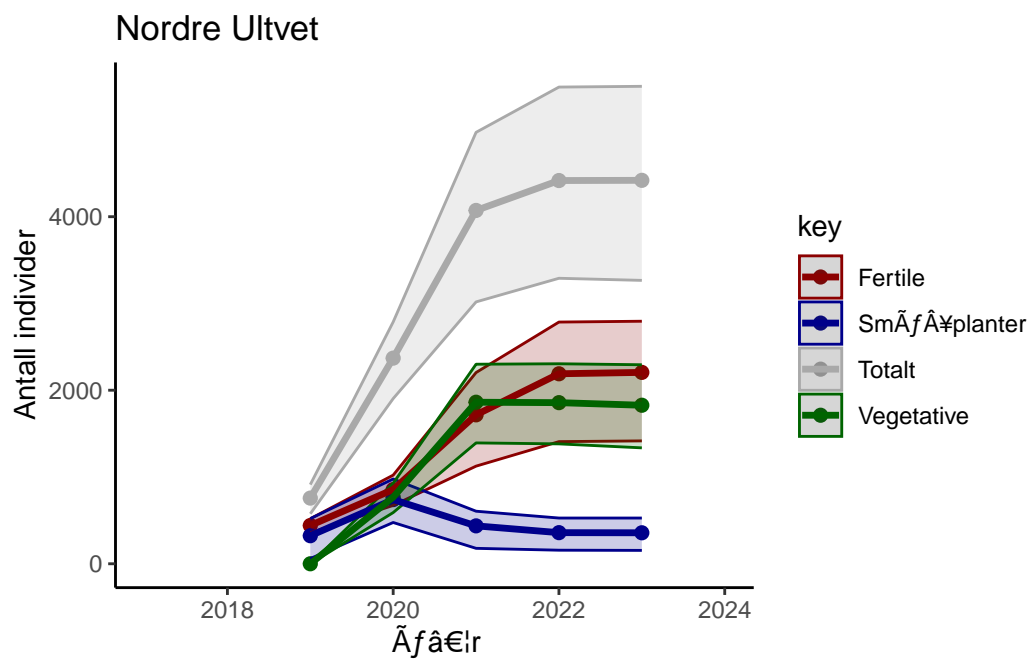
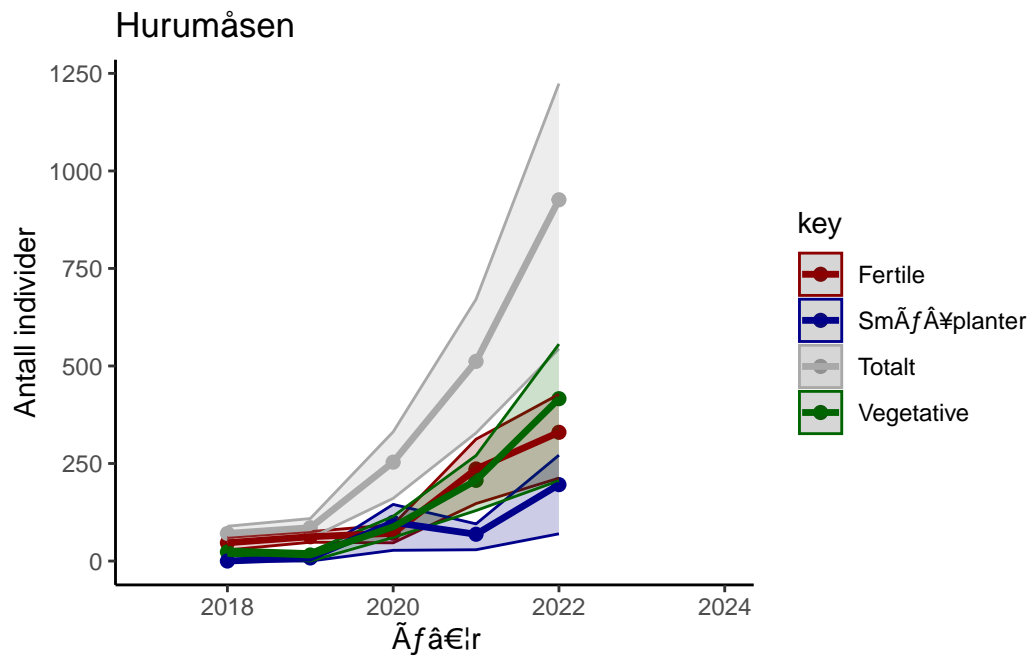


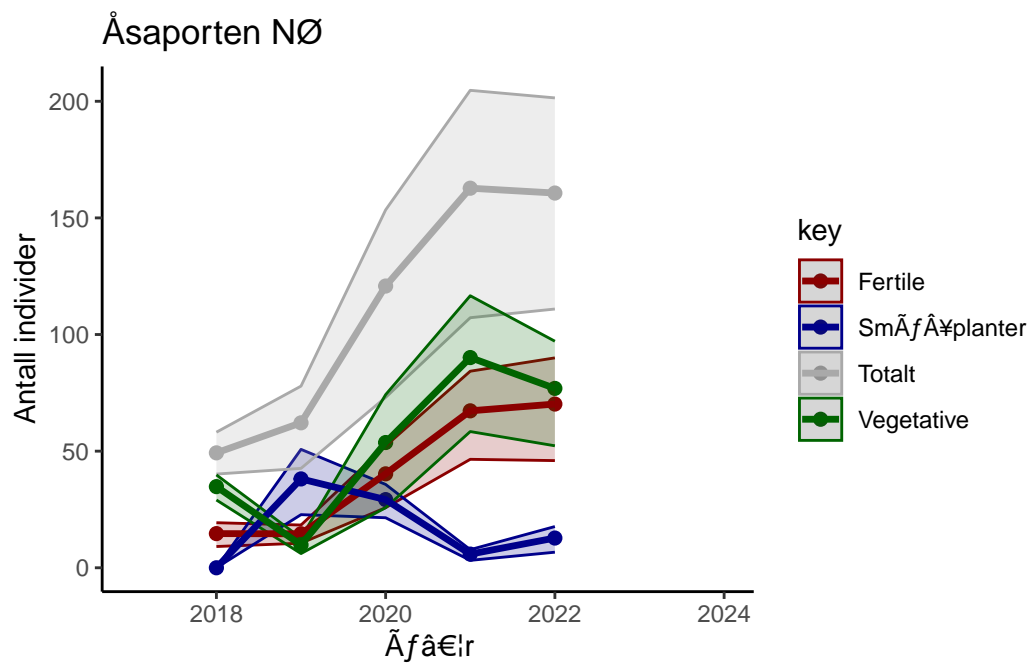
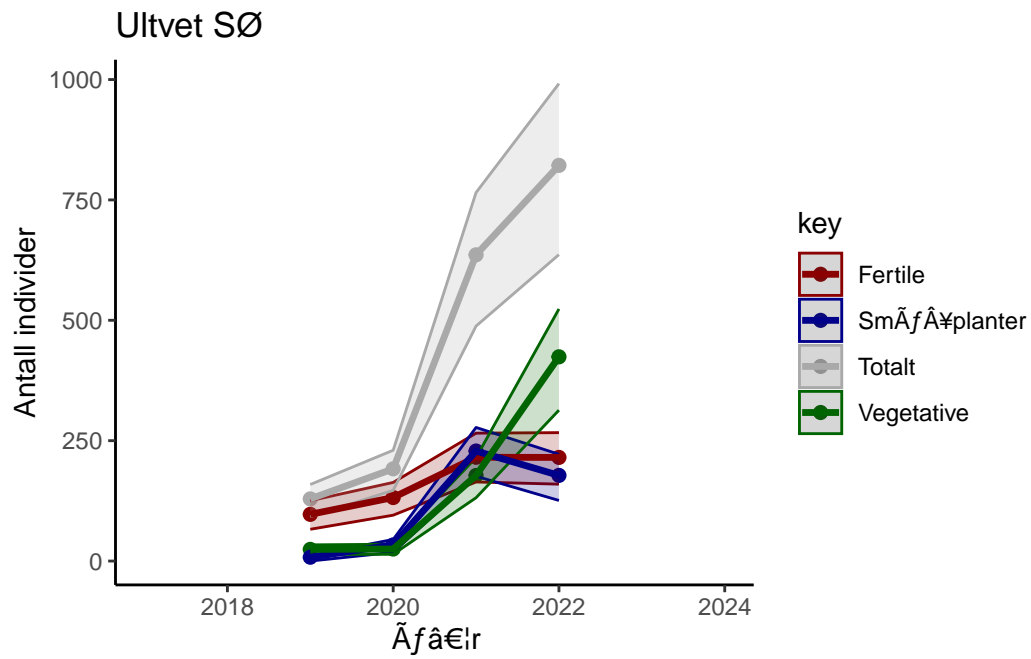


2.3 Ringerike









2.4

3 Lokale estimater av populasjonsvekstrate

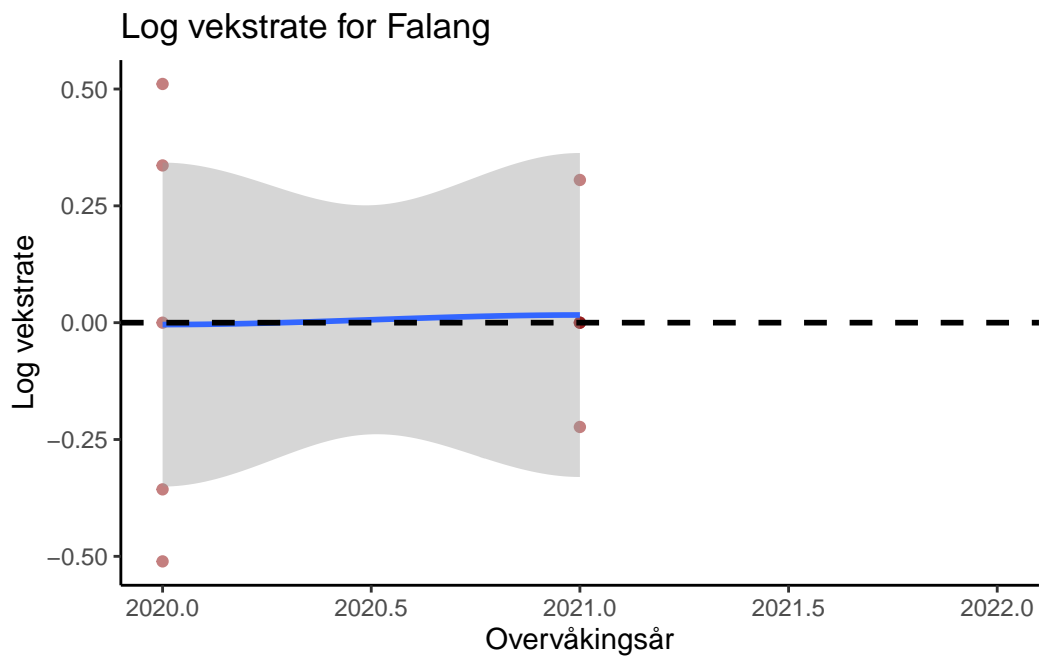
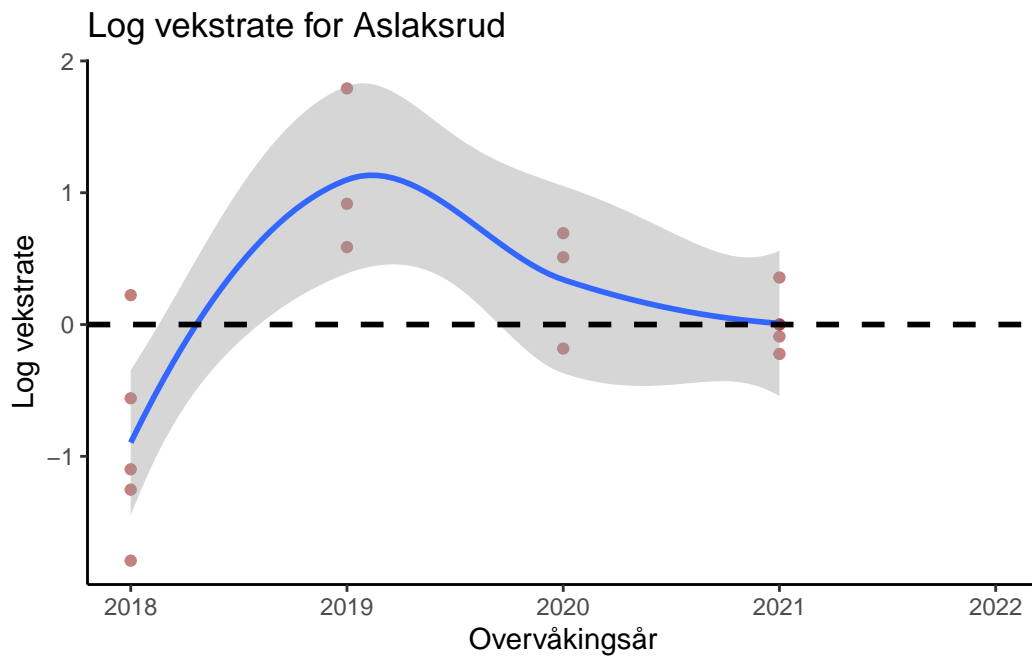
Disse figurene viser estimert populasjonsvekstrate for hvert år lokalitetene som inngår i overvåkingen.

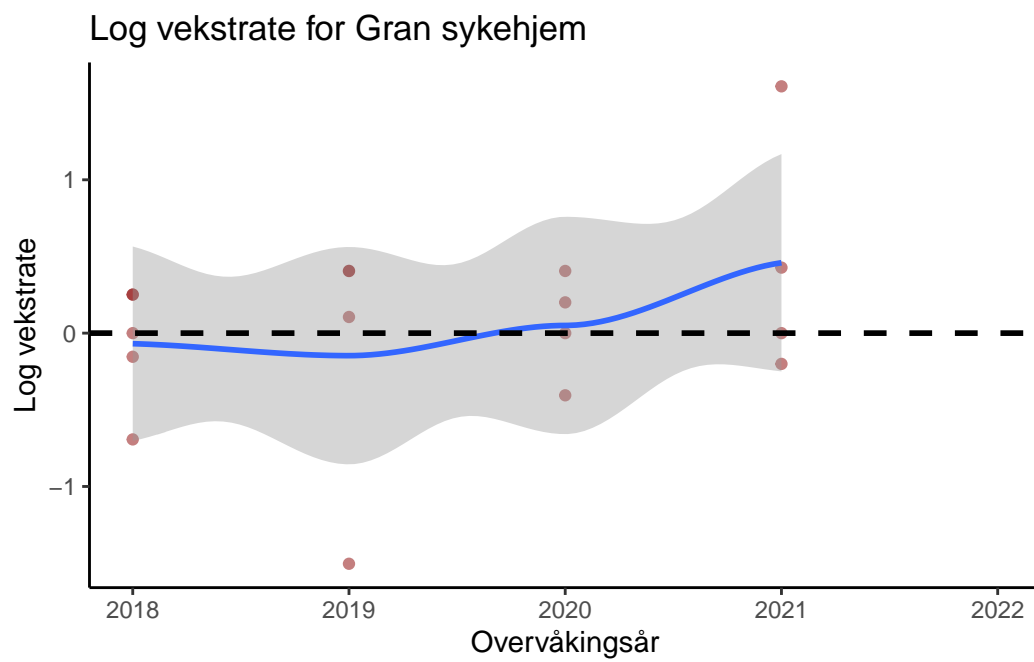
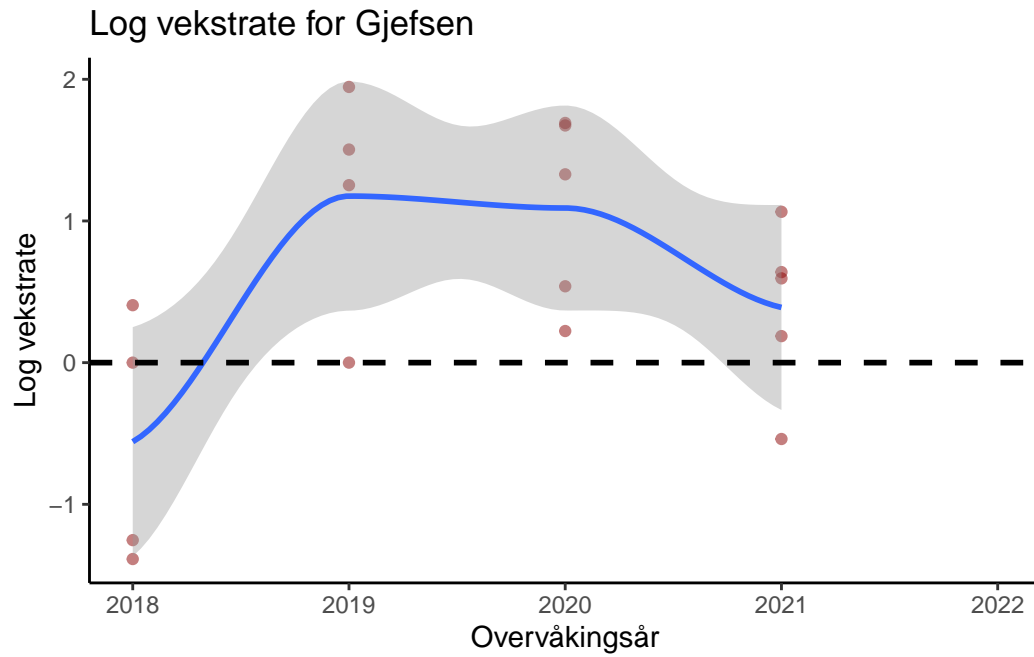
Vekstrate ble beregnet som forholdet mellom populasjonsstørrelsen (antall individer totalt) i år t over antall individer i år $t - 1$. Et gjennomsnitt ble beregnet for hver lokalitet og år, over alle overvåkingsruter på lokaliteten. I figurene er vekstraten log-transformert. En log-vekstrate på 0 betyr at populasjonen er stabil (antall individer i år $t =$ antall individer i år $t - 1$). En positiv log-vekstrate (> 0) betyr en populasjon i økning, mens en negativ log-vekstrate (< 0) betyr en populasjon i nedgang. Året langs x-aksen angir år $t - 1$, dvs. vekstraten i 2020 representerer endringen som er skjedd fra 2020 til 2021 ($\log(\text{antall individer i 2021} / \text{antall individer i 2020})$).

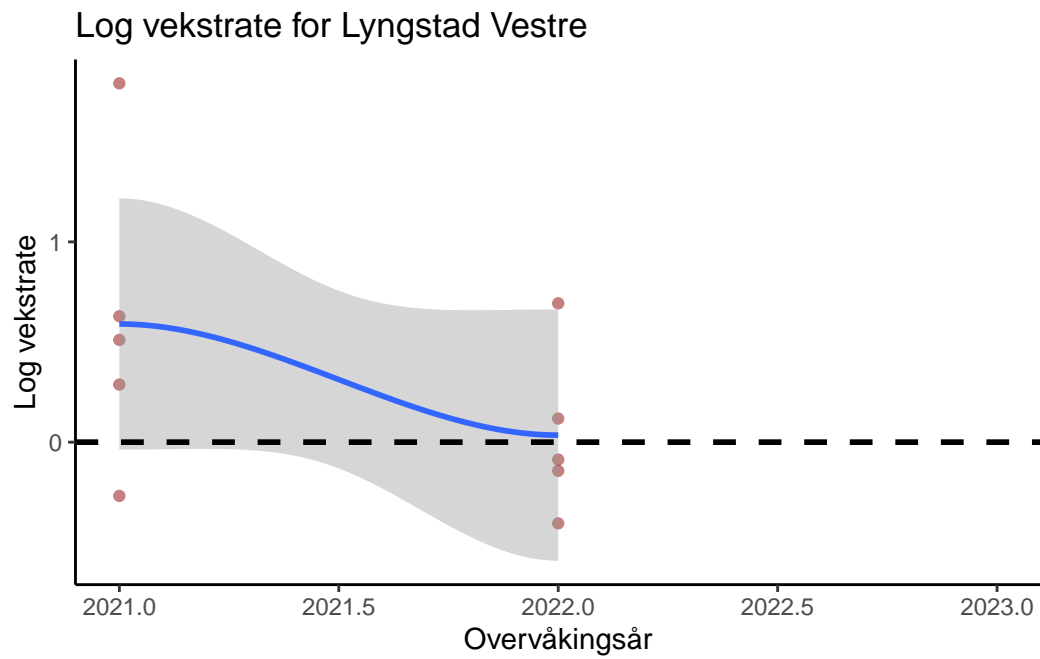
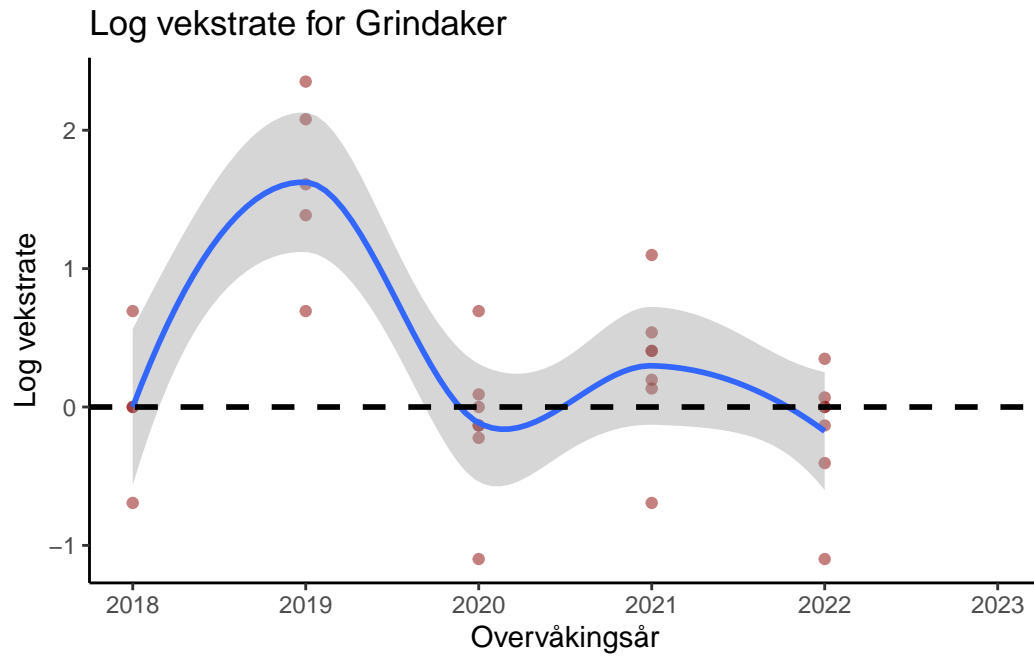
Fordi beregningen av vekstrate er avhengig av data fra overvåkingsruter, er vekstraten bare beregnet for de lokalitetene/årene med detaljert datainnsamling (overvåkingsruter og transekter). Vekstrater mangler foreløpig for de tre nyetablerte lokalitetene i Gudbrandsdalen, Mjøsa og Valdres.

I figurene vises hver overvåkingsrute som en prikk, gjennomsnittsverdien for lokaliteten som tykk blå strek og 95 % konfidensintervall som grått skravert område.

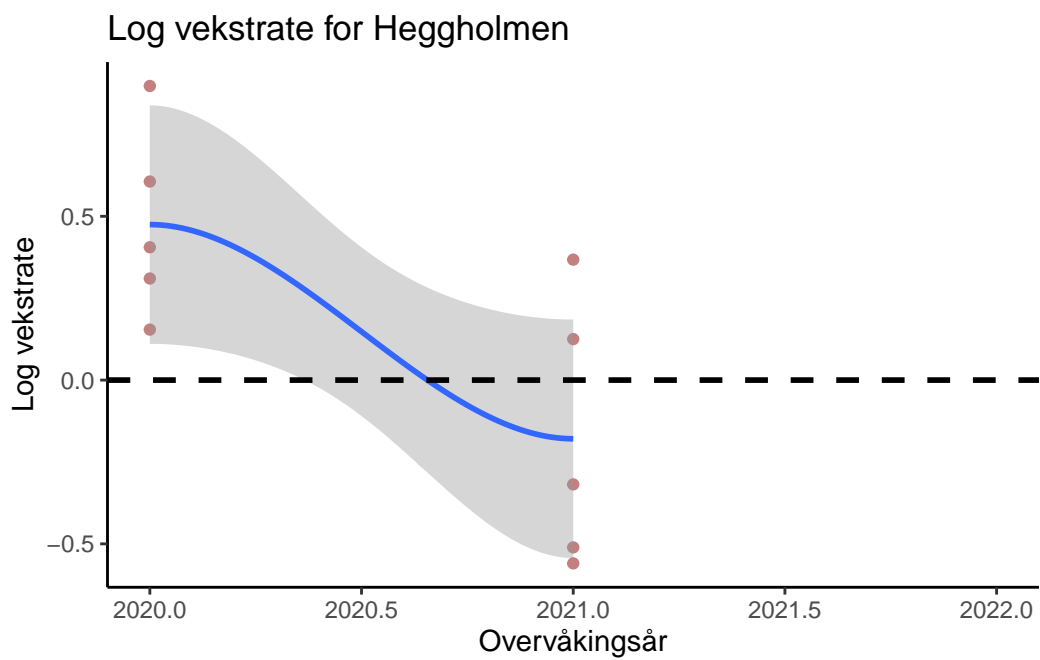
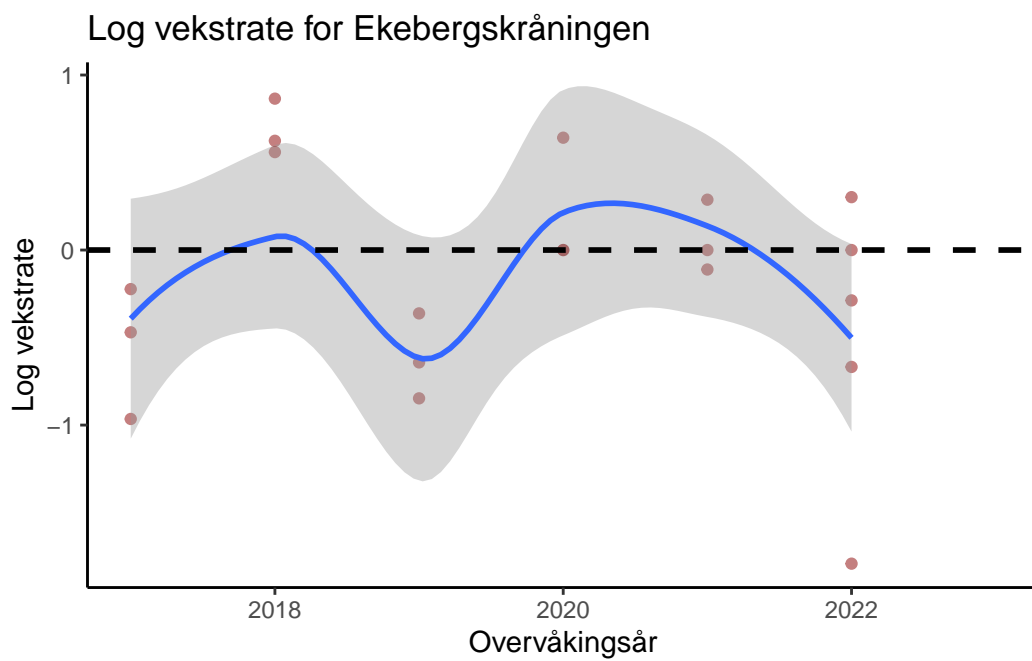
3.1 Hadeland

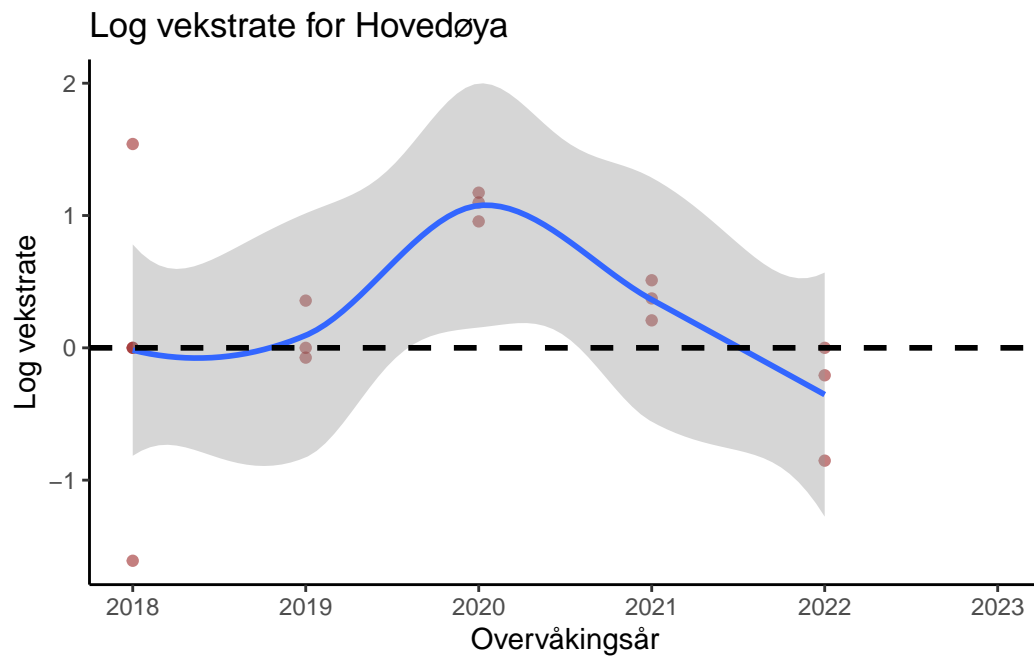
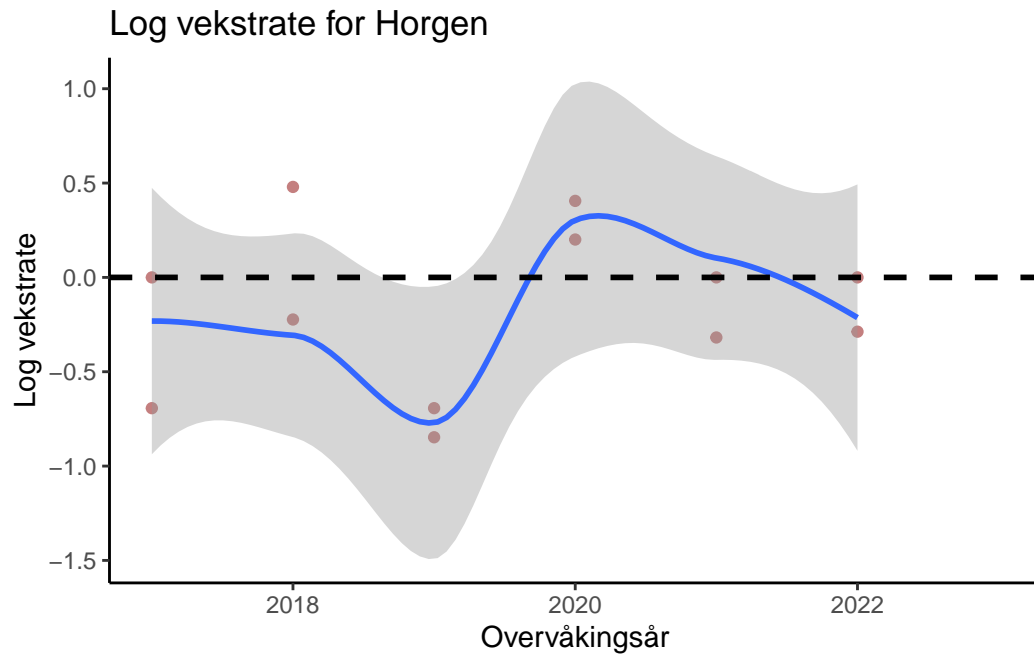


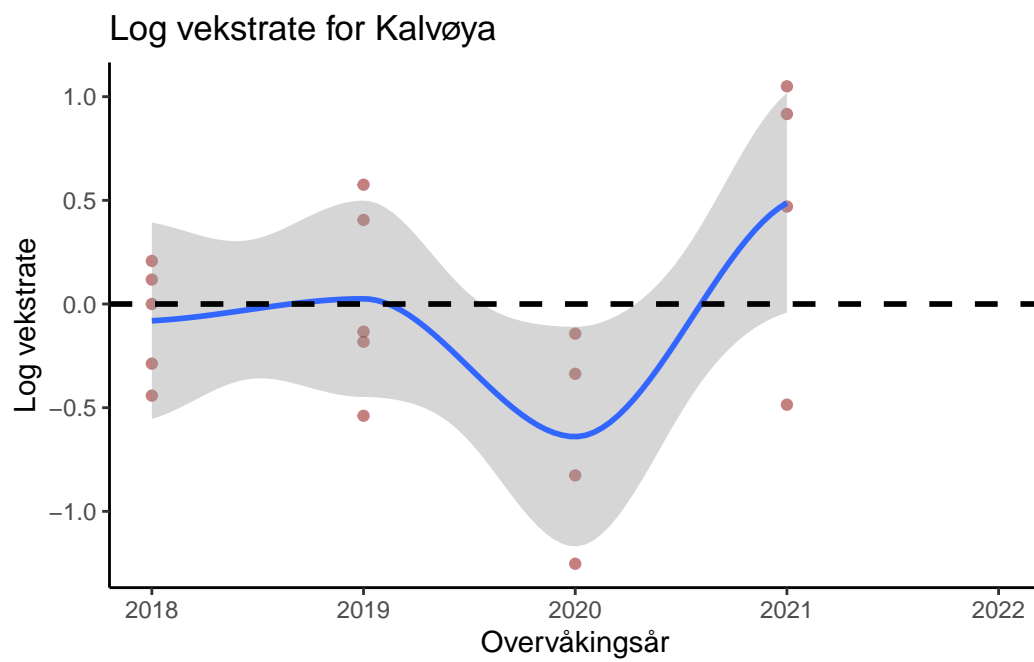
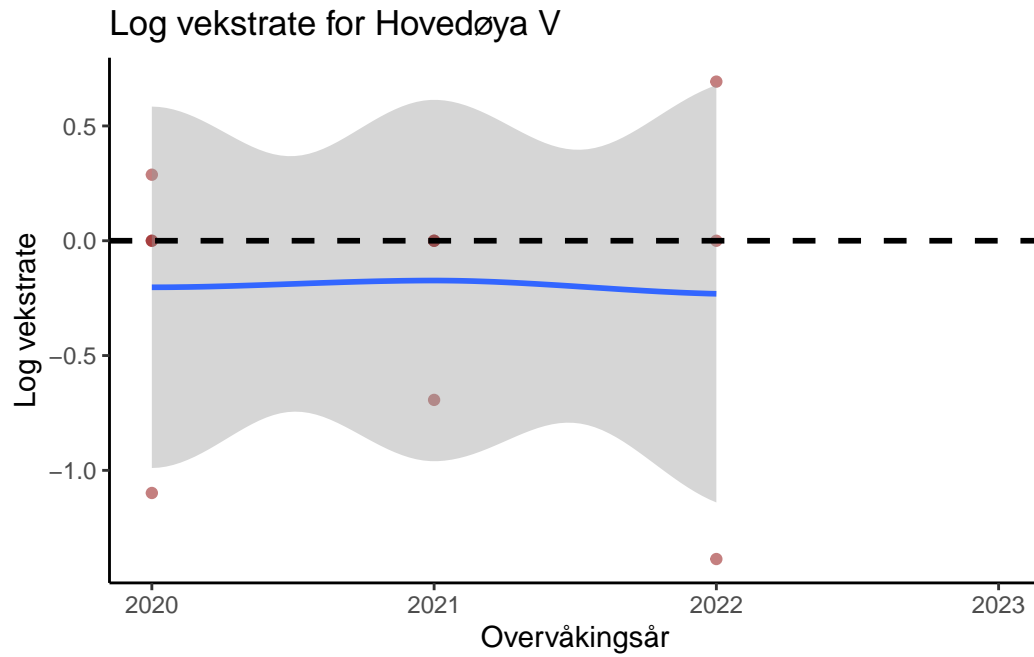


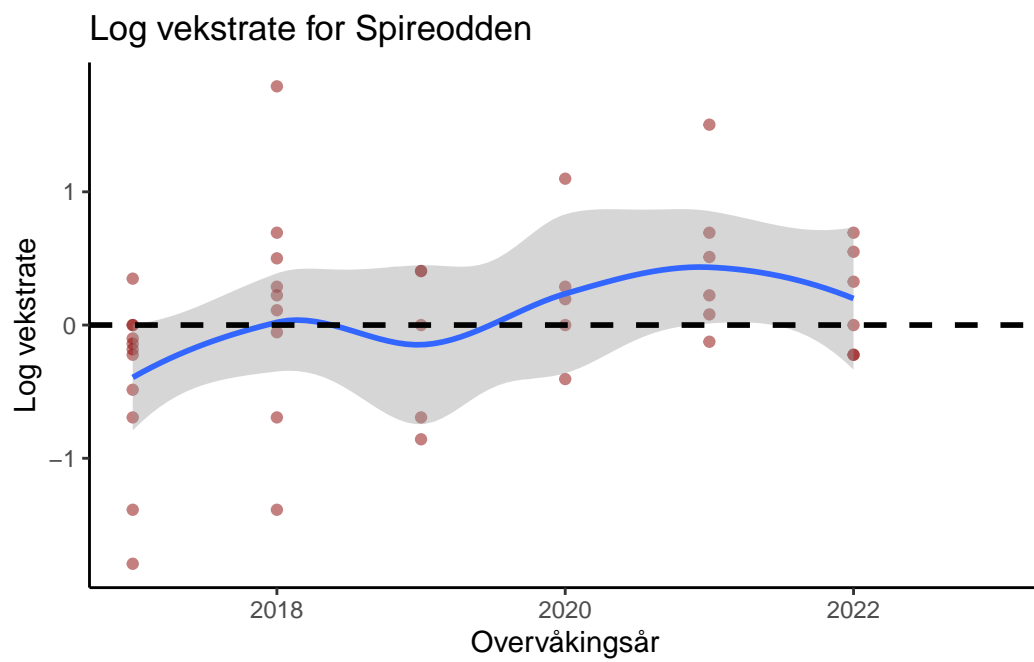
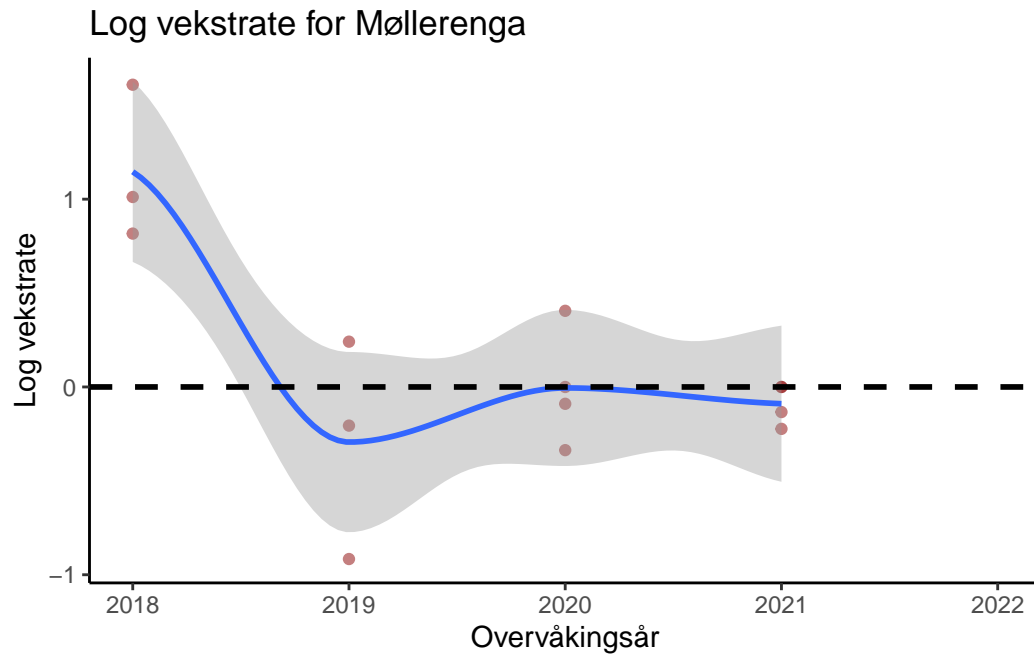


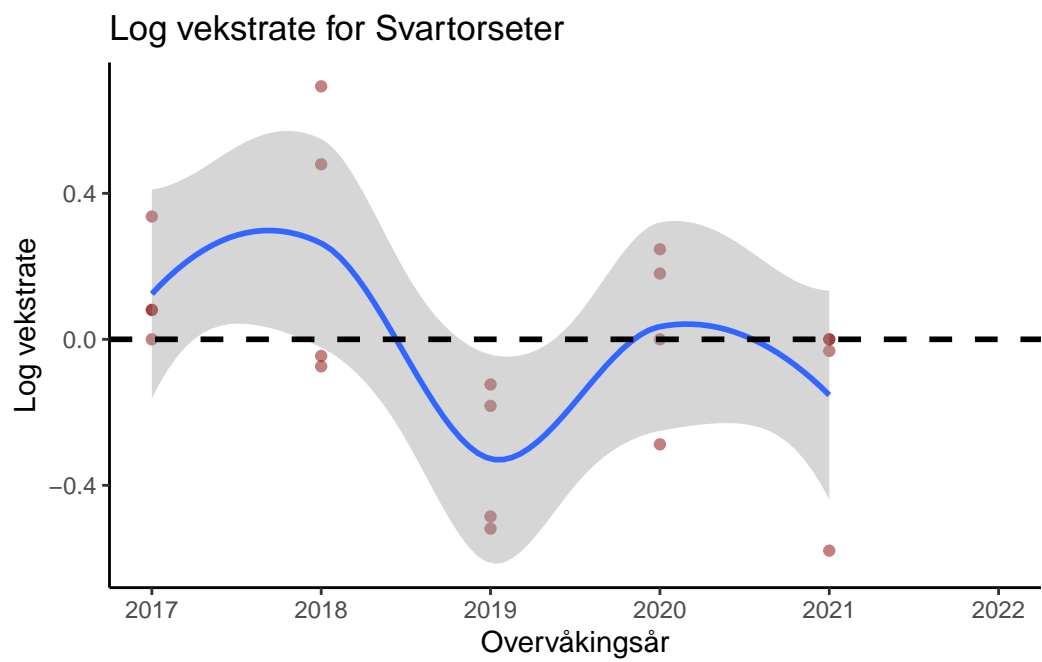
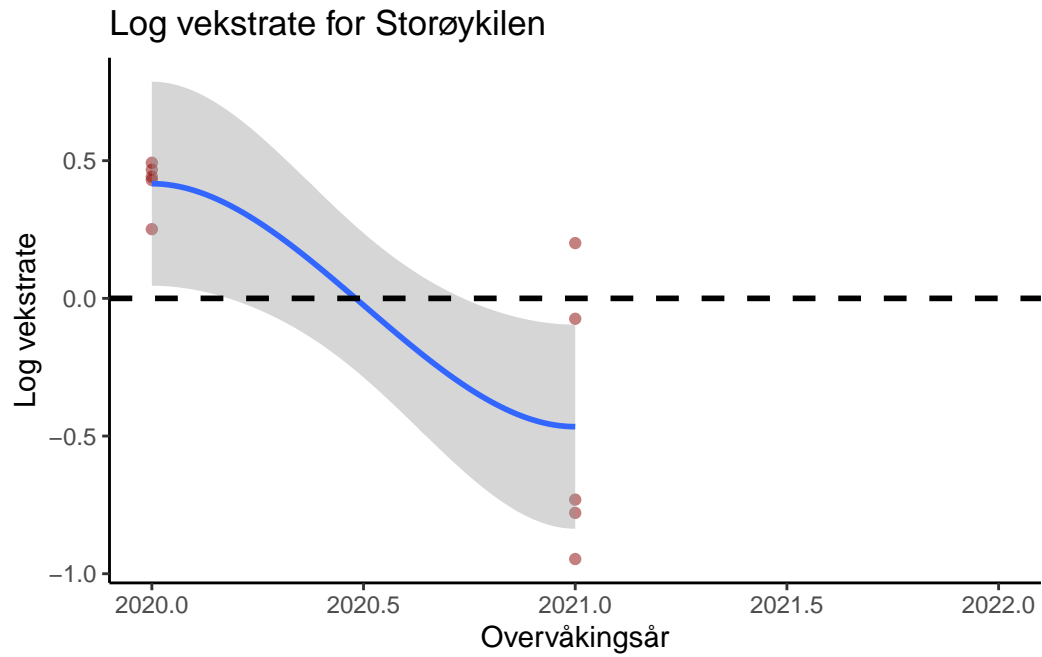
3.2 Oslo

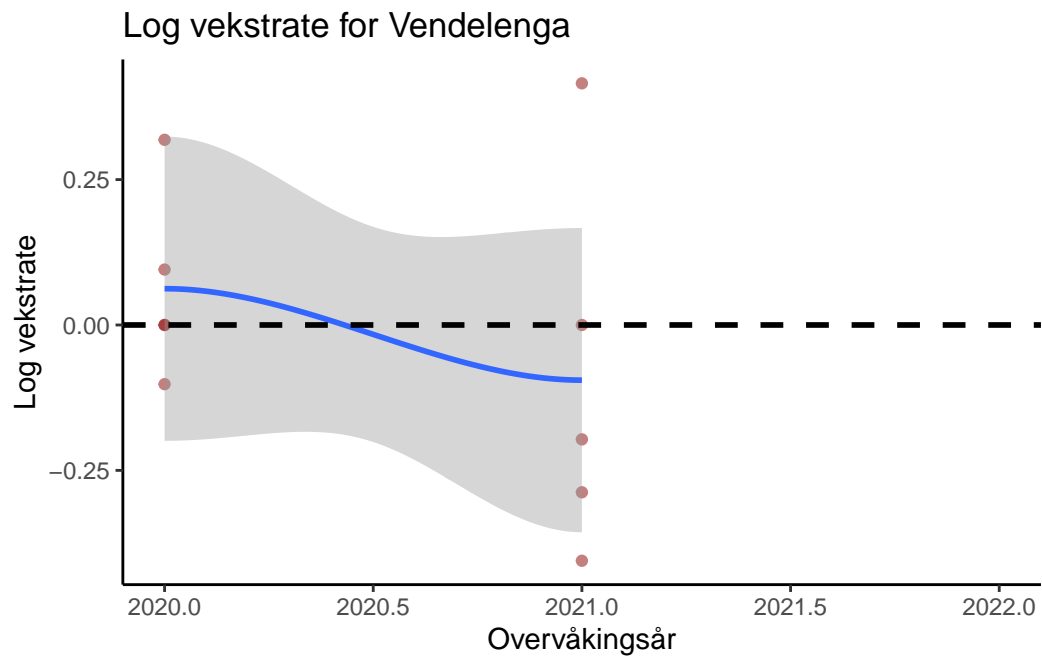
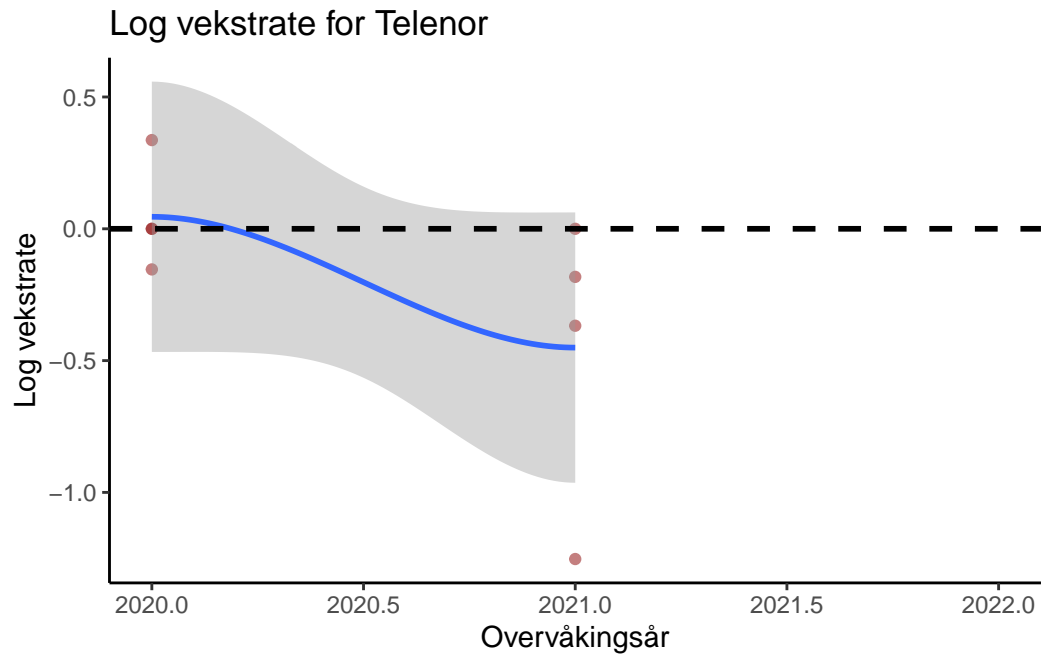




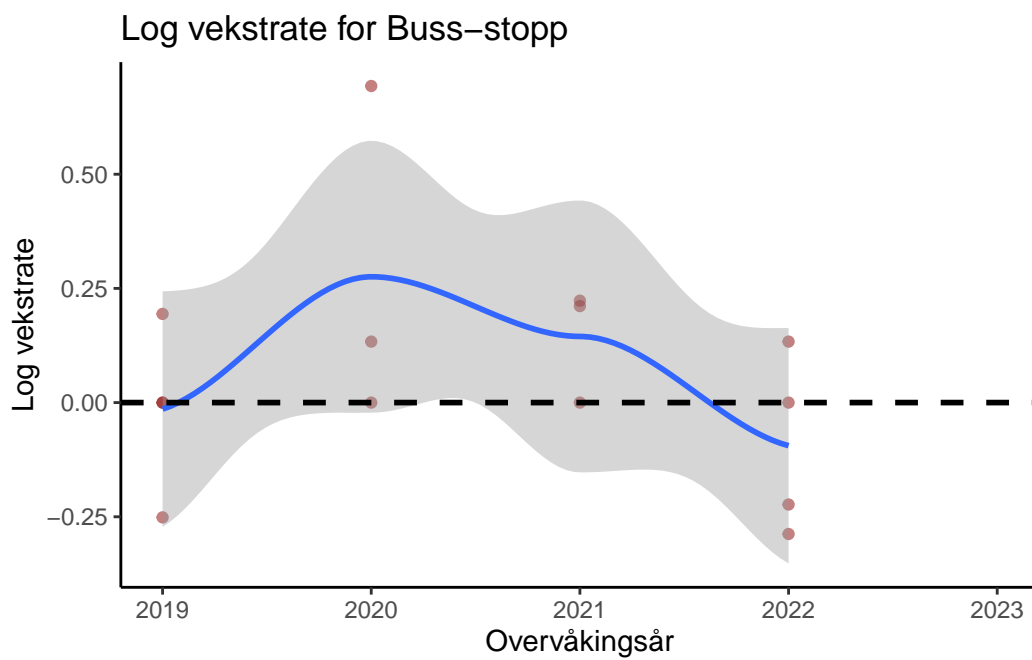
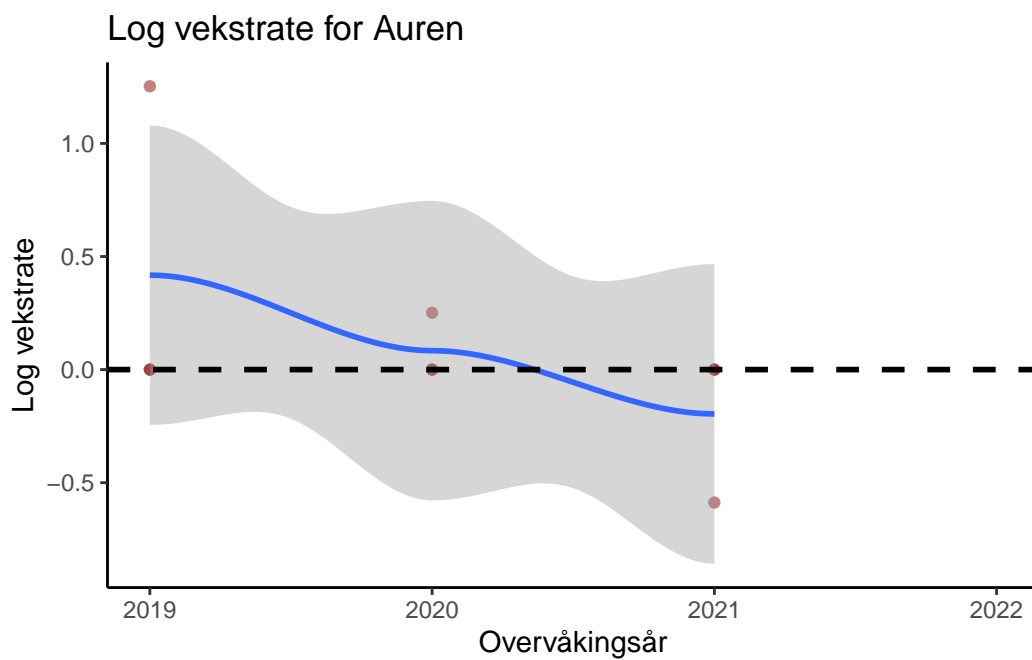


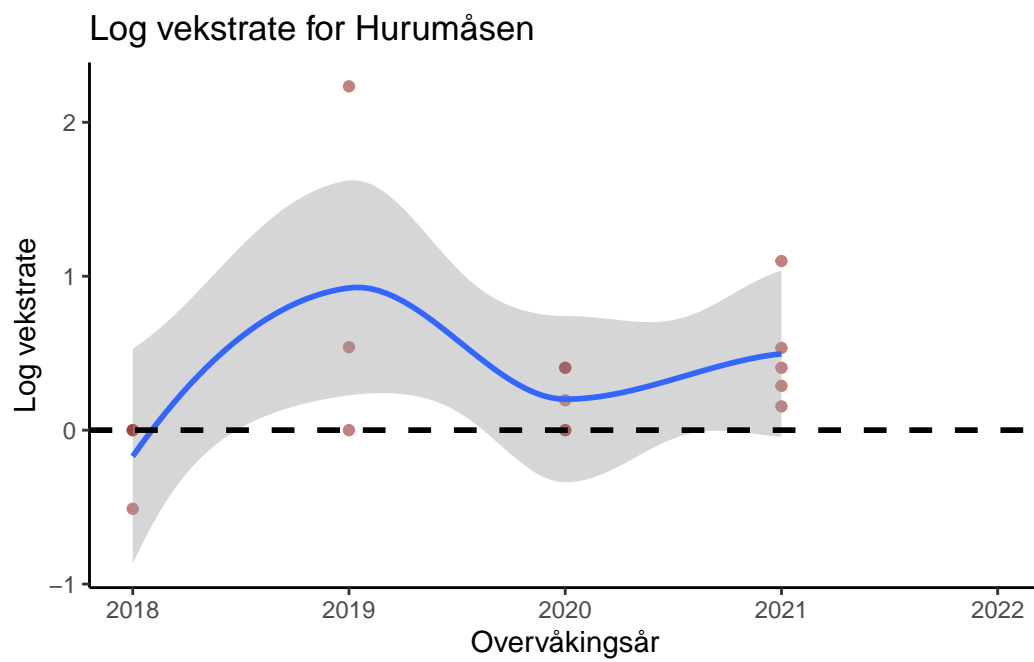
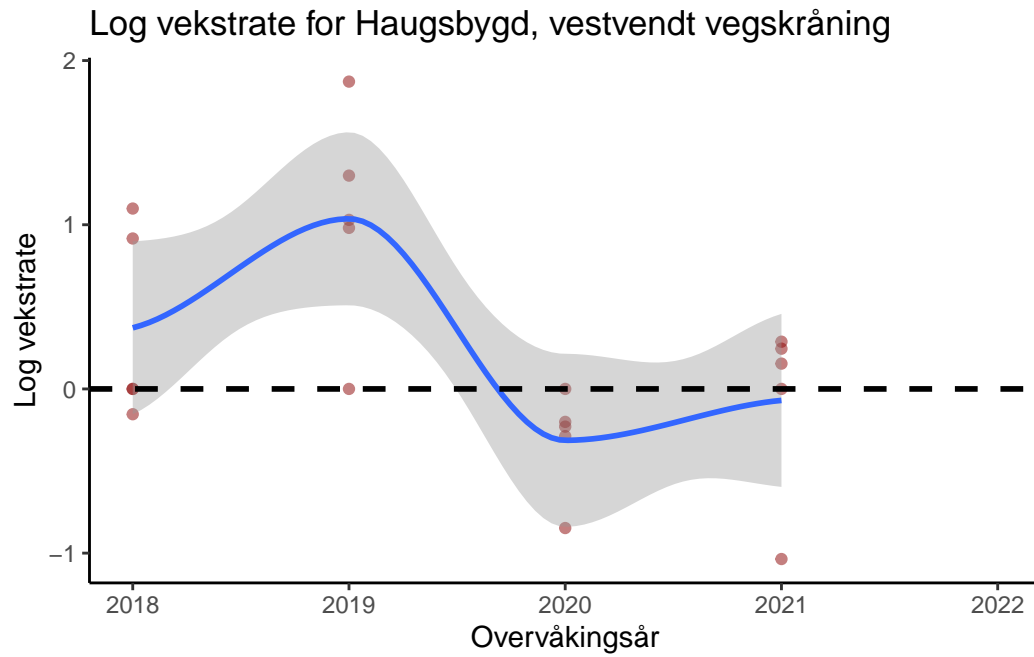


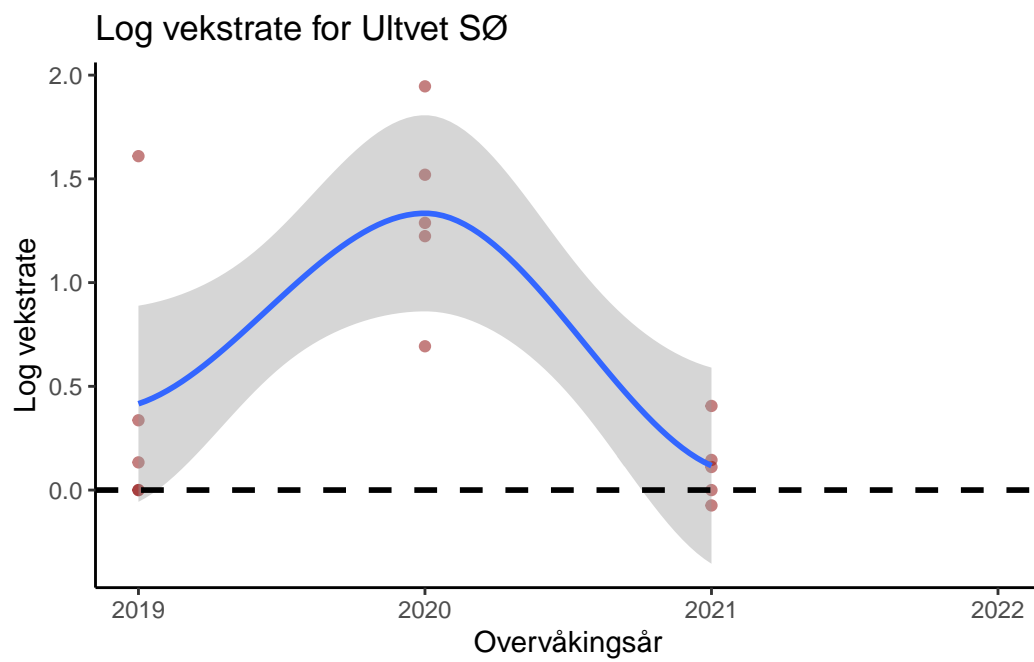
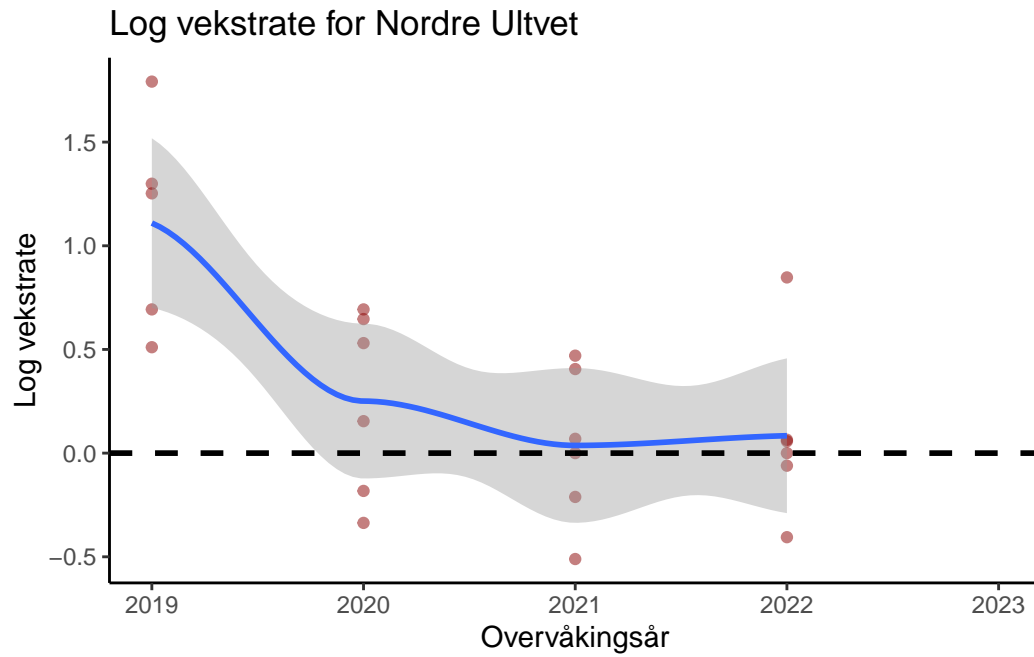


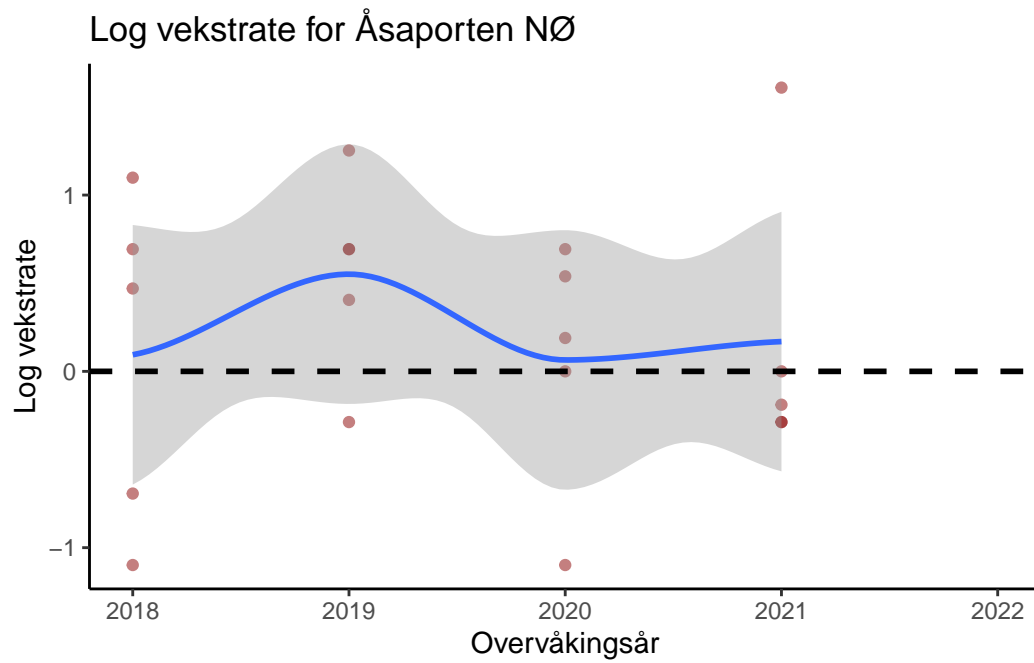


3.3 Ringerike









3.4

4 Vektete populasjonsvekstrater

For å oppsummere vekstratene på tvers av populasjoner brukte vi en vektet regresjon, en tilnærming som brukes i meta-analyser («random effects meta-analysis»). Vi vektet populasjonsvekstratene per lokalitet med den overordnede populasjonsstørrelsen (i den gitte lokaliteten i det gitte året), og et vektet gjennomsnitt ble deretter beregnet totalt (over alle populasjoner), per region og per naturtype.

Denne tilnærmingen gjør at vi kan vekte effekten av endringer i store populasjoner mer, mens endringer i små populasjoner har mindre effekt på overordnede vekstrater. Populasjonsvekstratene gir dermed et representativt estimat på endringer i dragehodepopulasjonen innenfor regionen/naturtypen.

Populasjonsvekstraten er log-transformert. Det betyr at en vekstrate på 0 indikerer en stabil populasjon, vekstrate > 0 indikerer en populasjon i vekst og vekstrate < 0 indikerer en populasjon i nedgang. Figurene viser vektet gjennomsnitt med 95 % konfidensintervall.

Populasjonsstørrelse og -vekstrate kan bare beregnes for populasjonene med detaljert overvåking (overvåkingsruter). Regionale og naturtype-spesifikke vekstrater er derfor bare beregnet med de populasjonene inkludert, som også har data fra overvåkingsruter i 2023.

As we can no longer estimate population size based on the quadrats we weight the regressions by the area of the site. Area is a good but not perfect proxy for population size (species area relationship)

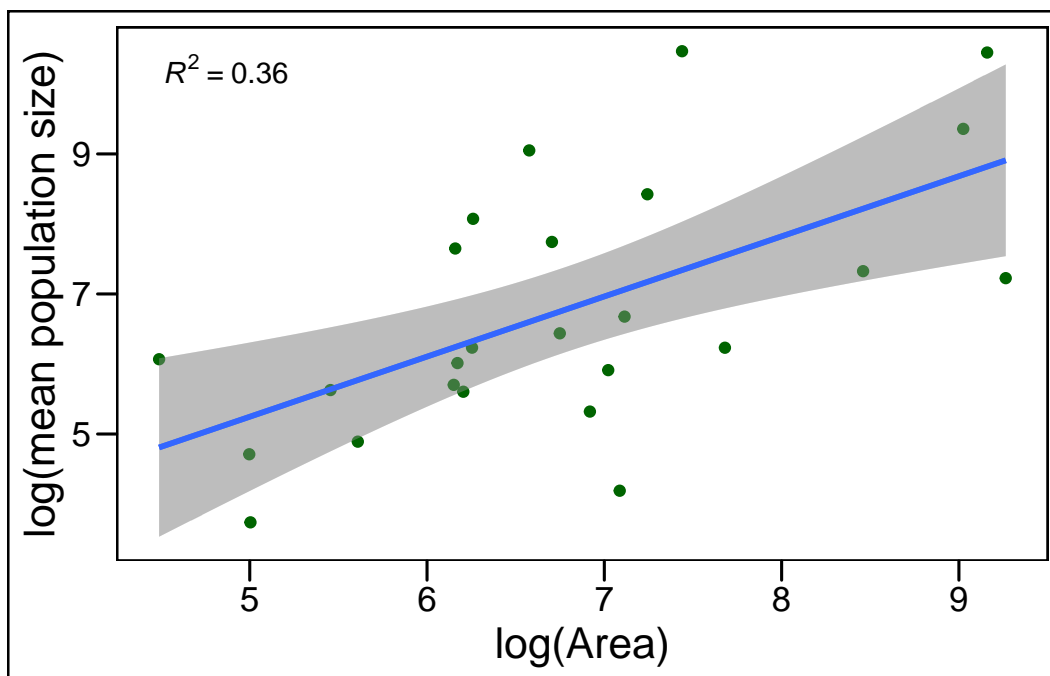
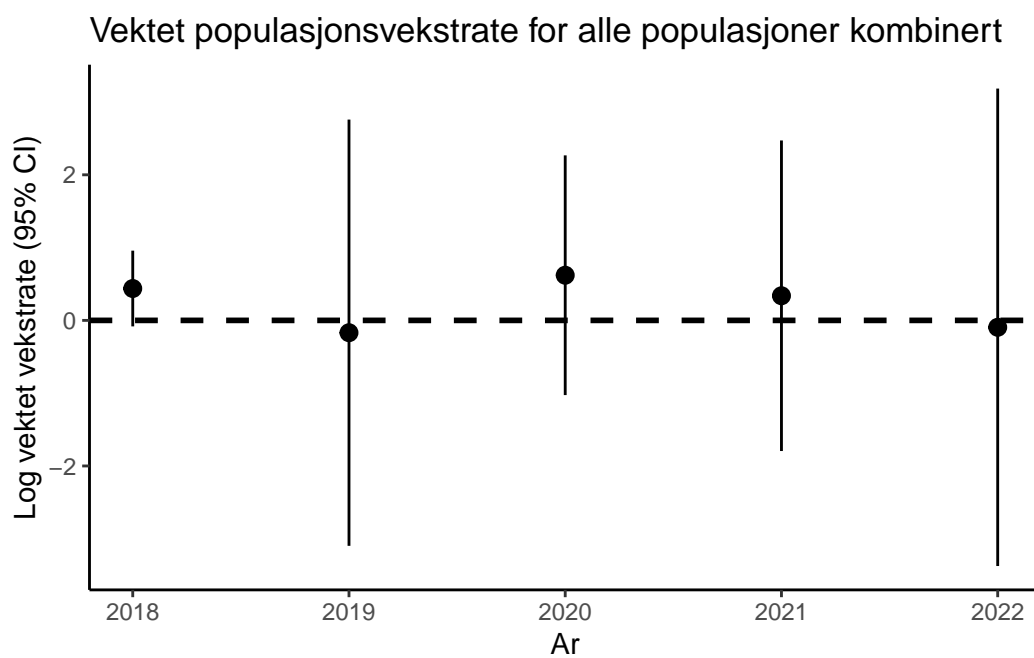
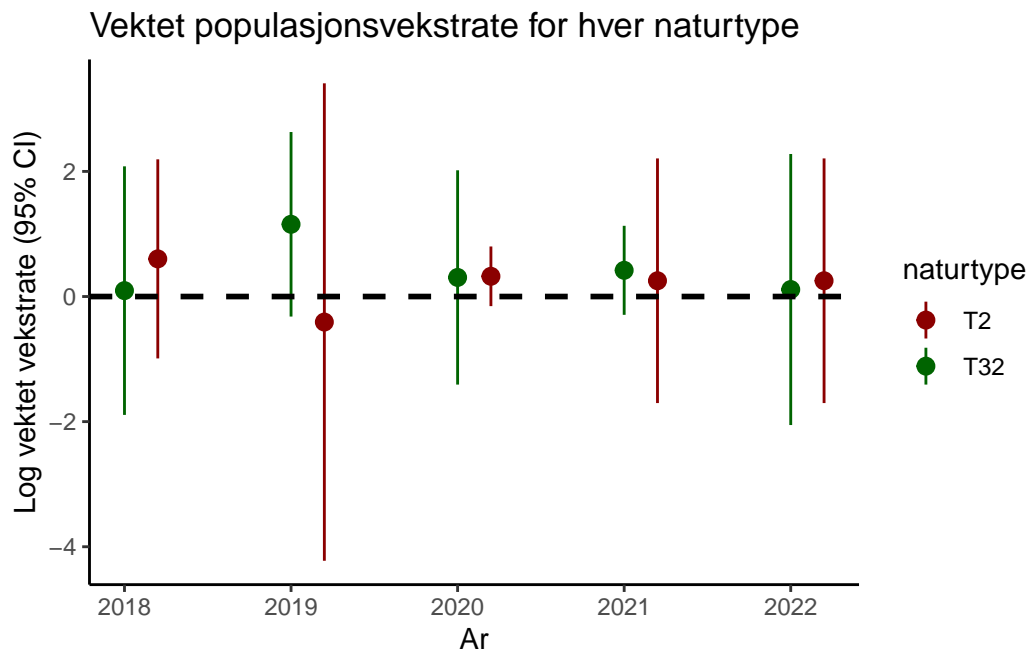
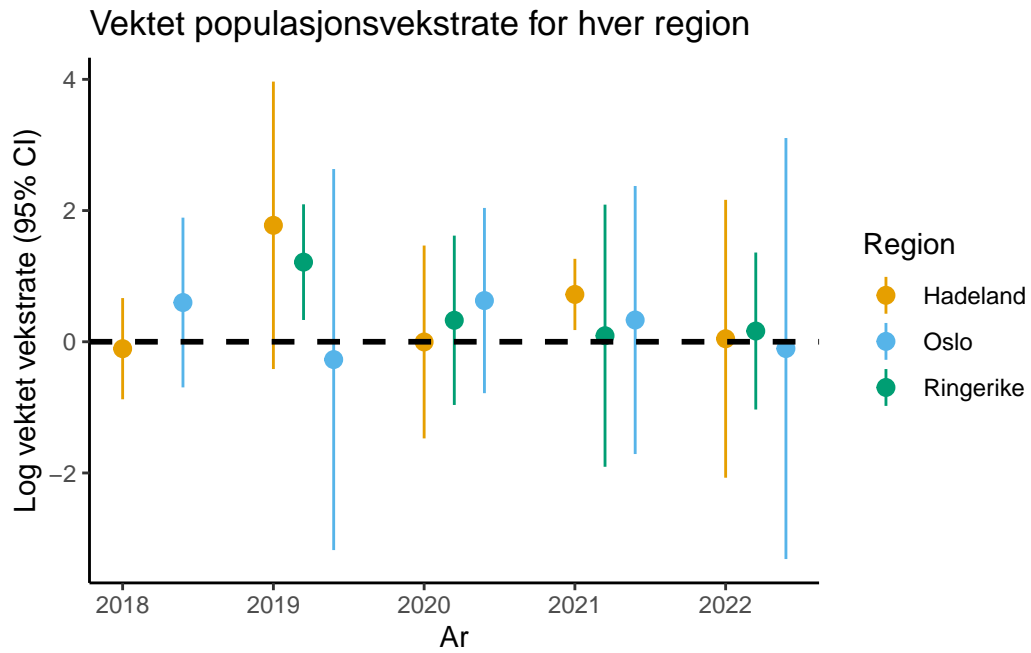


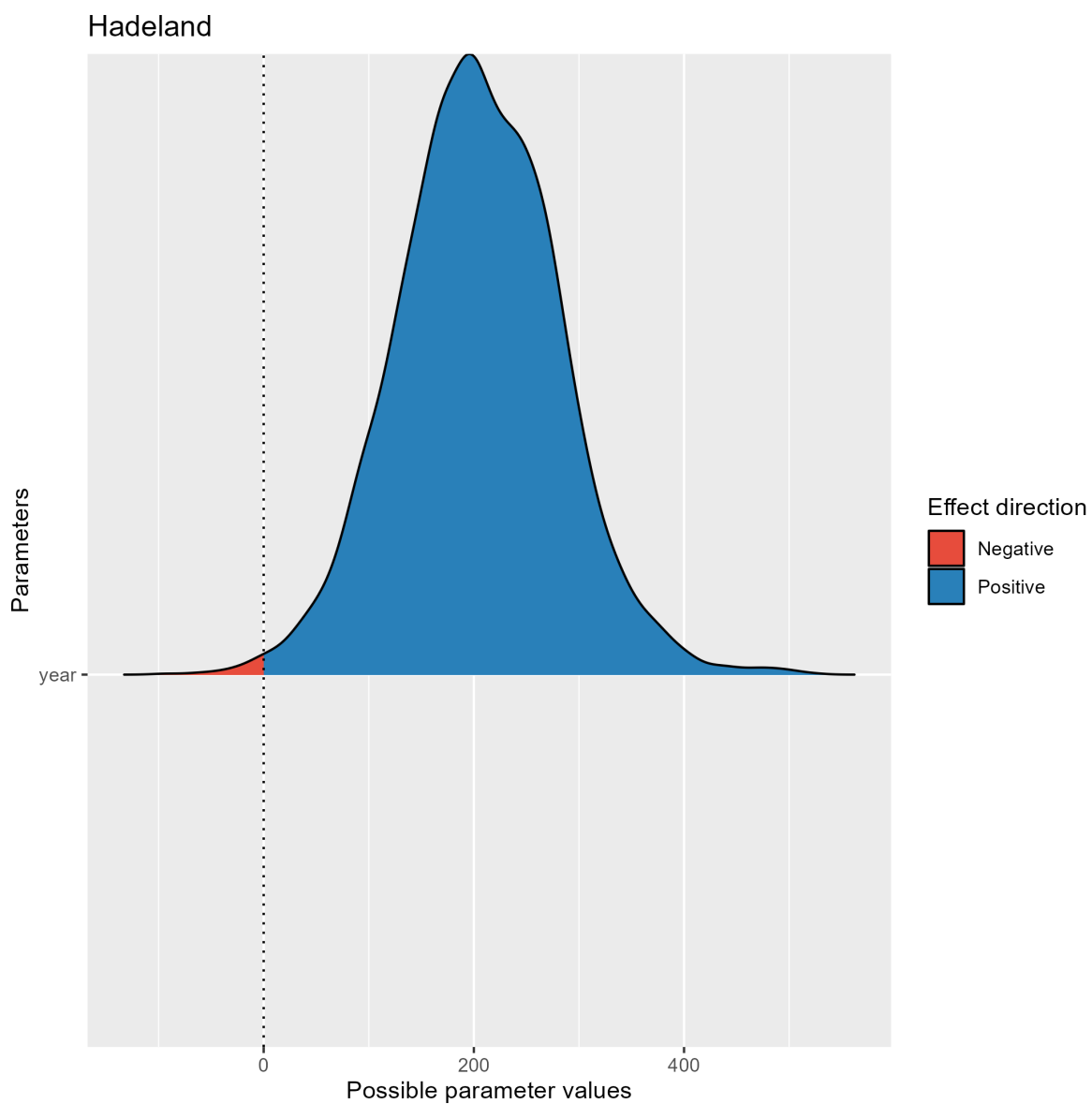
Figure 4.1: Thirty-eight percent of the variation in the mean population size is explained by area



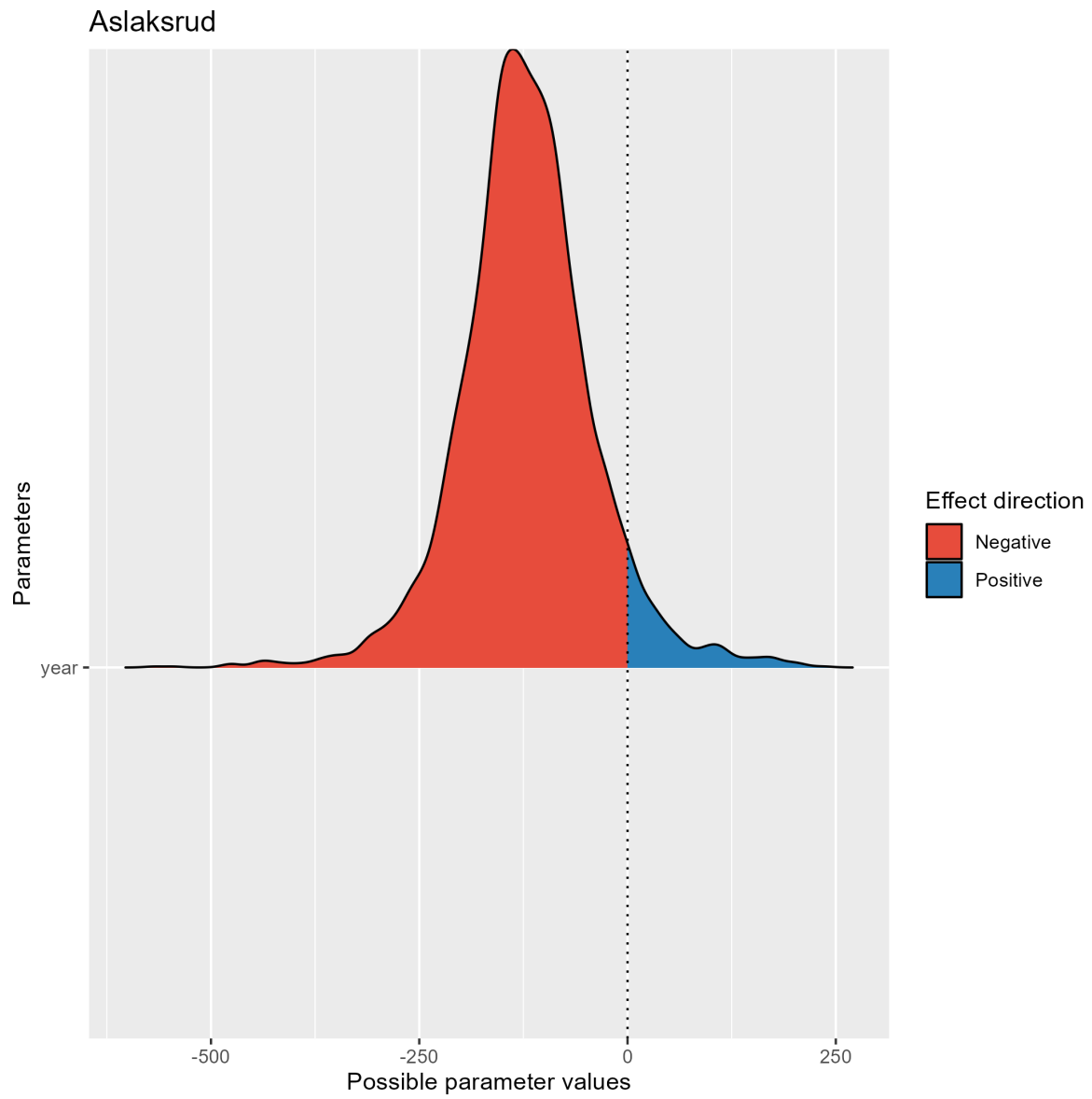


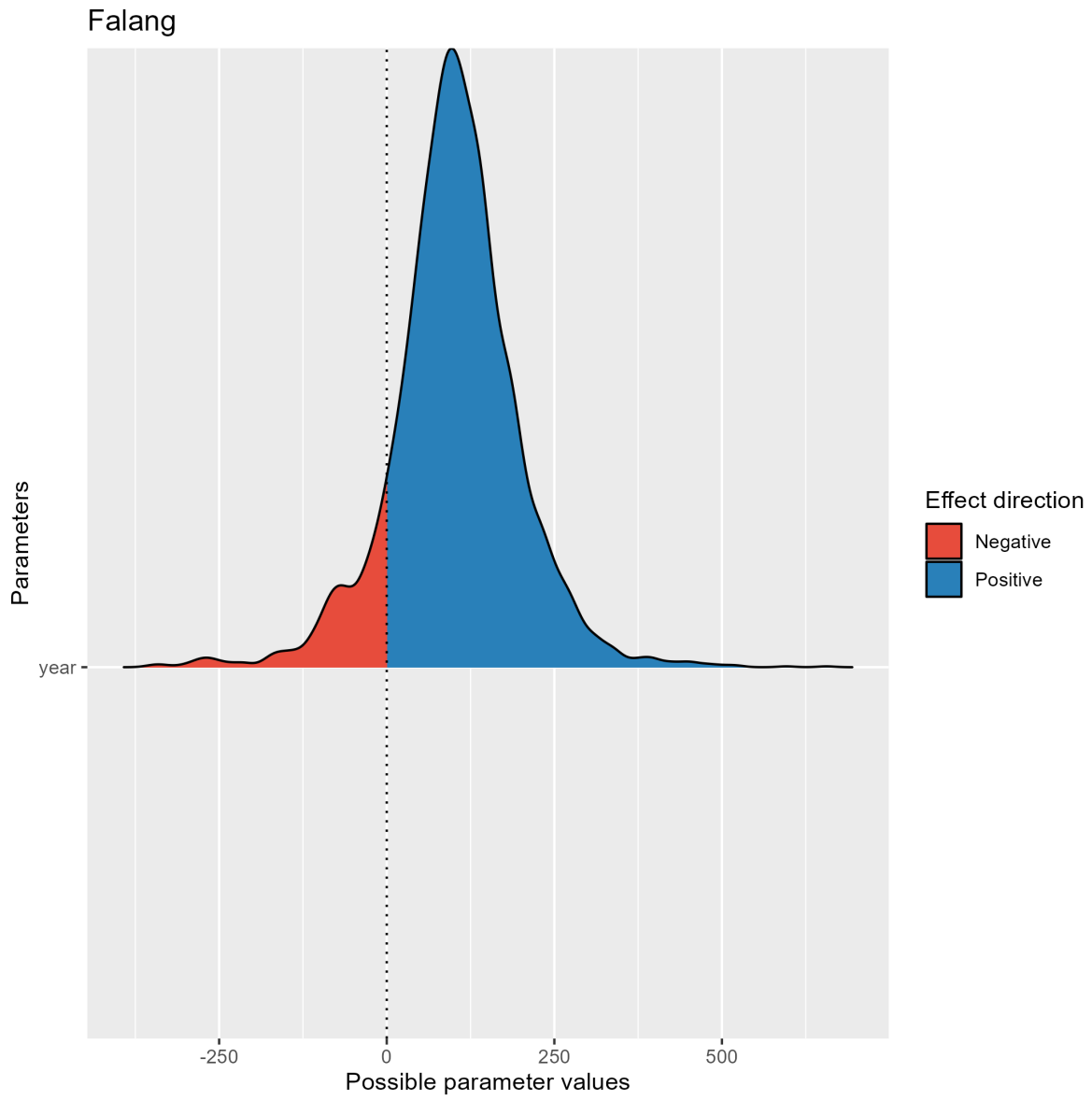
5 Figurer som viser retning i endring

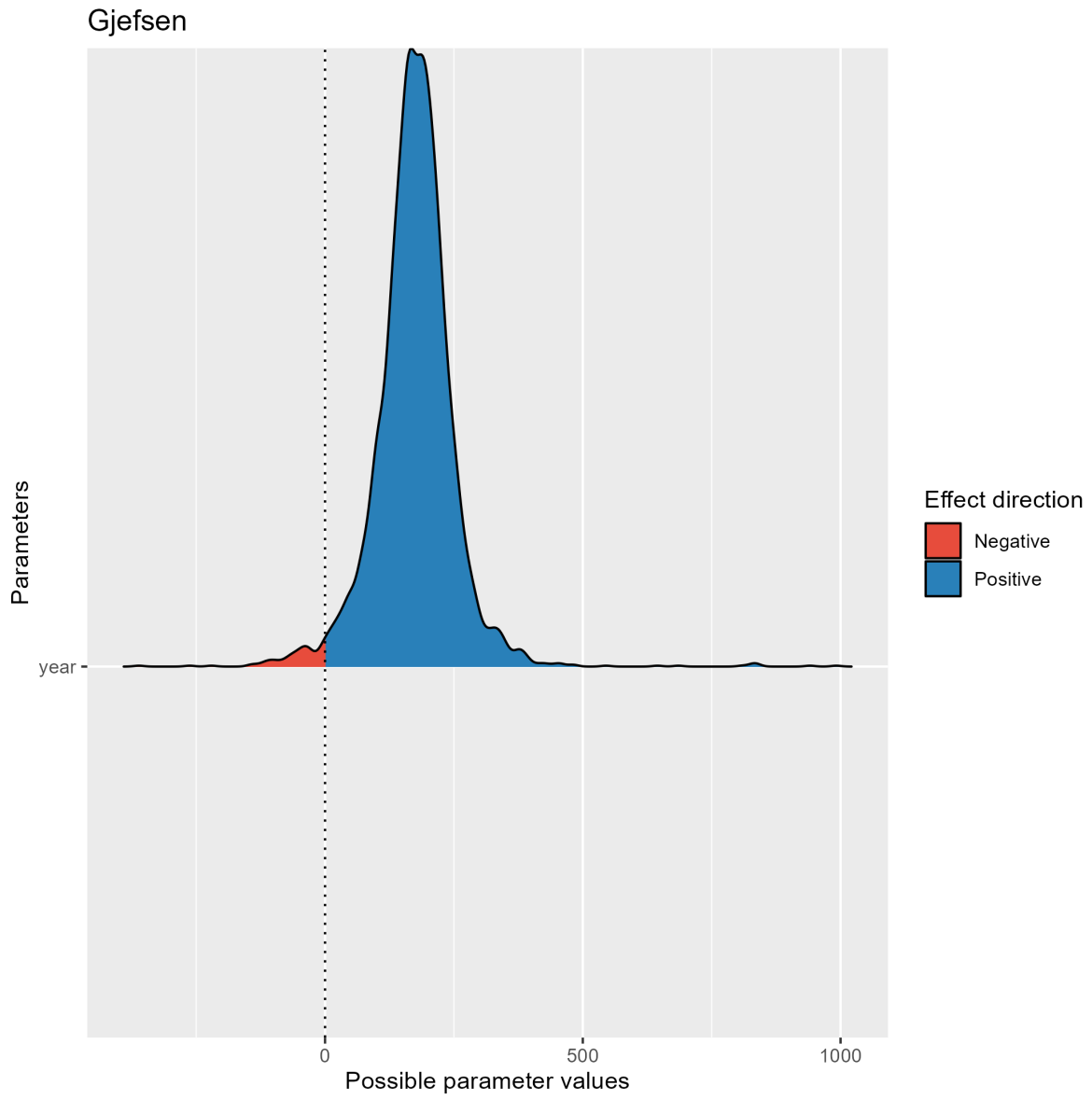
5.1 Hadeland

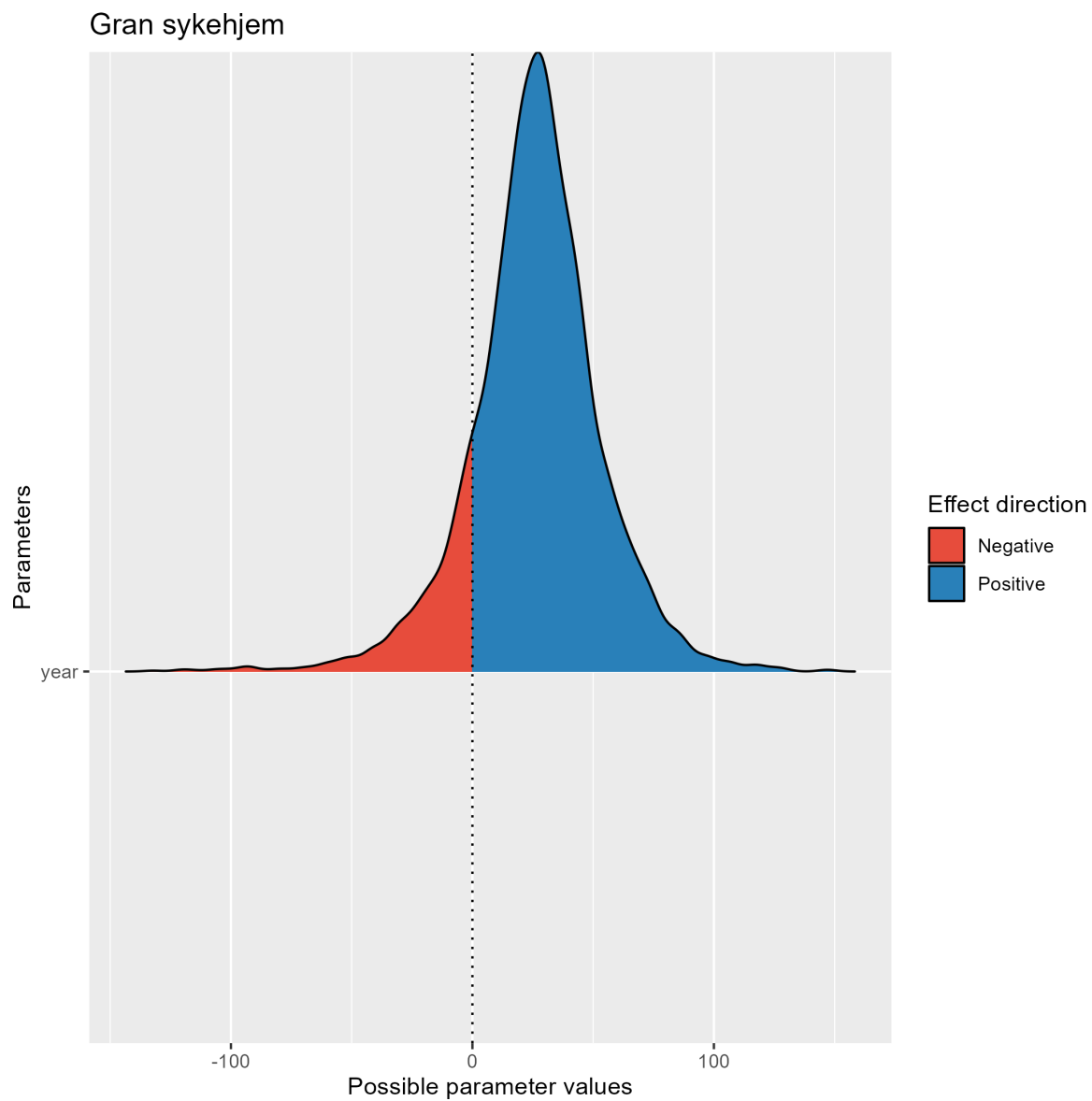


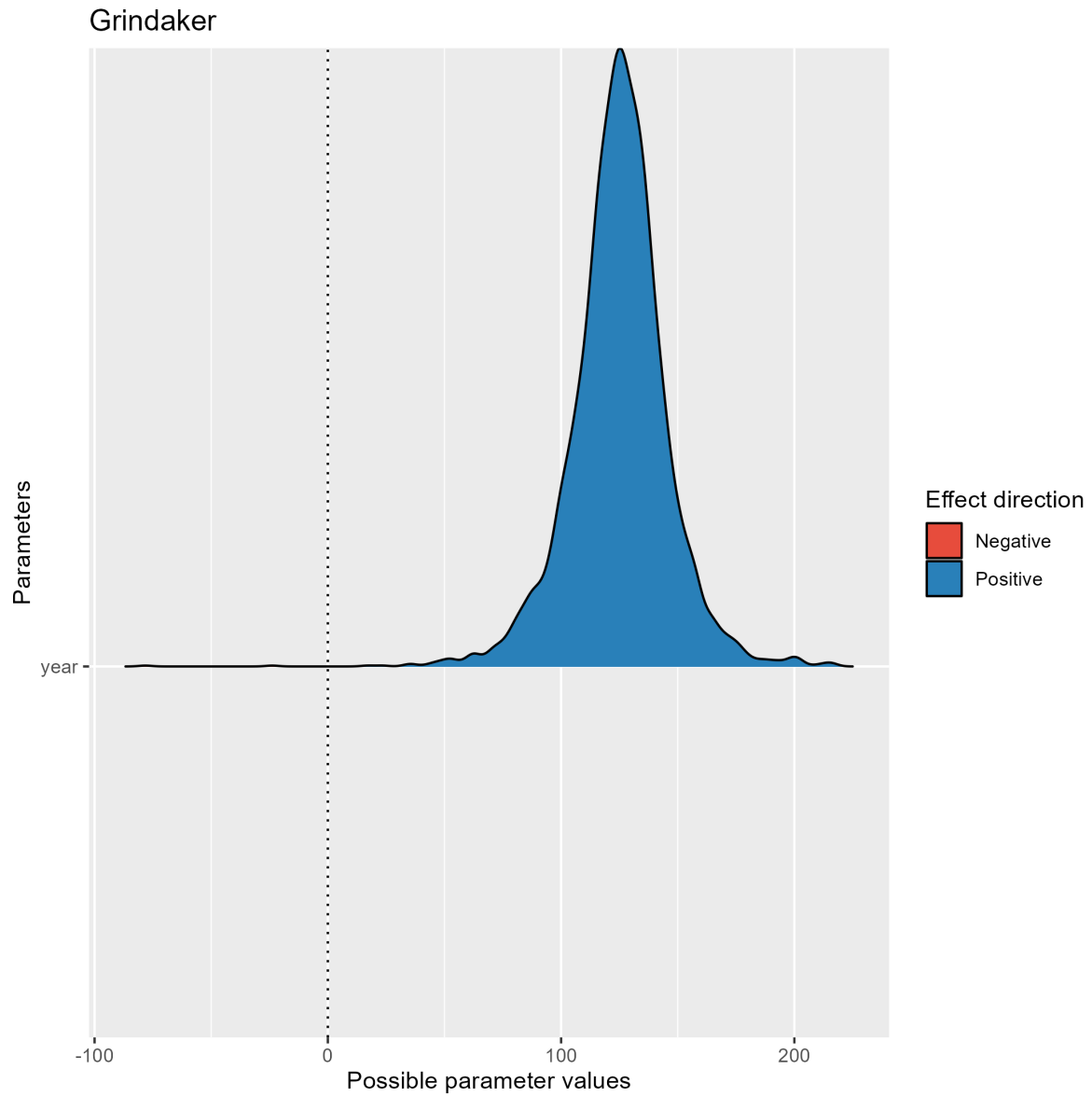
5.1.1 Sites

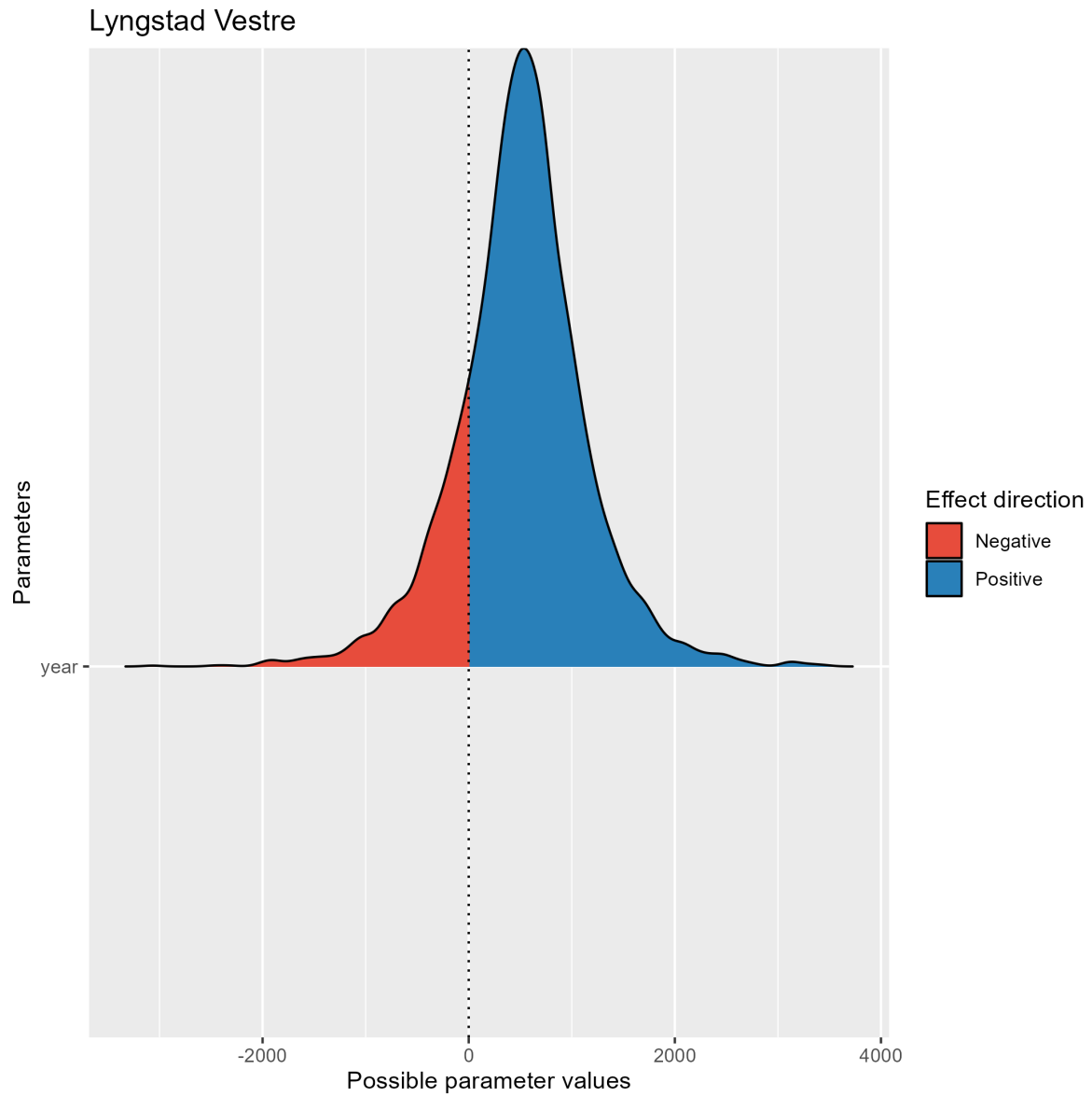




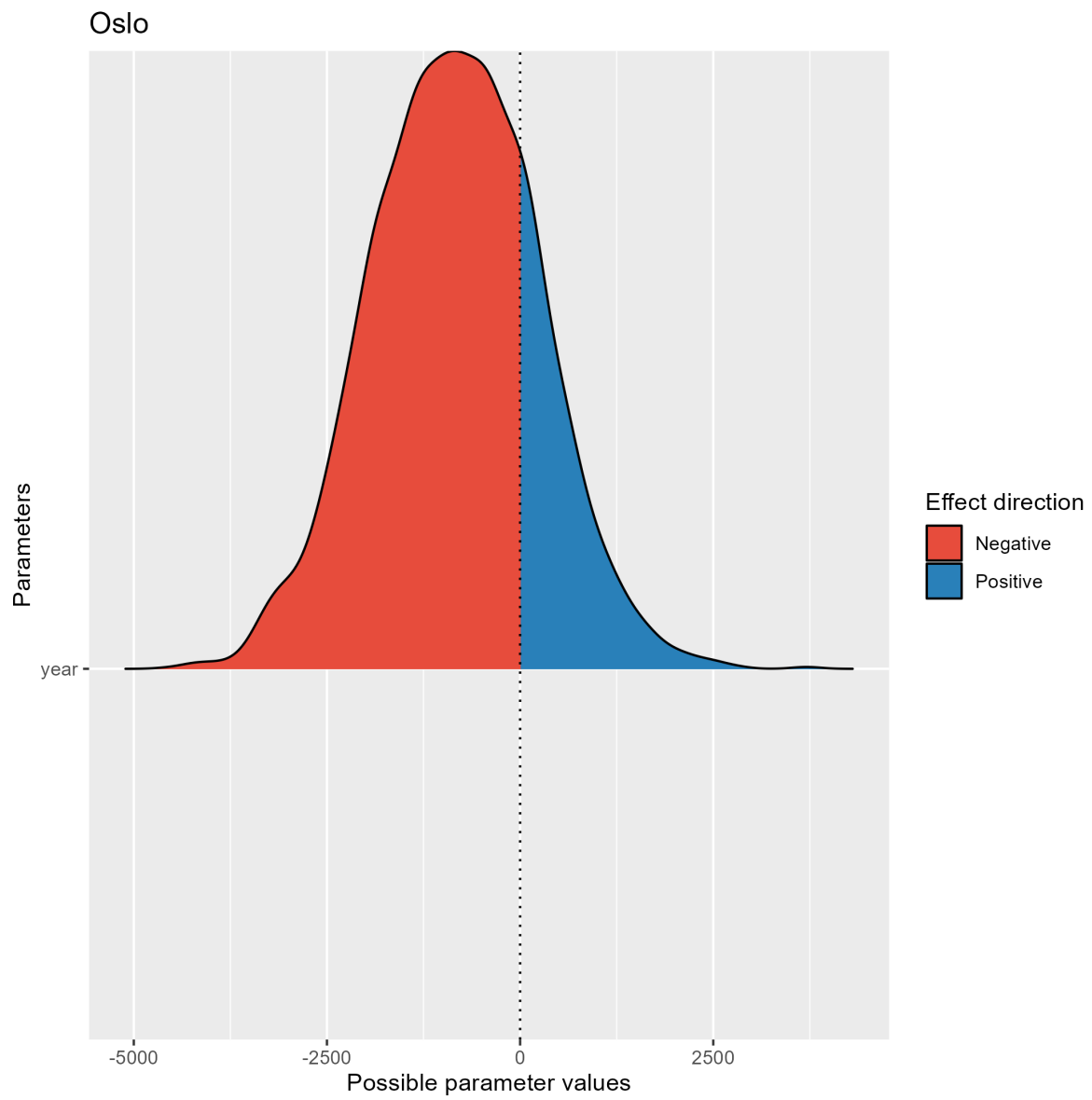




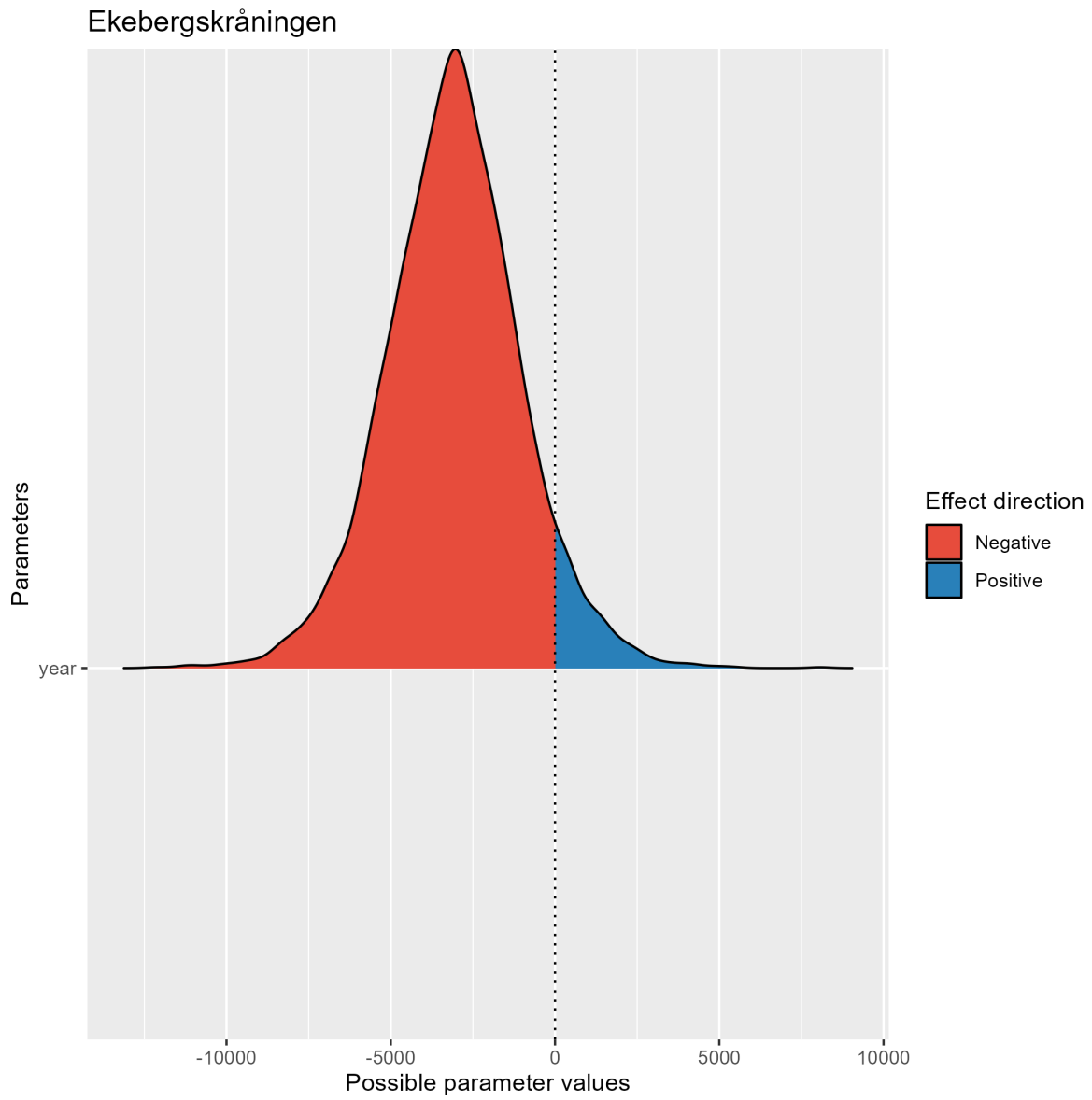


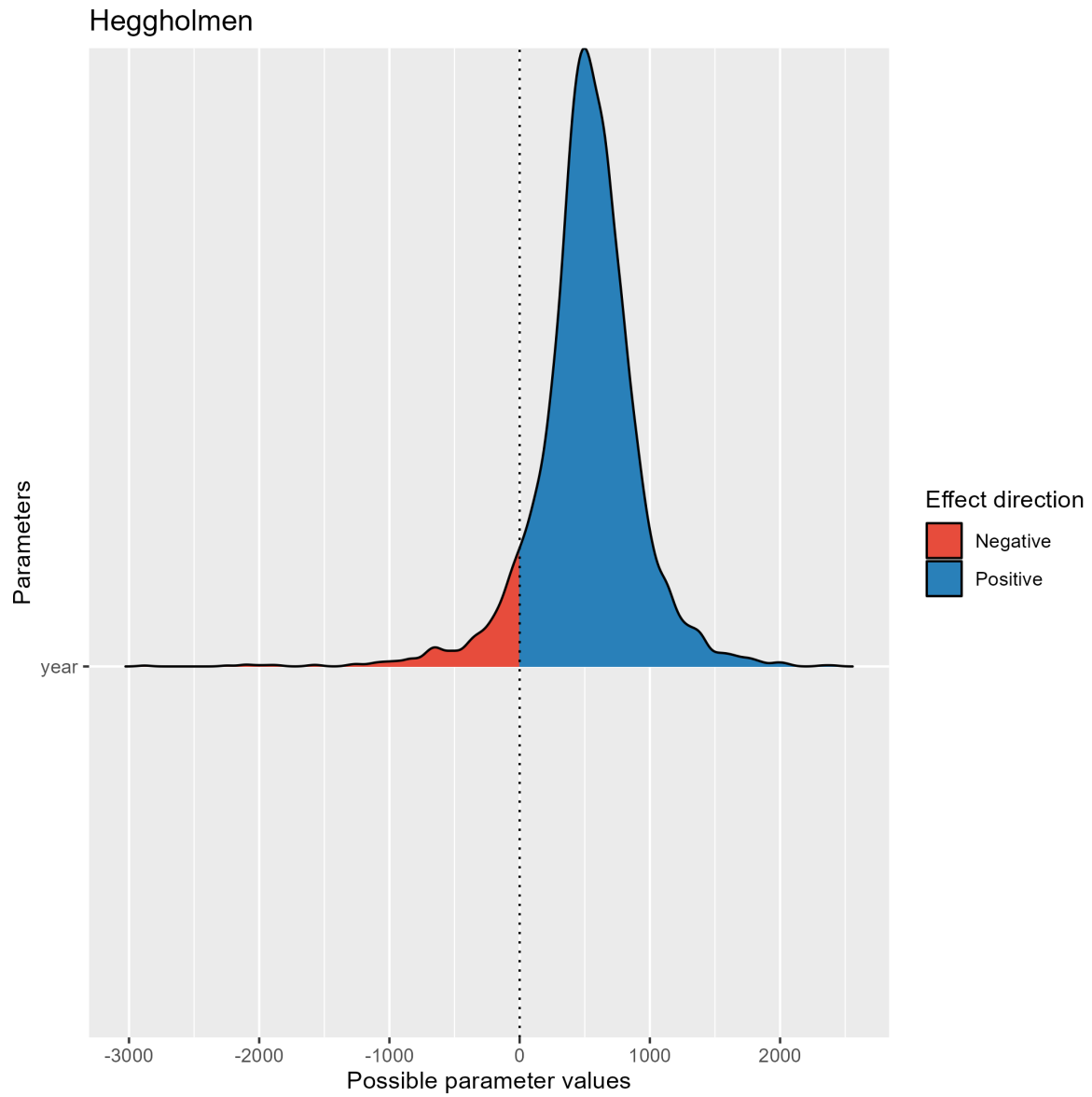


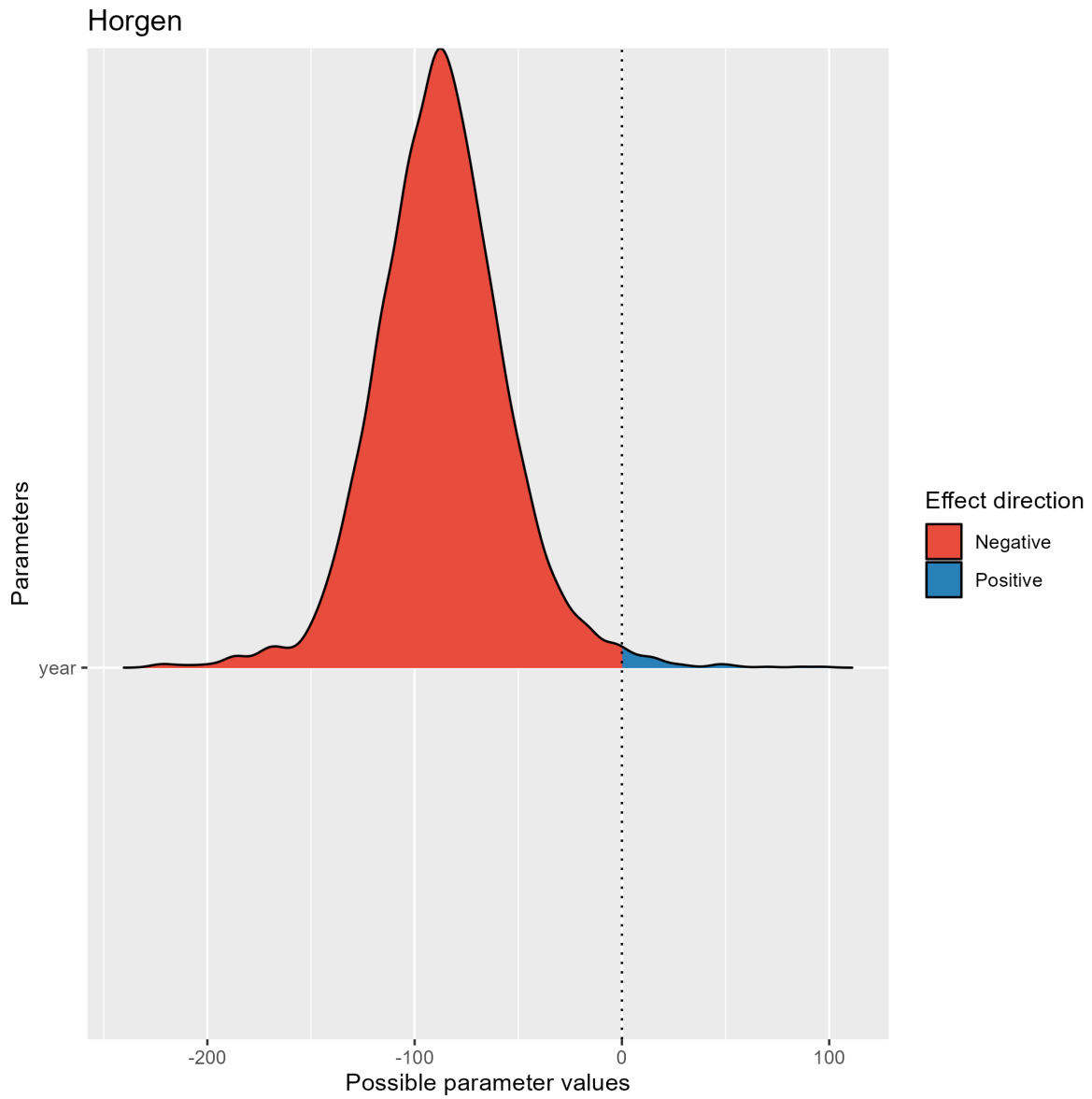
5.2 Oslo



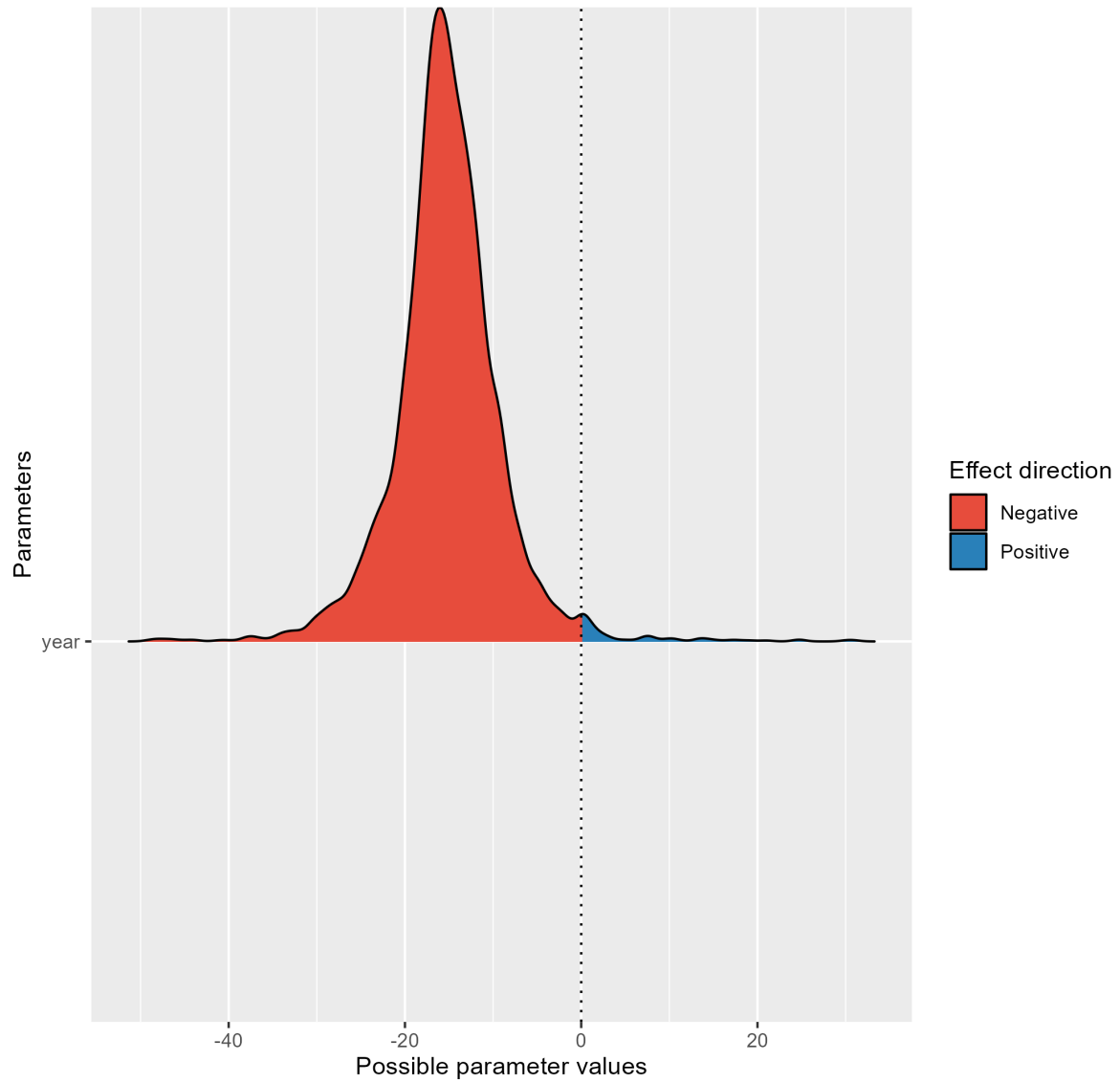
5.2.1 Sites

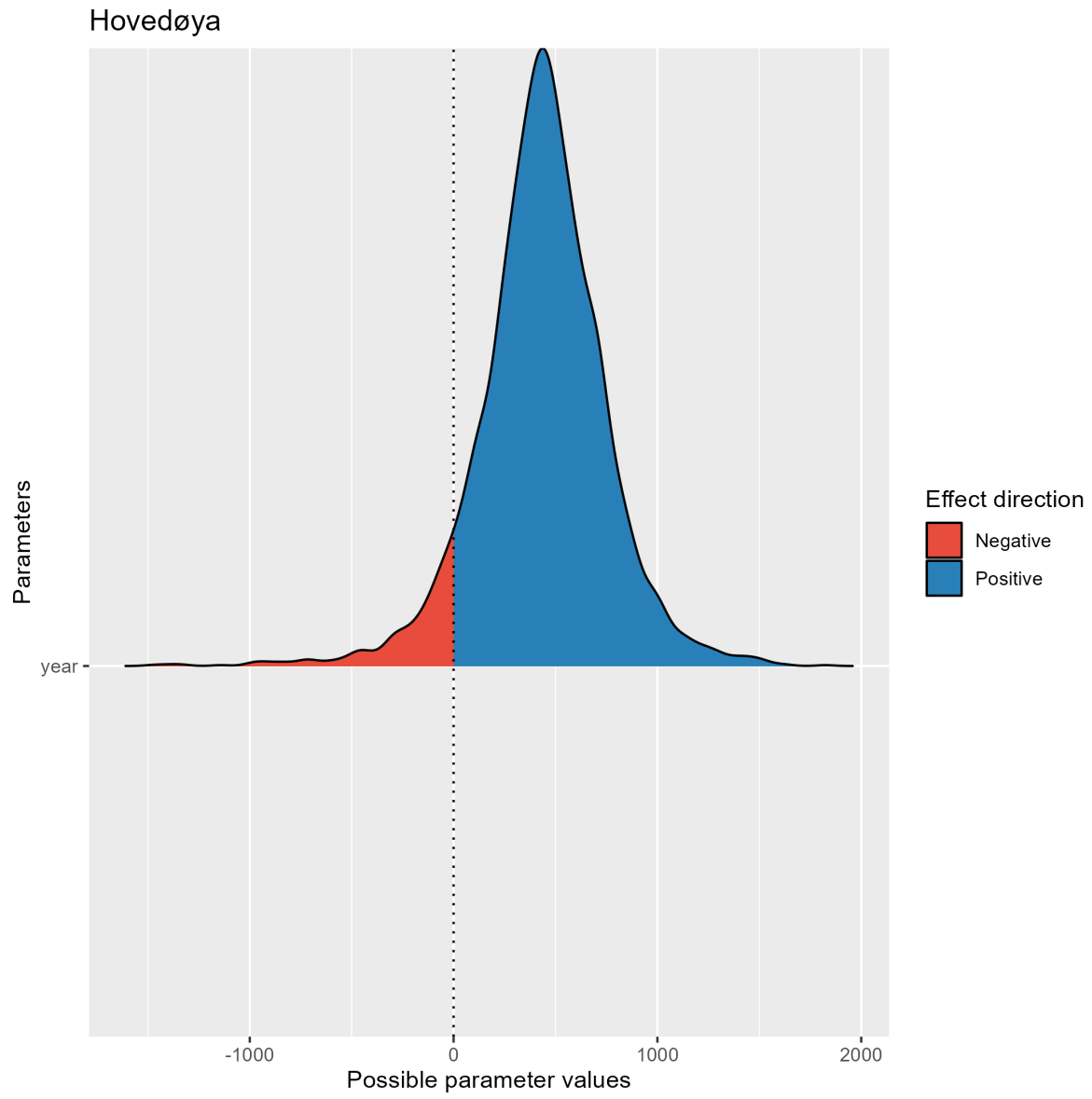


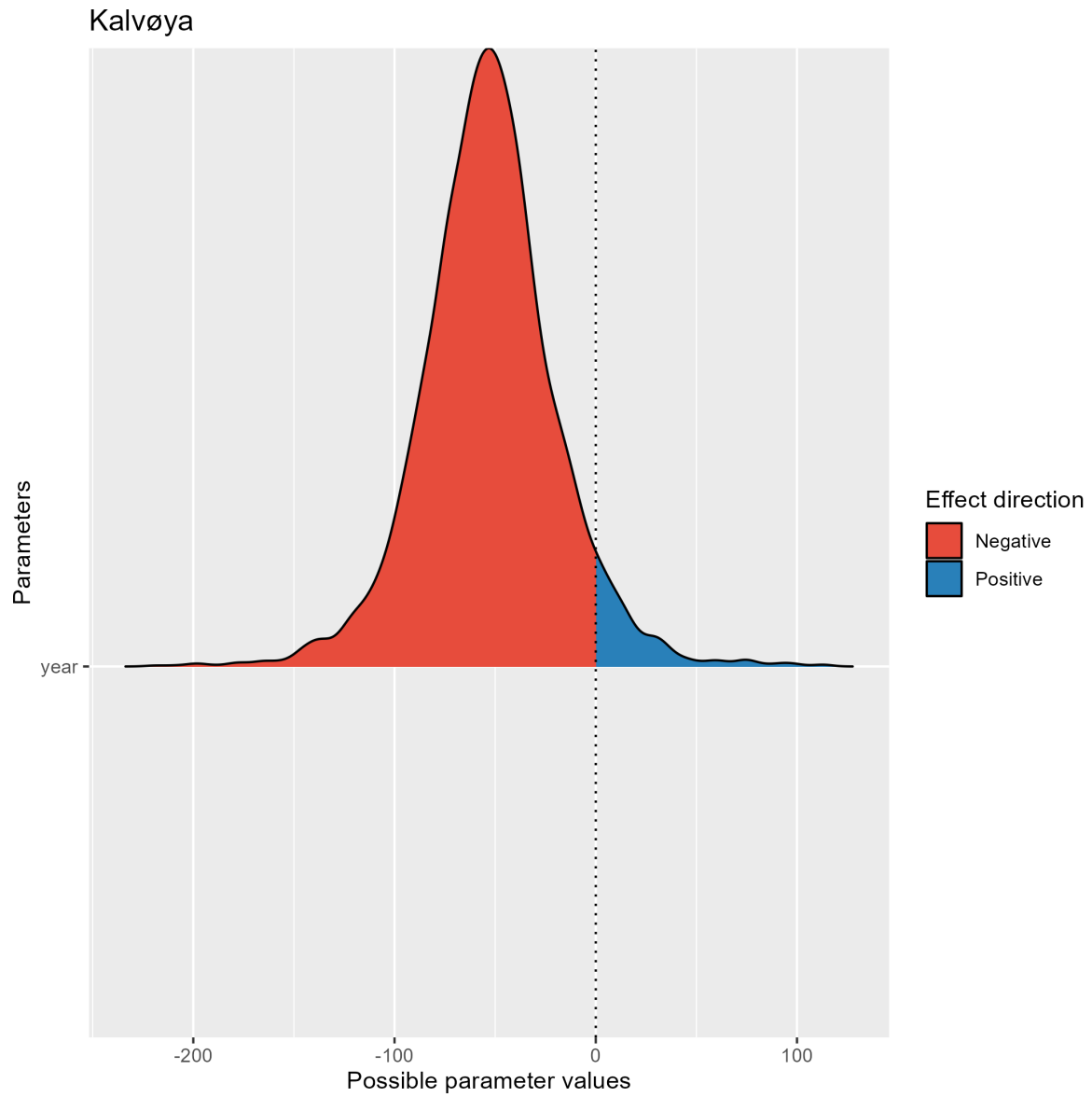


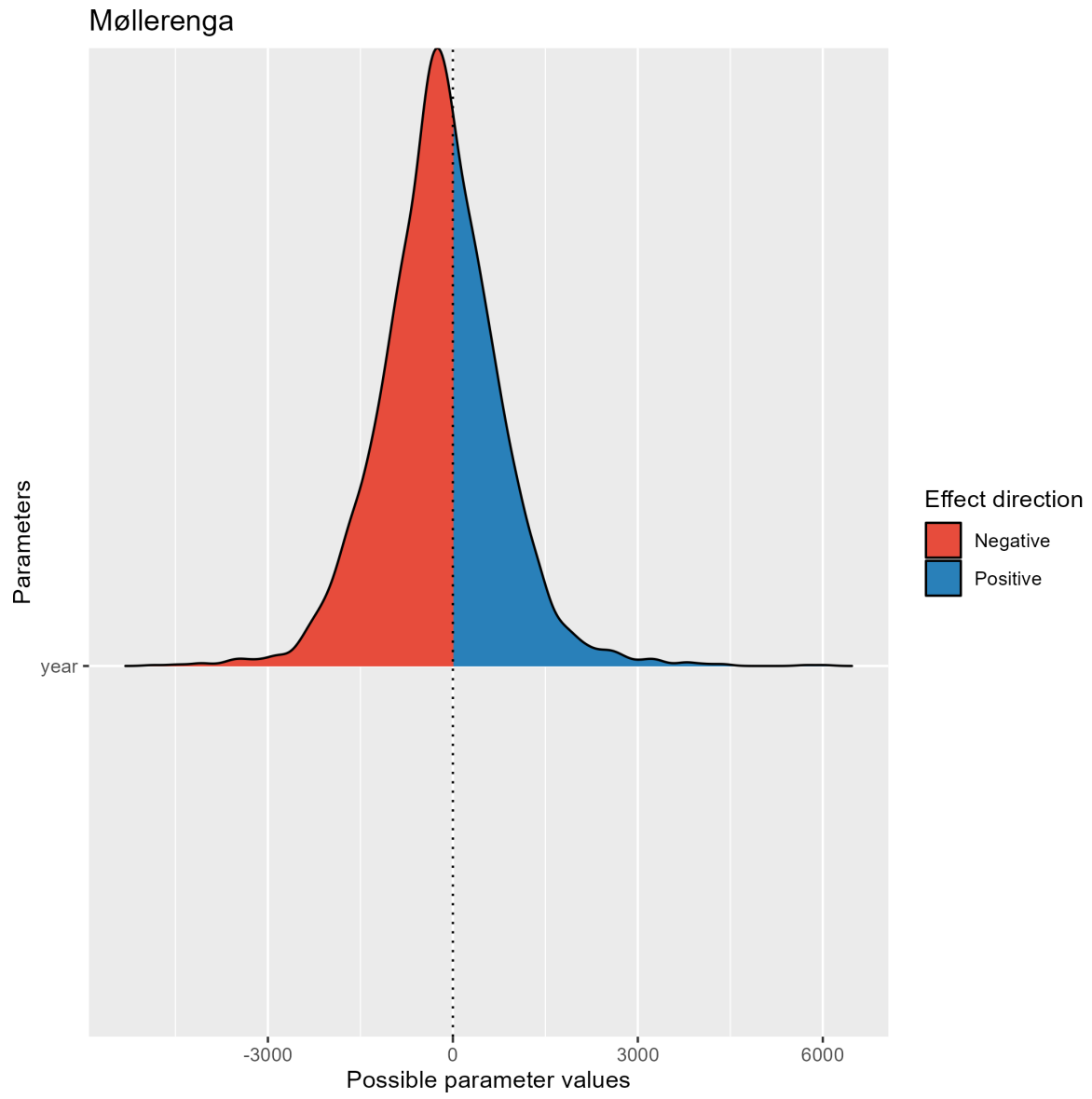


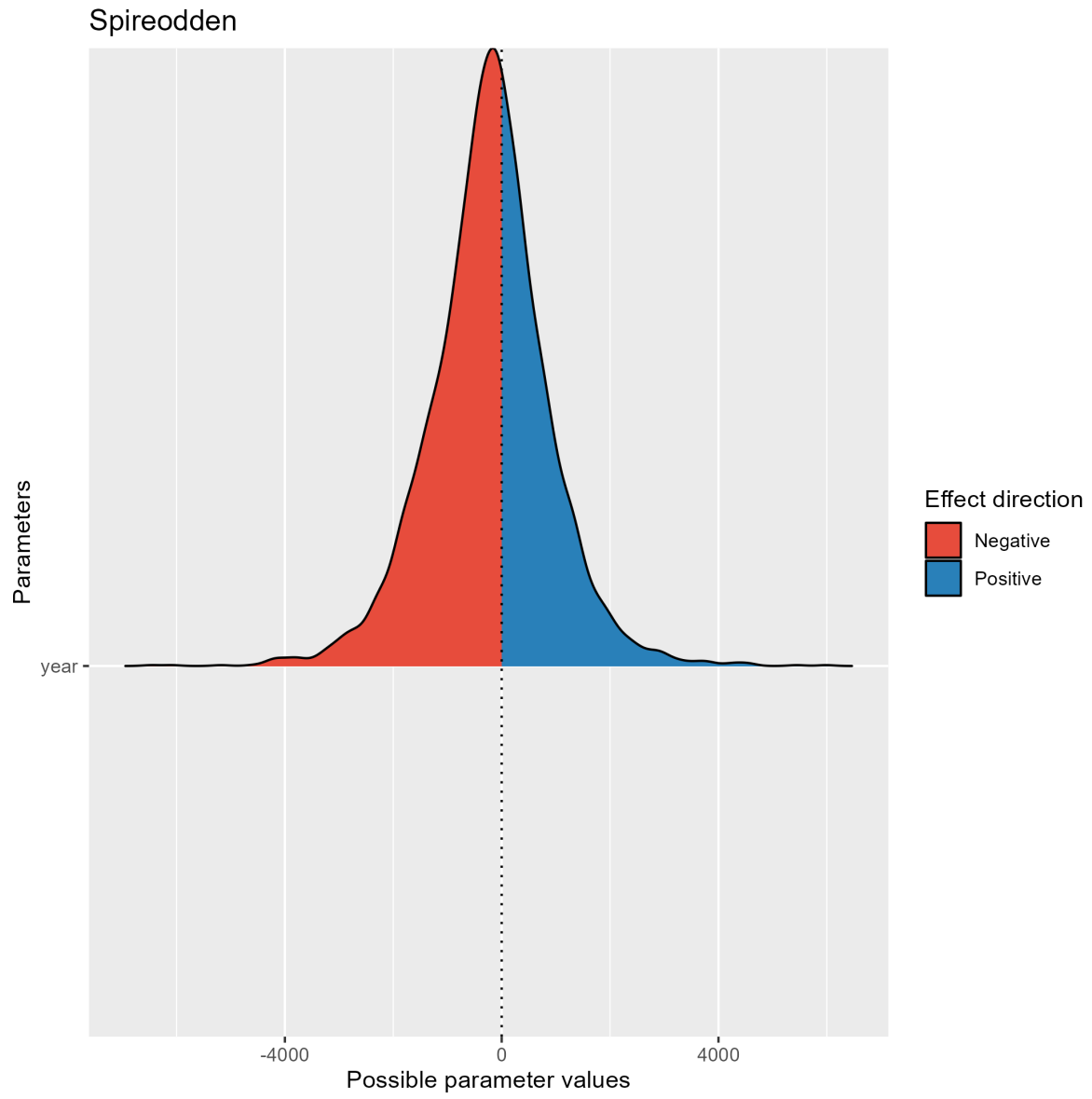
Hovedøya V

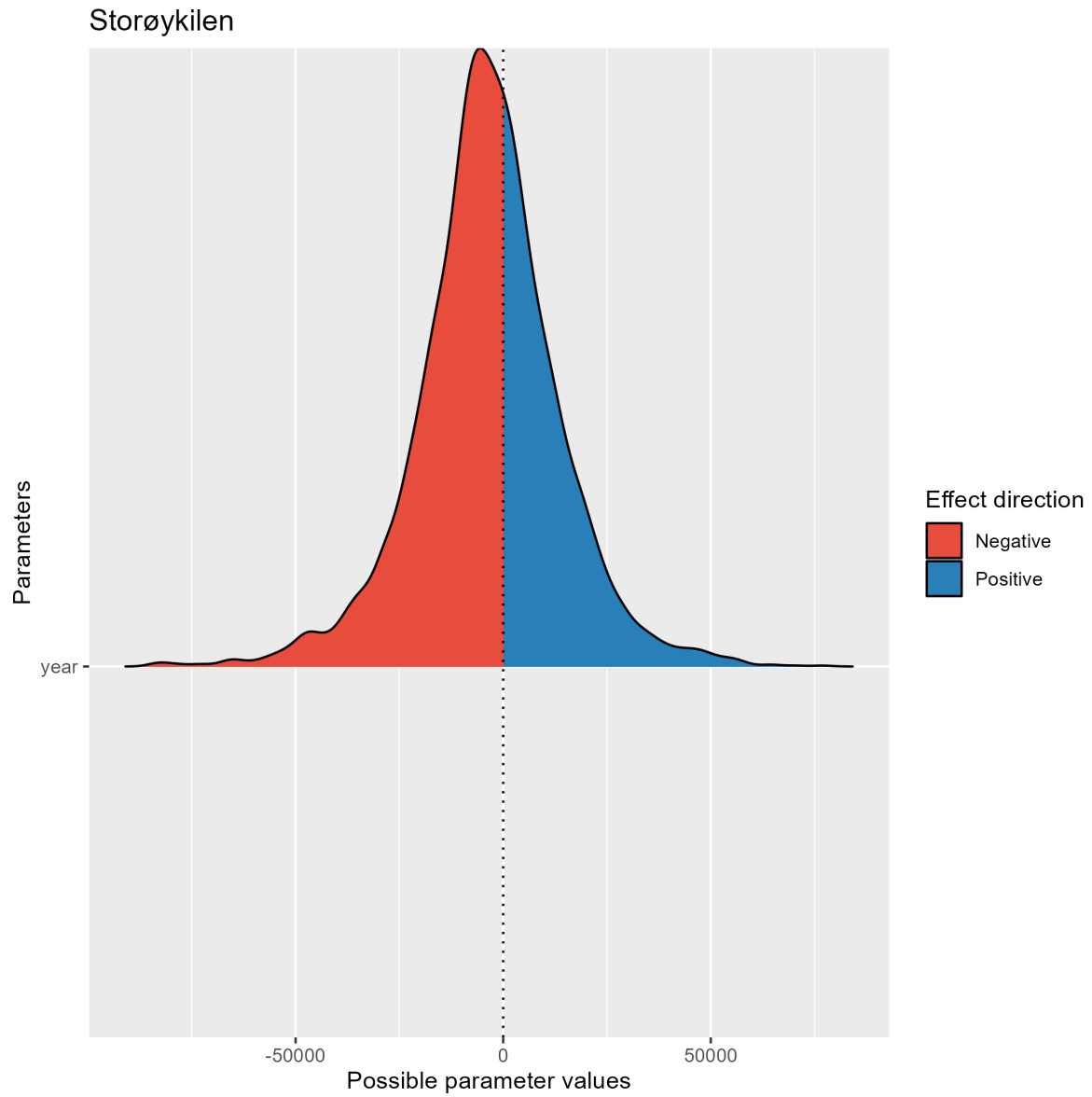


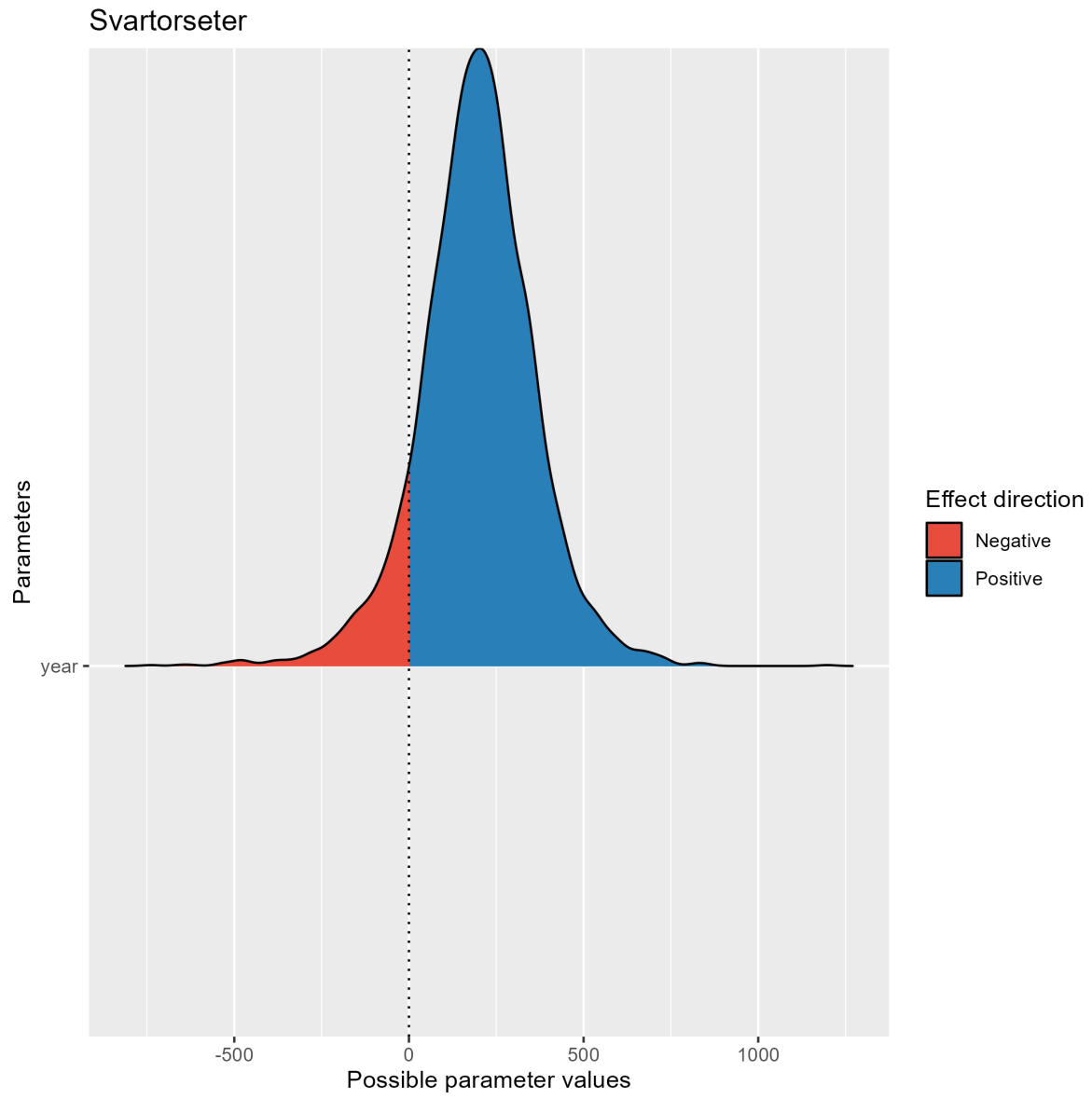


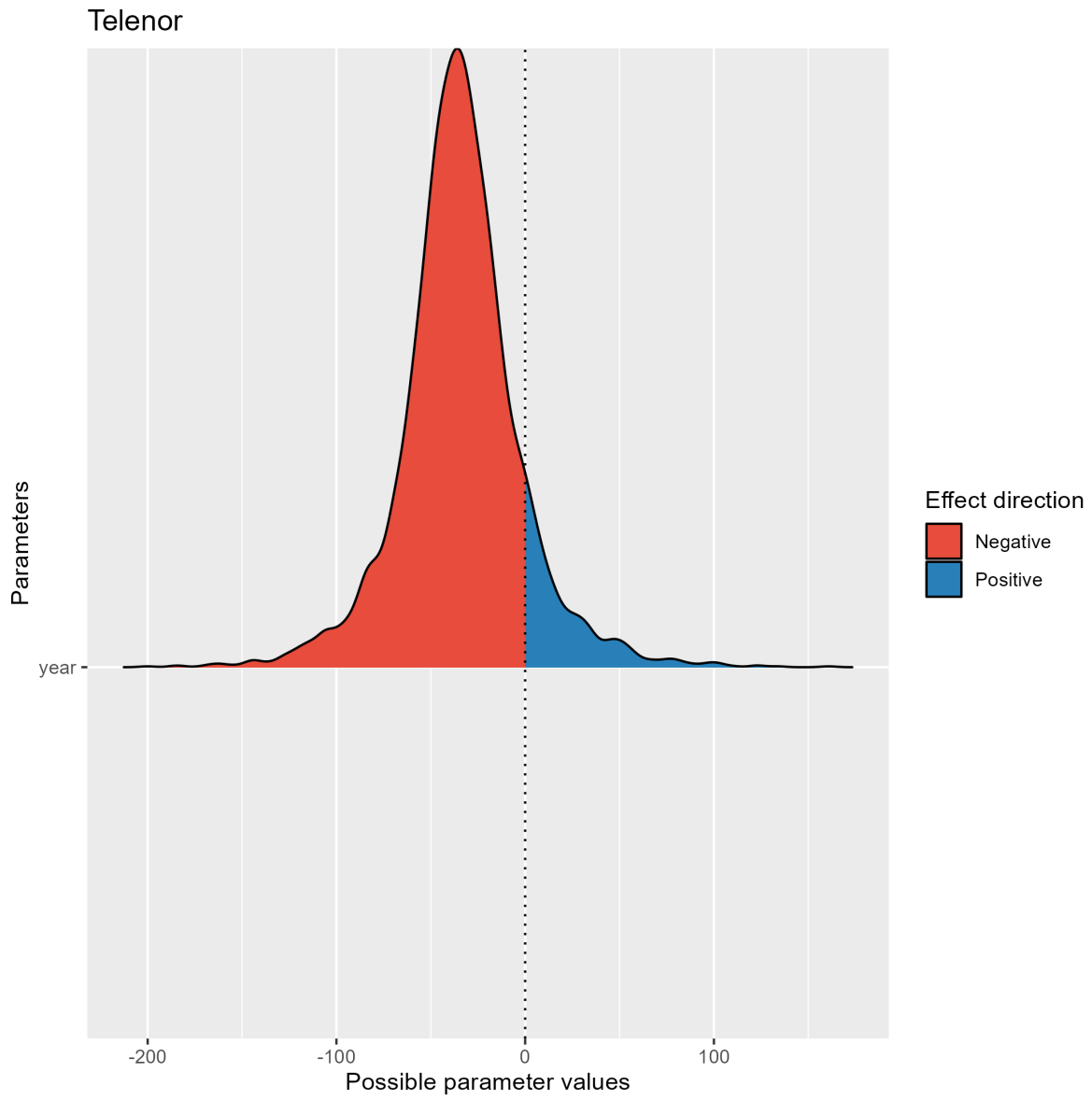


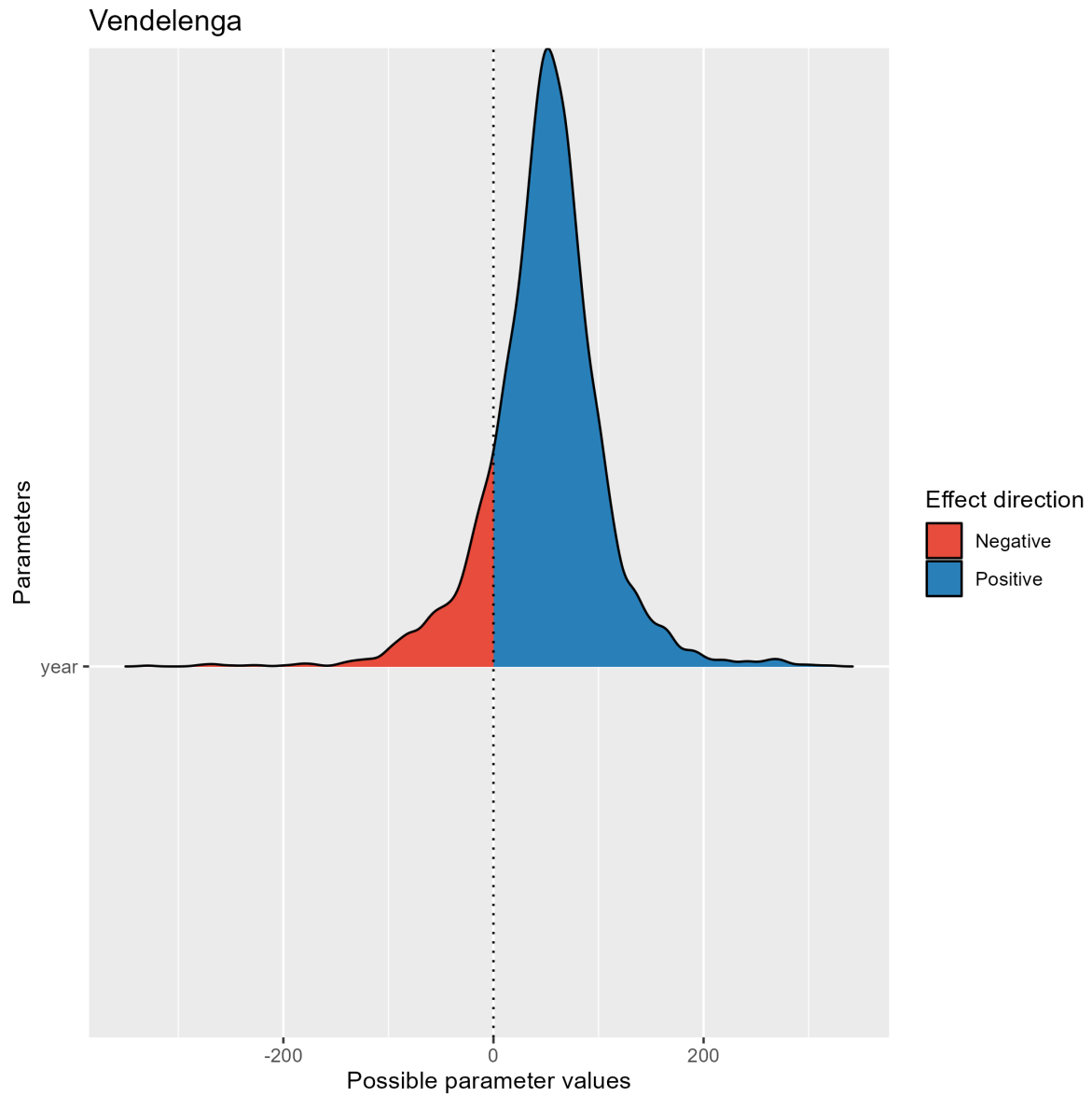




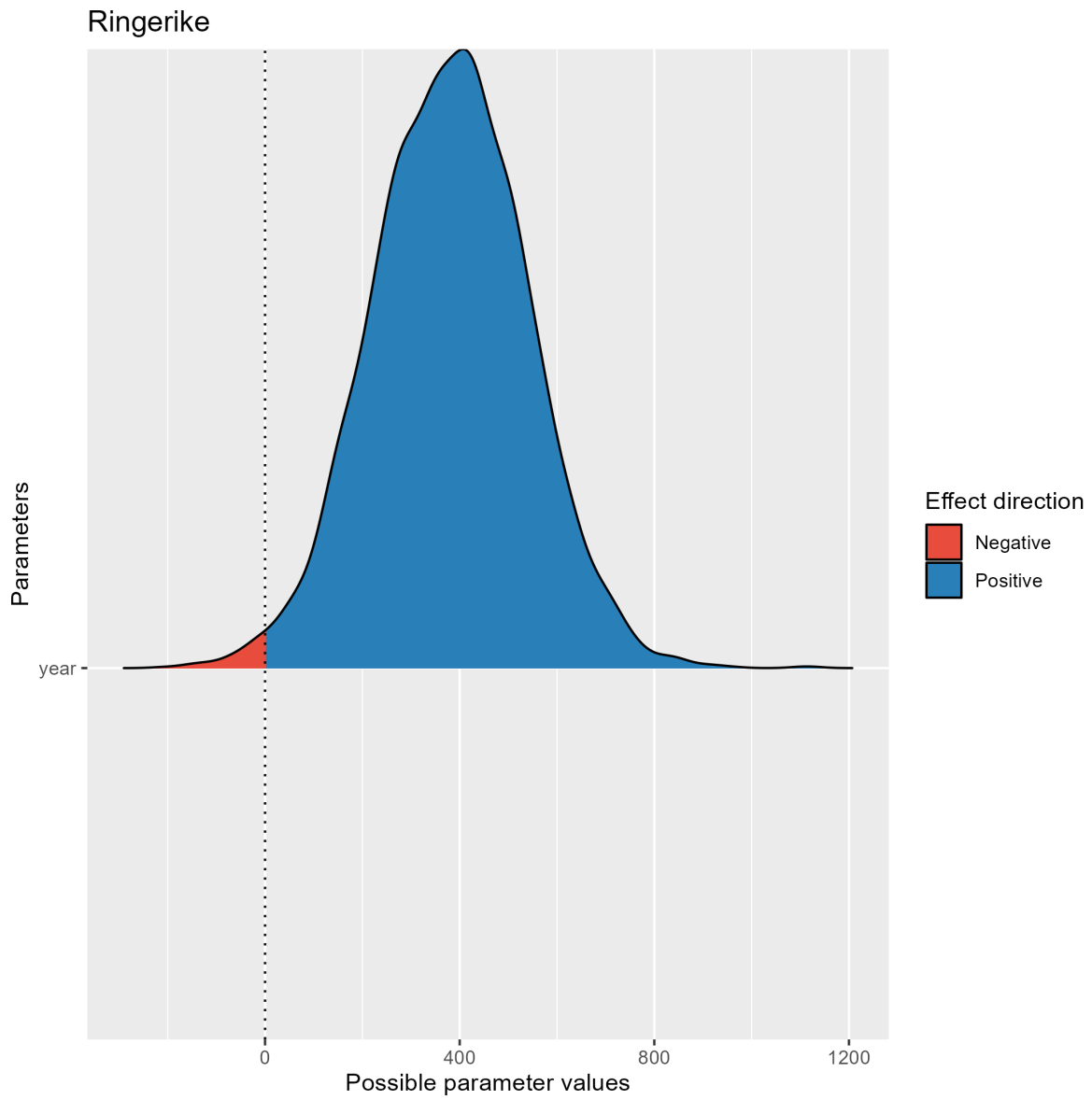




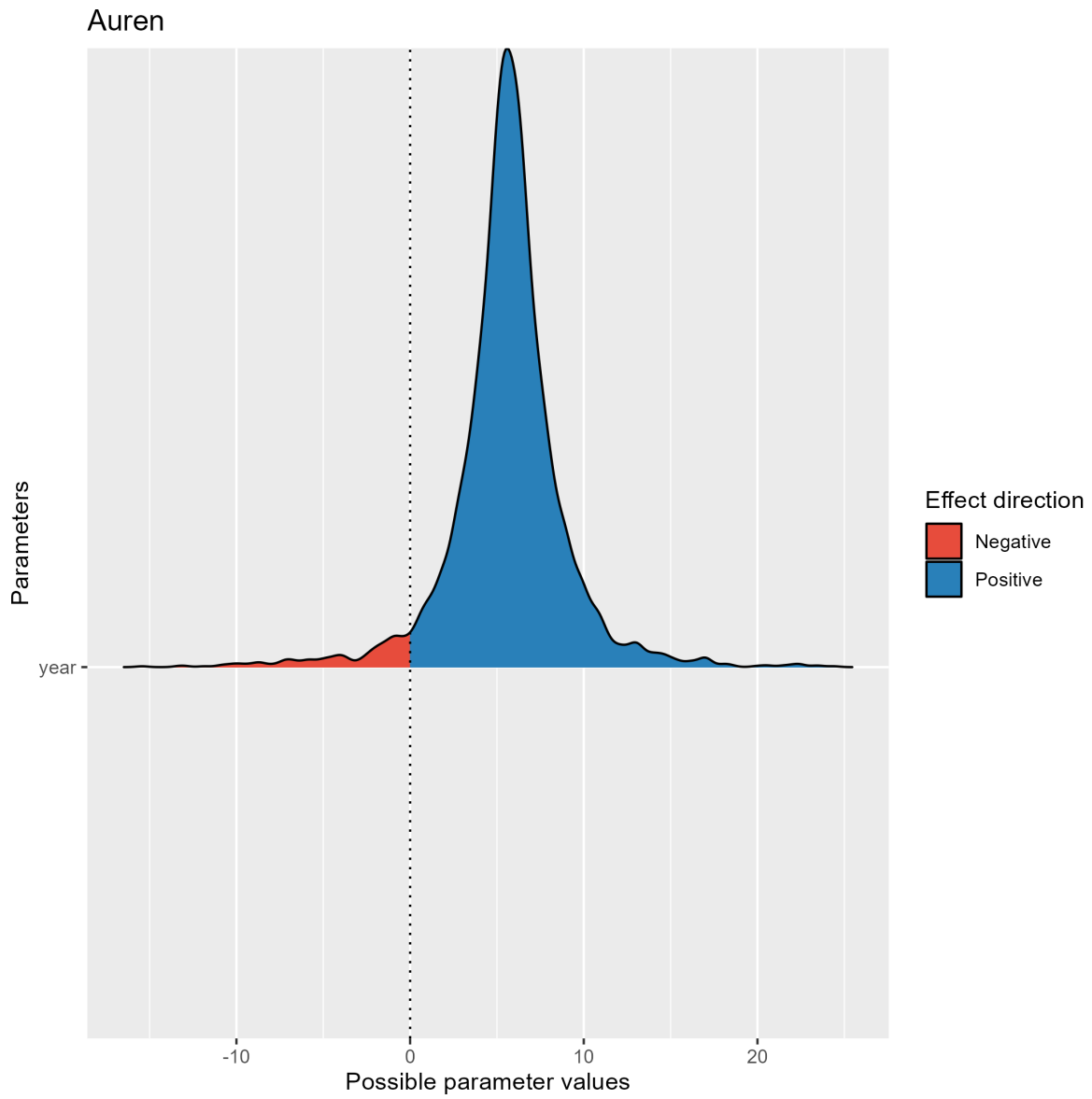


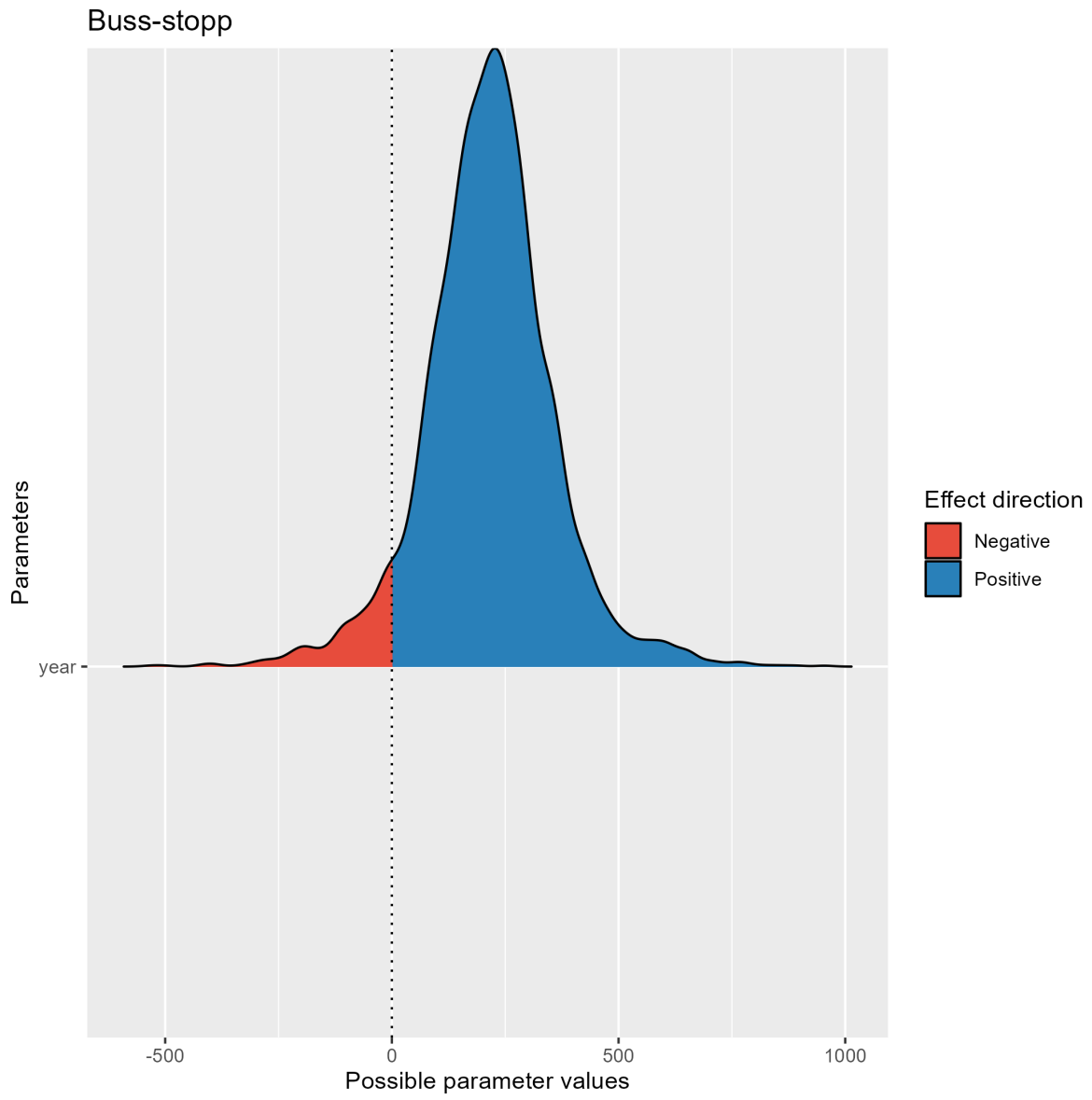


5.3 Ringerike

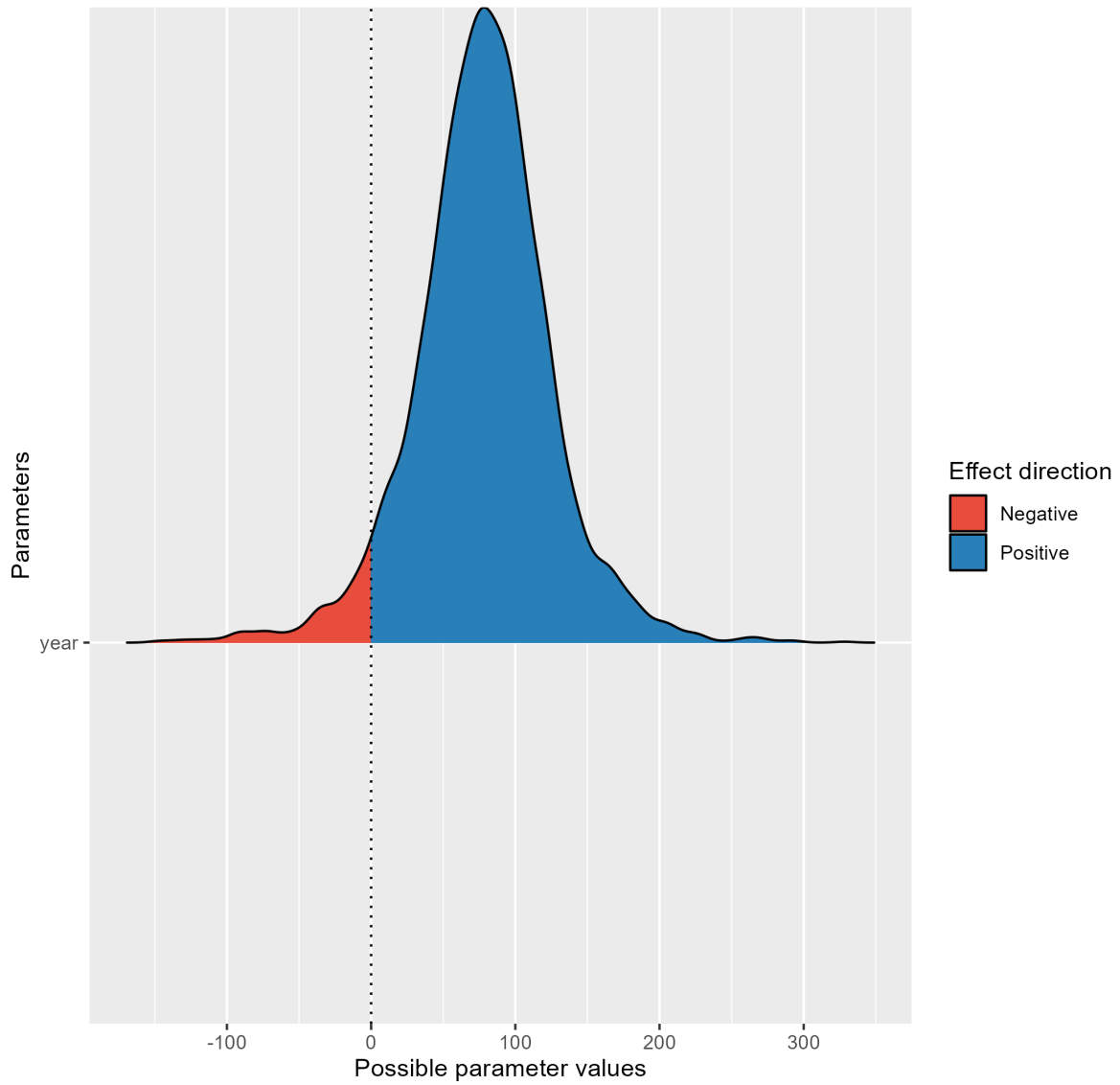


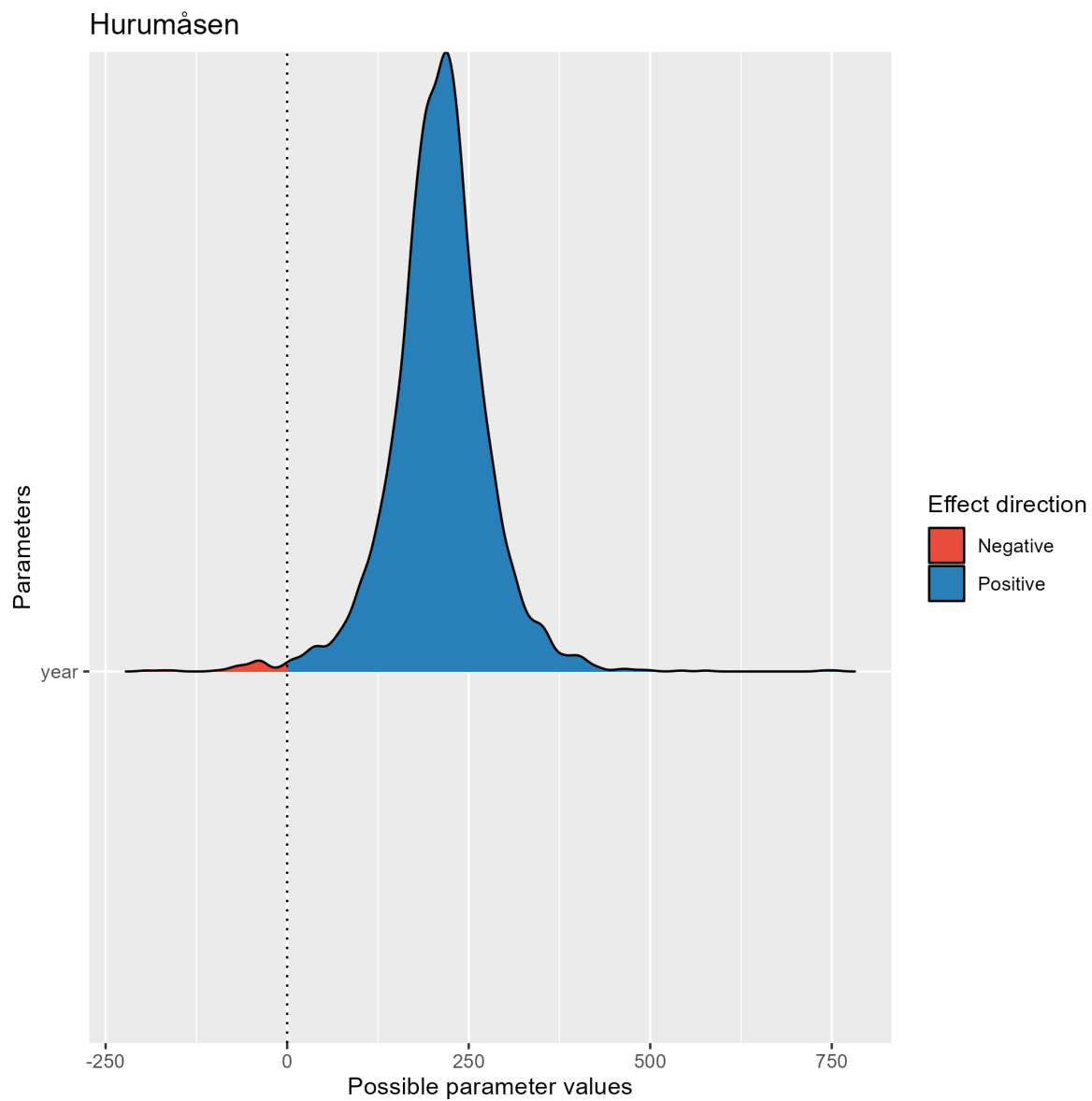
5.4 Sites

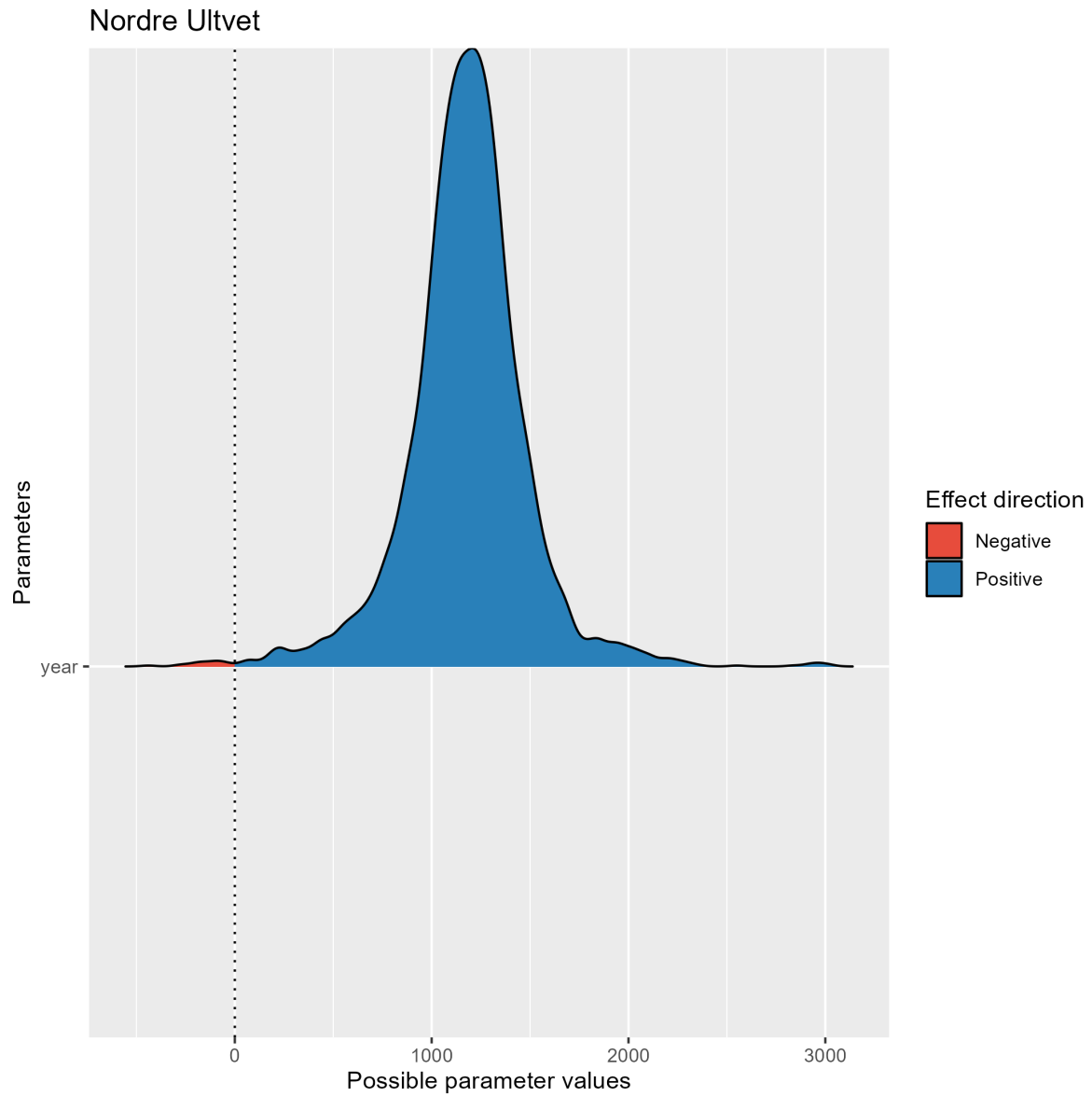


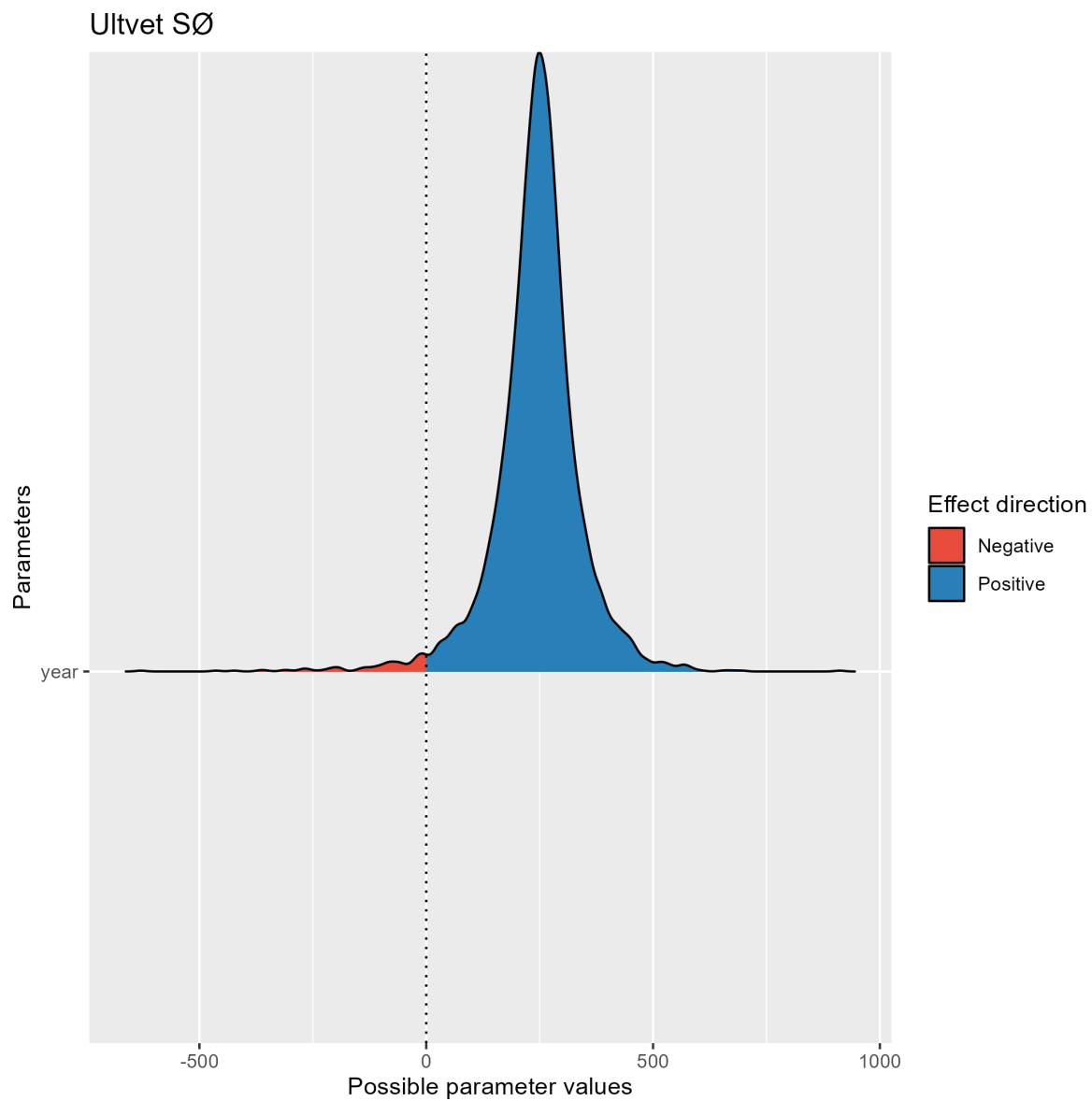


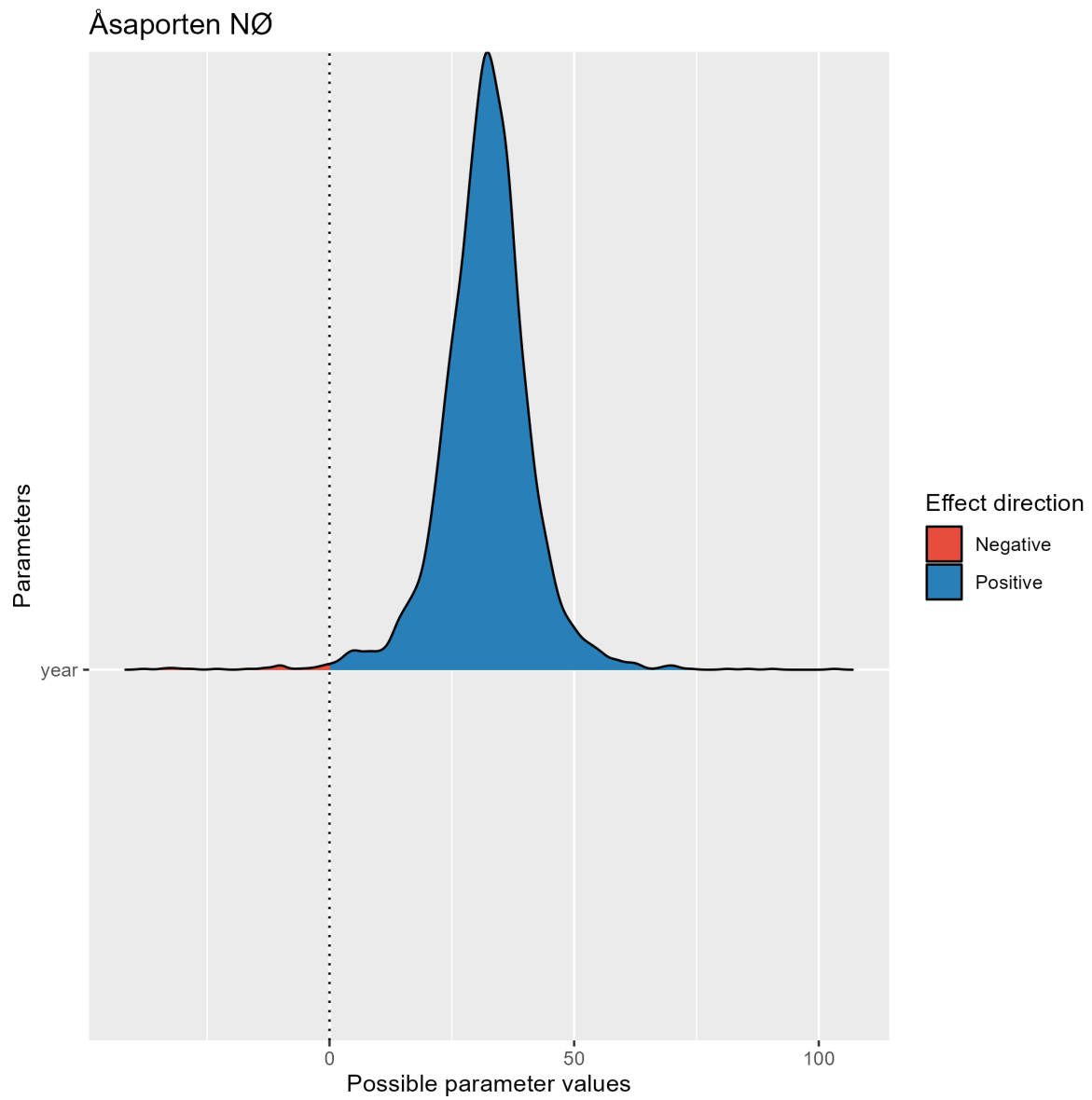
Haugsbygd, vestvendt vegskråning











6 Transect estimation of population size

6.1 Hadeland

