

# Country Summary: Liberia

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## 1 Intro

These estimates are created using the BB8 model with Admin 2 estimates using a RW1xICAR interaction model with area-specific random slopes.

Liberia has 15 Admin 1 areas and 66 Admin 2 areas.

All uncertainty intervals displayed in subsequent figures are 95% intervals.

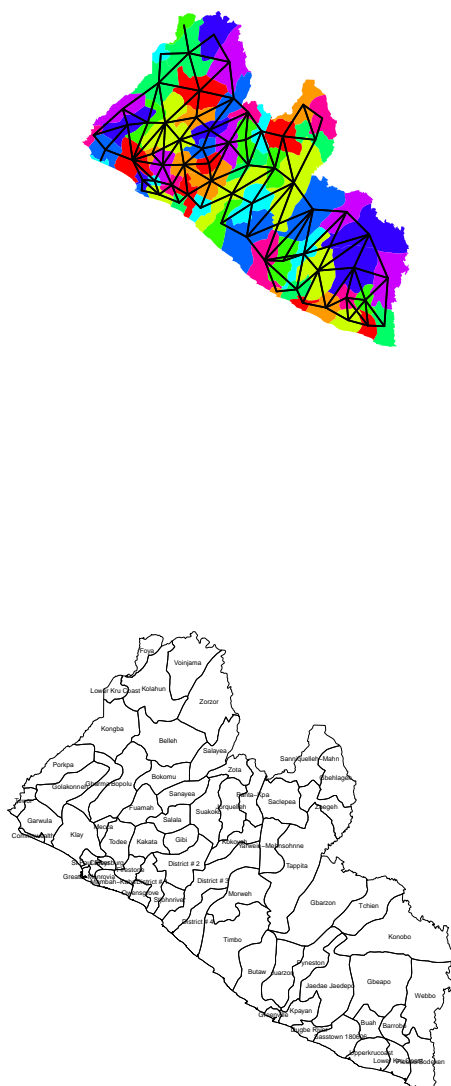


Figure 1: Top: The neighborhood structure of Admin 2 areas. Bottom: The names of Admin 2 areas.

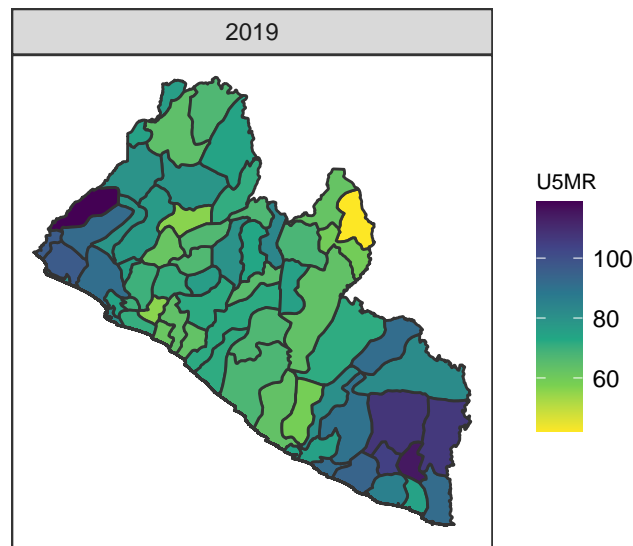


Figure 2: Median estimates of U5MR (deaths per 1000 children) in 2019.

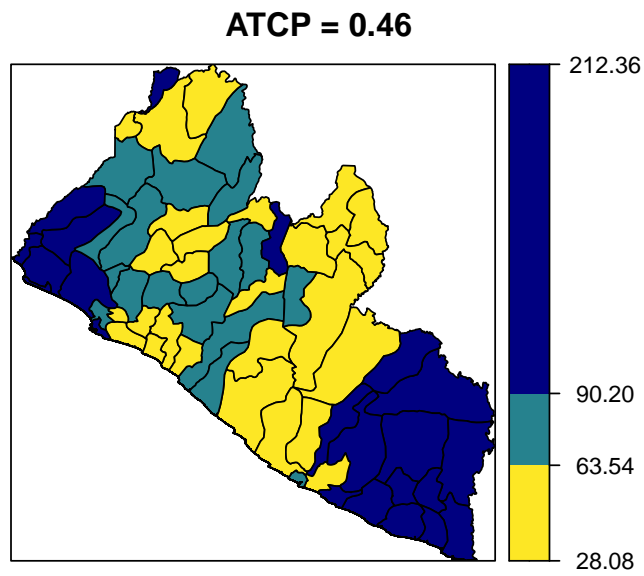
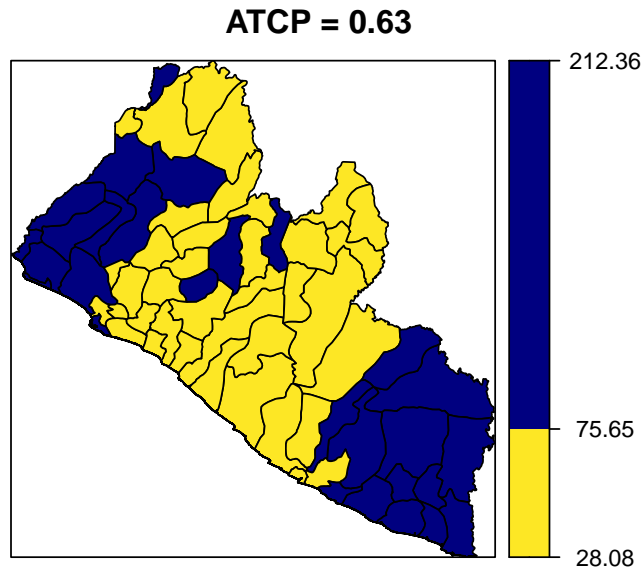


Figure 3: Expression of uncertainty of U5MR (deaths per 1000 children) based on the average true classification probability (ATCP) in 2019.

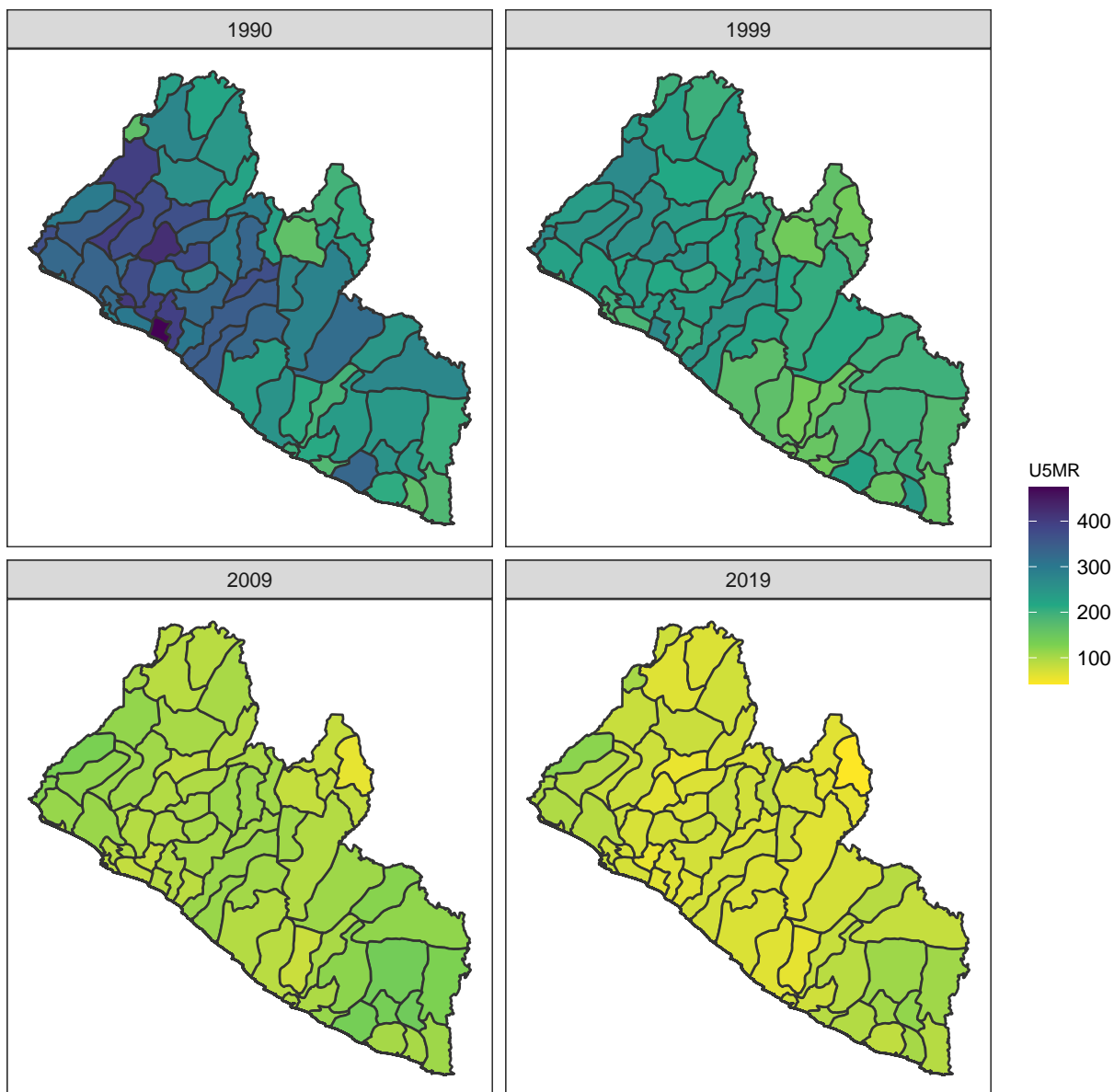
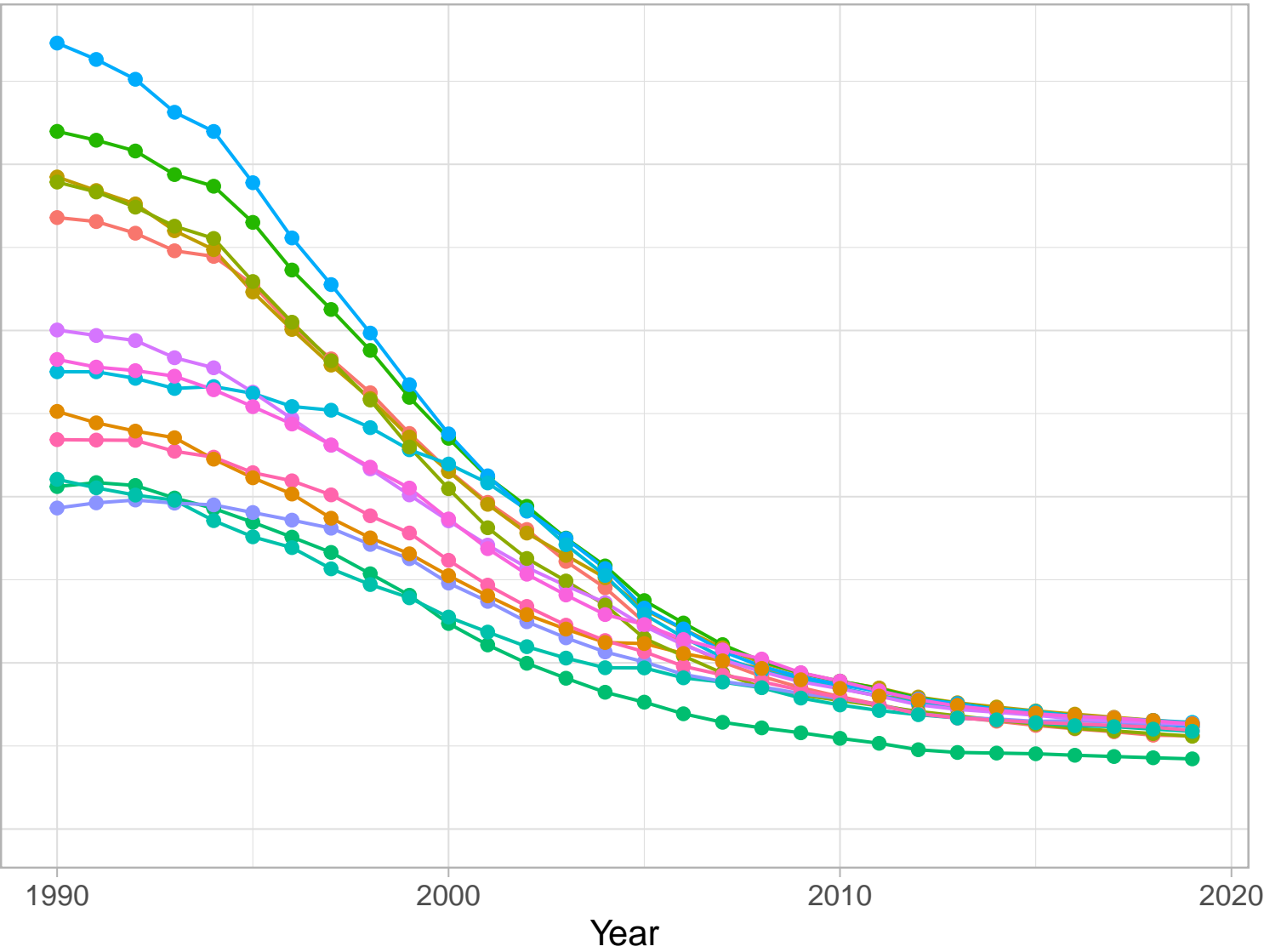


Figure 4: Median estimates for selected years.

# Liberia

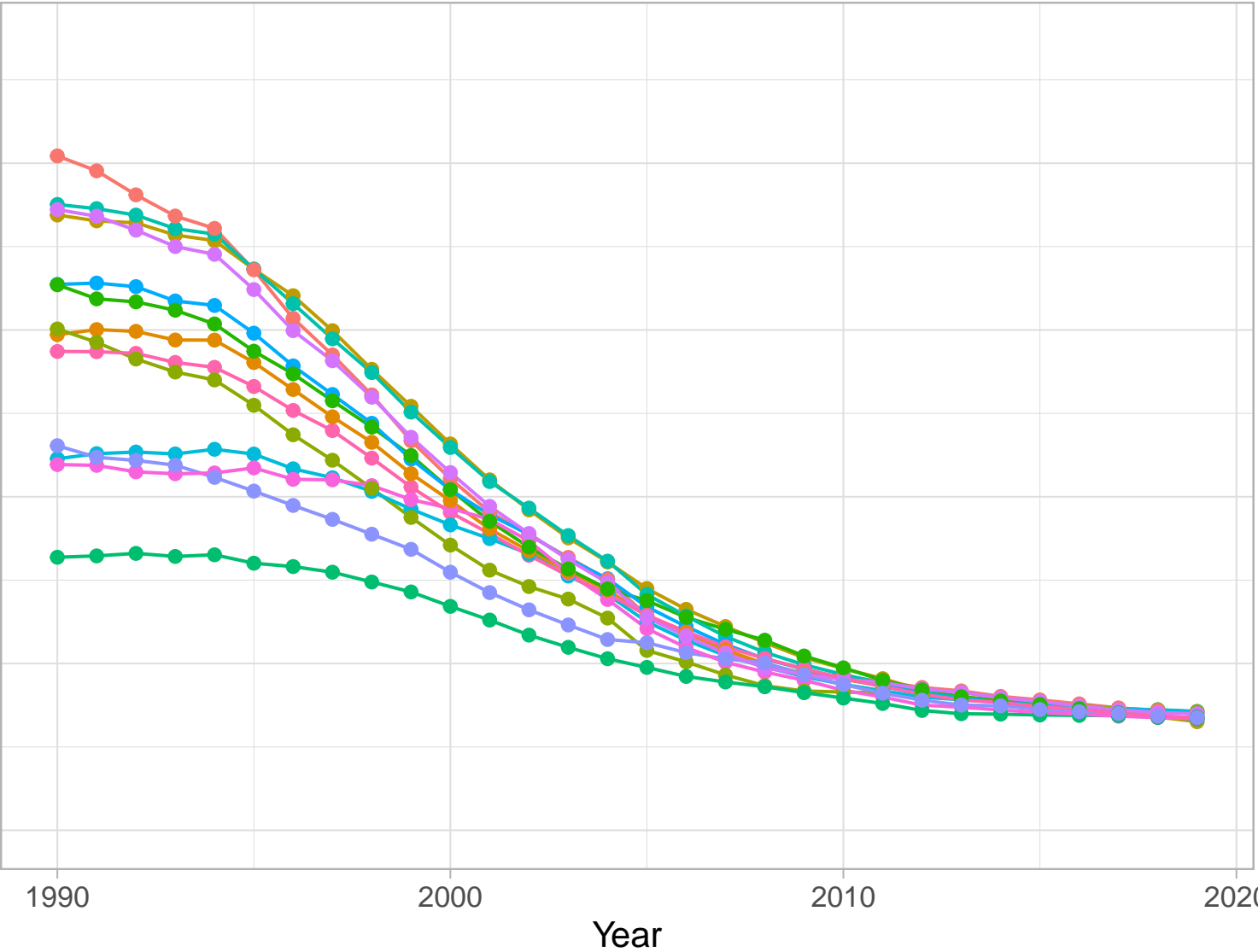
U5MR: deaths per 1000 live births



- Bokomu, Gbapolu
- Butaw, Sinoe
- District # 1, GrandBassa
- Firestone, Margibi
- Fuamah, Bong
- Gbehlagheh, Nimba
- Juarzon, Sinoe
- Kolahun, Lofa
- Owensgrove, GrandBassa
- Sanniquelleh-Mahn, Nimba
- Stjohnriver, GrandBassa
- Tappita, Nimba
- Zoegeh, Nimba

# Liberia

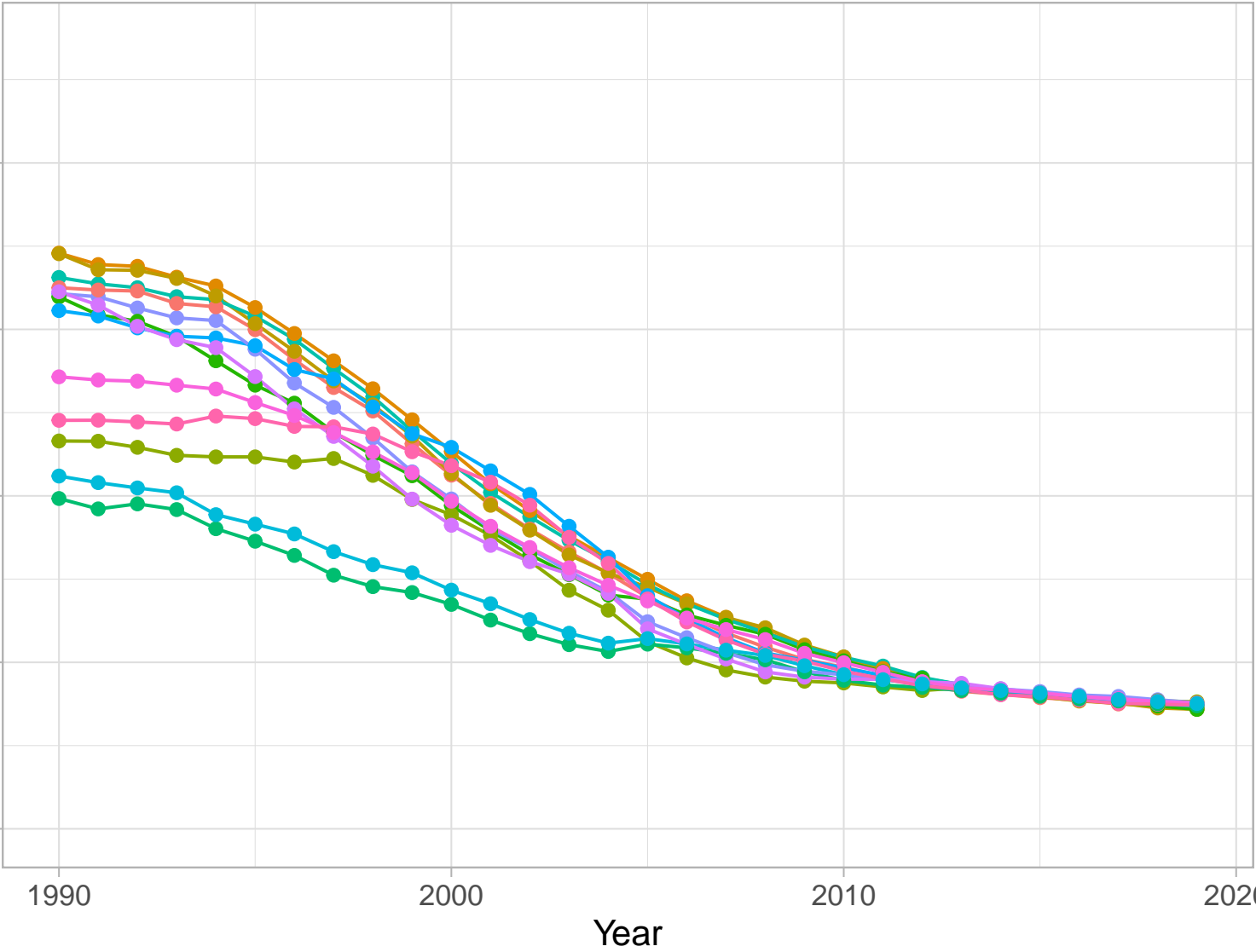
U5MR: deaths per 1000 live births



- Careysburg, Montserrado
- Kakata, Margibi
- Kokoyah, Bong
- Mambah-Kaba, Margibi
- Morweh, River Cess
- Saclepea, Nimba
- Salala, Bong
- Salayea, Lofa
- Sanayea, Bong
- Todee, Montserrado
- Voinjama, Lofa
- Zota, Bong
- Timbo, River Cess

# Liberia

U5MR: deaths per 1000 live births

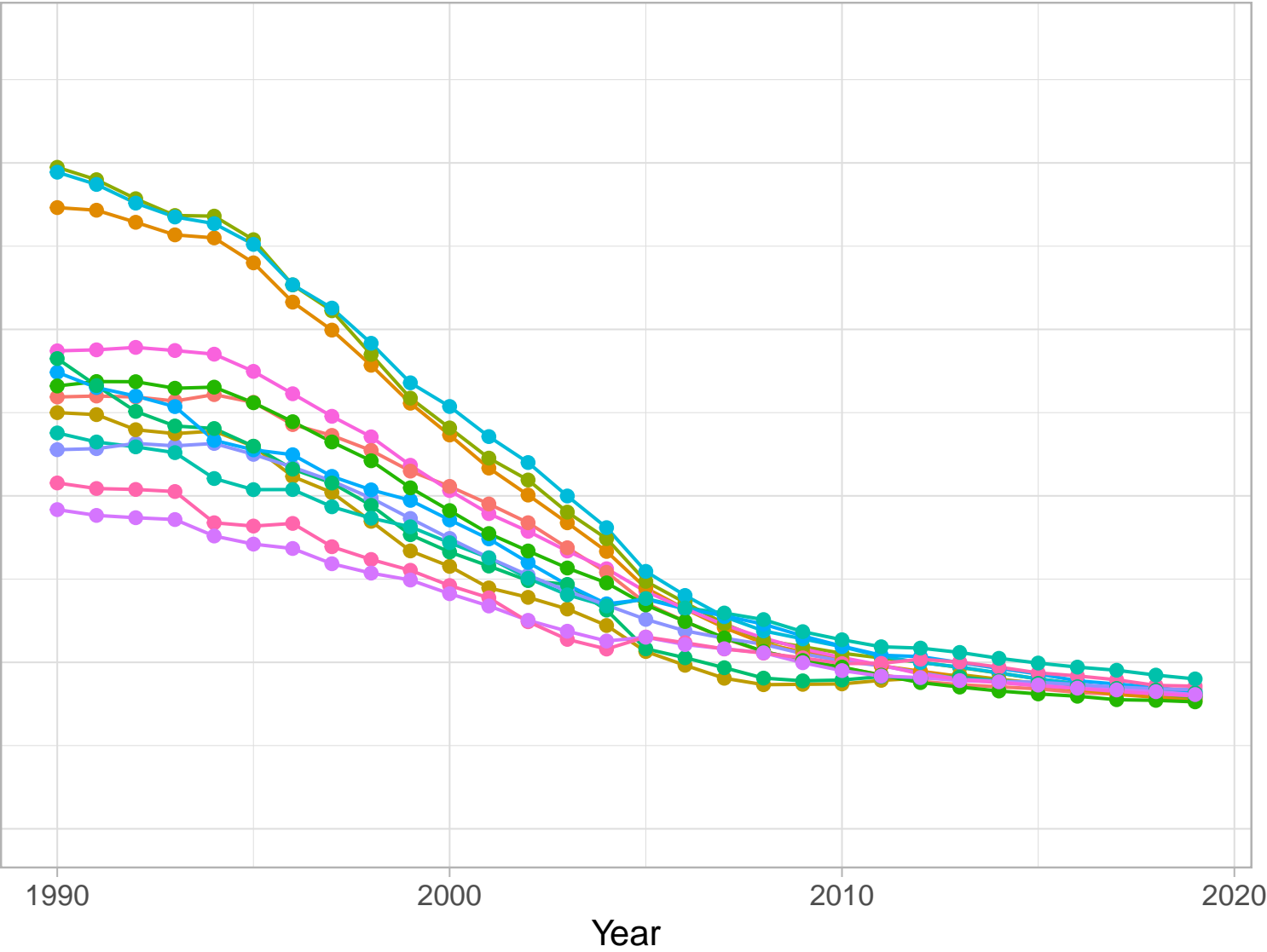


- District # 2, GrandBassa
- District # 3, GrandBassa
- District # 4, GrandBassa
- Foya, Lofa
- Gbarzon, GrandGedeh
- Greenville, Sinoe
- Jorquelleh, Bong
- Kpayan, Sinoe
- Lower Kru Coast, Lofa
- Mecca, Bomi
- St Paul River, Montserrado
- Yarwein-Mehnsohnne, Nimba
- Zorzor, Lofa



# Liberia

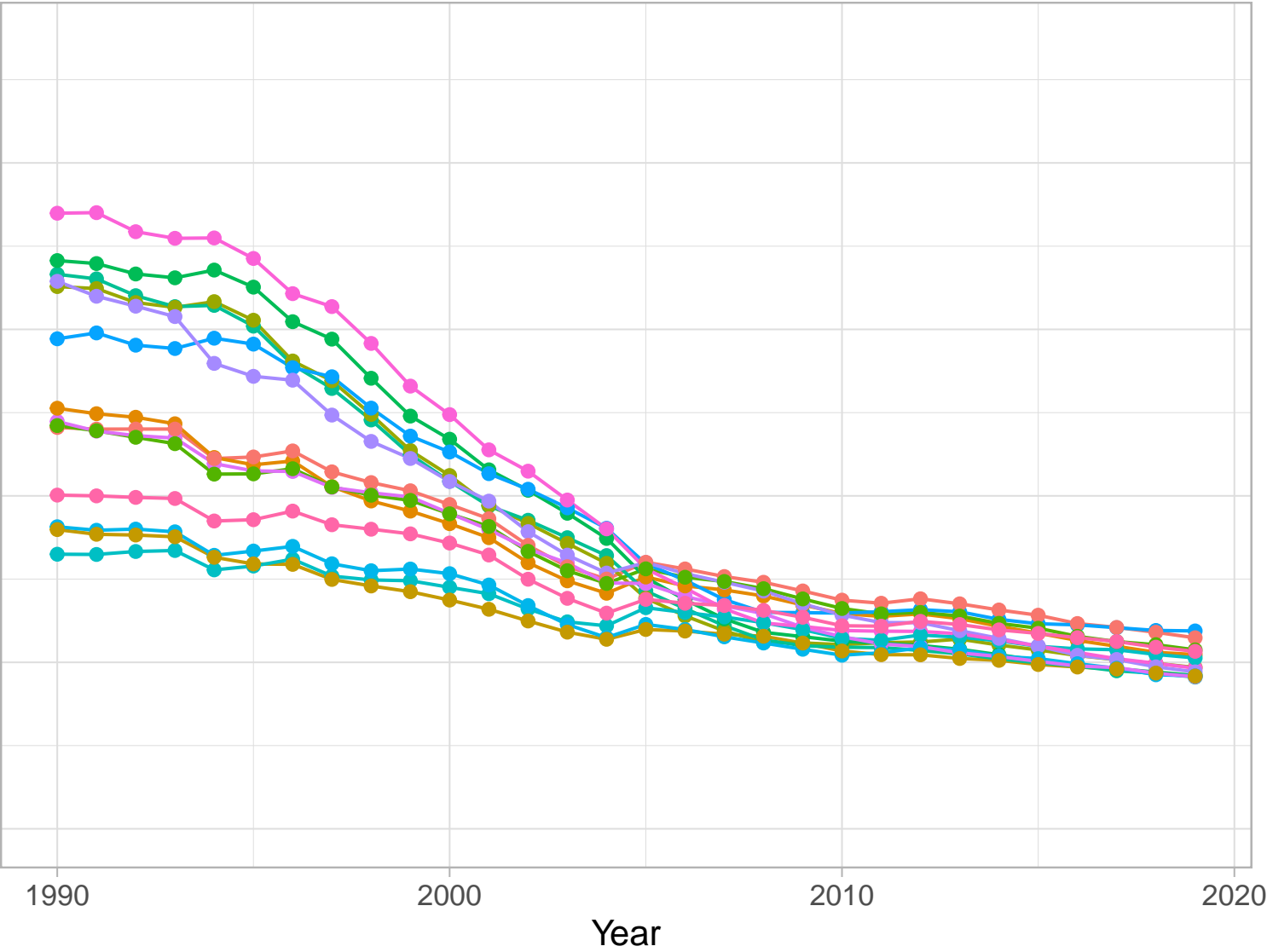
U5MR: deaths per 1000 live births



- Belleh, Gbapolu
- Bopolu, Gbapolu
- Commnwealth, Grand Cape Mount
- Gbarma, Gbapolu
- Gibi, Margibi
- Greater Monrovia, Montserrado
- Jaedae Jaedepo, Sinoe
- Kongba, Gbapolu
- Konobo, GrandGedeh
- Panta-Kpa, Bong
- Pyneston, Sinoe
- Suakoko, Bong
- Upperkrucoast, GrandKru

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U5MR: deaths per 1000 live births



- Barrobo, Maryland
- Buah, GrandKru
- Dugbe River, Sinoe
- Garwula, Grand Cape Mount
- Gbeapo, River Gee
- Golakonneh, Grand Cape Mount
- Klay, Bomi
- Lower Kru Coast, GrandKru
- Pleebo/Sodeken, Maryland
- Porkpa, Grand Cape Mount
- Sasstown 180606, GrandKru
- Tchien, GrandGedeh
- Tewor, Grand Cape Mount
- Webbo, River Gee

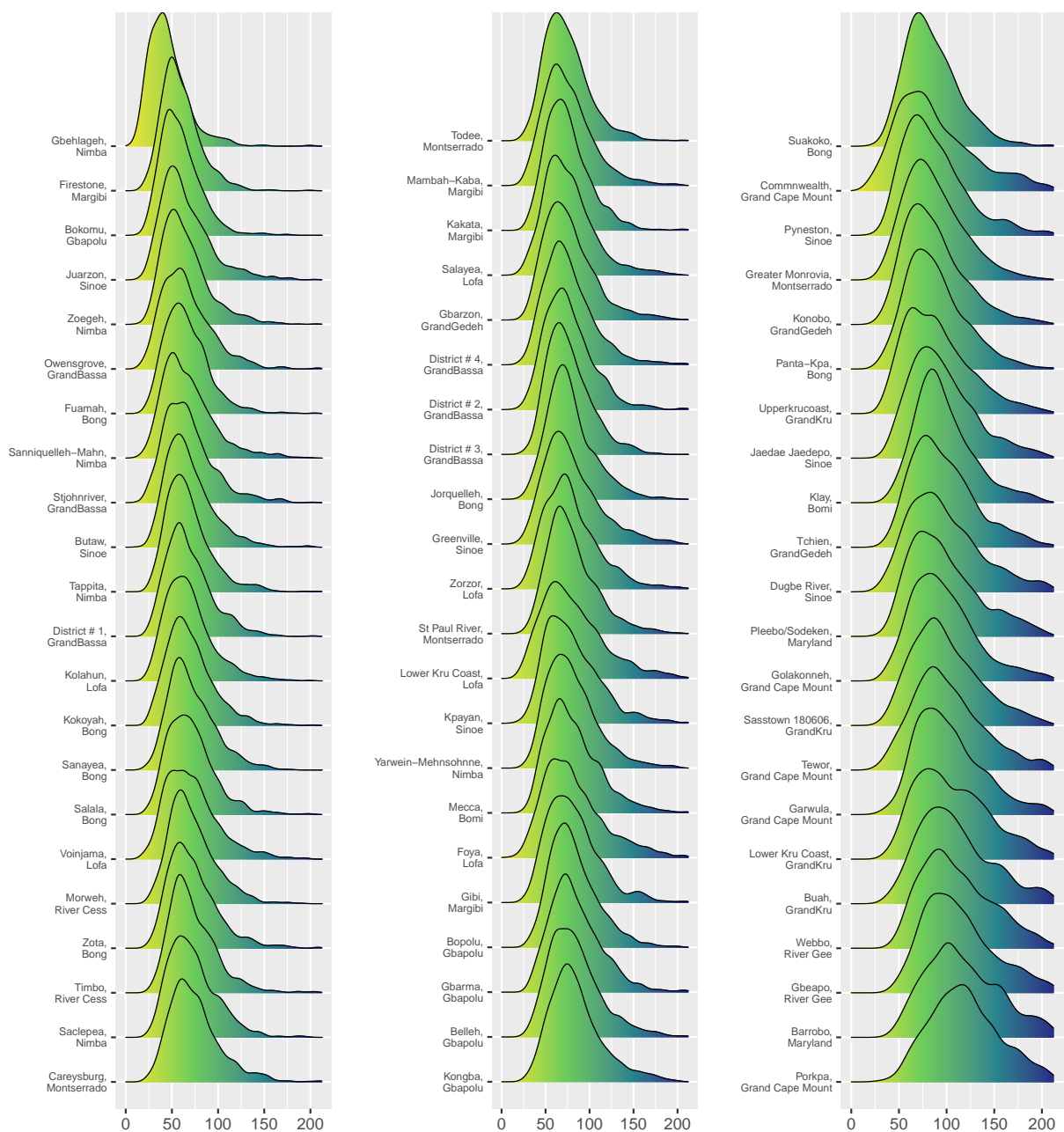


Figure 5: Posterior distributions of U5MR (deaths per 1000 children) in 2019. Areas are ordered by median estimated U5MR in 2019.

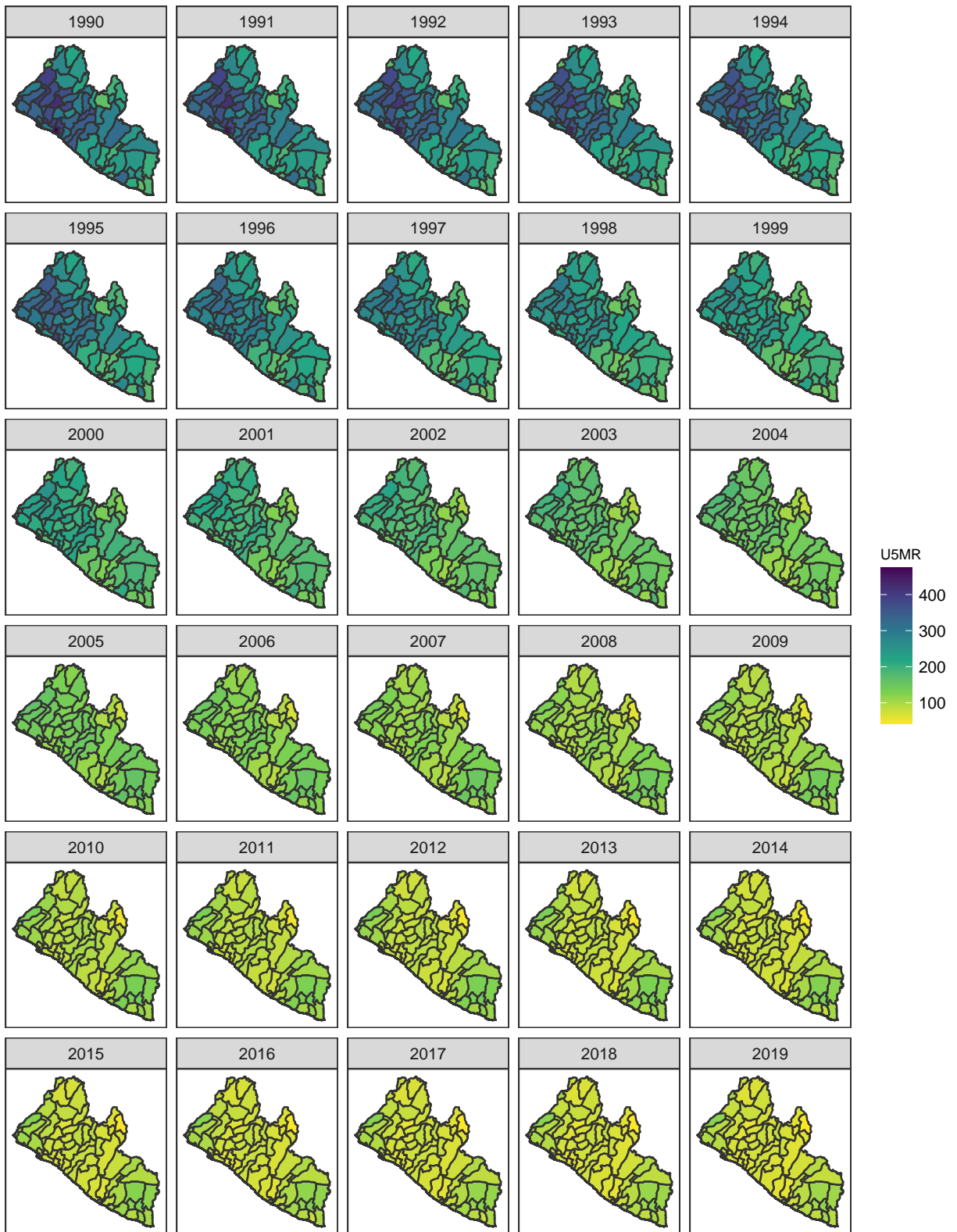


Figure 6: Posterior medians of U5MR (deaths per 1000 births) by Admin 2 area and year.

## 2 National Survey Data

Survey	Urban	Rural	Total
2007	110	181	291
2013	119	203	322

Table 1: Number of clusters by urban/rural designation by survey for Liberia.

Age	No. Deaths	No. Agemonths
0	1174	27778
1-11	1617	277650
12-23	716	273905
24-35	391	257365
36-47	267	240549
48-59	139	224920

Table 2: Numbers of agemonths and deaths by age for DHS 2013.

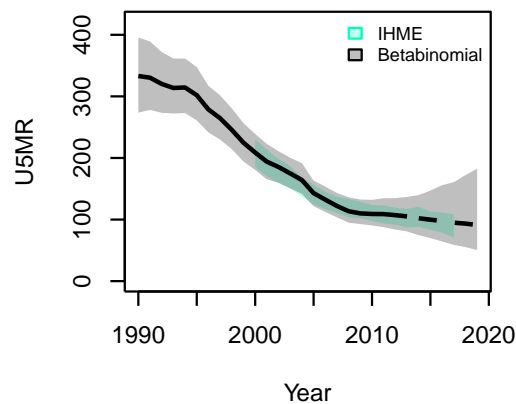
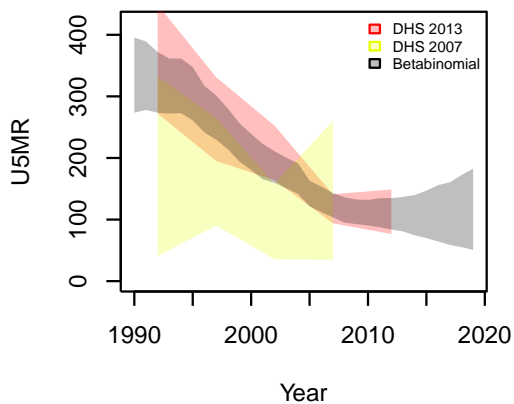
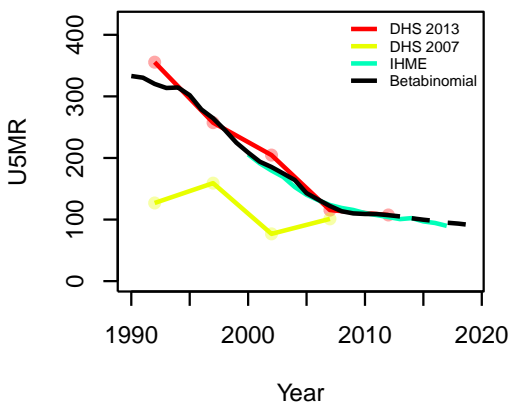
Age	No. Deaths	No. Agemonths
0	667	16619
1-11	1095	165643
12-23	394	163038
24-35	239	153929
36-47	137	143933
48-59	75	135130

Table 3: Numbers of agemonths and deaths by age for DHS 2007.

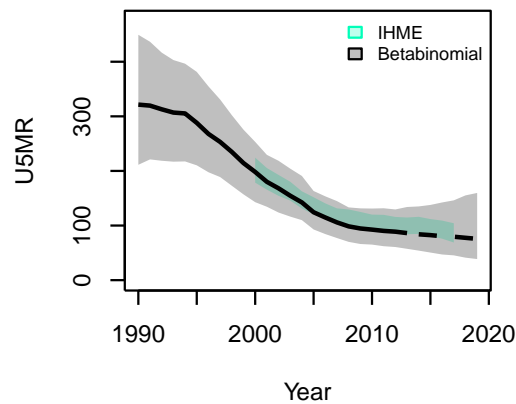
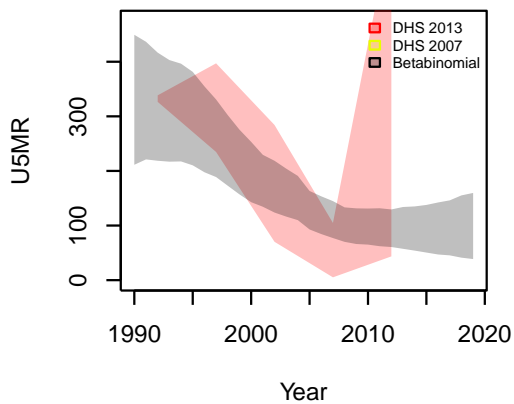
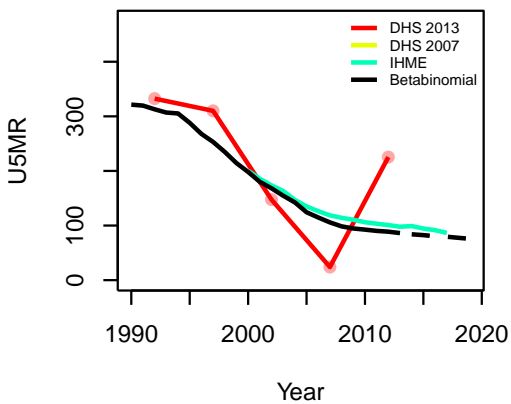
### 3 Admin 2 Figures

The following few pages have estimates by area across time with underlying data included. There are six admin areas per page. Colored lines with circular points and light grey uncertainty bands are 5-year survey-weighted estimates of U5MR for years 1990–1994 up to 2015–2019 depending on survey timing. For a survey that ends in the middle of a 5-year period, we plot the estimates at the mid-point of the years in that interval for which the survey provides data. Black lines and corresponding intervals represent posterior medians and 95% uncertainty intervals respectively for the betabinomial model.

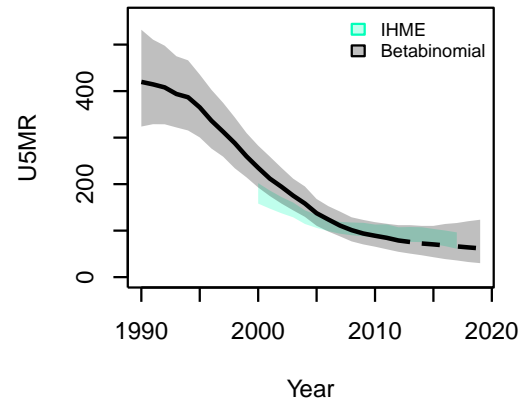
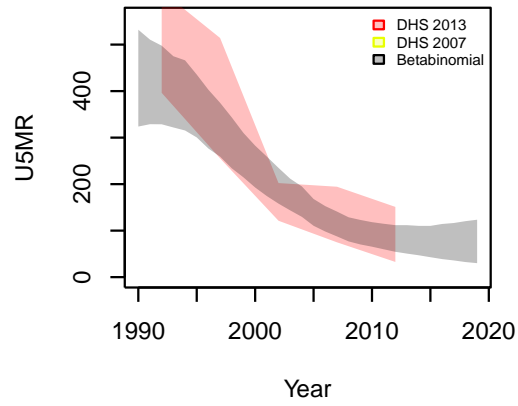
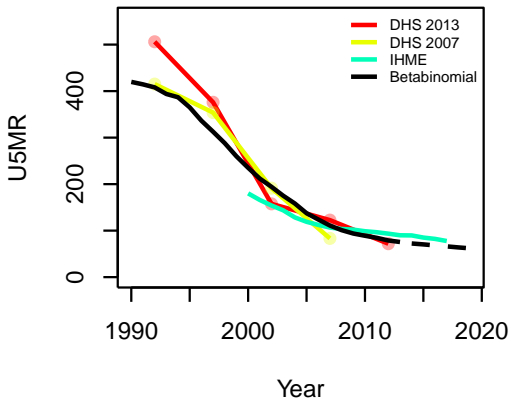
Klay, Bomi



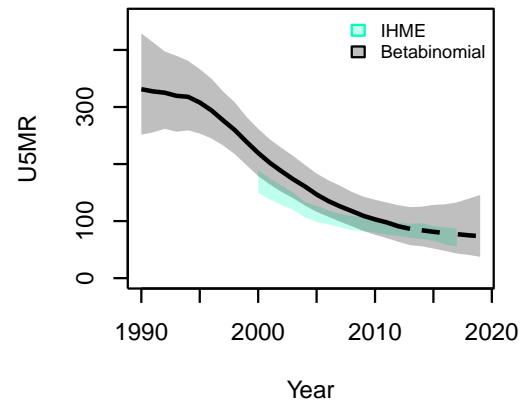
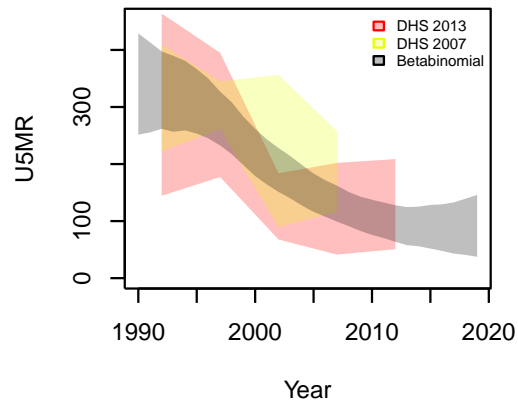
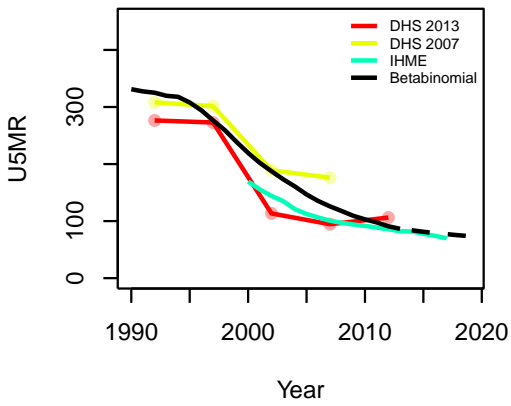
Mecca, Bomi



Fuamah, Bong

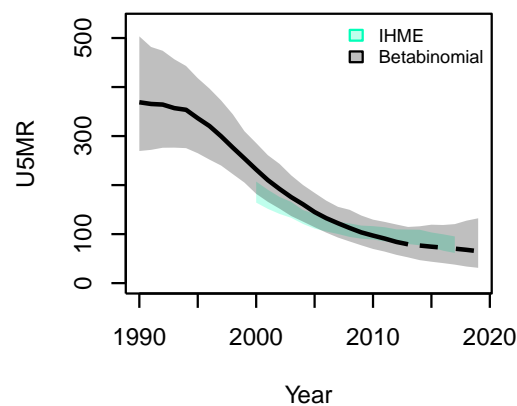
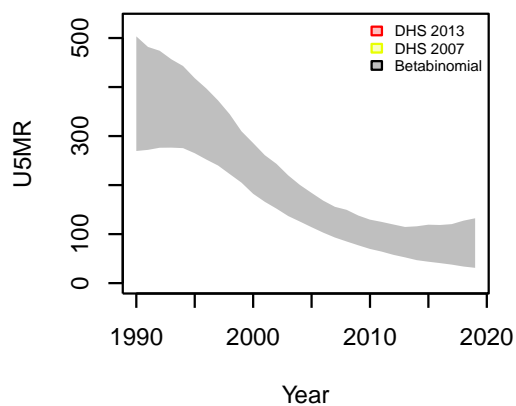
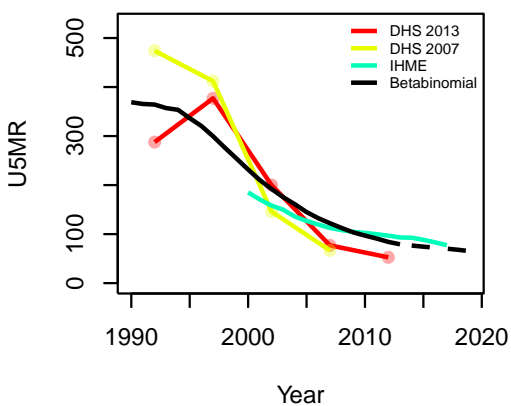


Jorquelleh, Bong

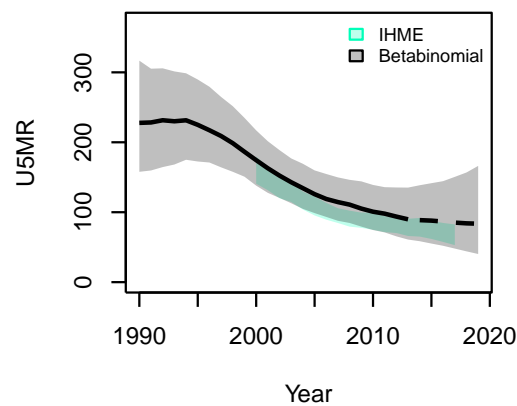
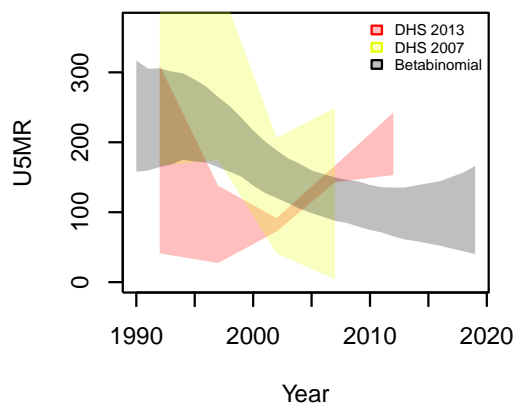
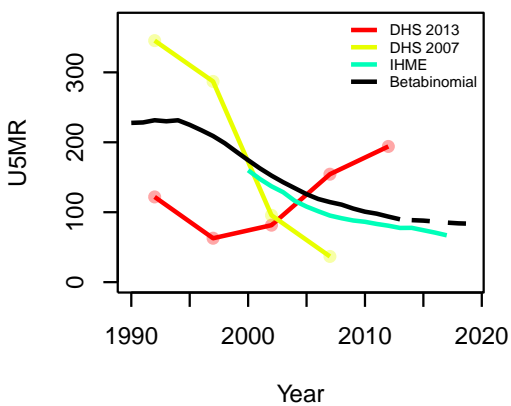




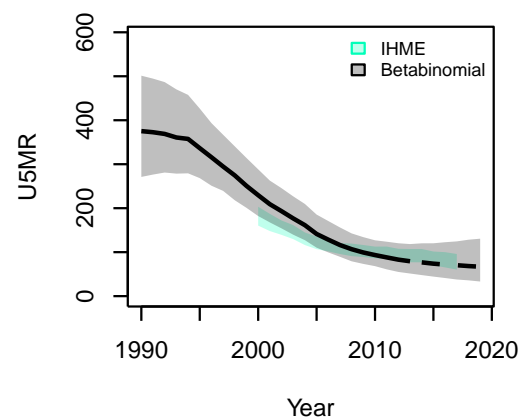
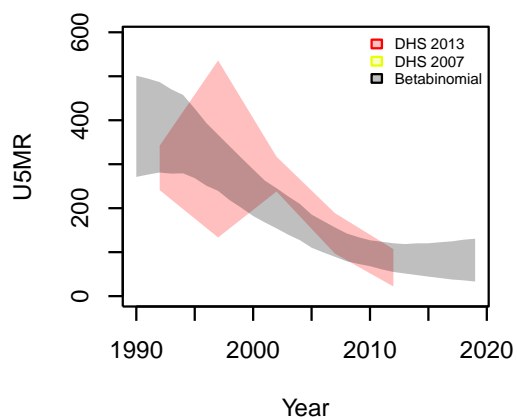
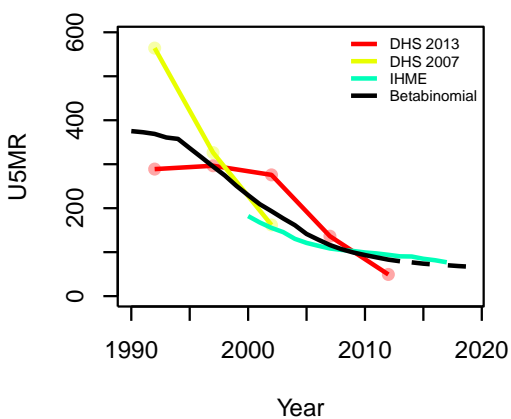
Kokoyah, Bong



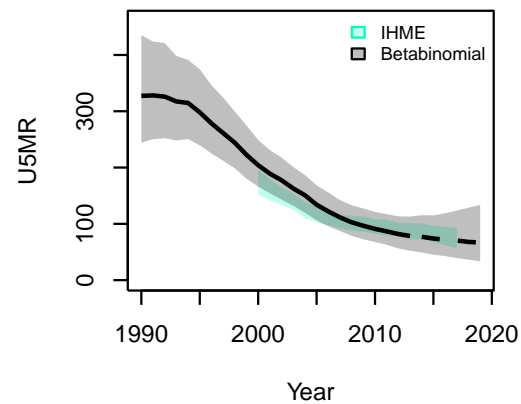
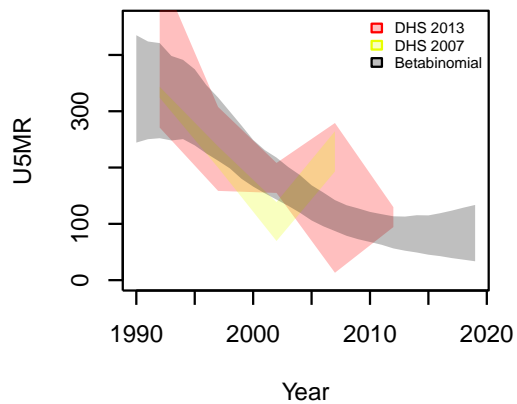
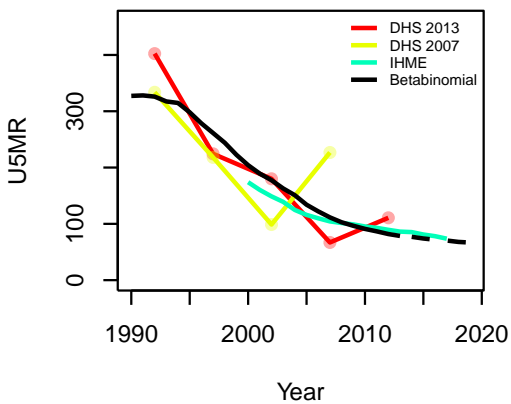
Panta-Kpa, Bong



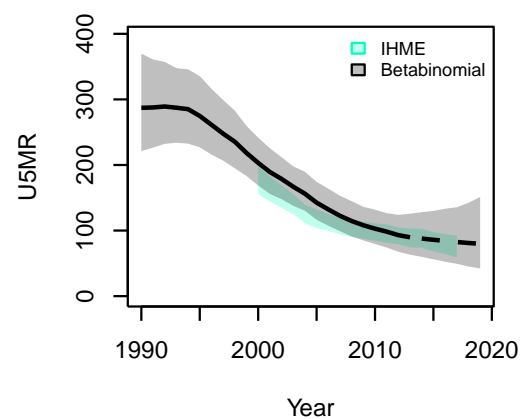
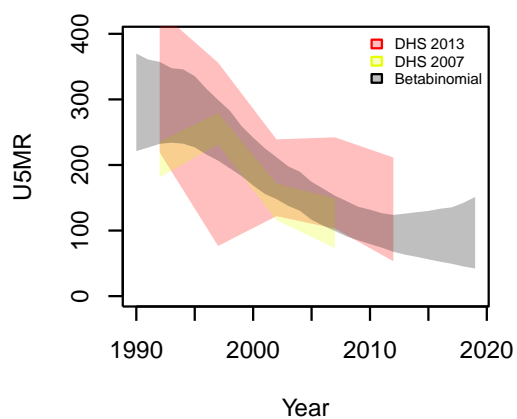
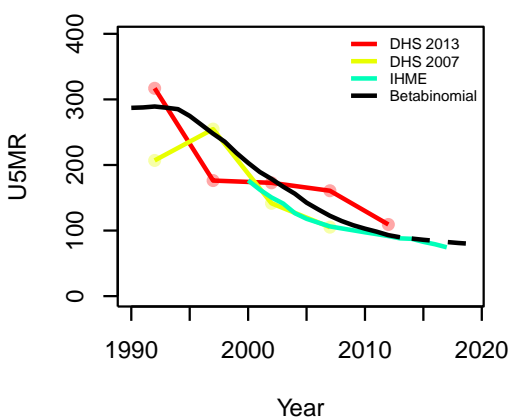
Salala, Bong



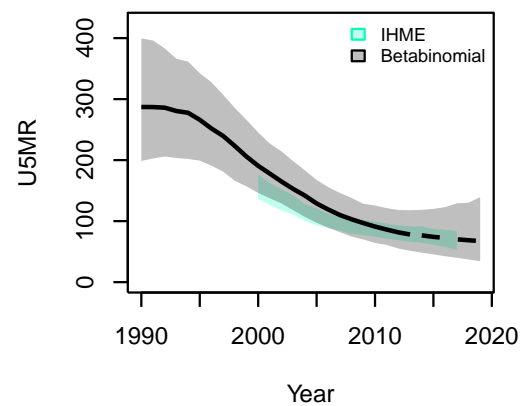
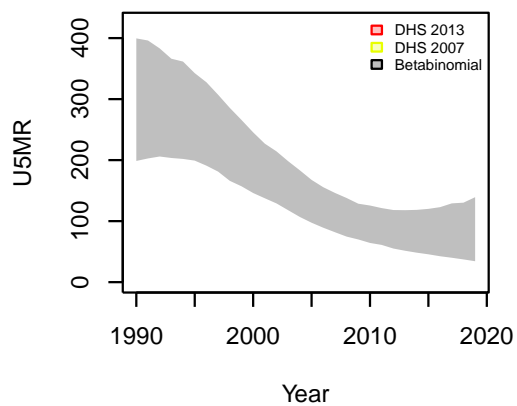
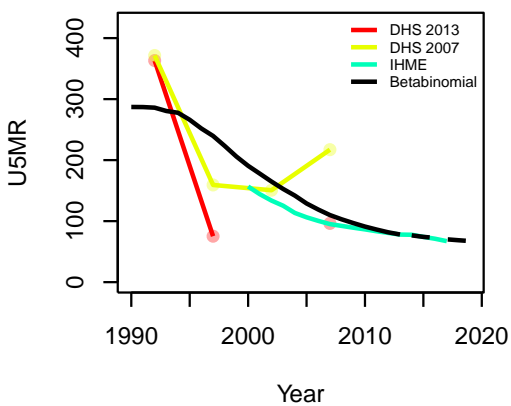
Sanayea, Bong



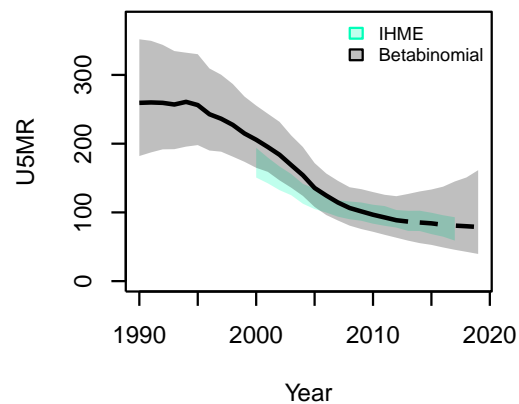
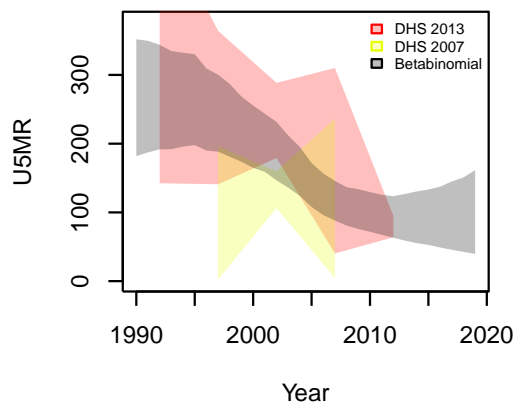
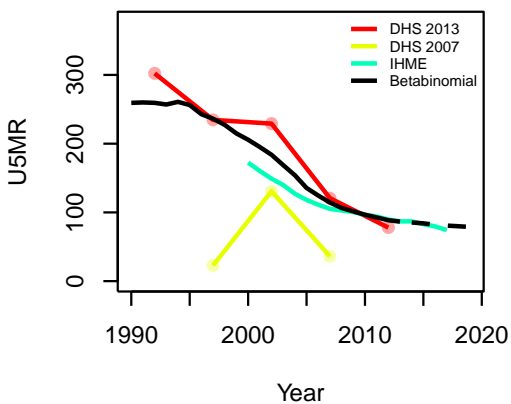
Suakoko, Bong



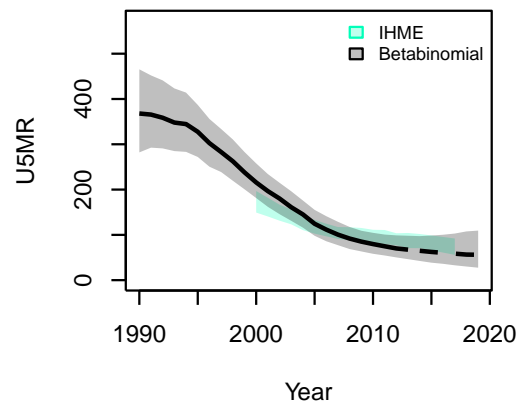
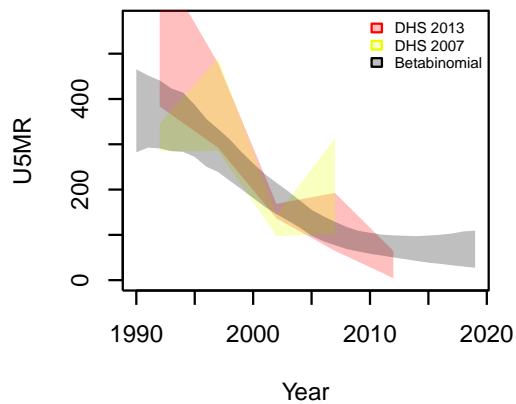
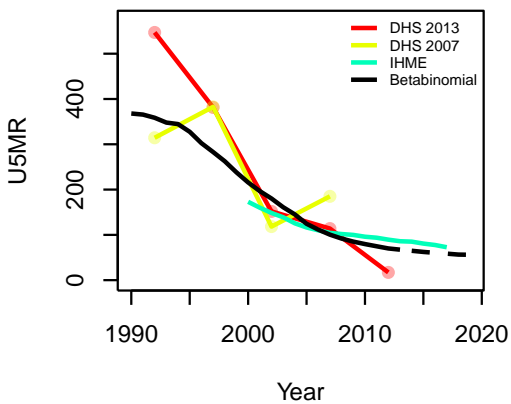
Zota, Bong



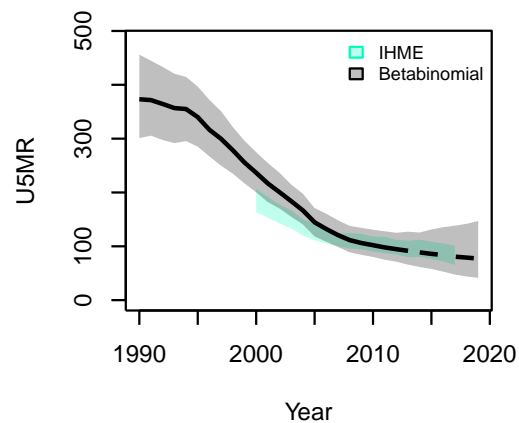
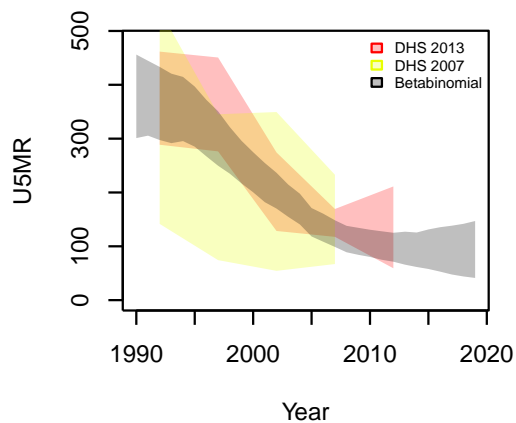
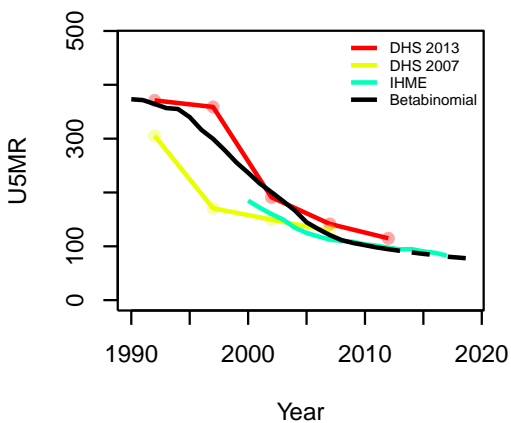
**Belleh, Gbapolu**



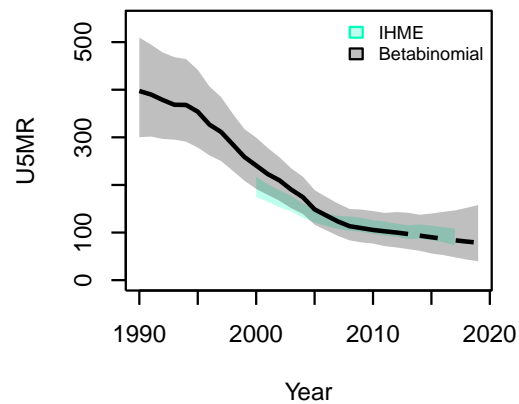
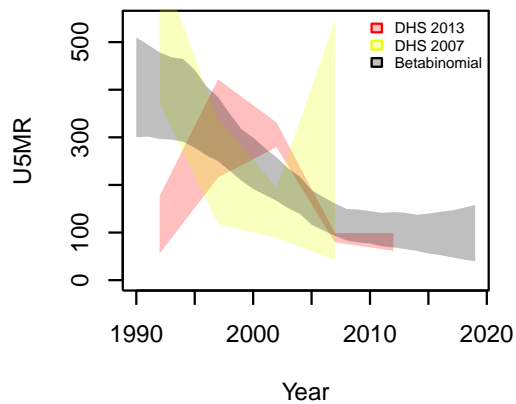
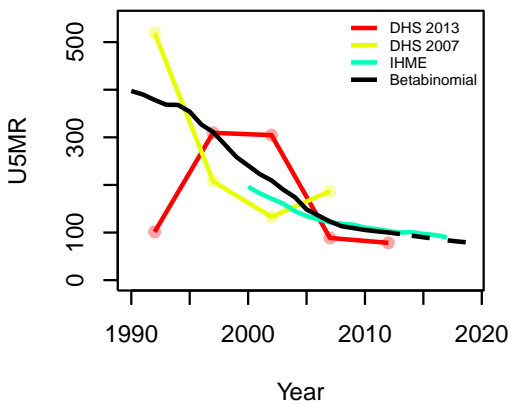
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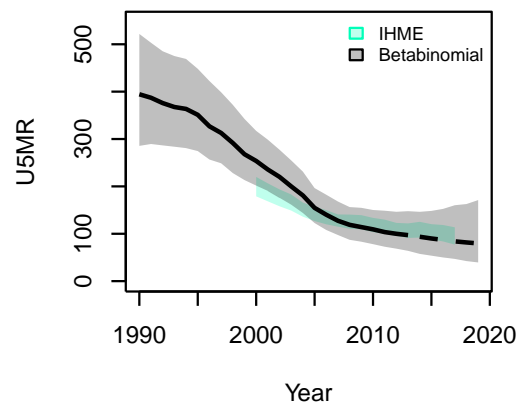
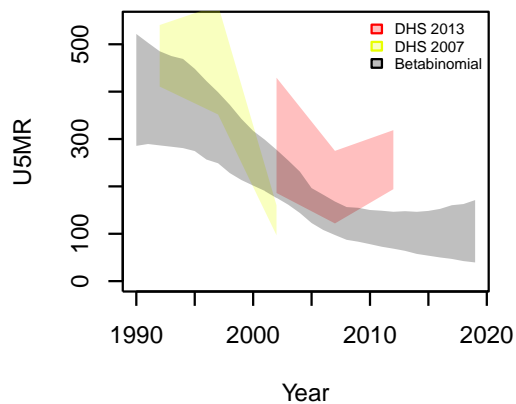
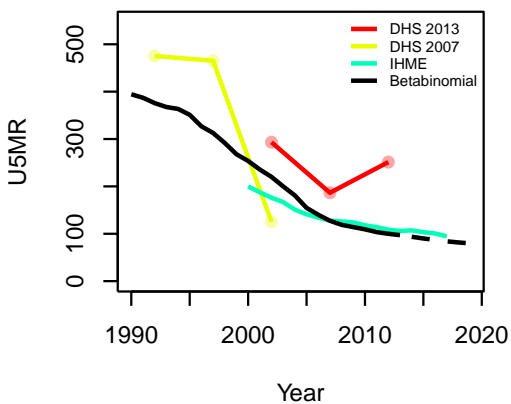
**Bopolu, Gbapolu**



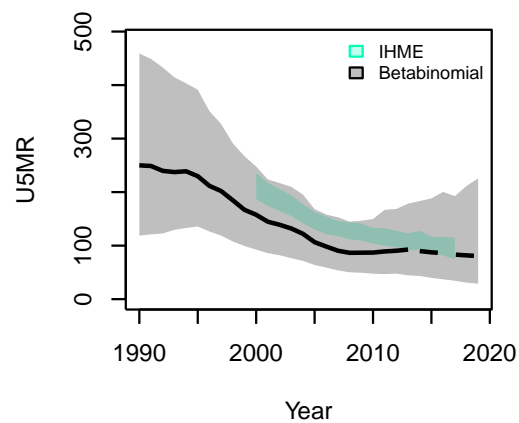
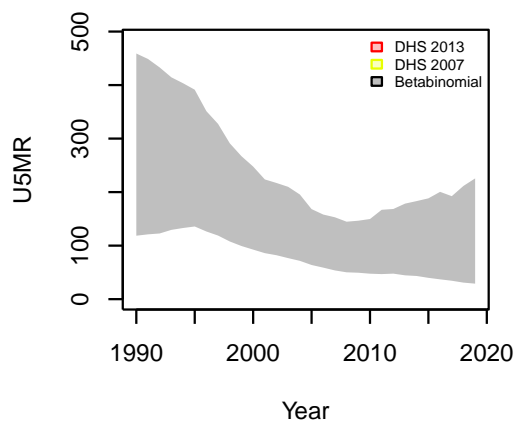
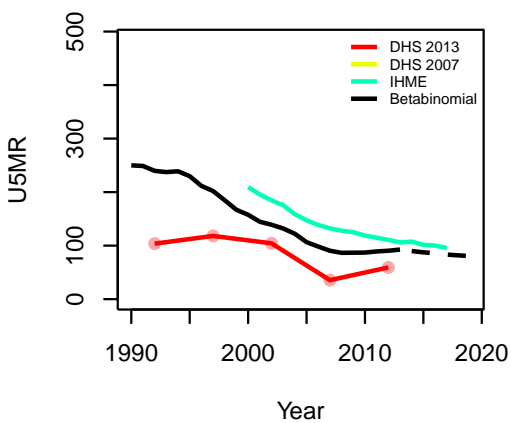
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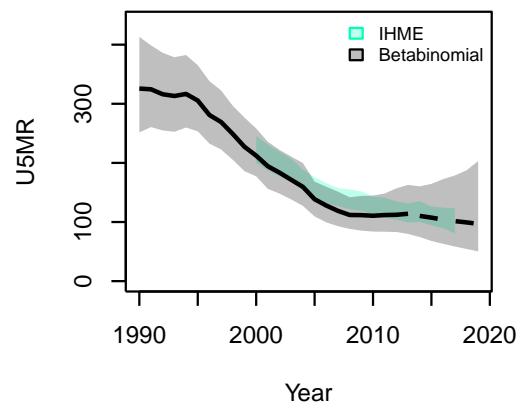
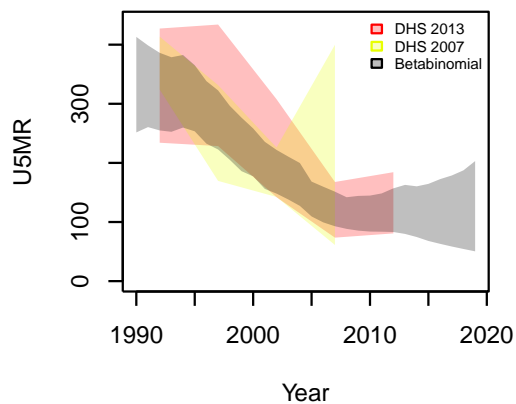
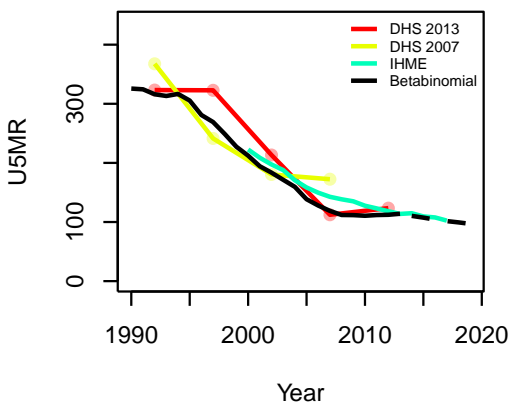
Kongba, Gbapolu



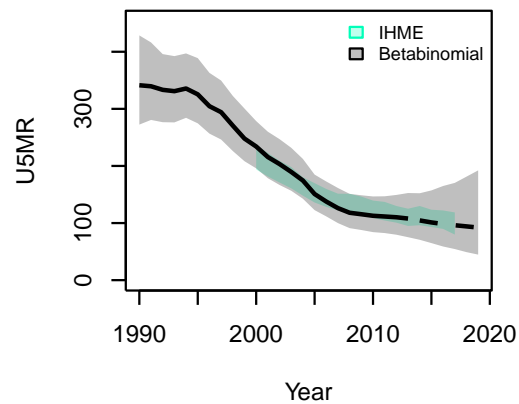
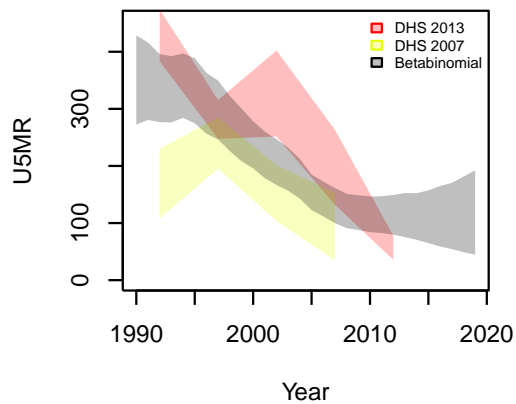
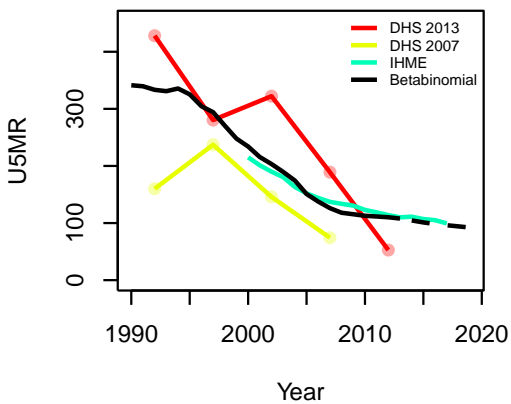
Commwealth, Grand Cape Mount



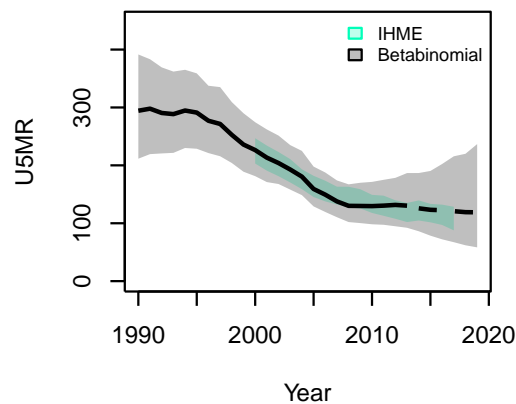
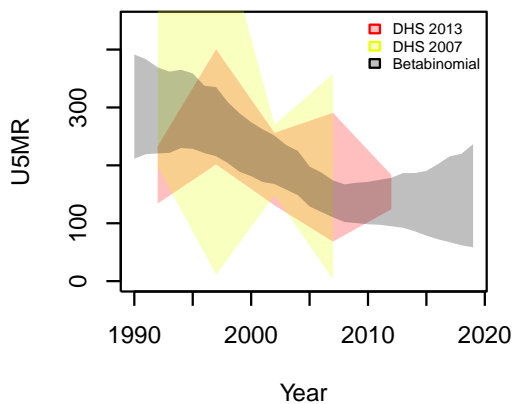
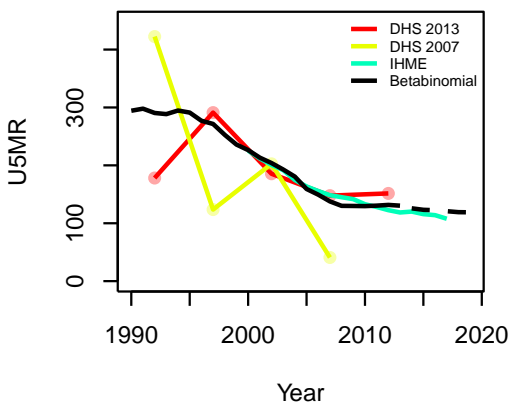
Garwula, Grand Cape Mount



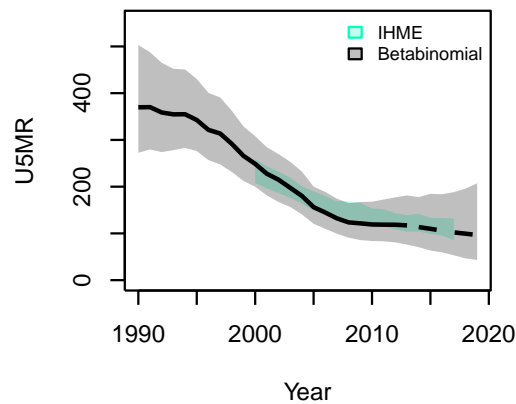
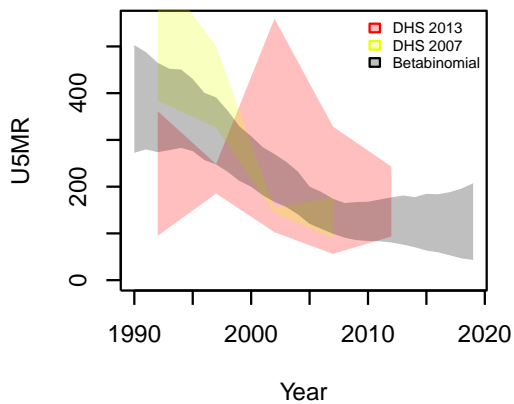
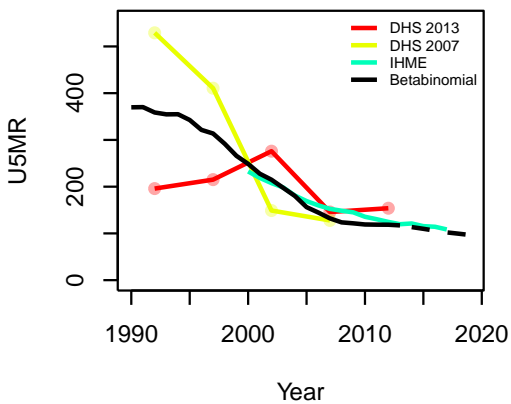
Golakonneh, Grand Cape Mount



Porkpa, Grand Cape Mount

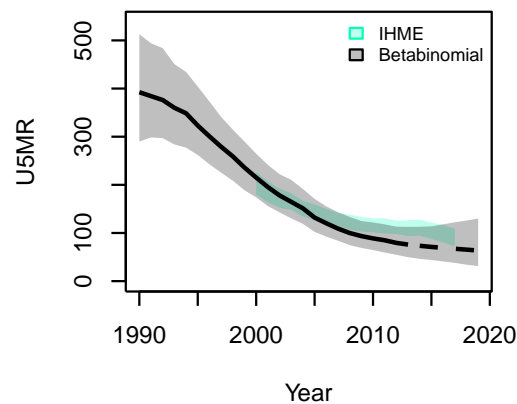
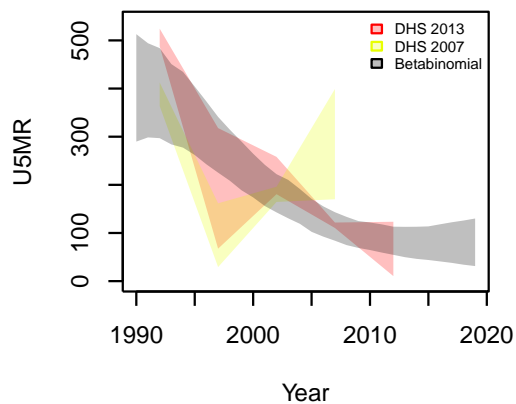
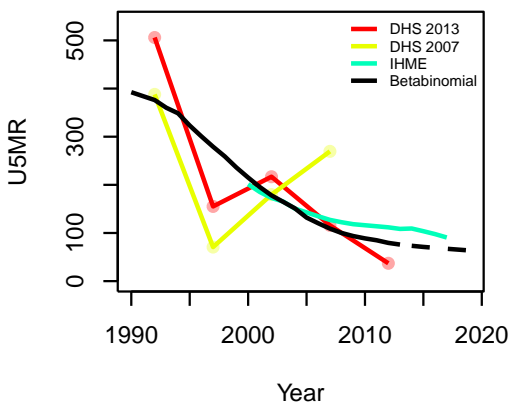


Tewor, Grand Cape Mount

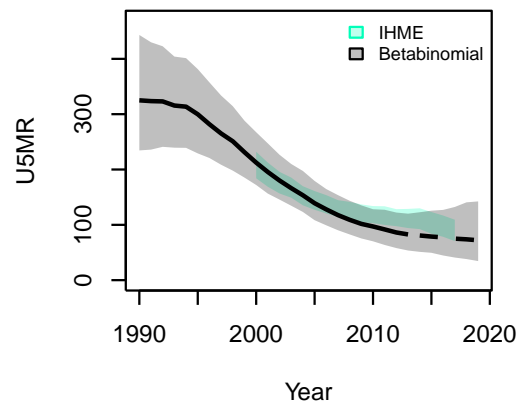
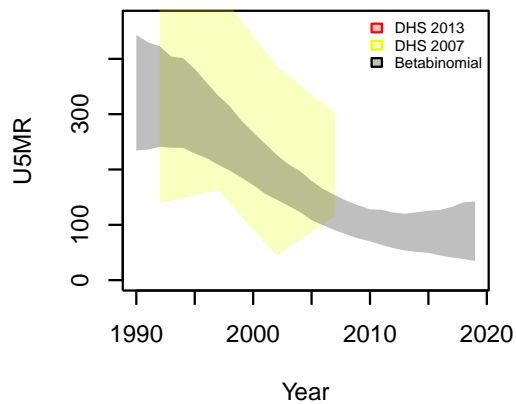
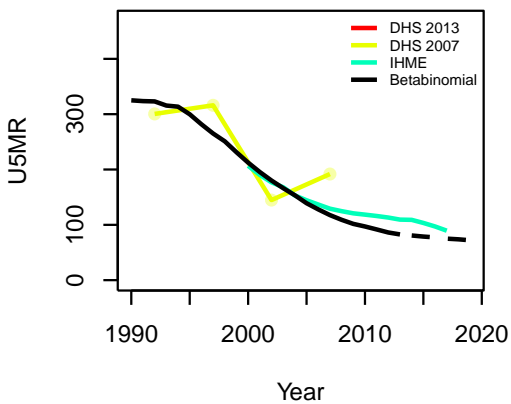




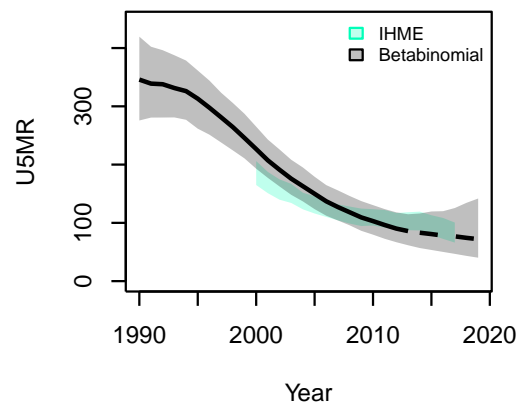
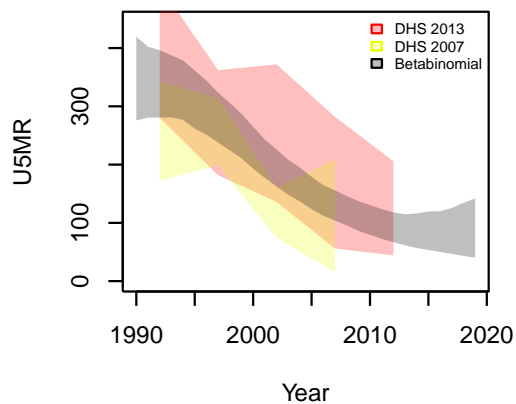
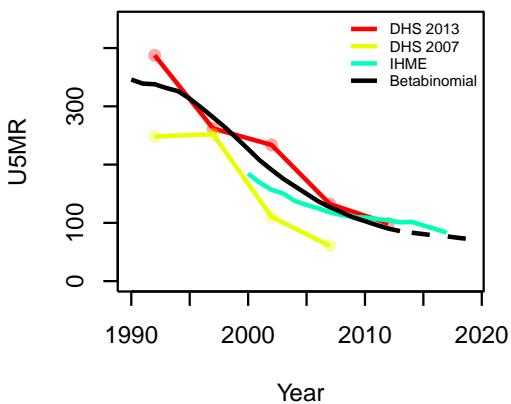
District # 1, GrandBassa



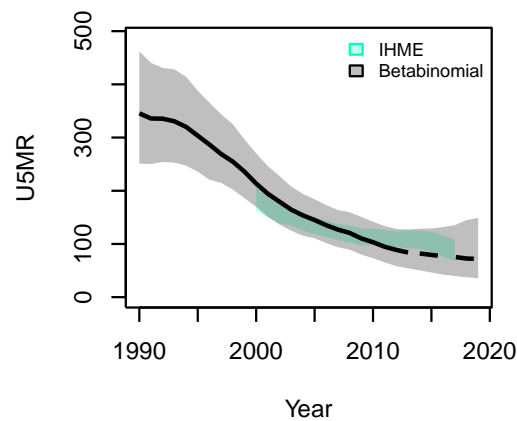
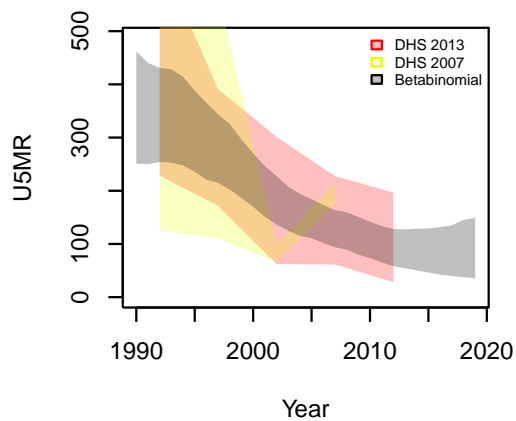
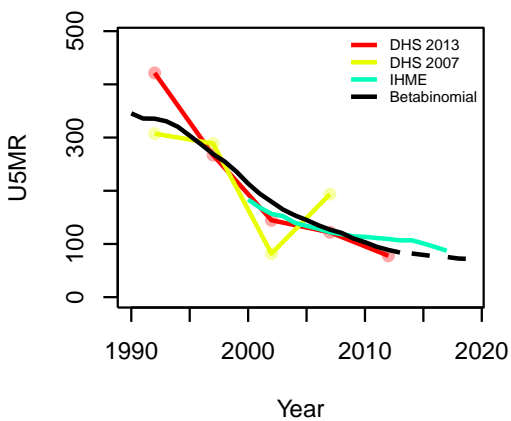
District # 2, GrandBassa



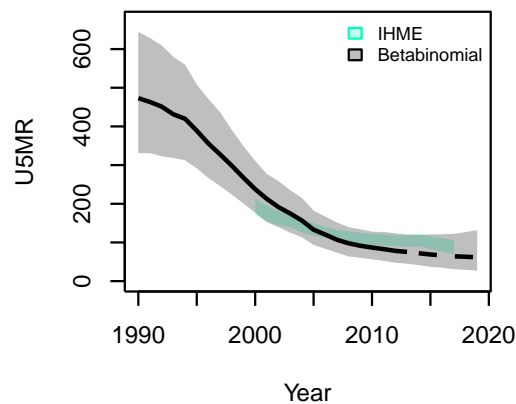
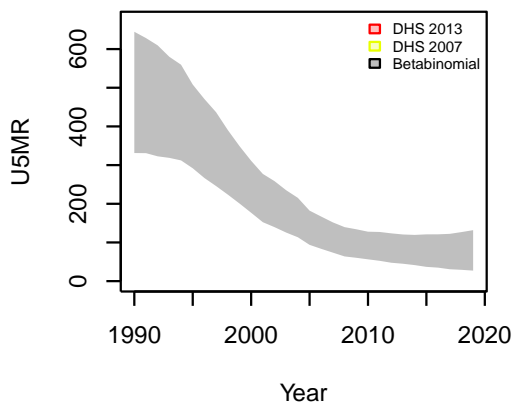
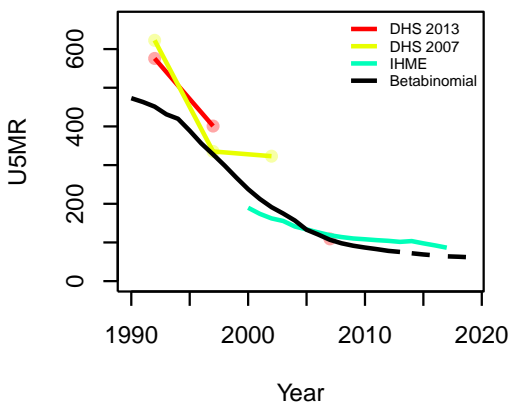
District # 3, GrandBassa



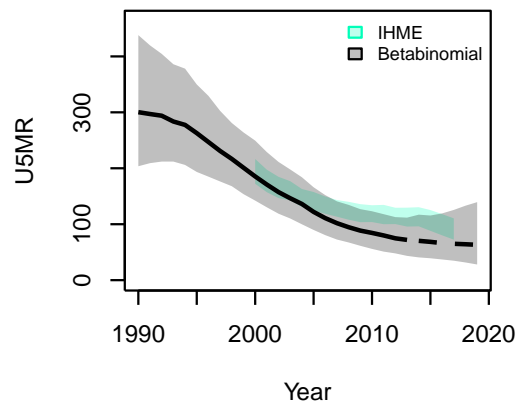
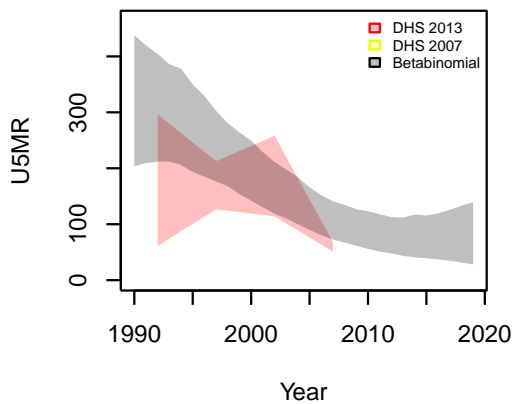
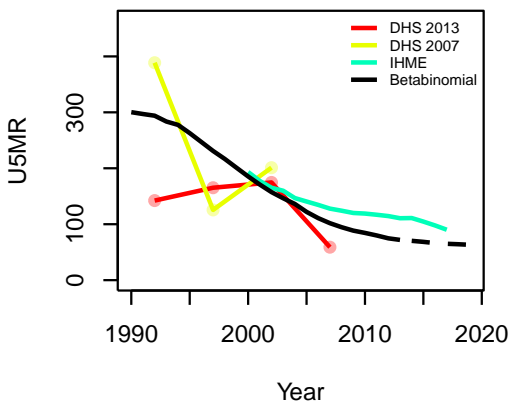
District # 4, GrandBassa



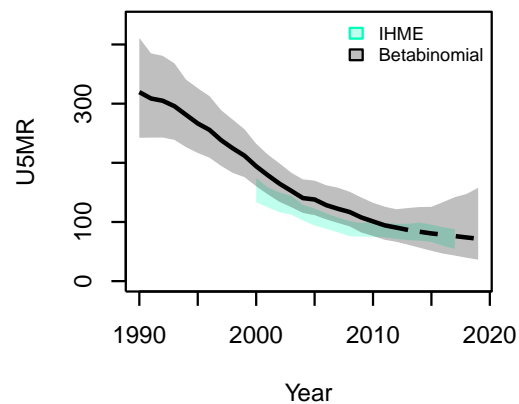
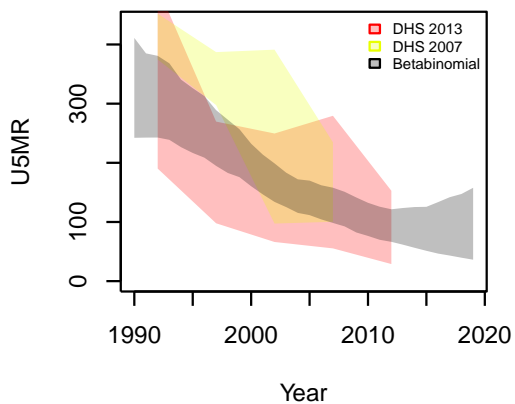
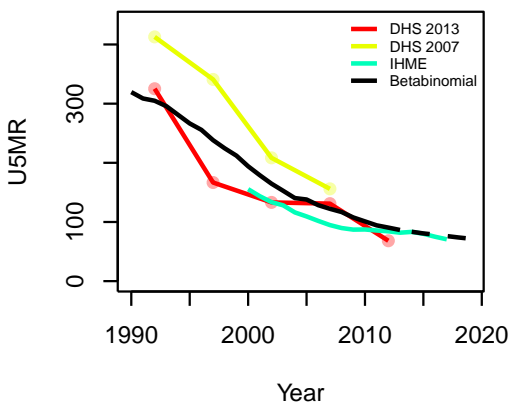
Owensgrove, GrandBassa



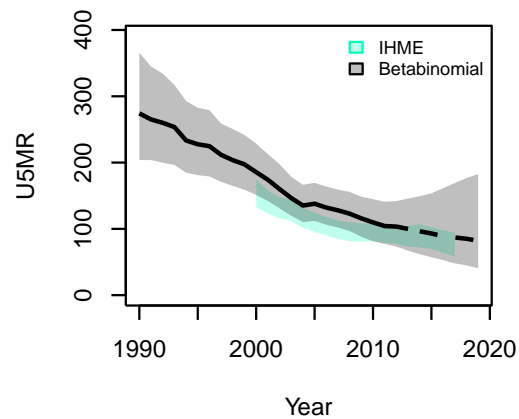
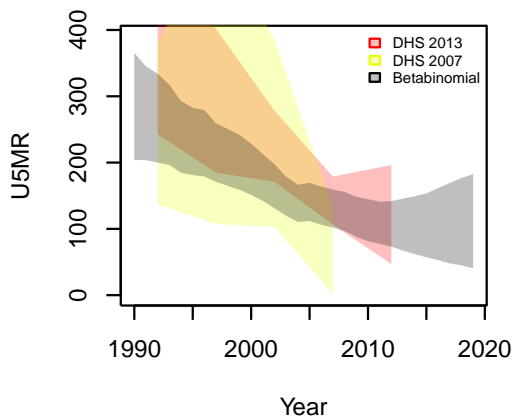
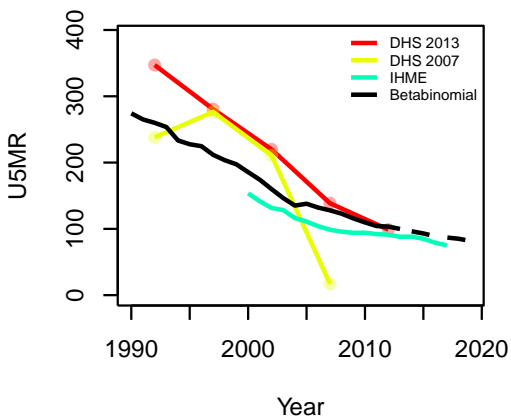
Stjohnriver, GrandBassa



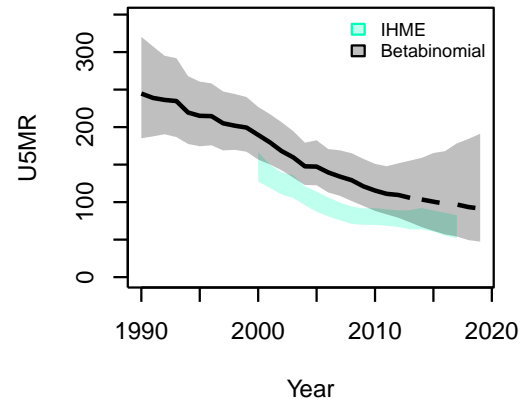
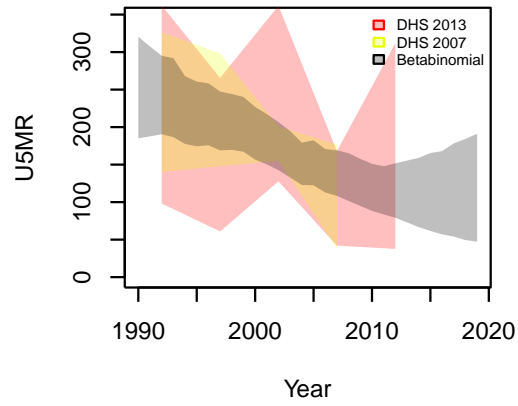
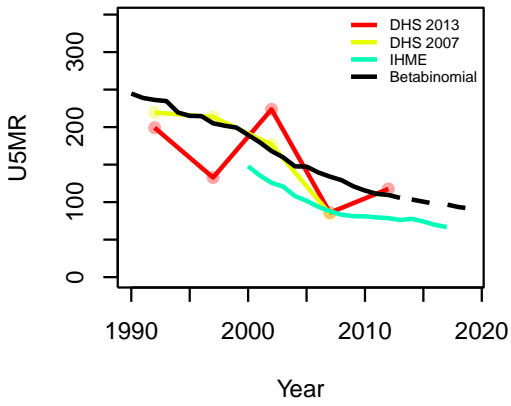
Gbarzon, GrandGedeh



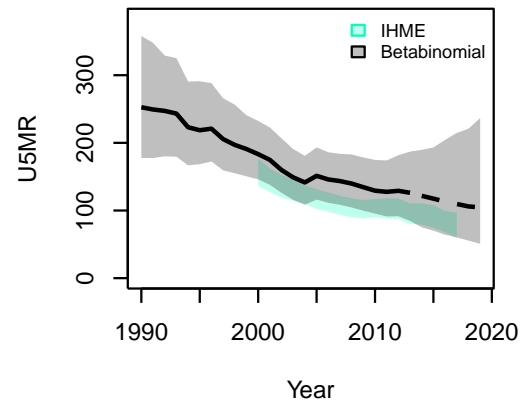
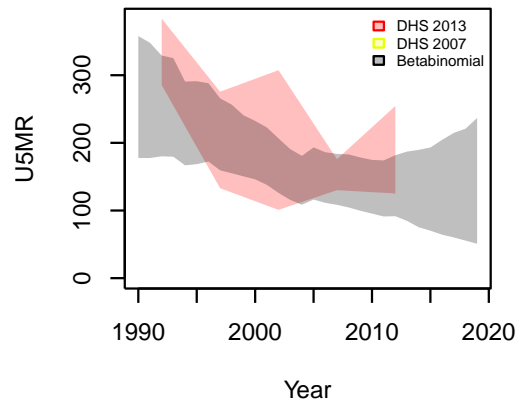
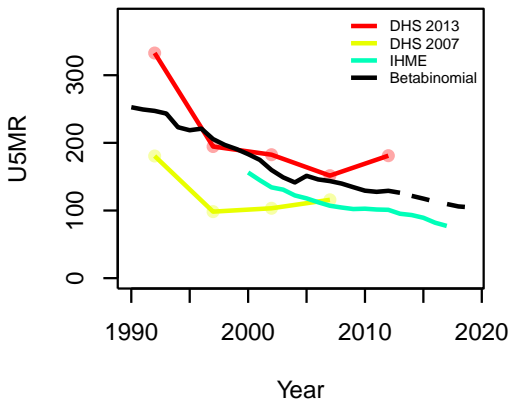
Konobo, GrandGedeh



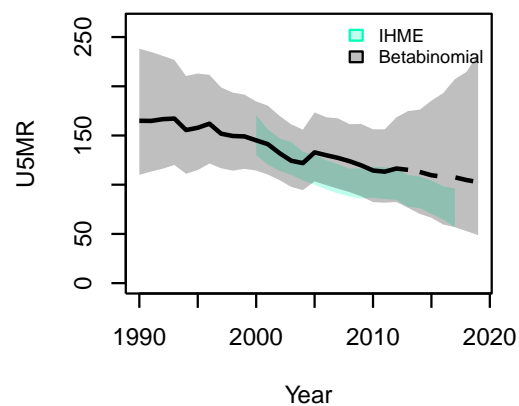
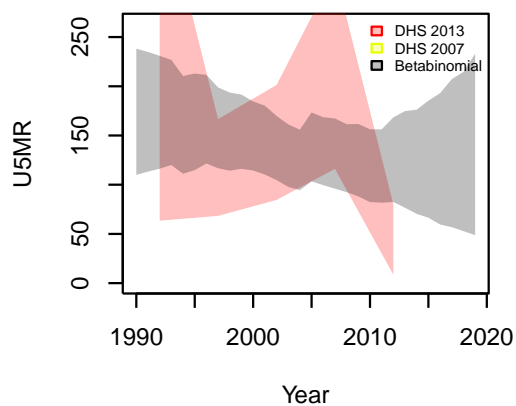
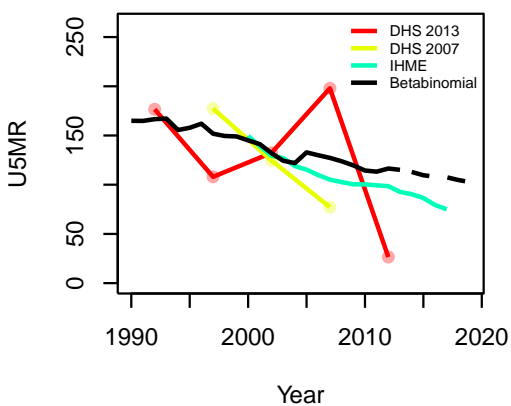
Tchien, GrandGedeh



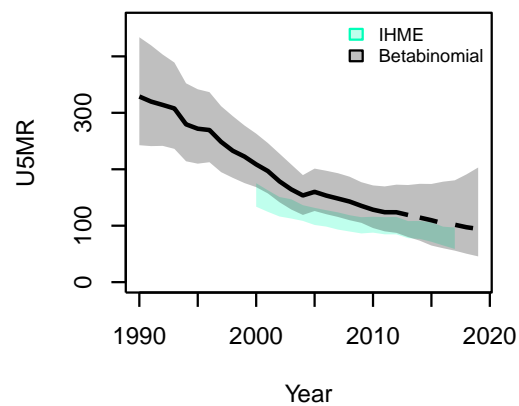
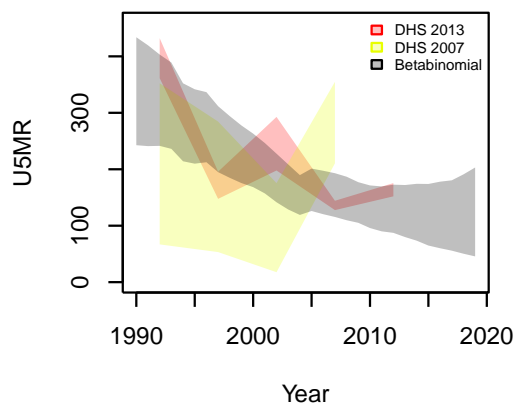
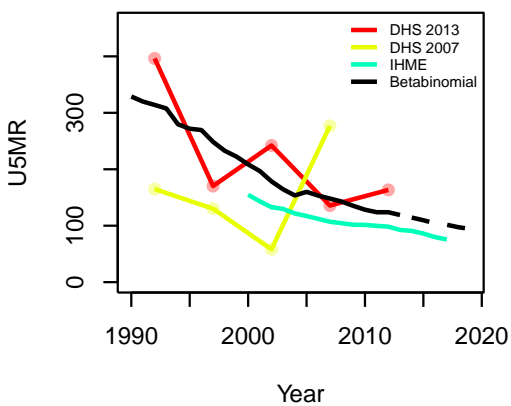
Buah, GrandKru



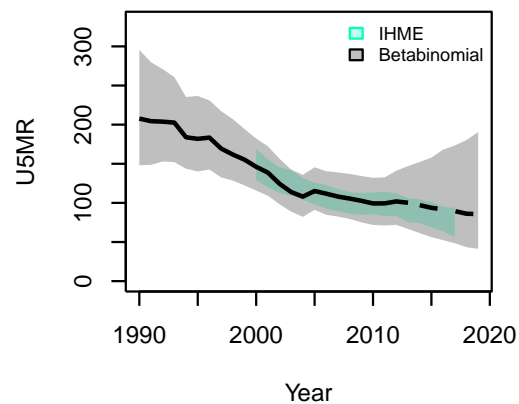
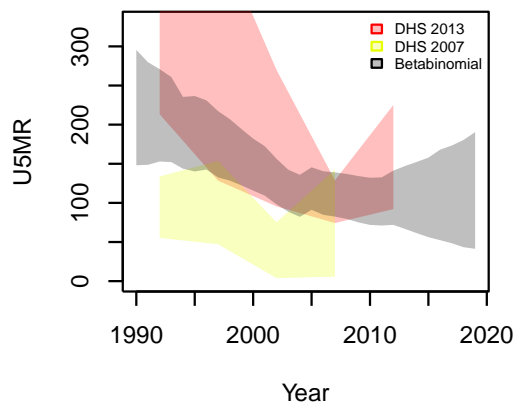
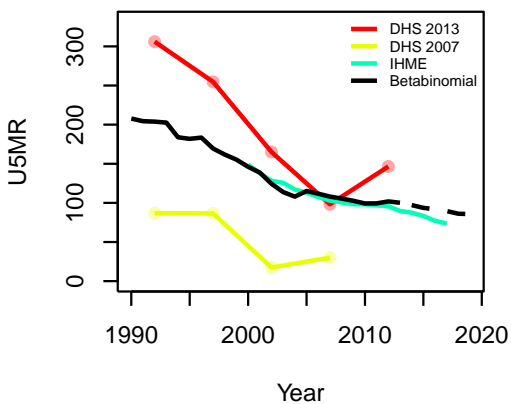
Lower Kru Coast, GrandKru



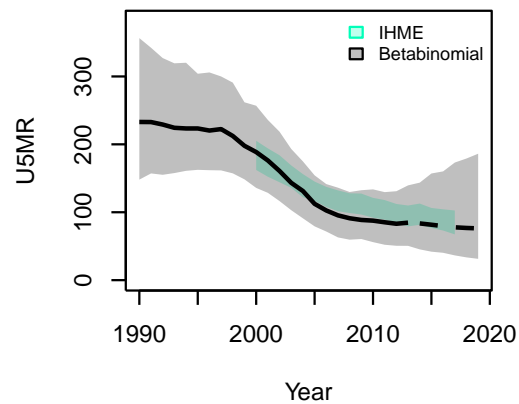
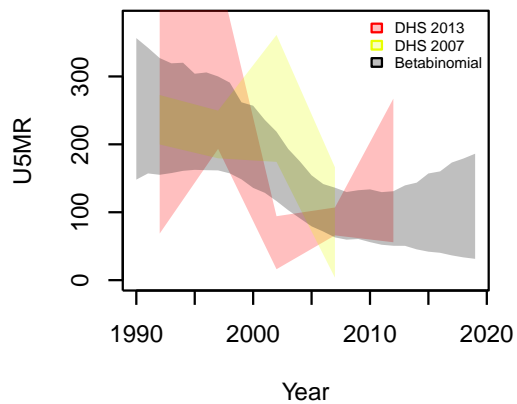
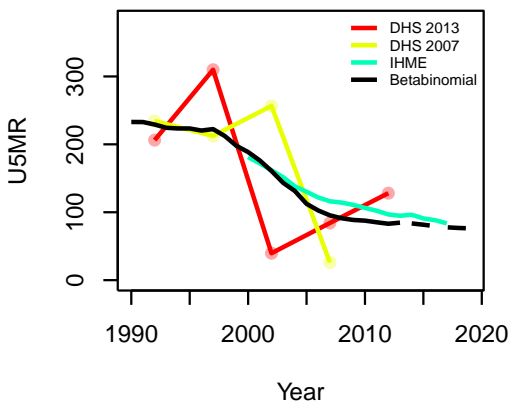
Sasstown 180606, GrandKru

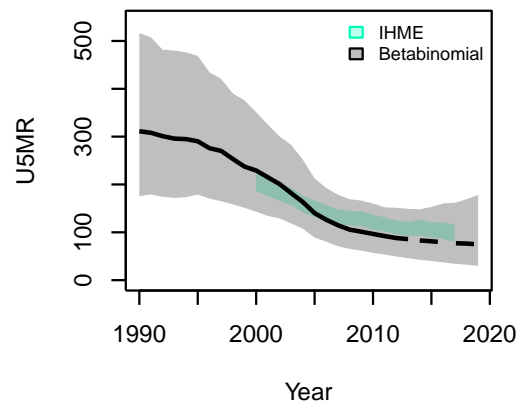
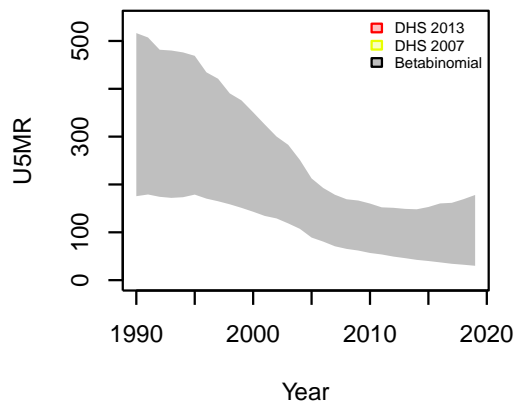
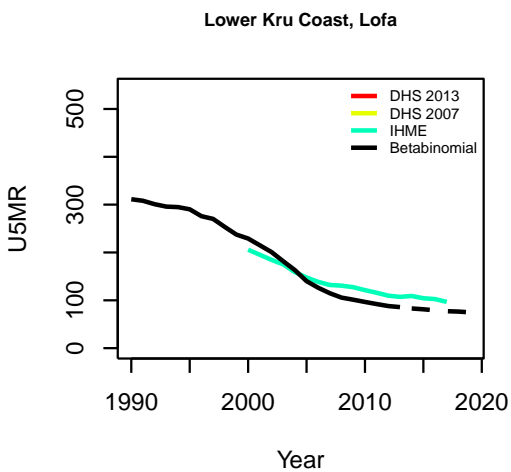
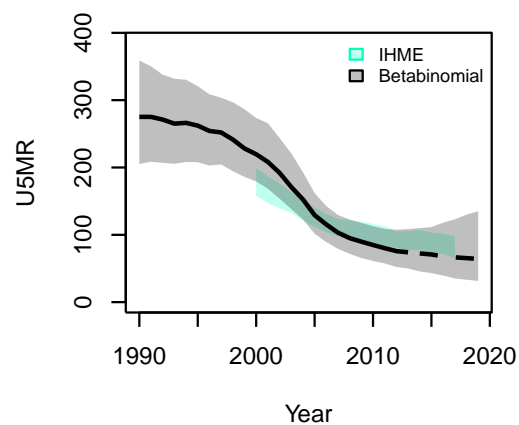
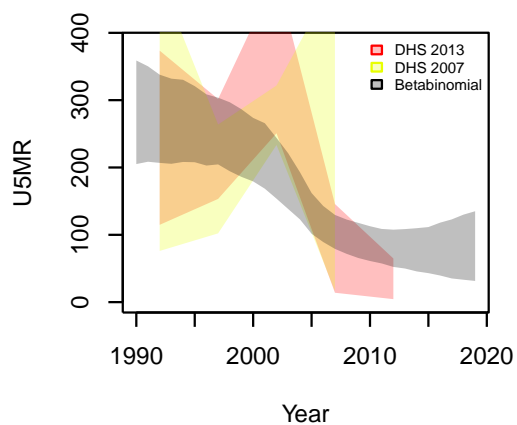
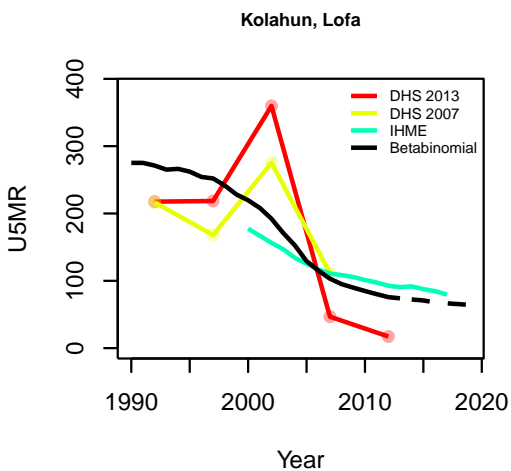


Upperkrucoast, GrandKru



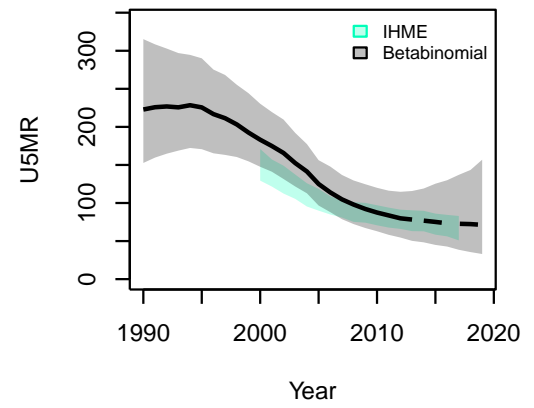
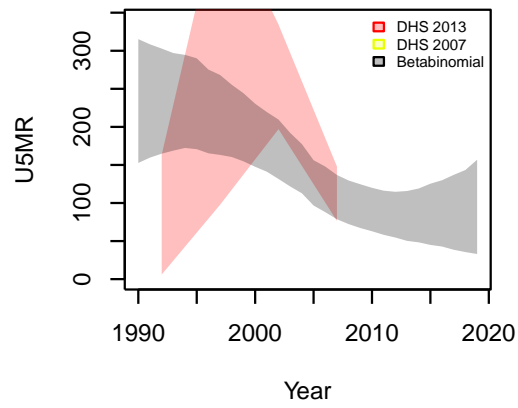
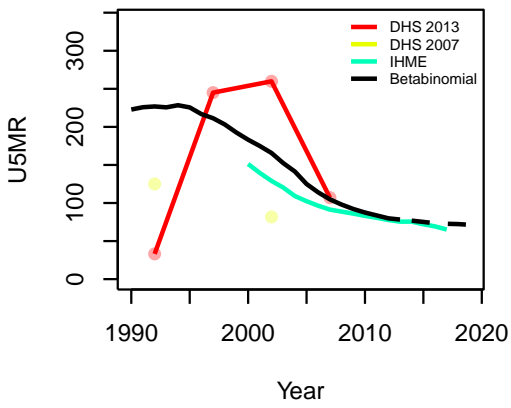
Foya, Lofa



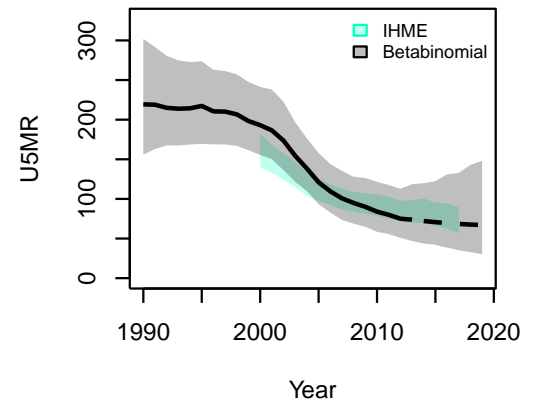
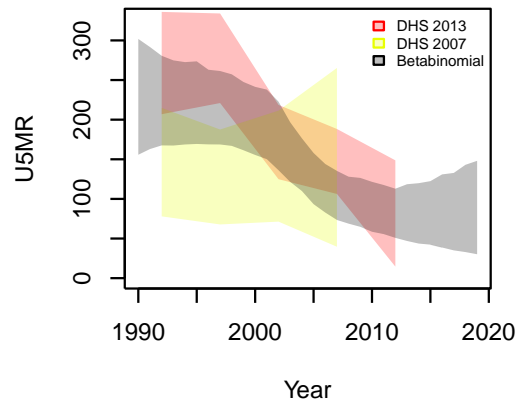
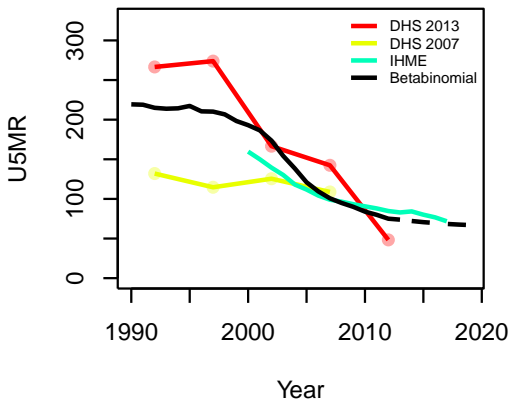




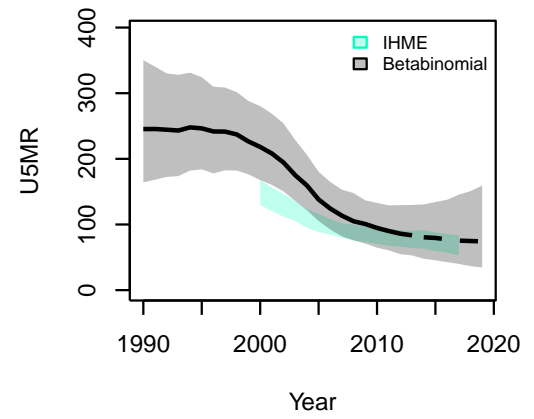
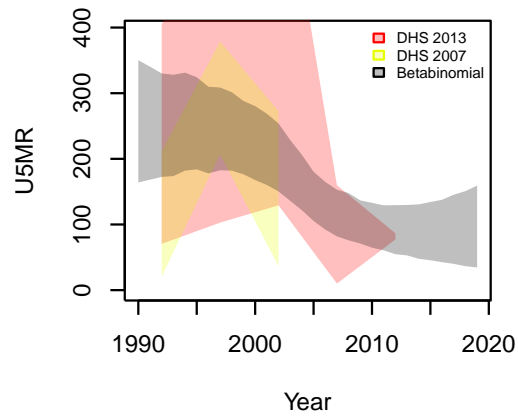
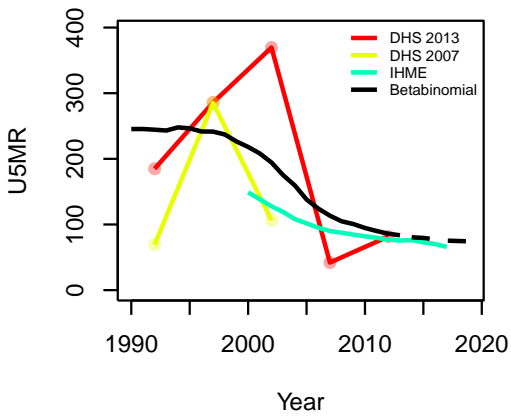
Salayea, Lofa



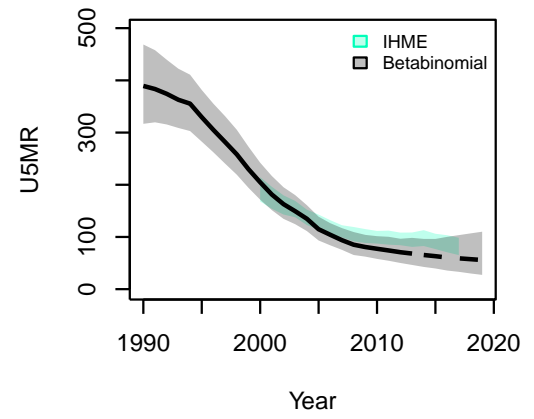
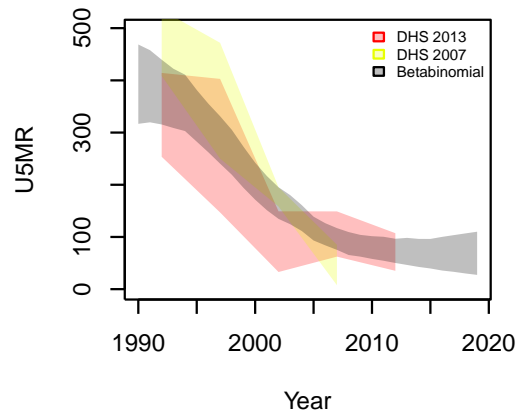
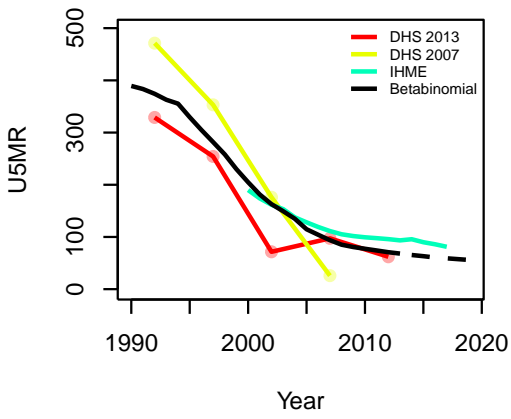
Voinjama, Lofa



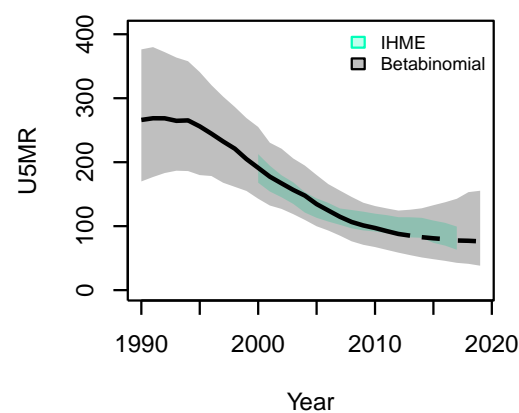
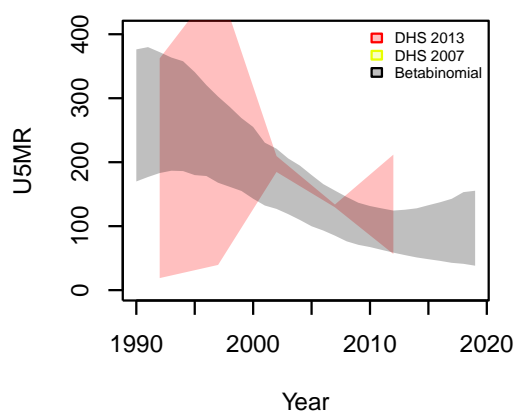
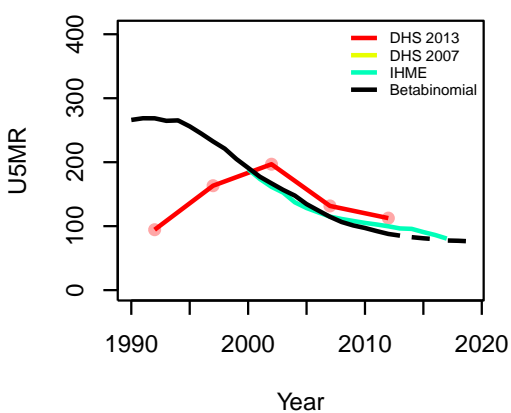
Zorzor, Lofa



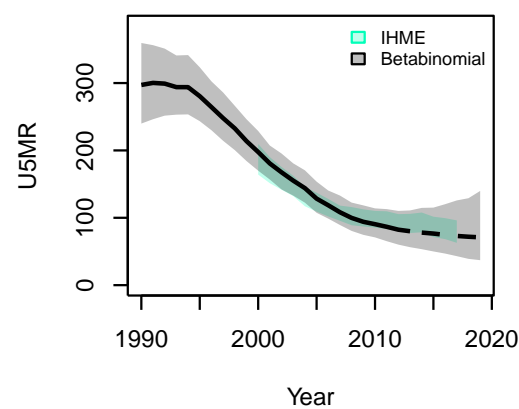
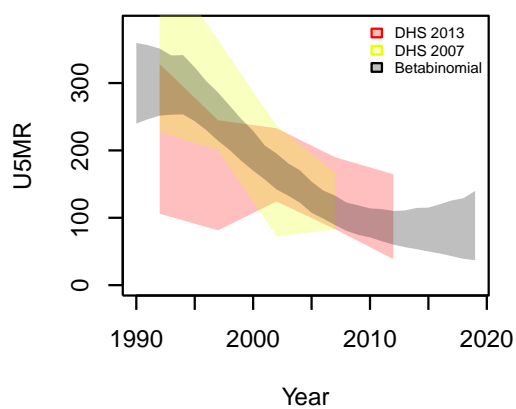
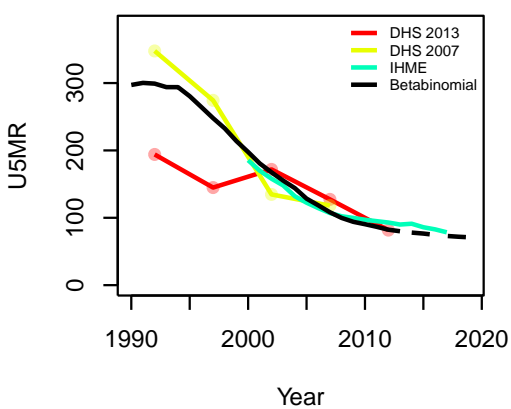
Firestone, Margibi



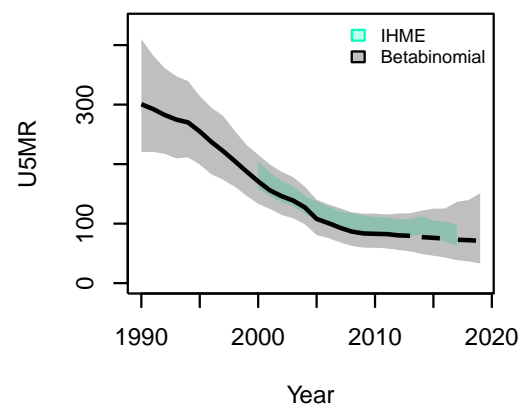
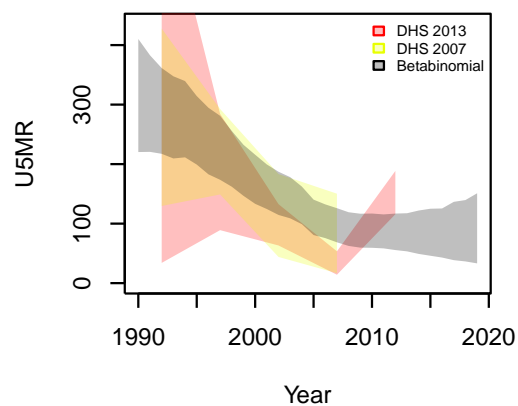
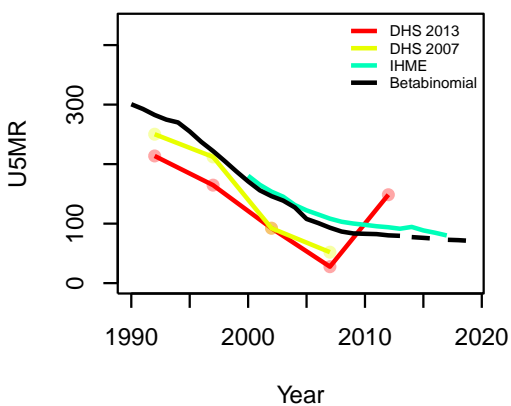
Gibi, Margibi



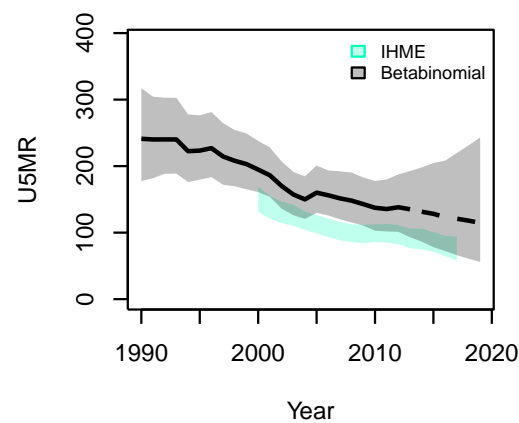
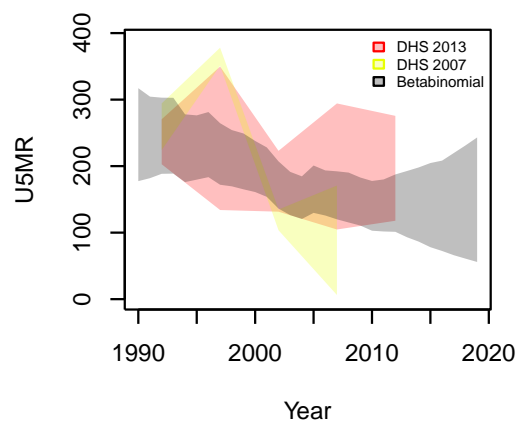
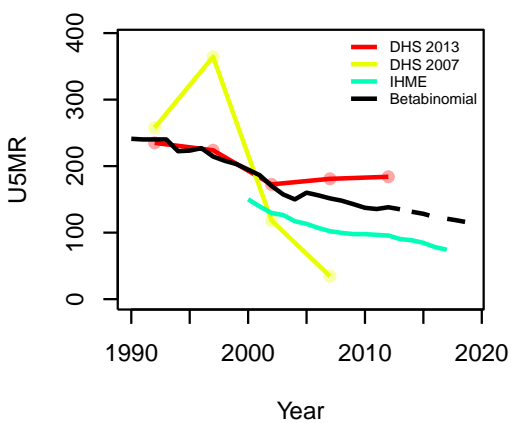
Kakata, Margibi



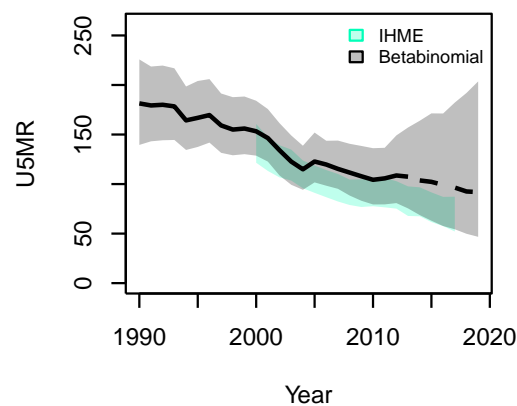
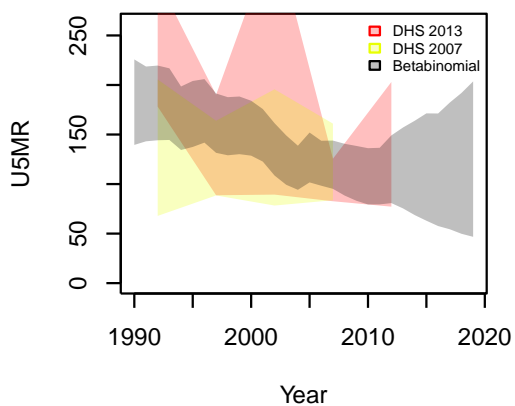
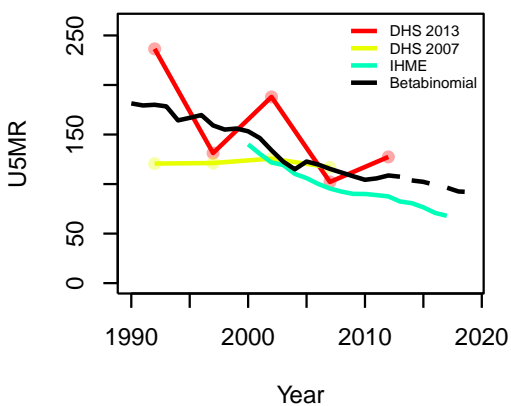
Mambah-Kaba, Margibi



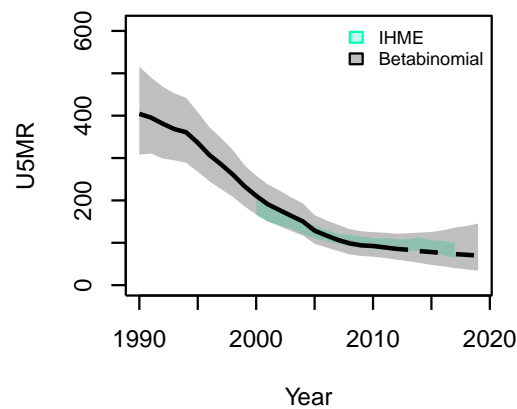
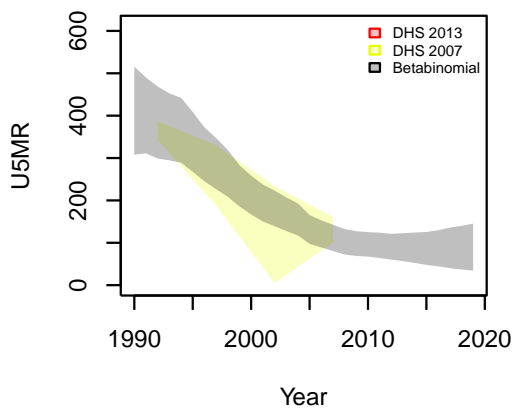
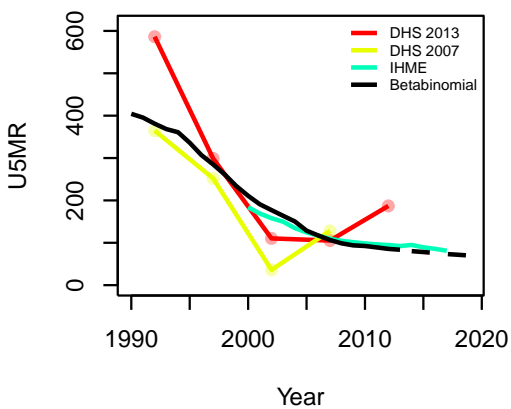
Barrobo, Maryland



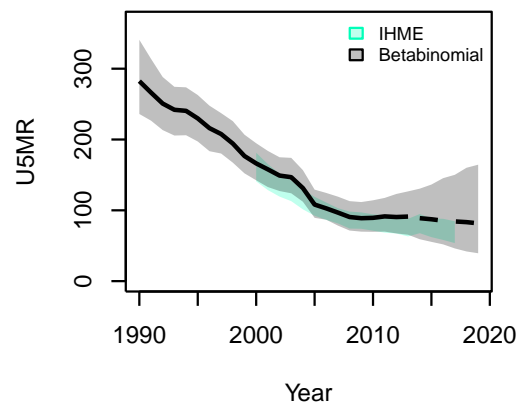
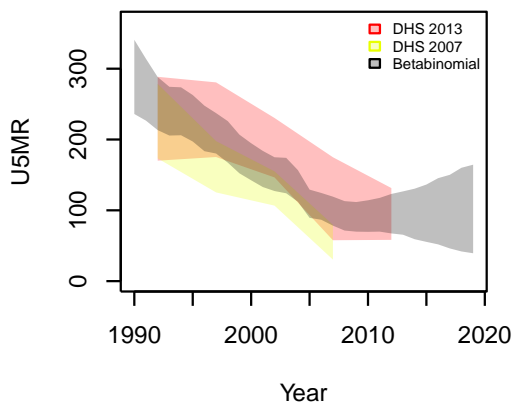
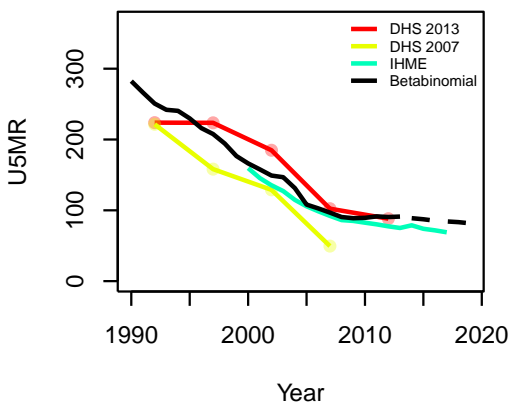
Pleebo/Sodeken, Maryland



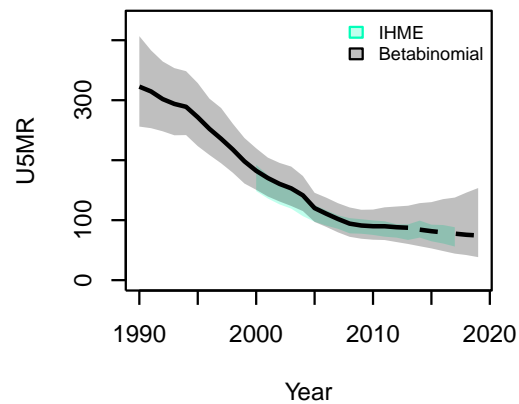
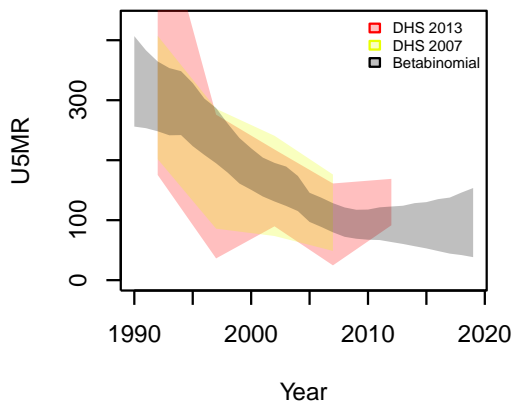
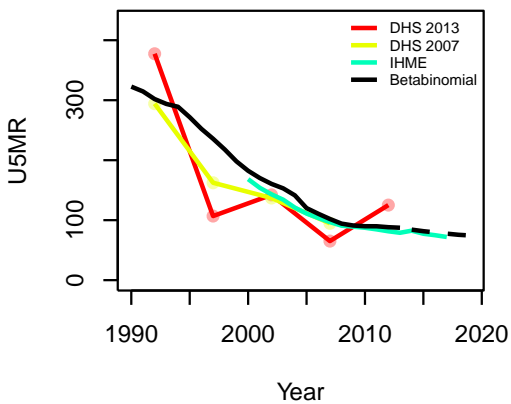
Careysburg, Montserrado



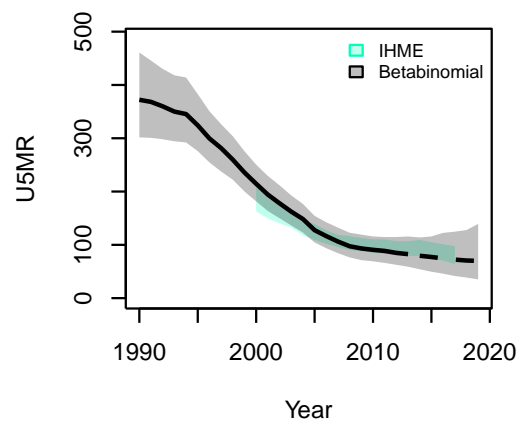
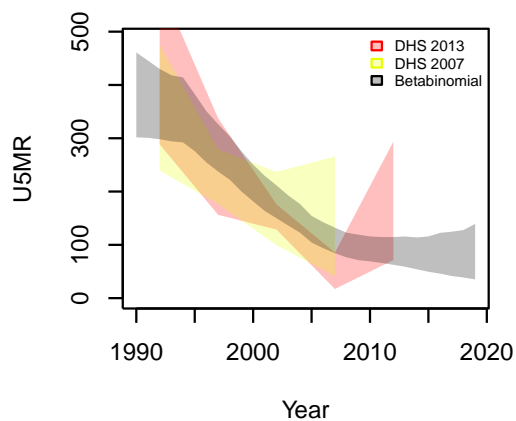
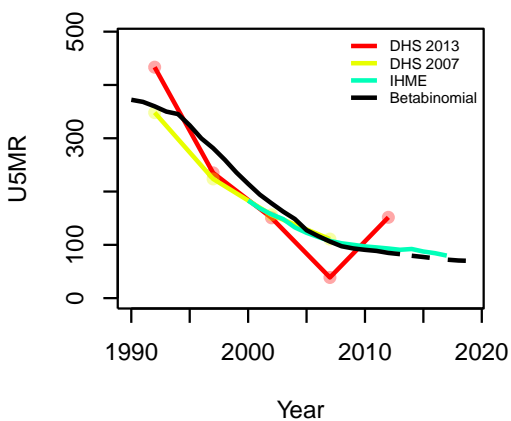
Greater Monrovia, Montserrado



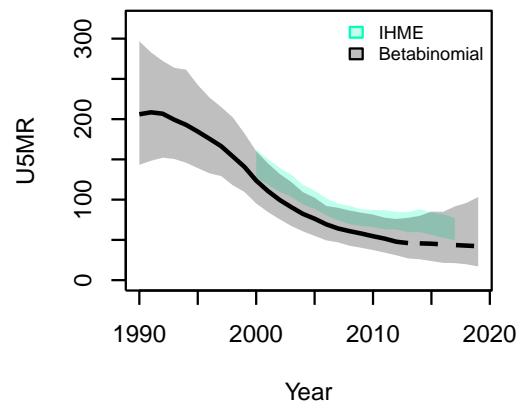
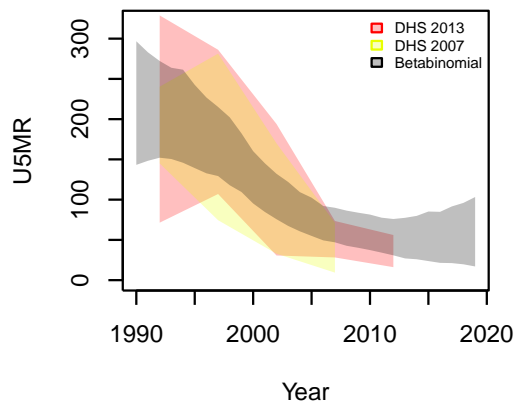
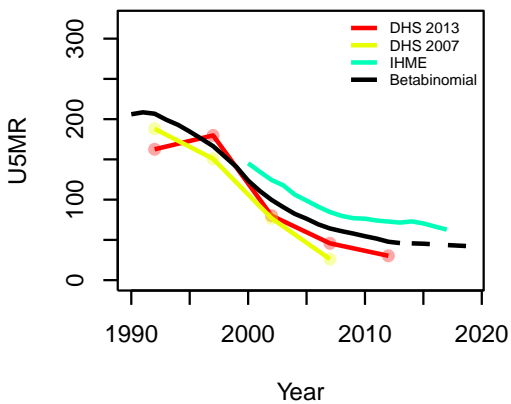
St Paul River, Montserrado



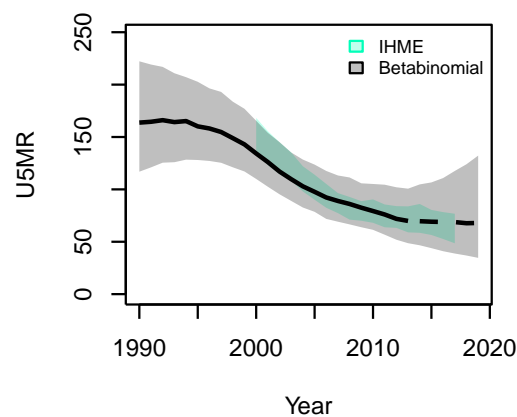
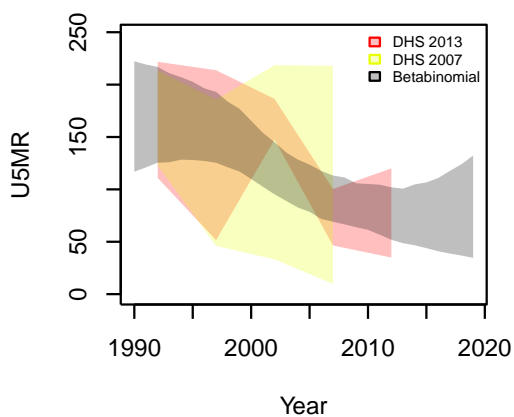
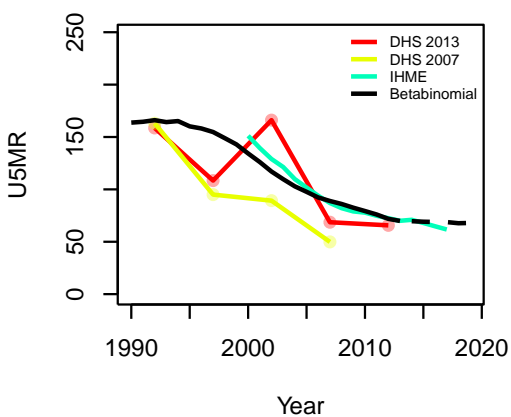
Todee, Montserrat



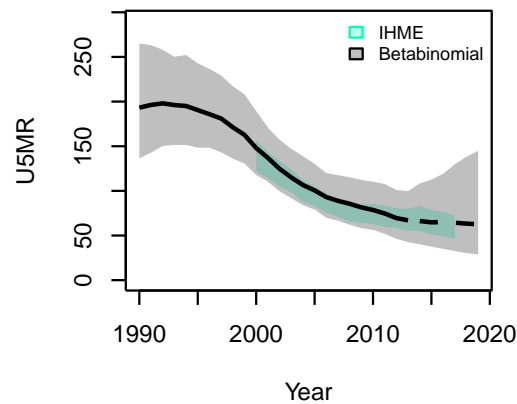
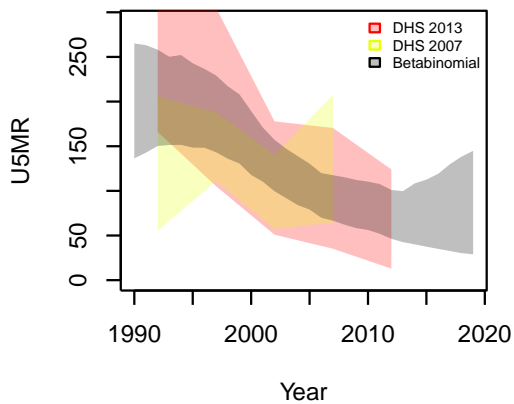
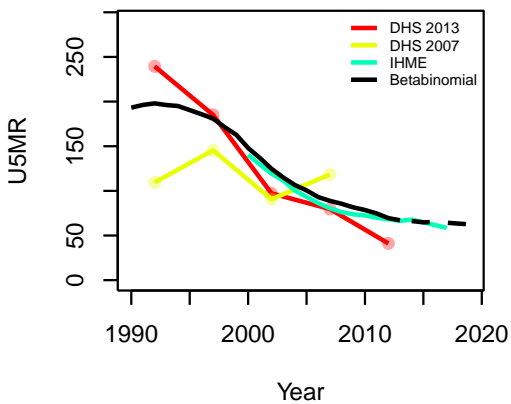
Gbehlageh, Nimba



Saclepea, Nimba

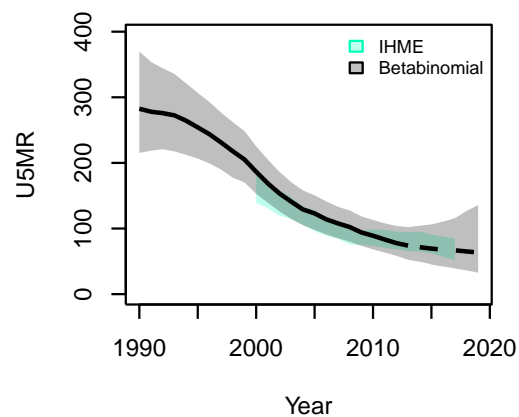
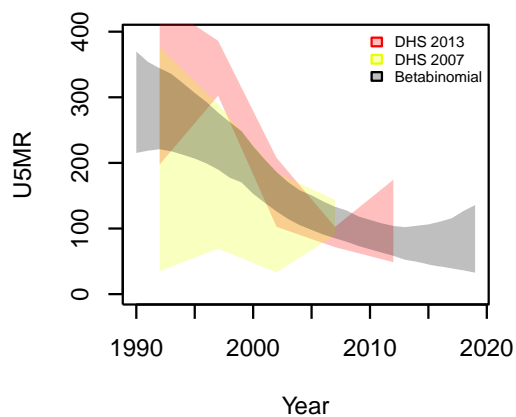
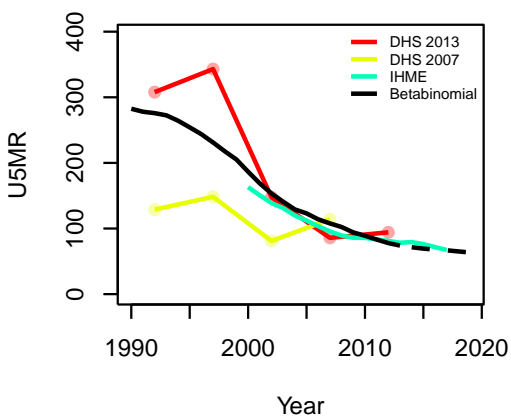


Sanniquelleh-Mahn, Nimba

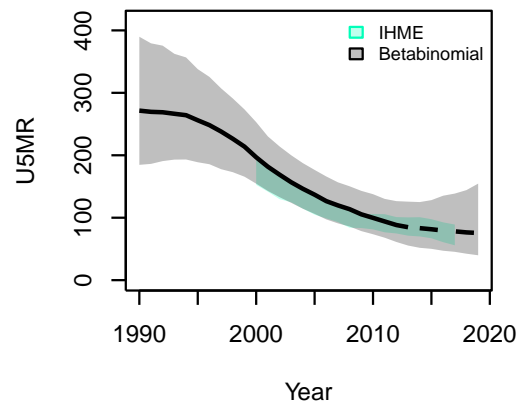
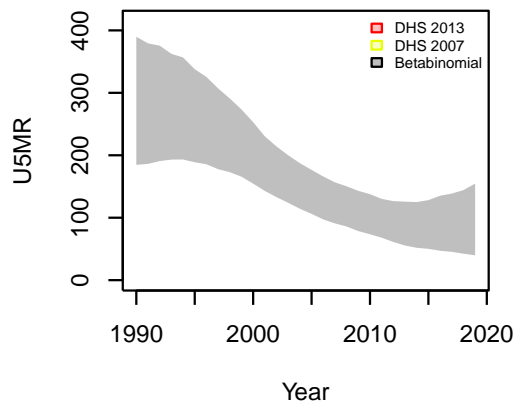
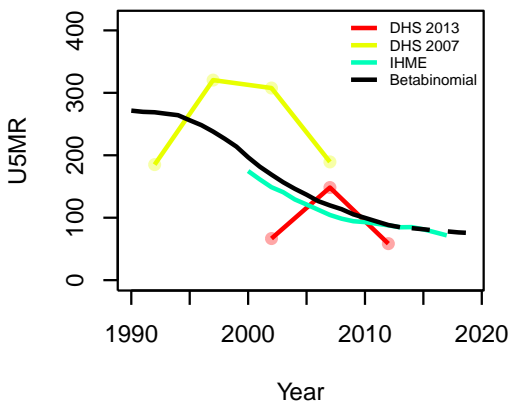




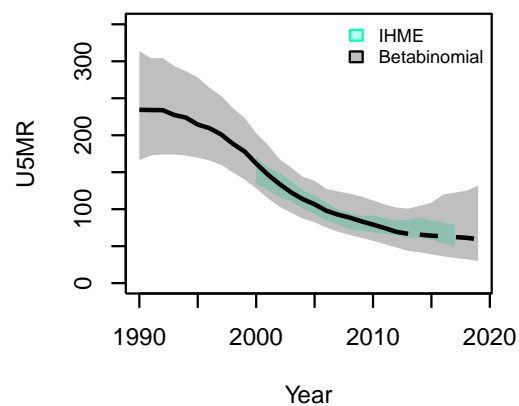
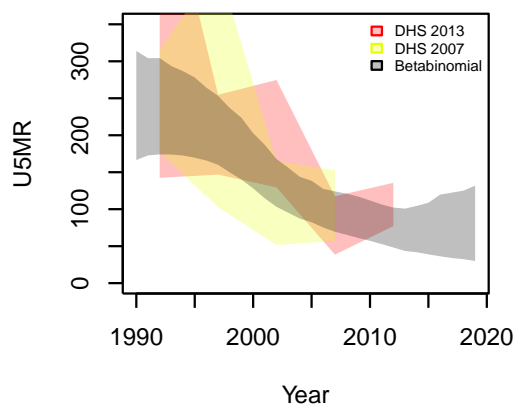
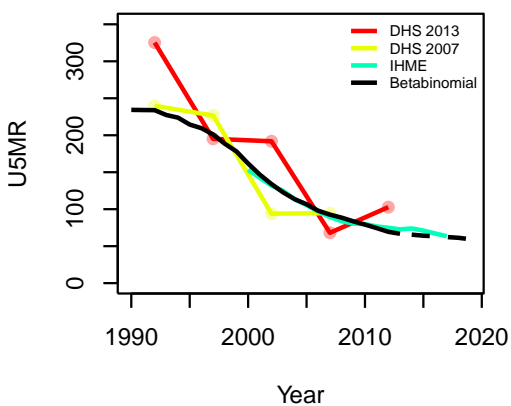
Tappita, Nimba



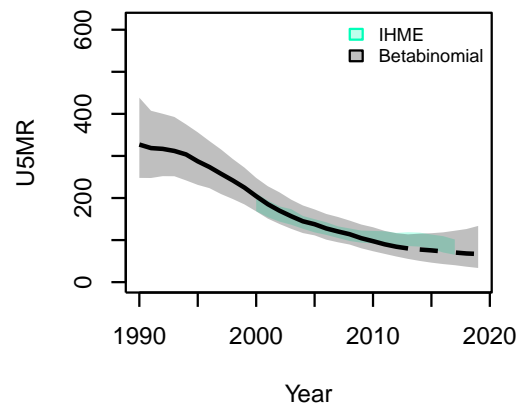
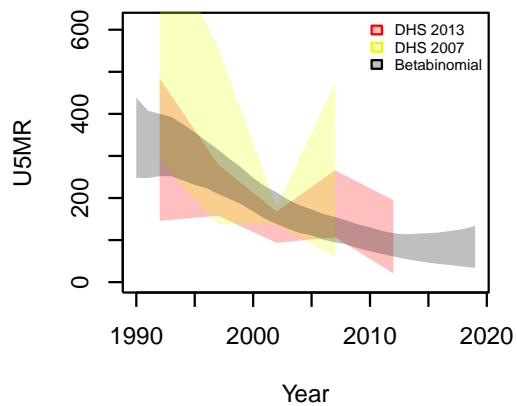
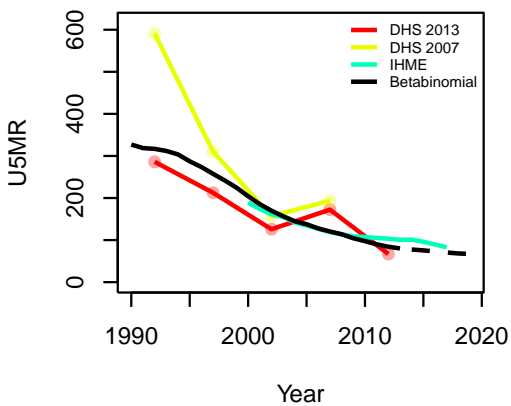
Yarwein-Mehnsohnne, Nimba



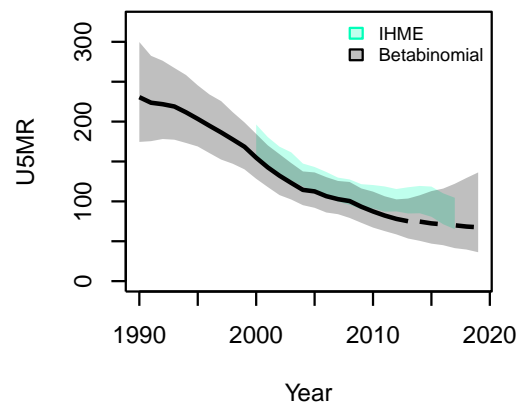
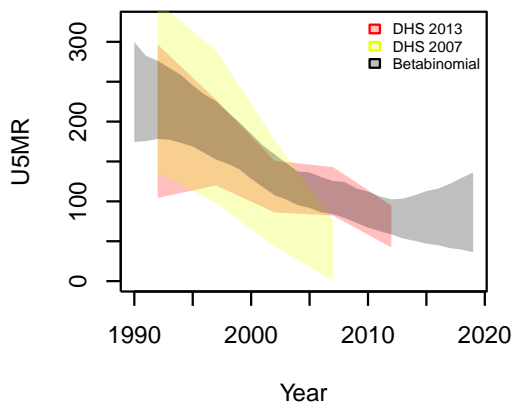
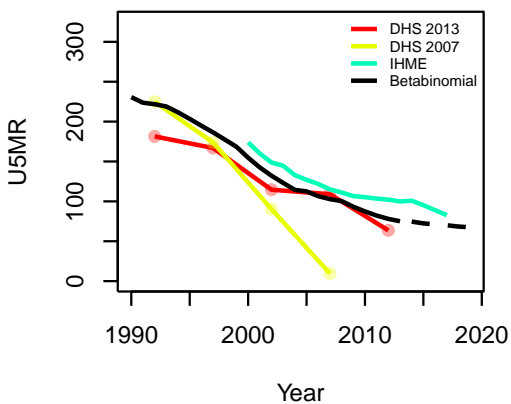
Zoegeh, Nimba



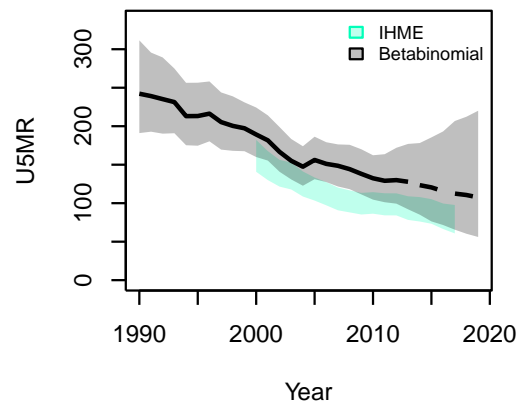
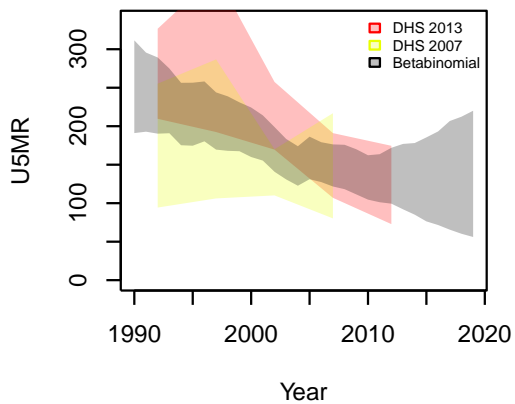
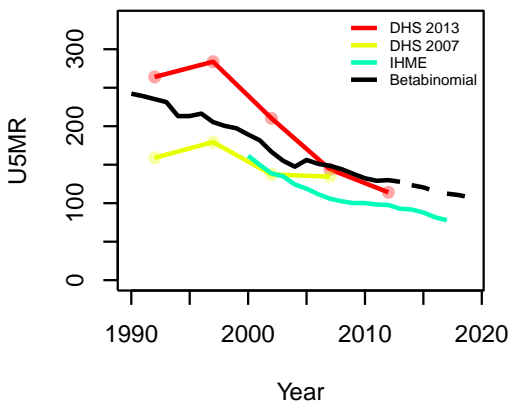
Morweh, River Cess



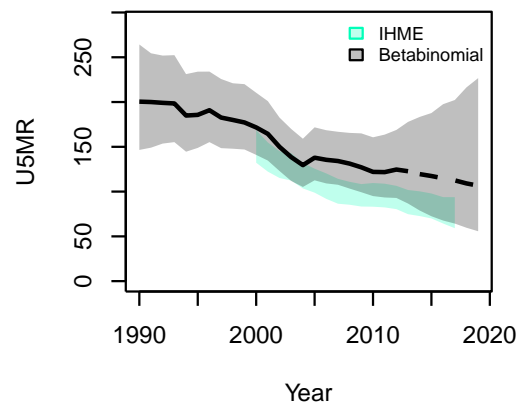
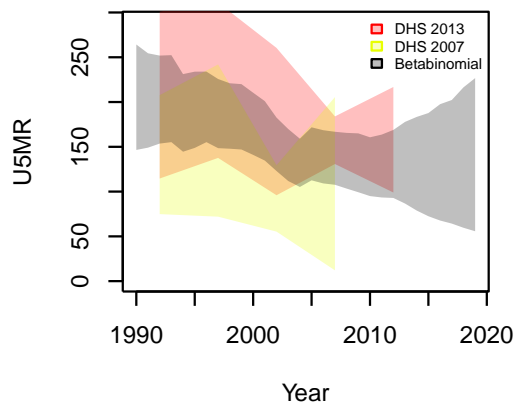
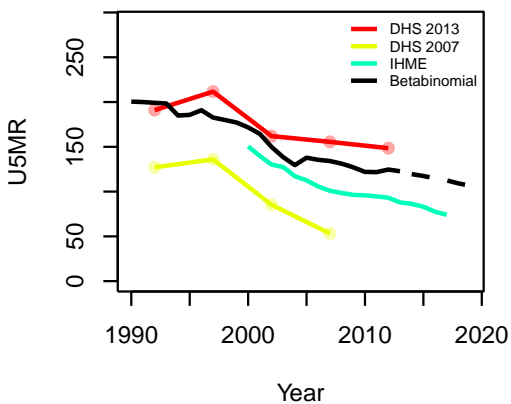
Timbo, River Cess



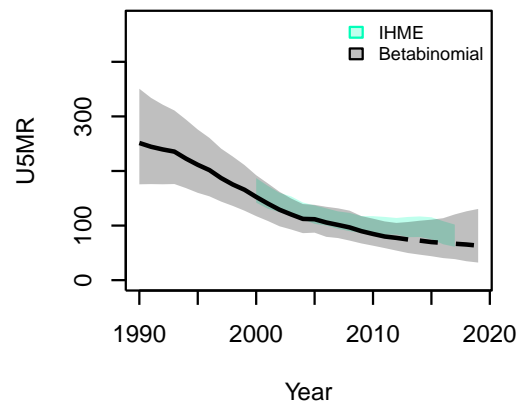
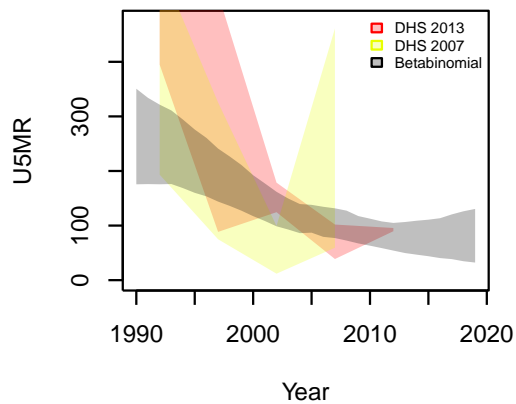
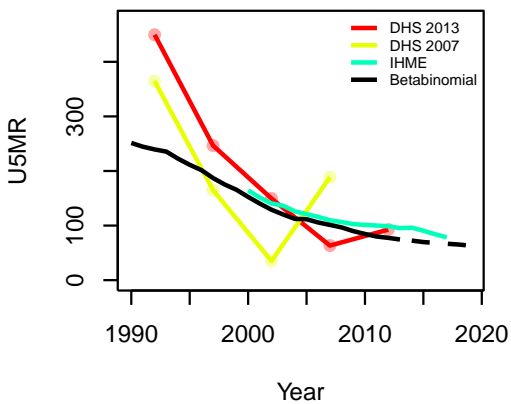
Gbeapo, River Gee



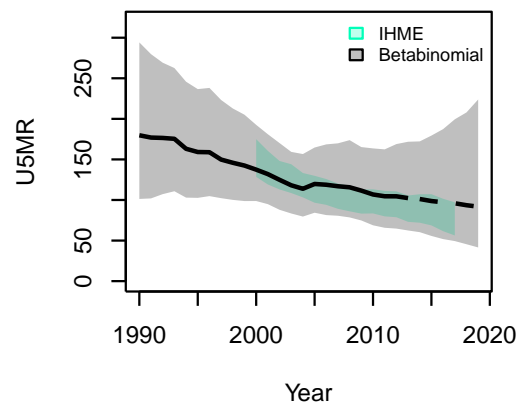
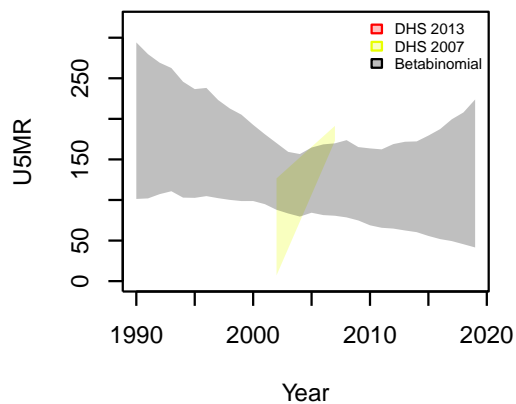
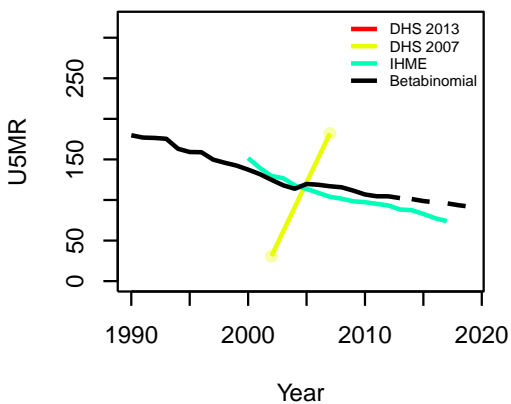
Webbo, River Gee



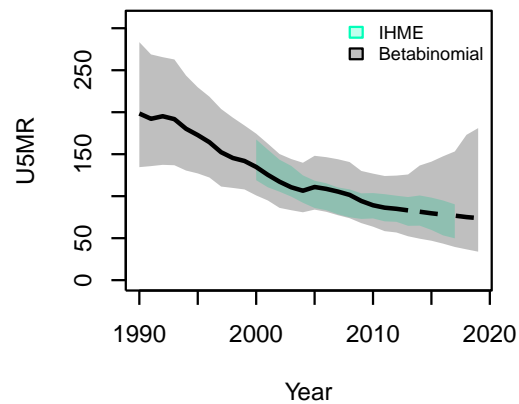
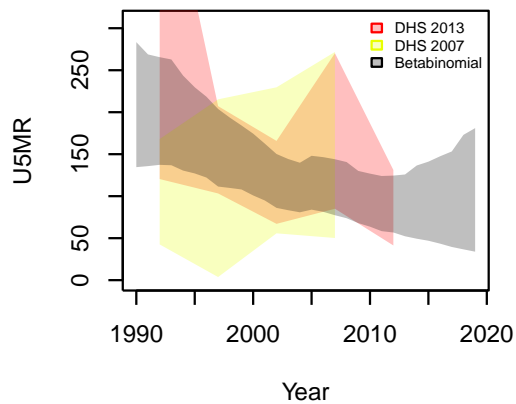
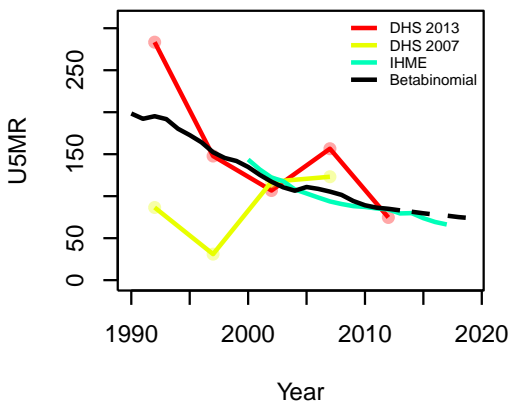
Butaw, Sinoe



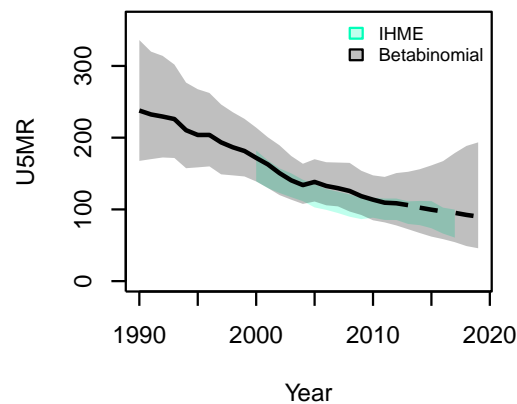
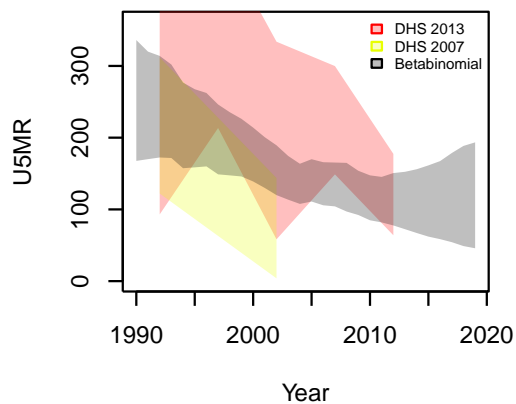
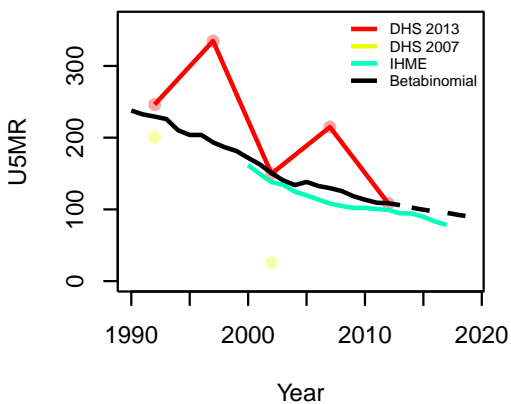
Dugbe River, Sinoe



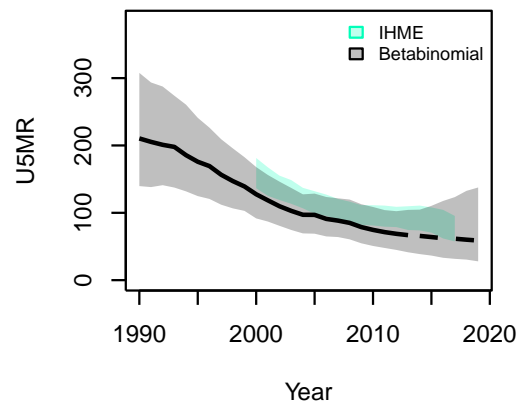
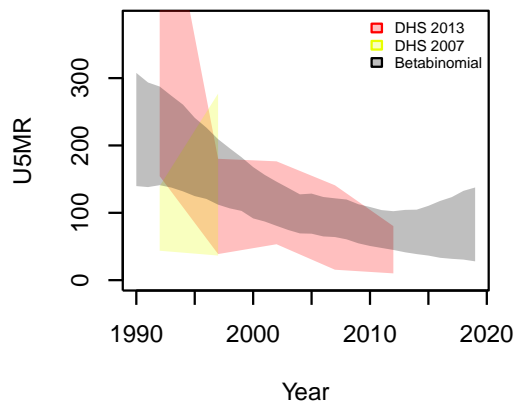
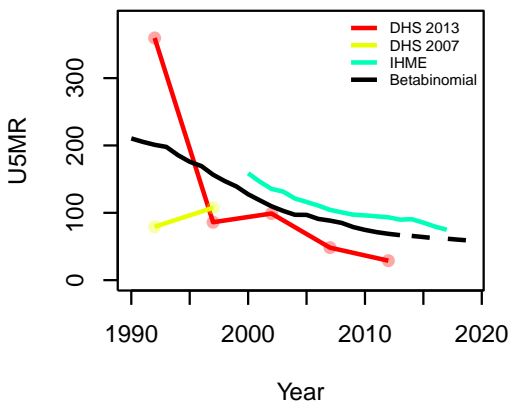
Greenville, Sinoe



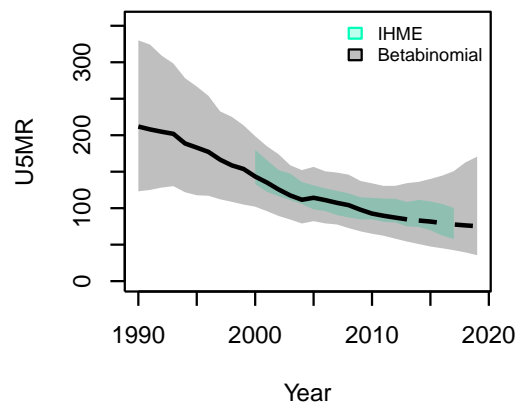
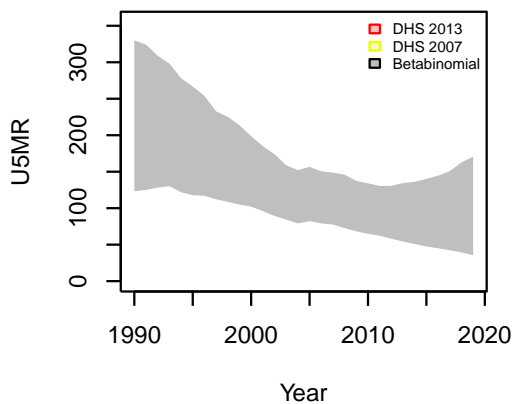
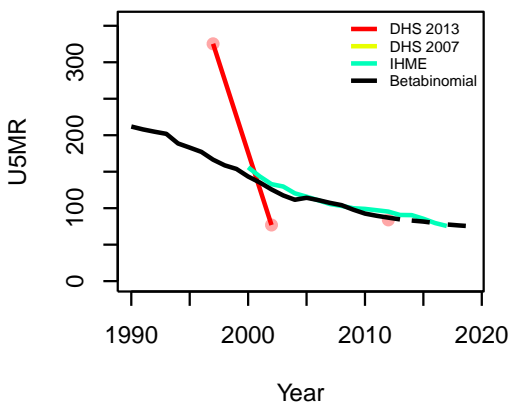
Jaedae Jaedepo, Sinoe



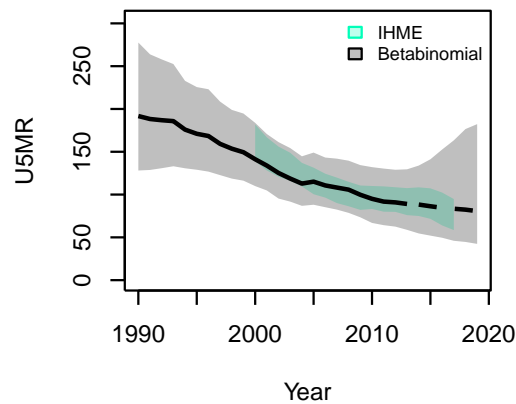
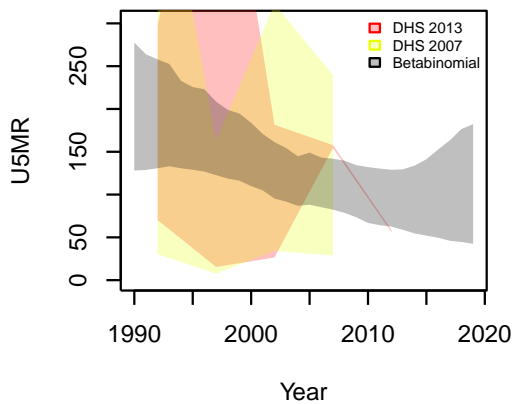
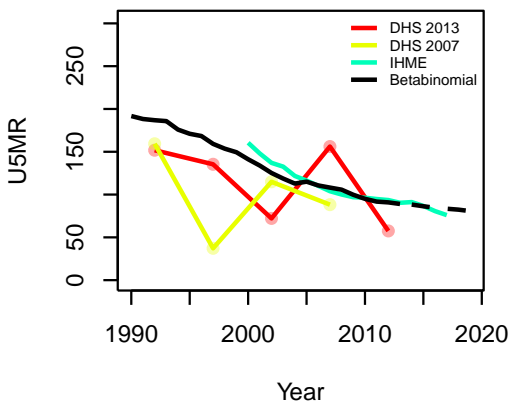
Juarzon, Sinoe



Kpayan, Sinoe



Pyneston, Sinoe



## 4 National Figures and Results

	Median	Interval	Median- Bench	Interval
0	34.30	(31.3,37.6)	39.20	(34.7,44.8)
1-11	4.10	(3.7,4.5)	4.60	(4.1,5.3)
12-23	2.00	(1.8,2.2)	2.30	(2,2.6)
24-35	1.20	(1.1,1.4)	1.40	(1.2,1.6)
36-47	0.80	(0.7,1)	1.00	(0.8,1.2)
48-59	0.50	(0.4,0.6)	0.60	(0.5,0.7)

Table 4: Monthly hazards in terms of 1000 children by age band for national, unstratified model for Liberia.

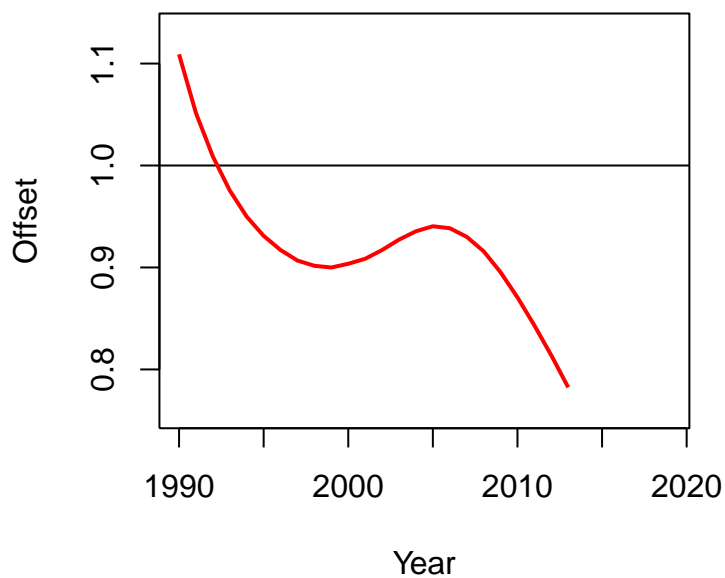


Figure 7: Benchmark offsets:  $BENCH(t) = U5MR^*(t)/U5MR(t)$  where  $U5MR^*(t)$  is modeled estimate and  $U5MR(t)$  is UN-IGME estimate.



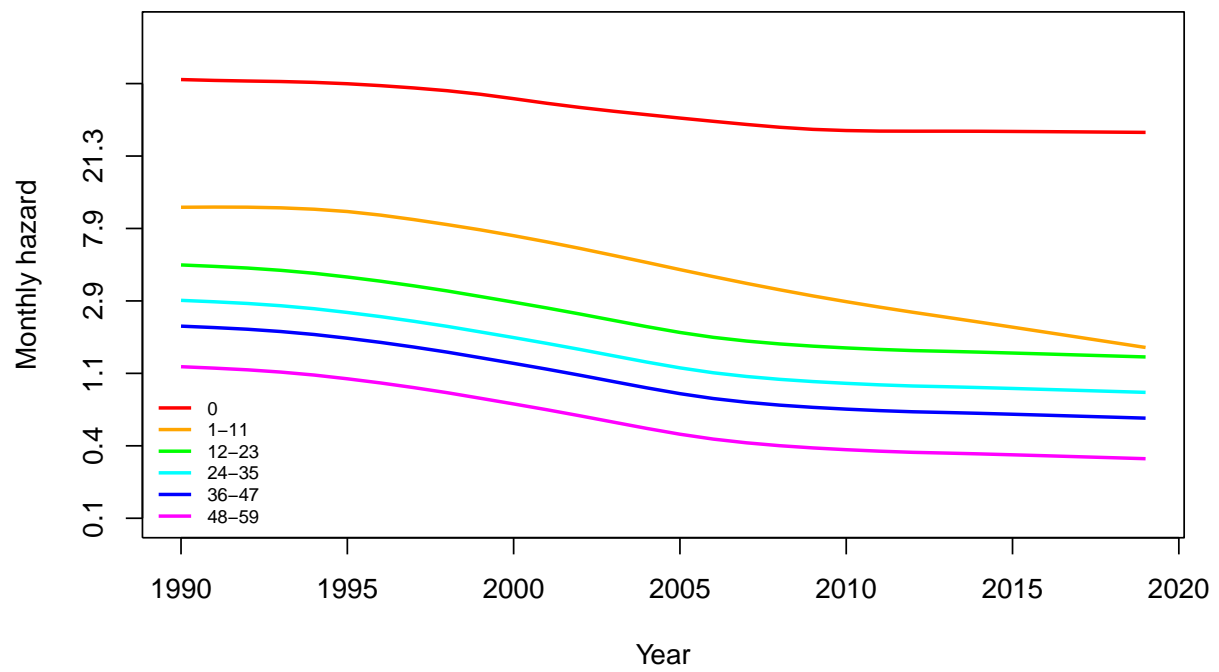


Figure 8: Monthly hazards of death in terms of U5MR (number deaths per 1000 children) by agebands.

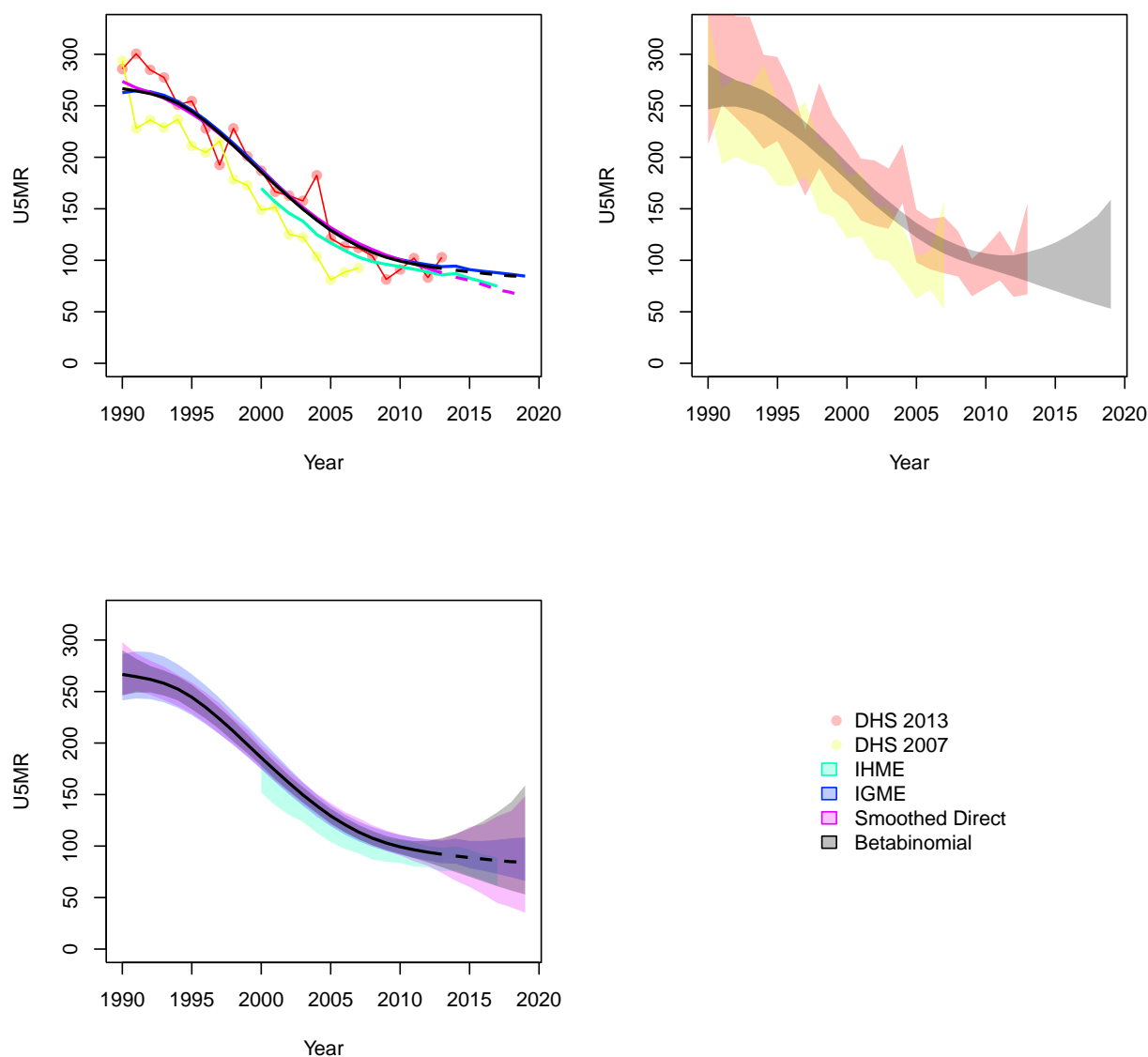
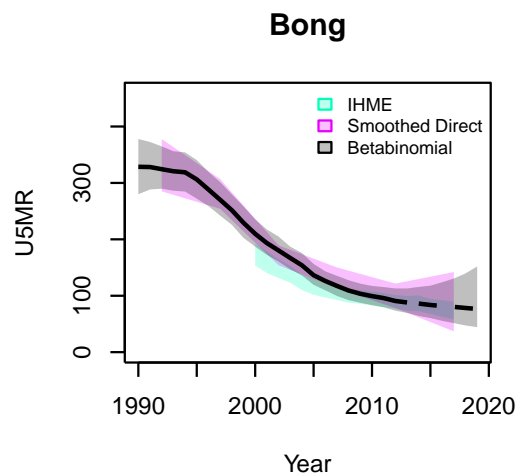
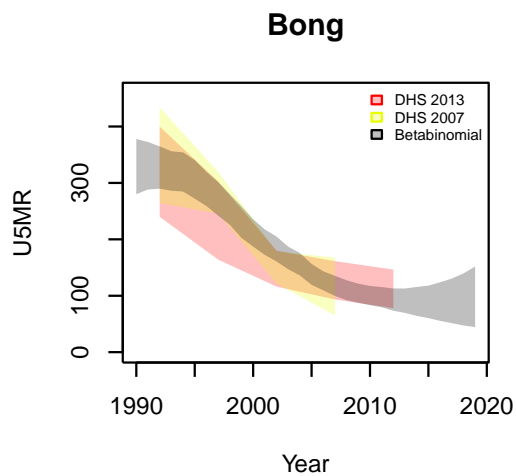
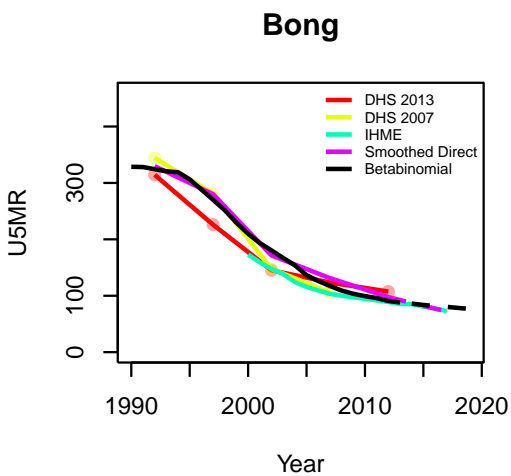
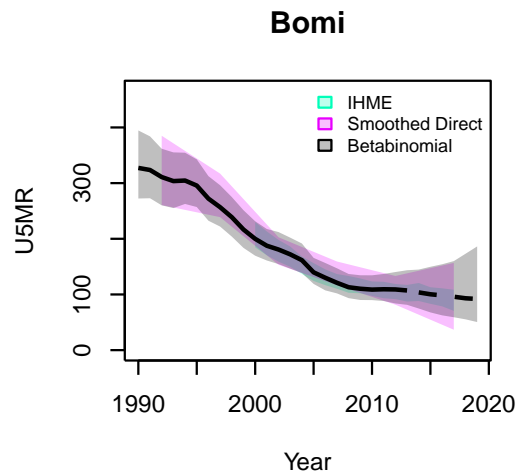
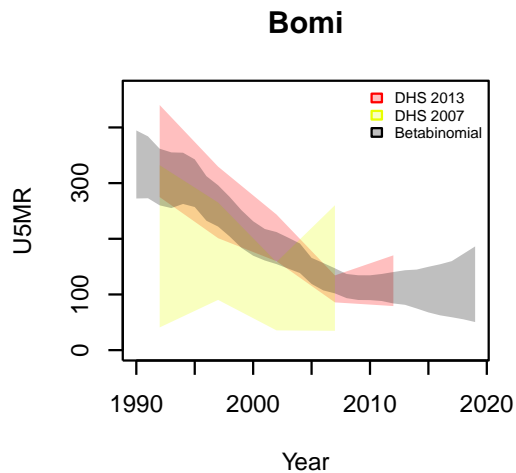
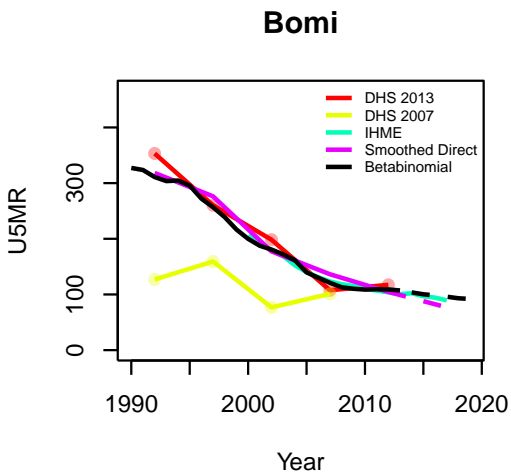
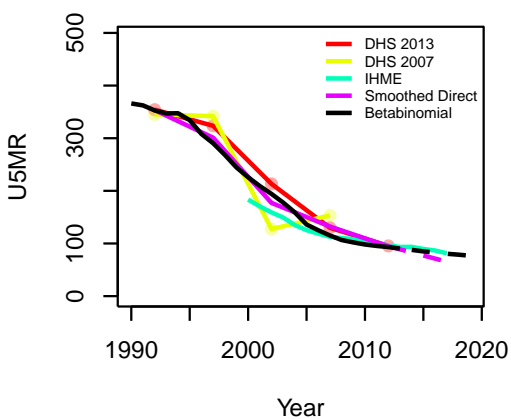


Figure 9: Benchmarked U5MR rates per 1000 live births. Top: DHS direct estimates with national trends from IHME GBD, UN-IGME, Smoothed Direct and Betabinomial estimates. Middle: 95% uncertainty intervals for DHS data. Bottom: IHME GBD, UN-IGME, Smoothed Direct and Betabinomial estimates with for the unstratified model. 95% uncertainty intervals

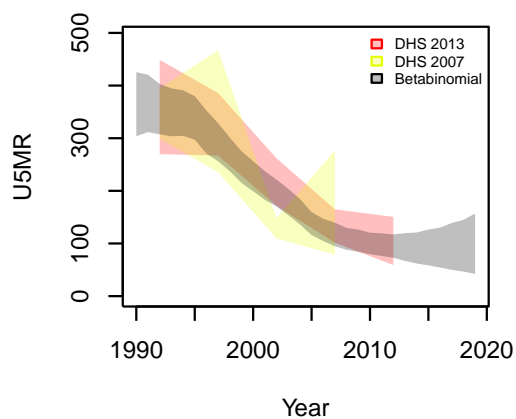
## 5 Admin 1 Figures



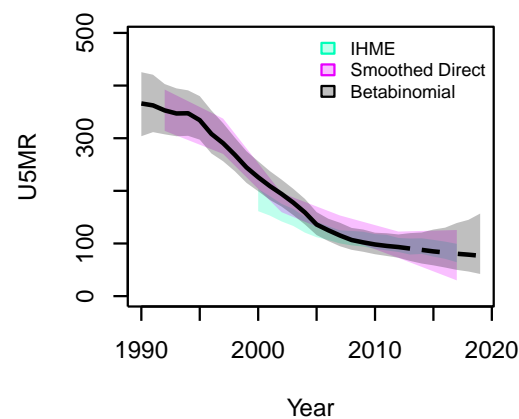
**Gbapolu**



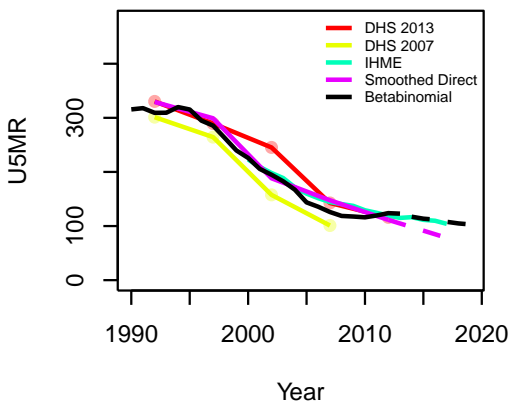
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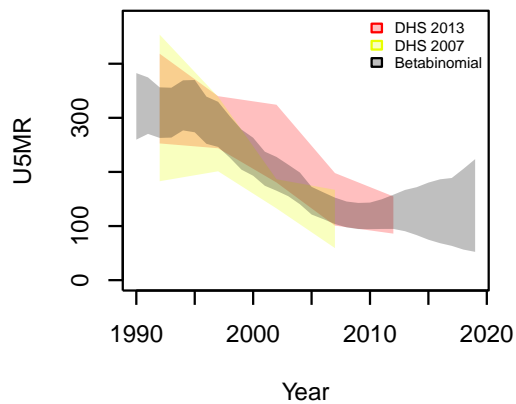
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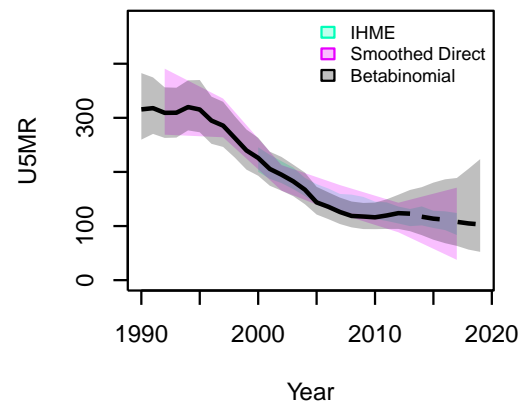
**Grand Cape Mount**



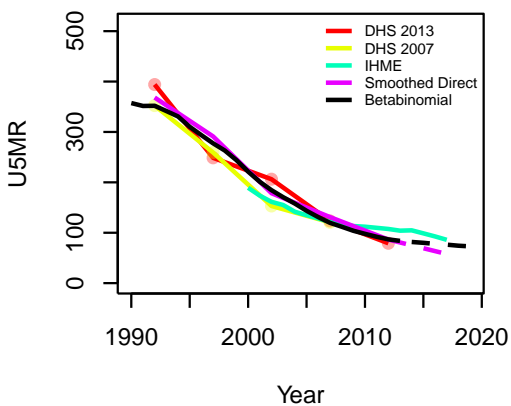
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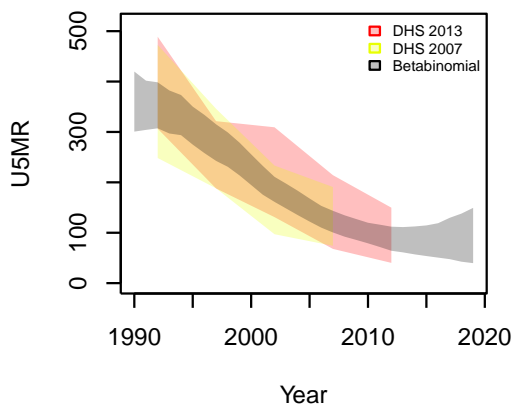
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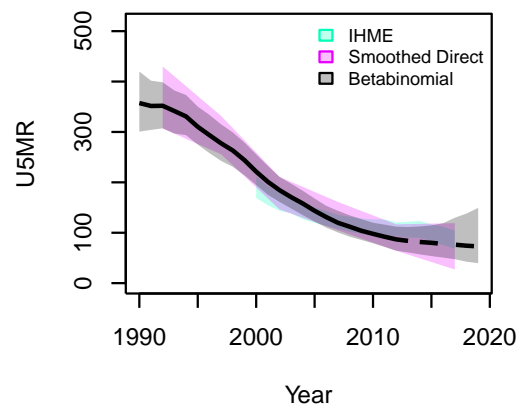
**GrandBassa**



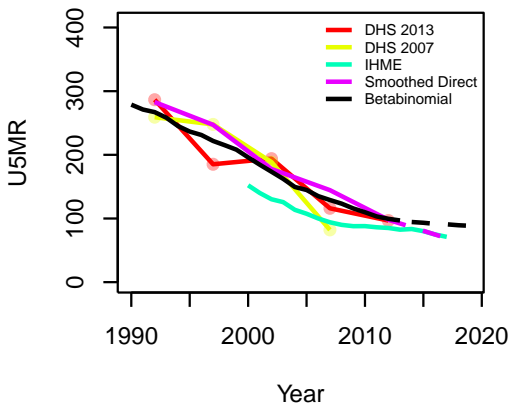
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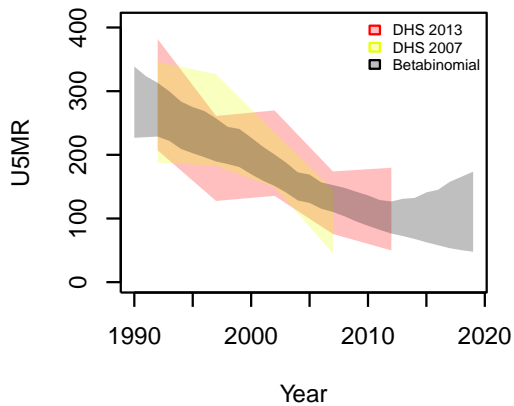
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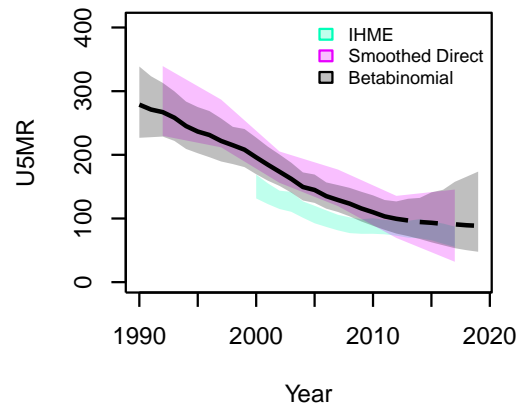
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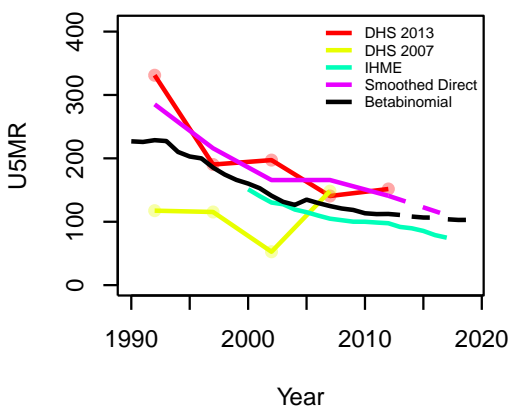
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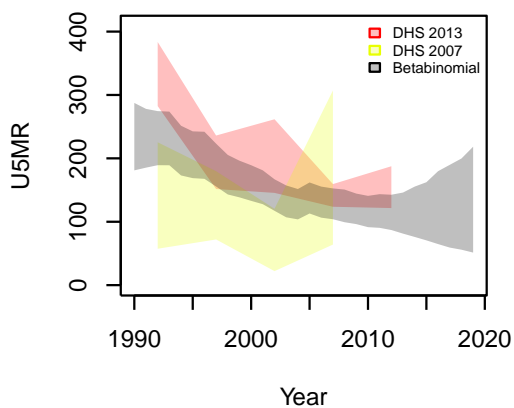
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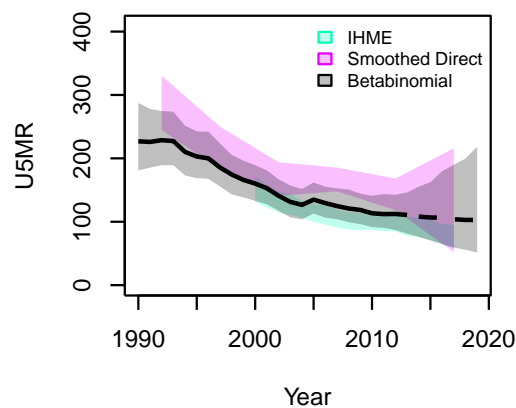
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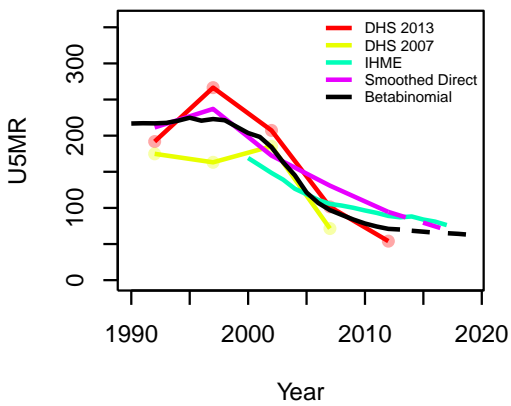
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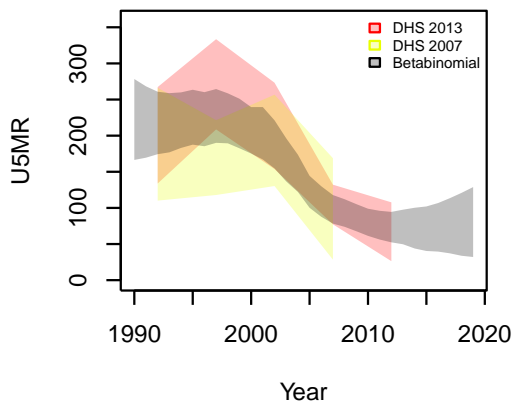
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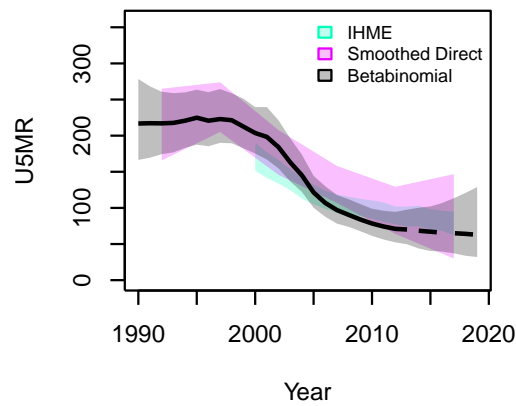
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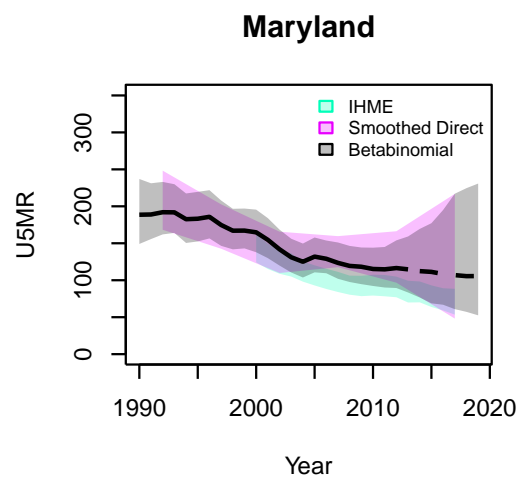
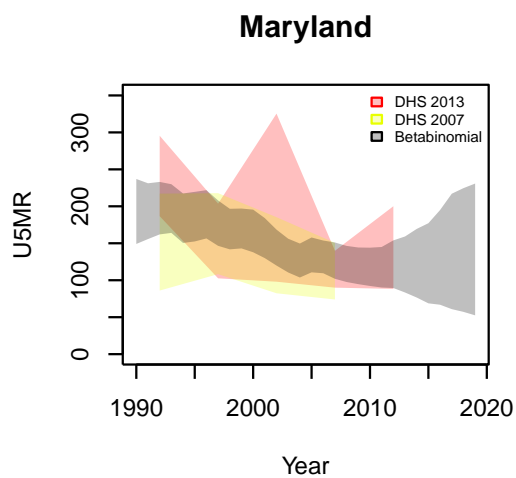
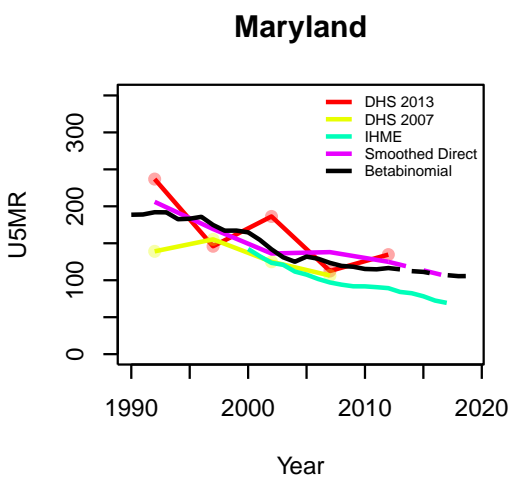
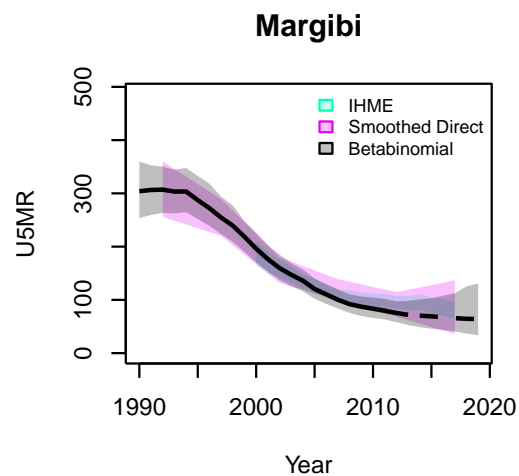
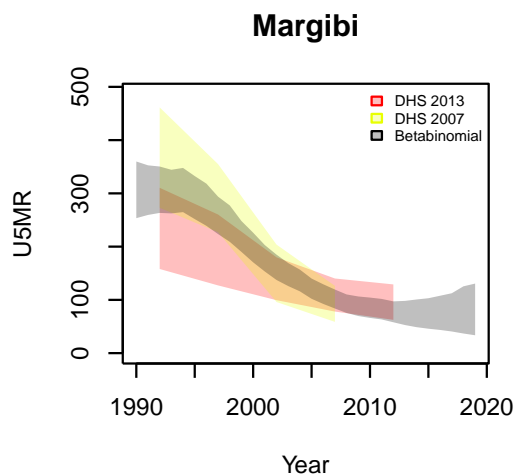
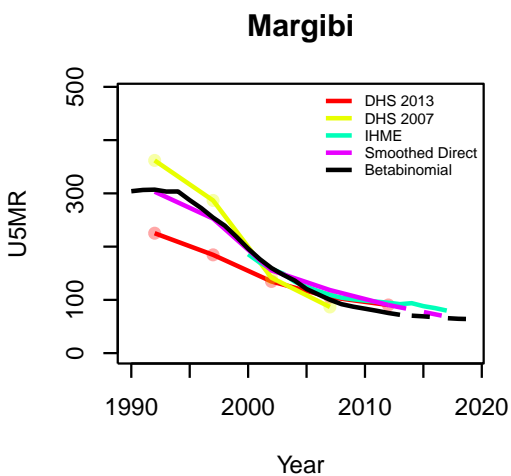


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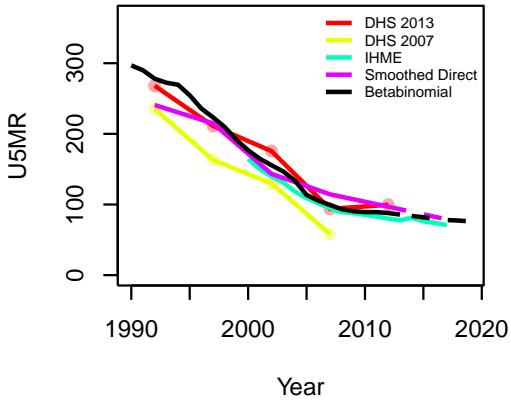
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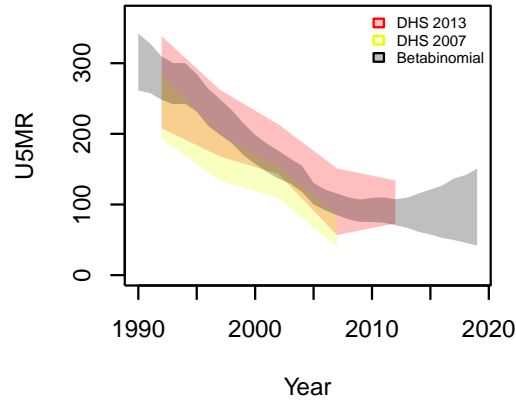




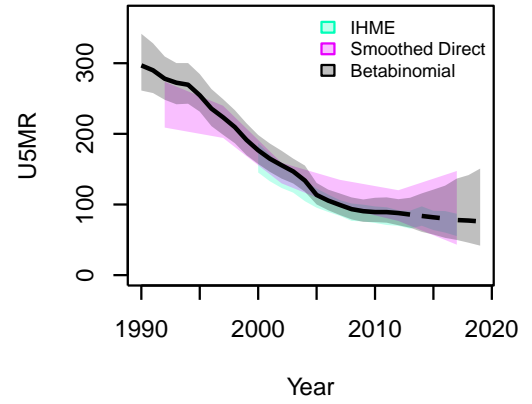
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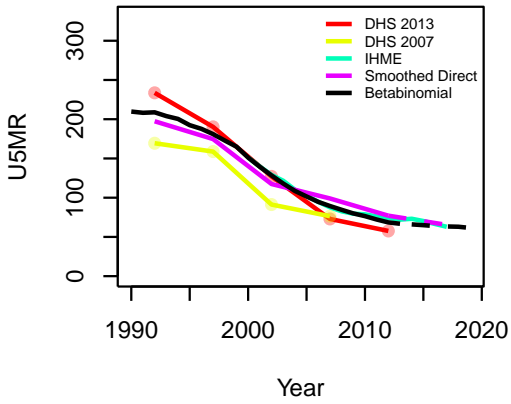
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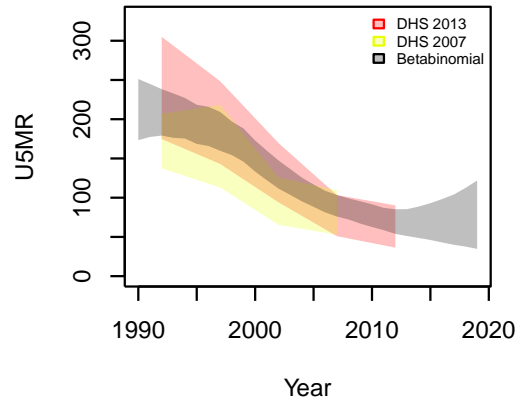
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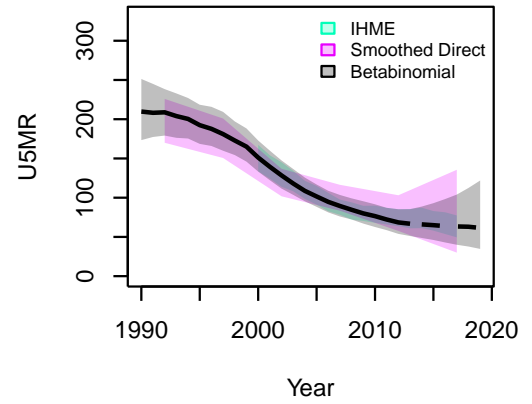
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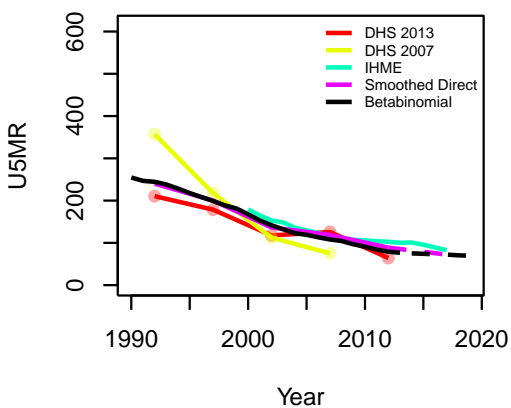
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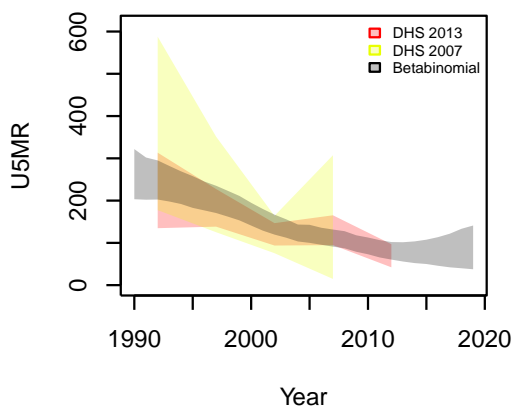
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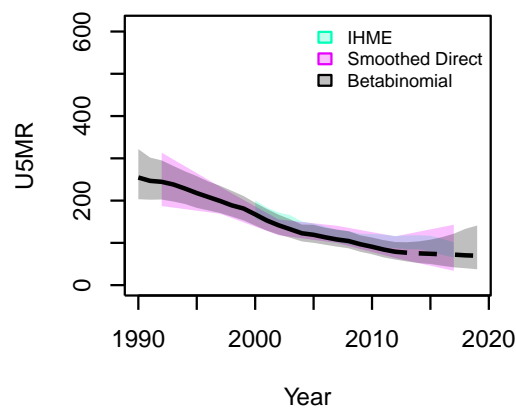
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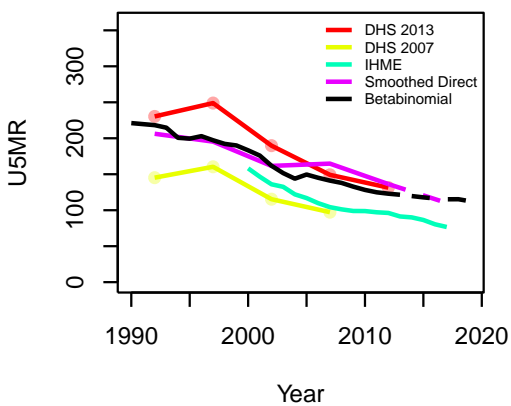
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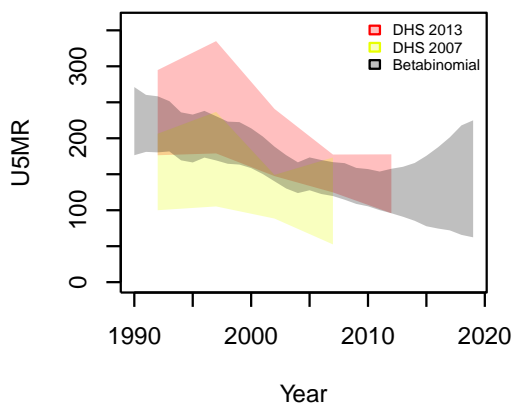
**River Cess**



**River Gee**



**River Gee**



**River Gee**

