Supplementary Material: Estimating and Forecasting the Smoking-Attributable Mortality Fraction Jointly for Both Genders in Over 60 Countries

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1 MCMC Convergence Diagnostics

1.1 Hyperparameter Diagnostics

In this section, we present the MCMC convergence diagnostics of the hyperparameters in Level 4 of the model in terms of traceplots, Raftery diagnostic statistics (Raftery and Lewis, 1992), and Gelman diagnostic statistics (Gelman and Rubin, 1992). Table 1 provides the Gelman and Raftery diagnostic statistics of all hyperparameters. We use 3 chains with 2000 burnin and 8000 samples without thinning for the Gelman diagnostics, and randomly choose one of the chain to perform the Raftery diagnostics. Figure 1 shows the traceplots of all 8000 samples of hyperparameters.

Table 1: Diagnostic statistics for hyperparameters. PSRF and 95% UCI are the point estimator and upper bound of the 95% CI of the Gelman potential scale reduction factor. Burn1, Size1, and DF1 are the length of burn-in, requied sample size, and dependent factor of Raftery diagnostics with parameters $q = 0.025, r = 0.0125, s = 0.95$. Burn2, Size2, and DF2 are the length of burn-in, requied sample size, and dependent factor of Raftery diagnostics with parameters $q = 0.975, r = 0.0125, s = 0.95$.

Parameters	Gelman Diag		Raftery Diag					
	PSRF	95% UCI	Burn1	Size1	DF1	Burn2	Size2	DF2
a_1^m	1	1.00	6	1318	2.20	6	1164	1.94
a_2^m	1	1.00	3	710	1.18	6	1504	2.51
a_3^m	1	1.00	6	1584	2.64	6	1424	2.37
a_4	1	1.01	8	1750	2.92	9	2028	3.38
k^m	1	1.01	10	1952	3.25	6	1236	2.06
$\sigma^2_{a_2^m}$	1	1.00	2	640	1.07	6	1730	2.88
$\sigma^2_{a_4}$	1	1.00	21	4410	7.35	12	2132	3.55
$\sigma^2_{k^m}$	1	1.00	6	1334	2.22	8	1448	2.41
a_1^f	1	1.00	2	640	1.07	6	1318	2.20
$\triangle_{a_2}$	1	1.00	4	756	1.26	6	688	1.15
a_3^f	1	1.00	8	1504	2.51	12	1852	3.09
k^f	1	1.00	5	895	1.49	2	640	1.07
$\sigma^2_{\triangle_{a_2}}$	1	1.00	3	696	1.16	4	839	1.40
$\sigma^2_{k^f}$	1	1.00	2	640	1.07	6	1376	2.29
ν	1	1.00	8	1518	2.53	8	1934	3.22
ρ^2	1	1.00	6	1270	2.21	6	1392	2.32
σ^2_h	1	1.00	10	1872	3.12	12	2337	3.90

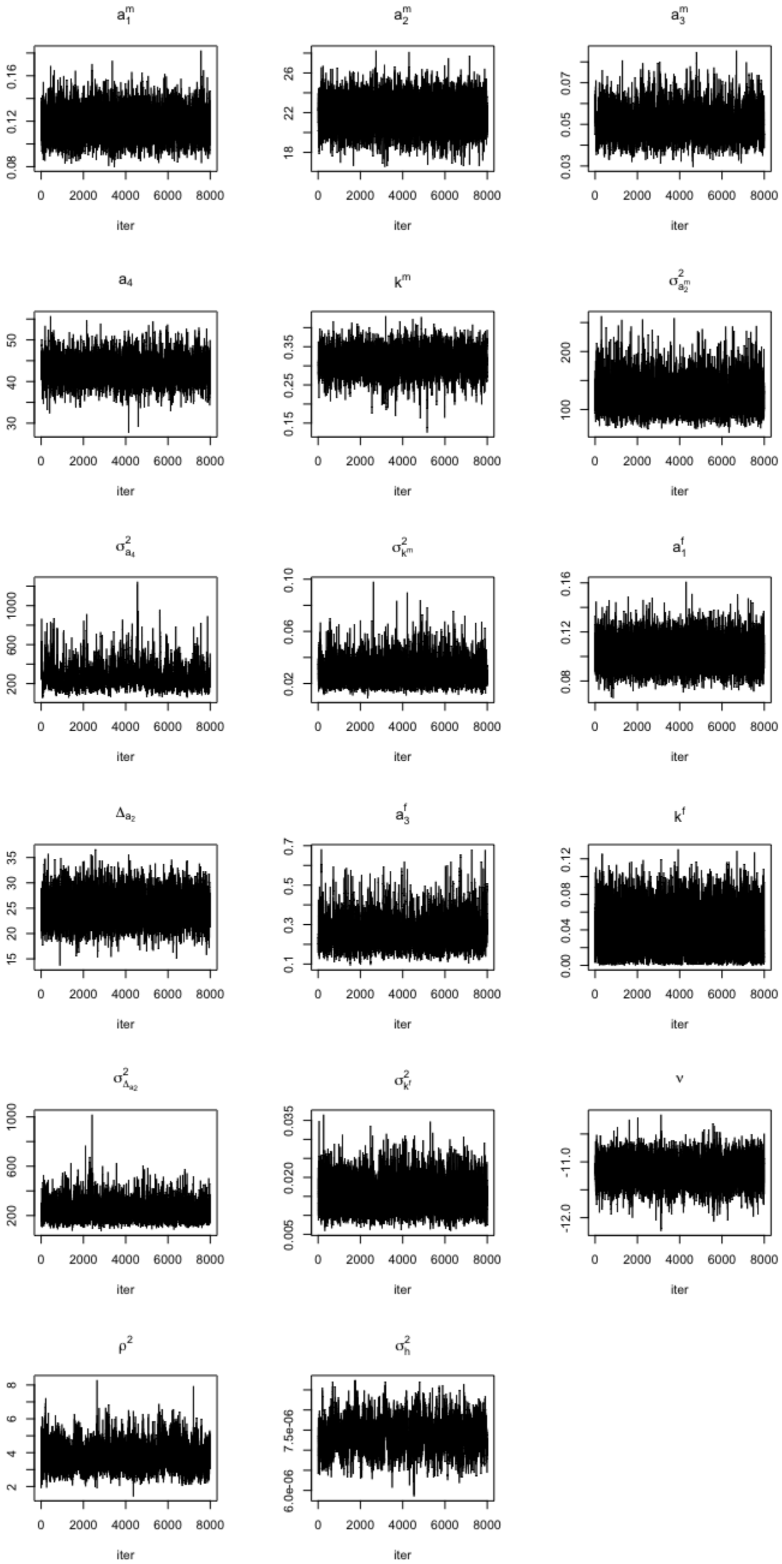


Figure 1: Traceplots for the hyperparameters.

1.2 Country-specfic Parameter Diagnostics

In this section, we present the MCMC convergence diagnostics of country-specific parameters of the model in terms of traceplots, Raftery diagnostic statistics, and Gelman diagnostic statistics. Table 2 provides the Gelman and Raftery diagnostic statistics of country-specific parameters of the United States for male and female. The chains are the same as in the previous section. Figure 2 shows the traceplots of all 8000 samples of country-specific paremeters for male and female of the United States.

Table 2: Diagnostic statistics for country-specific parameters for the United States. PSRF and 95% UCI are the point estimator and upper bound of the 95% CI of the Gelman potential scale reduction factor. Burn1, Size1, and DF1 are the length of burn-in, requied sample size, and dependent factor of Raftery diagnostics with parameters $q = 0.025, r = 0.0125, s = 0.95$. Burn2, Size2, and DF2 are the length of burn-in, requied sample size, and dependent factor of Raftery diagnostics with parameters $q = 0.975, r = 0.0125, s = 0.95$.

Parameters	Gelman Diag		Raftery Diag					
	PSRF	95% UCI	Burn1	Size1	DF1	Burn2	Size2	DF2
a_1^m	1	1.00	4	830	1.38	2	640	1.07
a_2^m	1	1.00	6	1326	2.21	4	756	1.26
a_3^m	1	1.00	4	822	1.37	2	633	1.06
a_4^m	1	1.00	2	614	1.02	4	772	1.29
k^m	1	1.00	6	1106	1.10	2	621	1.03
a_1^f	1	1.00	3	661	1.10	2	614	1.02
a_2^f	1	1.00	2	627	1.04	2	614	1.02
a_3^f	1	1.00	2	627	1.04	6	1314	2.19
a_4^f	1	1.00	3	661	1.10	4	848	1.41
k^f	1	1.00	3	668	1.11	6	1444	2.41
σ_c^2	1.01	1.03	96	15198	25.30	24	3834	6.39

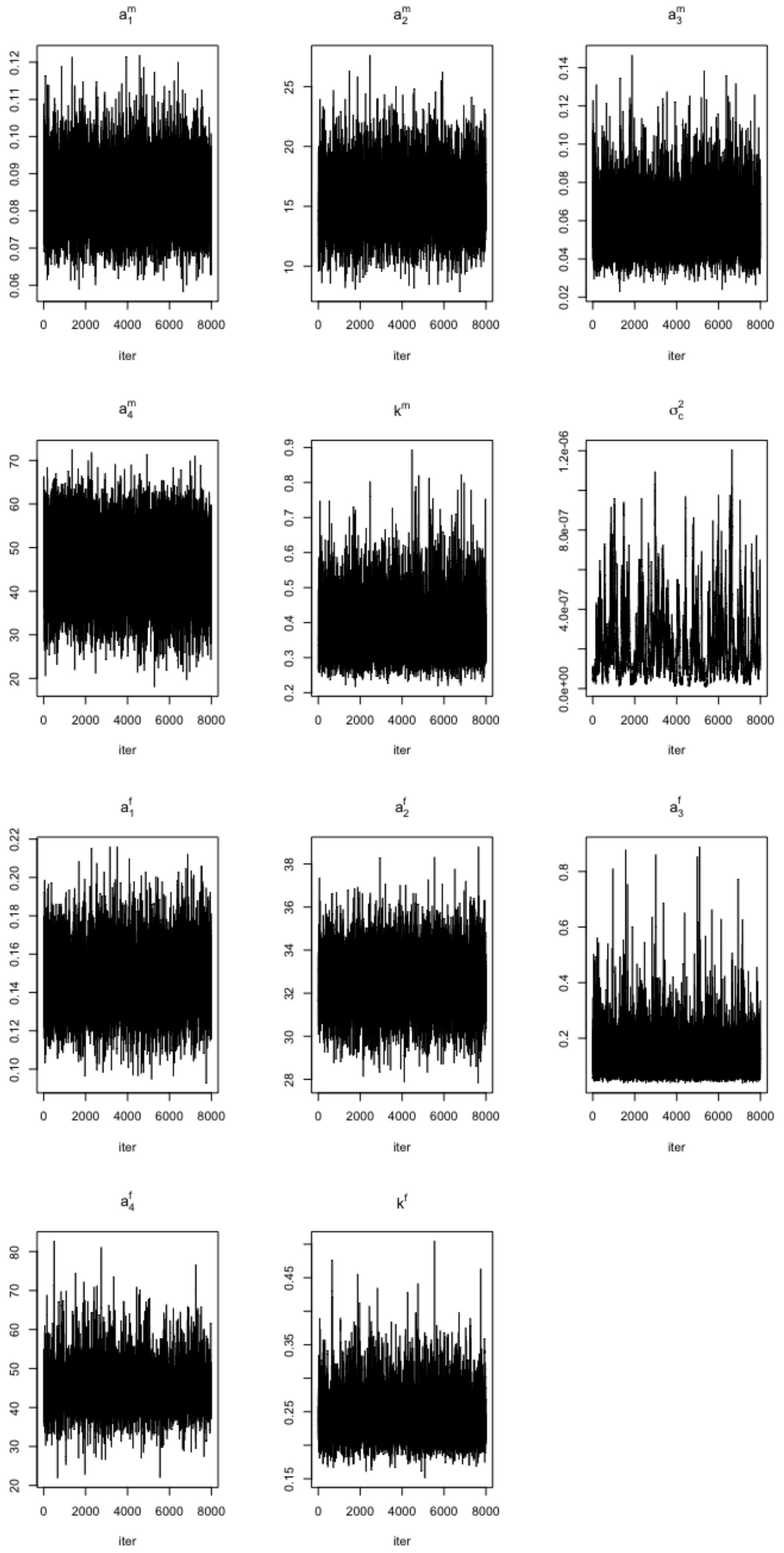


Figure 2: Traceplots for the country-specific parameters of the United States.

2 Hyperparameter Sensitivity Analysis

In this section, we present the sensitivity analysis for the hyperparameters set in $\pi(\cdot)$ on the posterior distributions of the global parameters ψ in Level 4 of our model. We use `rstansensitivity` package (Giordano, 2019) in R to perform the sensitivity analysis. The local sensitivity of the posterior mean of parameter θ under hyperparameters ζ (i.e., $\mathbb{E}(\theta|x,\zeta)$) to ζ at ζ_0 is defined as

$$S_{\zeta_0} := \frac{d\mathbb{E}(\theta|x,\zeta)}{d\zeta}\bigg|_{\zeta_0},$$

where x is the observed data (cf. Basu et al. (1996), Gustafson (1996), and Giordano et al. (2018) for more discussions on local sensitivity in Bayesian analysis). By scaling the local sensitivity to be comparable with the possible range of the posterior distribution of θ, the normalized local sensitivity is defined as

$$\tilde{S}_{\zeta_0} := \left|\frac{S_{\zeta_0}}{\mathrm{sd}(\theta|x,\zeta_0)}\right|.$$

As commented in Giordano et al. (2018), if the quantity $\tilde{S}_{\zeta_0}$ is less than 1 or if $\tilde{S}_{\zeta_0}$ is greater than 1 but the final results barely change when modifying the hyperparameters, then the model is robust. First of all, Table 3 investigates the normalized local sensitivity of the hyperparameters set in $\pi(\cdot)$ on posterior distributions of the global parameters ψ. For most hyperparameters, the normalized local sensitivity are much smaller than 1. For those whose normalized local sensitivity are greater than 1, we conduct out-of-sample validations for three five-year period prediction with the hyperparameters changed to evaluate the actual changes on the validation results. Table 4, 5, 6, and 7 show the out-of-sample validtion results after modifying $\beta_{\sigma^2_{k_m}}$ (0.255^2 to 1), $\beta_{\sigma^2_{k_f}}$ (0.255^2 to 1), $\beta_{\sigma^2_h}$ (0.01^2 to 0.02^2), and α_{a_4} (38.362 to 20), respectively. All four cases show that the validation results barely change, and we conclude that model is robust under the current choices of hyperparameters.

Table 3: Normalized local sensitivity of hyperparameters on the global parameters. The bold numbers are local sensitivity $\tilde{S}_{\zeta_0}$ with absolute value greater than 1.

	a_1^m	a_2^m	a_3^m	a_4	k_m	$\sigma^2_{a_2^m}$	$\sigma^2_{a_4}$	σ^2_{km}	a_1^f	$\triangle_{a_2}$	a_3^f	k_f	$\sigma^2_{\triangle a_2}$	$\sigma^2_{k_f}$	ν	ρ^2	σ^2_h
$\alpha_{a_1^m}$	0.014	0.001	0.001	0.046	-0.006	-0.031	0.198	0.000	-0.000	-0.018	0.000	-0.001	-0.096	-0.000	0.003	0.002	-0.000
$\beta_{a_1^m}$	-0.002	-0.000	-0.000	-0.006	0.001	0.003	-0.023	-0.000	0.000	0.002	-0.000	0.000	0.011	0.000	-0.000	-0.000	0.000
$\alpha_{a_2^m}$	0.000	0.012	0.000	-0.001	-0.000	0.005	0.003	0.000	0.000	-0.003	-0.000	0.000	-0.002	0.000	0.000	-0.000	-0.000
$\beta_{a_2^m}$	-0.000	-0.004	-0.000	0.000	-0.000	-0.000	-0.002	0.000	-0.000	0.001	0.000	-0.000	0.002	-0.000	-0.000	0.000	0.000
$\alpha_{a_3^m}$	0.002	0.019	0.011	0.059	-0.009	0.002	0.295	0.001	-0.000	-0.034	0.002	-0.001	-0.094	-0.000	-0.001	-0.001	0.000
$\beta_{a_3^m}$	-0.000	-0.001	-0.001	-0.003	0.000	-0.000	-0.015	-0.000	0.000	0.002	-0.000	0.000	0.005	0.000	0.000	0.000	-0.000
α_{a_4}	0.000	-0.001	0.000	0.020	-0.001	-0.004	0.048	-0.000	0.000	-0.003	0.000	-0.000	-0.011	-0.000	-0.000	-0.000	0.000
β_{a_4}	0.000	-0.001	0.000	0.025	-0.001	-0.005	0.064	-0.000	0.000	-0.004	0.000	-0.000	-0.013	-0.000	-0.000	-0.000	0.000
α_{k^m}	-0.030	-0.004	-0.027	-0.617	0.168	0.290	**-1.591**	-0.032	-0.004	0.186	-0.007	0.010	0.870	0.000	-0.003	0.005	-0.000
β_{k^m}	-0.012	0.015	-0.012	-0.316	0.062	0.162	-0.610	-0.000	-0.003	0.085	-0.004	0.005	0.399	0.001	0.004	0.005	-0.000
$\alpha_{\sigma^2_{a_2^m}}$	0.001	-0.025	-0.000	0.025	-0.002	-1.104	-0.051	0.000	0.002	-0.003	0.003	-0.001	-0.136	-0.000	-0.002	0.007	0.000
$\beta_{\sigma^2_{a_2^m}}$	-0.000	0.000	-0.000	-0.000	0.000	0.009	0.000	-0.000	-0.000	0.000	-0.000	0.000	0.001	0.000	0.000	-0.000	-0.000
$\alpha_{\sigma^2_{a_4}}$	-0.008	-0.026	-0.007	-0.260	0.012	-0.066	-3.916	0.001	-0.002	-0.014	0.010	-0.004	0.144	0.000	-0.006	0.006	0.000
$\beta_{\sigma^2_{a_4}}$	0.000	0.000	0.000	0.001	-0.000	0.000	0.015	-0.000	0.000	0.000	-0.000	0.000	-0.001	-0.000	0.000	-0.000	-0.000
$\alpha_{\sigma^2_{km}}$	-0.001	-0.001	-0.002	0.068	0.016	-0.010	0.178	-0.029	-0.001	0.051	0.001	-0.001	0.084	-0.000	-0.004	0.009	-0.000
$\beta_{\sigma^2_{k_m}}$	0.012	-0.063	0.055	**-2.644**	-0.468	-0.067	**-10.187**	**1.004**	0.058	**-1.964**	-0.051	0.048	**-3.475**	0.004	0.123	-0.378	0.000
$\alpha_{a_1^f}$	-0.000	0.001	-0.000	0.012	-0.001	-0.057	0.024	0.000	0.013	-0.051	0.004	-0.002	-0.065	-0.000	0.002	0.001	-0.000
$\beta_{a_1^f}$	0.000	-0.000	0.000	-0.001	0.000	0.006	-0.003	-0.000	-0.001	0.005	-0.000	0.000	0.007	0.000	-0.000	-0.000	0.000
$\alpha_{\triangle_{a_2}}$	-0.000	-0.005	-0.000	-0.006	0.001	0.001	0.008	-0.000	-0.001	0.040	-0.000	0.001	0.069	0.000	-0.001	-0.000	0.000
$\beta_{\triangle_{a_2}}$	-0.001	-0.013	-0.001	-0.020	0.002	0.002	0.030	-0.001	-0.002	0.123	-0.001	0.002	0.222	0.000	-0.002	0.000	-0.000
$\alpha_{a_3^f}$	0.000	0.002	0.001	0.003	-0.002	-0.074	-0.286	-0.000	0.004	-0.040	0.069	-0.006	-0.263	-0.002	-0.002	0.004	0.000
$\beta_{a_3^f}$	-0.000	0.001	-0.000	-0.000	0.000	0.019	0.070	0.000	-0.001	0.008	-0.018	0.001	0.059	0.000	0.001	-0.002	-0.000
α_{k^f}	-0.005	0.052	-0.002	-0.071	0.008	0.134	0.500	0.002	-0.007	0.249	-0.022	0.110	0.909	-0.022	0.020	0.010	-0.000
β_{k^f}	0.012	-0.119	0.004	0.151	-0.019	-0.289	**-1.155**	-0.005	0.015	-0.551	0.049	-0.249	**-1.948**	0.049	-0.048	-0.027	0.000
$\alpha_{\sigma^2_{\triangle_{a_2}}}$	0.003	0.013	0.003	0.063	-0.006	-0.129	0.217	0.001	0.002	-0.184	0.008	-0.007	**-2.611**	-0.002	-0.004	0.001	0.000
$\beta_{\sigma^2_{\triangle_{a_2}}}$	-0.000	-0.000	-0.000	-0.000	0.000	0.001	-0.001	-0.000	-0.000	0.001	-0.000	0.000	0.012	0.000	0.000	-0.000	-0.000
$\alpha_{\sigma^2_{kf}}$	0.000	-0.001	0.000	0.052	0.000	-0.021	0.044	-0.000	0.001	-0.018	0.007	0.021	-0.214	-0.016	0.002	0.008	0.000
$\beta_{\sigma^2_{k_f}}$	-0.025	-0.139	-0.021	**-3.454**	-0.022	**1.940**	**-2.054**	0.029	-0.042	**1.225**	-0.486	**-1.595**	**14.056**	**1.093**	-0.124	-0.655	-0.000
α_{ν}	0.001	0.013	-0.000	-0.012	-0.000	0.018	0.034	0.001	0.001	-0.014	-0.001	0.002	0.019	-0.000	0.079	-0.002	-0.000
β_{ν}	-0.001	-0.012	0.000	0.014	0.000	-0.029	-0.013	-0.001	-0.001	0.019	0.001	-0.001	-0.016	0.000	-0.098	0.005	0.000
α_{ρ^2}	-0.000	0.003	0.000	0.010	-0.000	0.051	0.039	0.000	-0.000	0.001	-0.002	-0.001	0.017	0.000	0.002	-0.165	-0.000
β_{ρ^2}	0.000	-0.001	-0.000	-0.003	-0.000	-0.014	-0.013	-0.000	0.000	-0.000	0.000	0.000	-0.005	-0.000	-0.001	0.046	0.000
$\alpha_{\sigma^2_h}$	0.000	0.001	-0.000	-0.000	0.001	0.016	0.043	-0.000	0.001	-0.000	-0.000	0.000	0.021	0.000	0.003	-0.007	-0.000
$\beta_{\sigma^2_h}$	**-37.688**	**-116.830**	**16.011**	**17.100**	**-82.440**	**-2098.717**	**-5650.674**	**27.425**	**-71.201**	**10.789**	**37.786**	**-66.317**	**-2863.039**	**-1.673**	**-434.118**	**958.762**	**4.054**

Table 4: Out-of-sample validation results of ASAF for both male and female with $\beta_{\sigma^2_{k_m}}$ changed. "Bayes (mod)" is the BHM with changed hyperparameter.

Gender	Train	Test	num	Method	MAE	Coverage		
						80%	90%	95%
Male	1950-2000	2000-2015	63	Bayes(mod)	0.016	0.63	0.76	0.85
				Bayes	0.016	0.65	0.76	0.84
Female	1950-2000	2000-2015	63	Bayes(mod)	0.011	0.80	0.89	0.94
				Bayes	0.011	0.81	0.90	0.95

Table 5: Out-of-sample validation results of ASAF for both male and female with $\beta_{\sigma^2_{k_f}}$ changed. "Bayes (mod)" is the BHM with changed hyperparameter.

Gender	Train	Test	num	Method	MAE	Coverage		
						80%	90%	95%
Male	1950-2000	2000-2015	63	Bayes(mod)	0.016	0.64	0.77	0.85
				Bayes	0.016	0.65	0.76	0.84
Female	1950-2000	2000-2015	63	Bayes(mod)	0.011	0.82	0.90	0.95
				Bayes	0.011	0.81	0.90	0.95

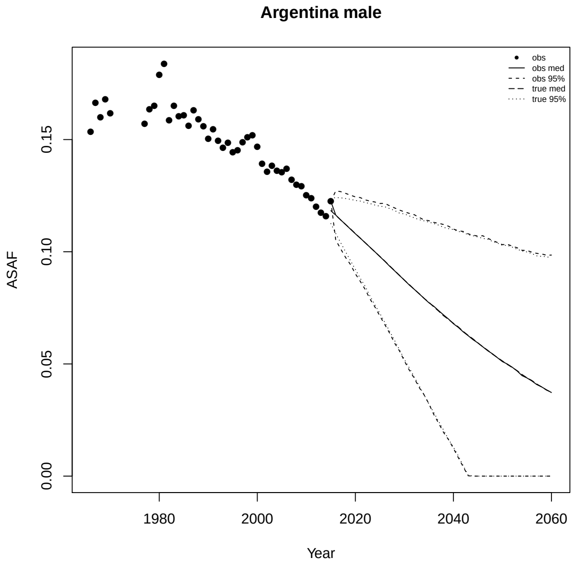
Table 6: Out-of-sample validation results of ASAF for both male and female with $\beta_{\sigma^2_h}$ changed. "Bayes (mod)" is the BHM with changed hyperparameter.

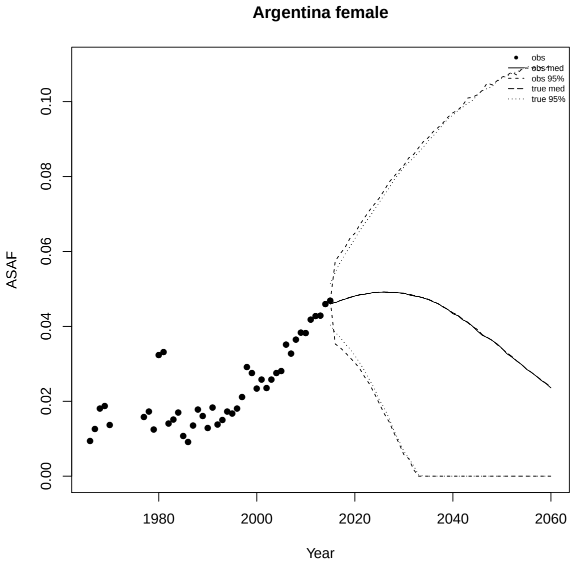
Gender	Train	Test	num	Method	MAE	Coverage		
						80%	90%	95%
Male	1950-2000	2000-2015	63	Bayes(mod)	0.016	0.68	0.80	0.88
				Bayes	0.016	0.65	0.76	0.84
Female	1950-2000	2000-2015	63	Bayes(mod)	0.011	0.82	0.90	0.95
				Bayes	0.011	0.81	0.90	0.95

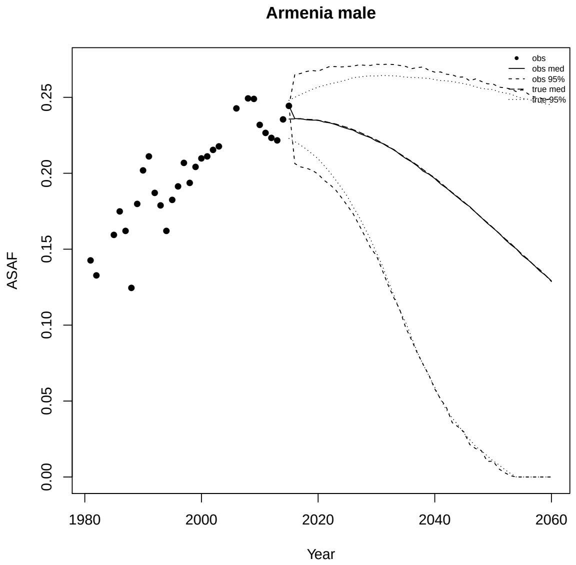
Table 7: Out-of-sample validation results of ASAF for both male and female with α_{a_4} changed. "Bayes (mod)" is the BHM with changed hyperparameter.

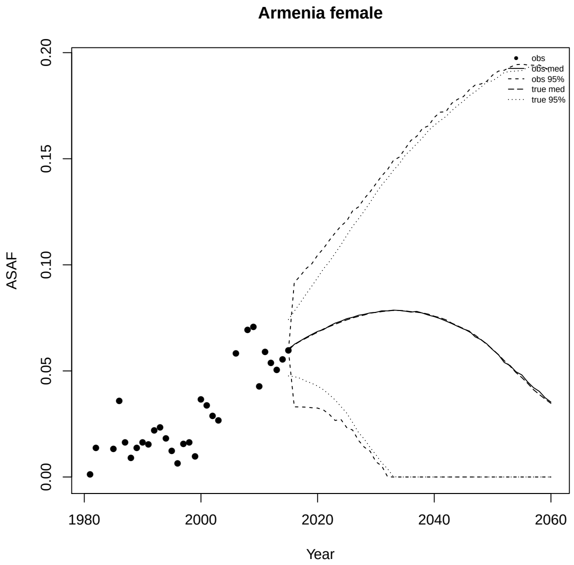
Gender	Train	Test	num	Method	MAE	Coverage		
						80%	90%	95%
Male	1950-2000	2000-2015	63	Bayes(mod)	0.016	0.65	0.76	0.85
				Bayes	0.016	0.65	0.76	0.84
Female	1950-2000	2000-2015	63	Bayes(mod)	0.011	0.81	0.89	0.95
				Bayes	0.011	0.81	0.90	0.95

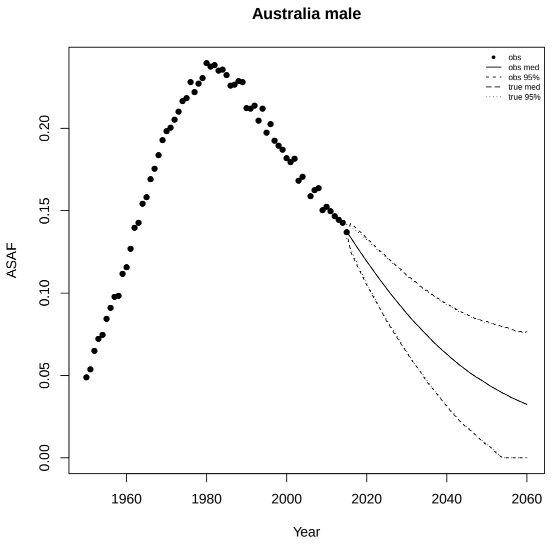
3 All-age Smoking Attribuable Fraction Projection for Both Genders in Over 60 Countries







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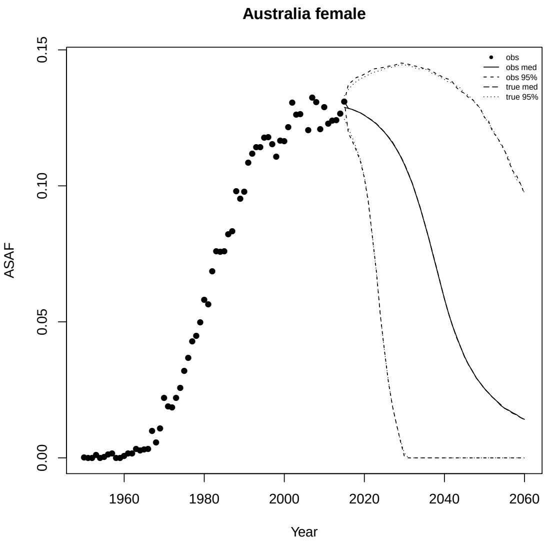
Australia female
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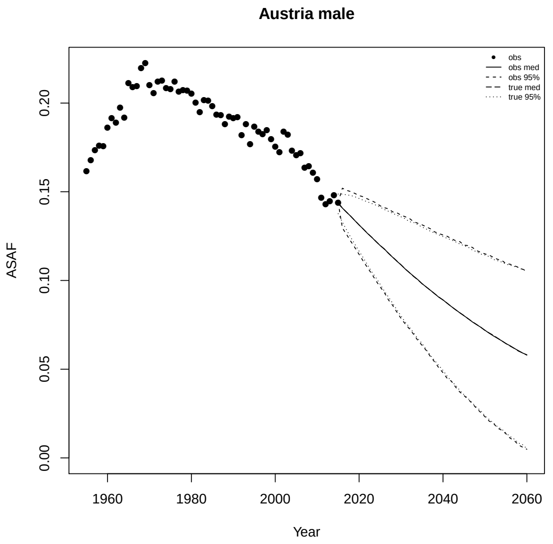
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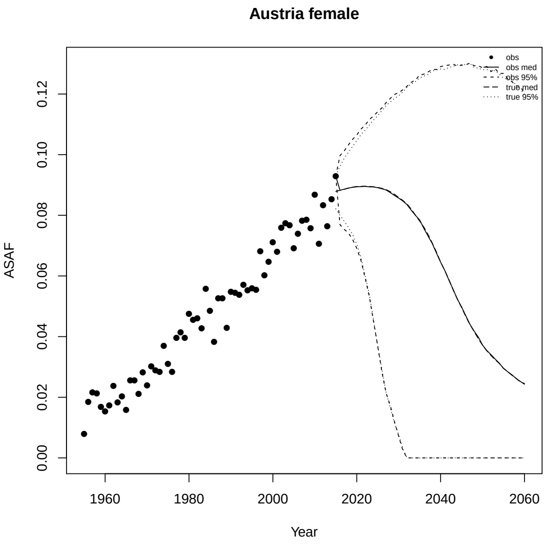
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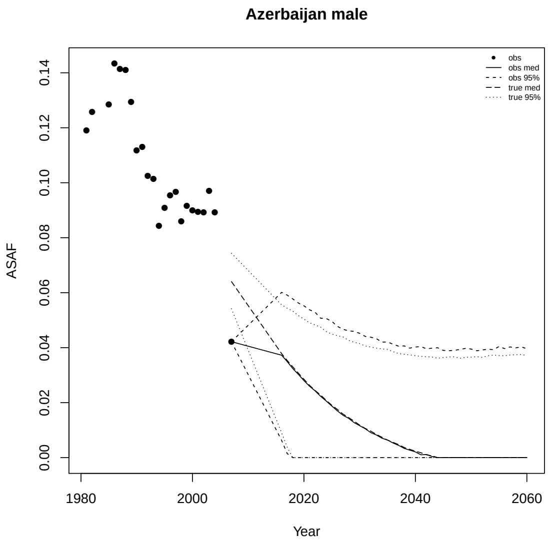
Azerbaijan male
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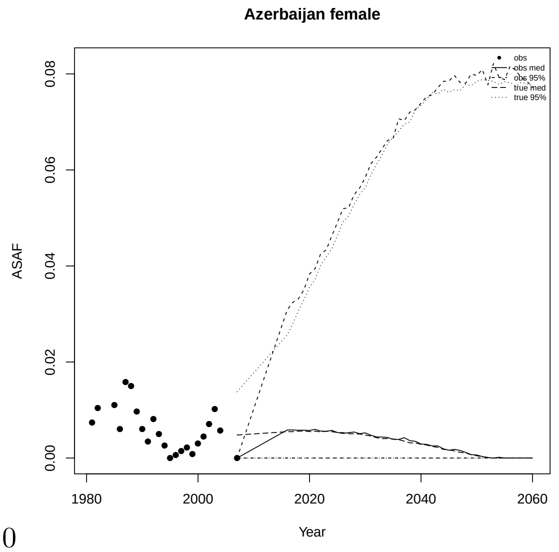
Azerbaijan female
ASAF
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obs med
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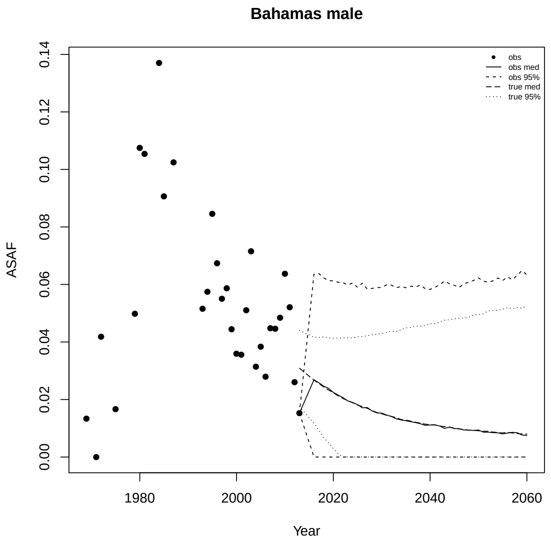
true 95%


Bahamas male
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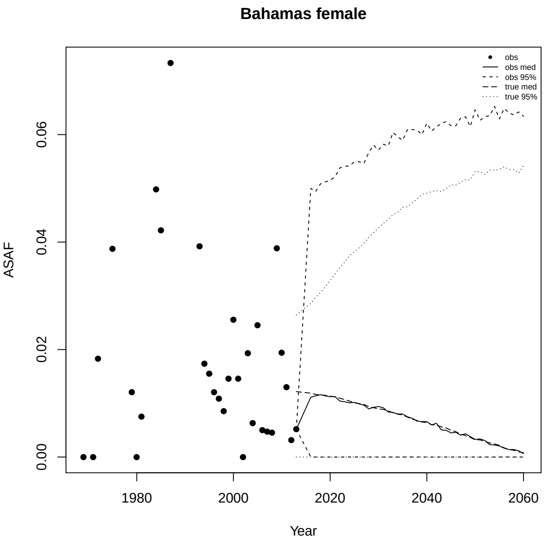
Bahamas female
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true 95%
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0.04
0.06
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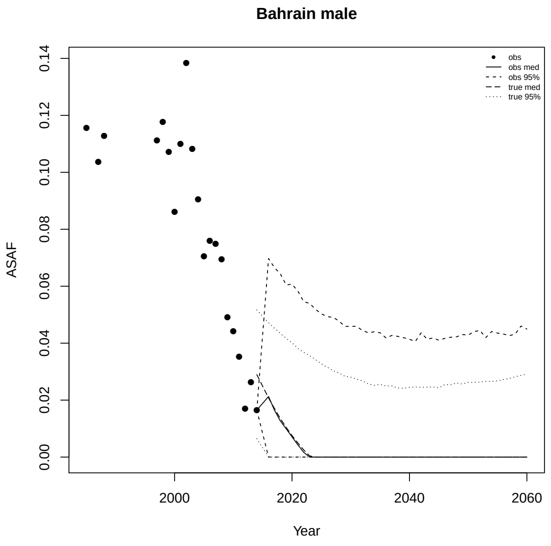
2000
2020
2040
2060


Bahrain male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
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0.12
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2000
2020
2040
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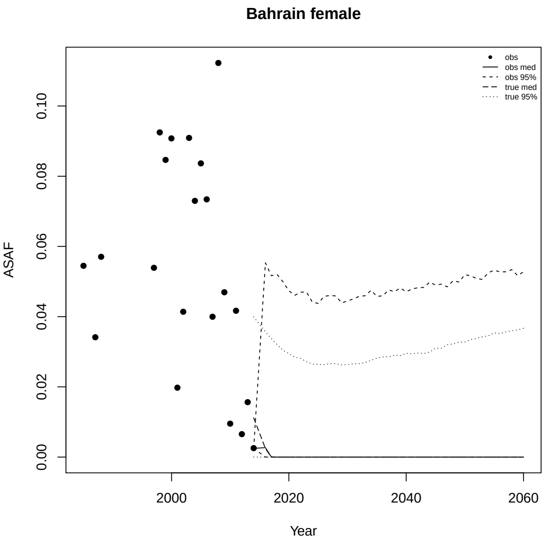
Bahrain female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
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0.08
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2000
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2040
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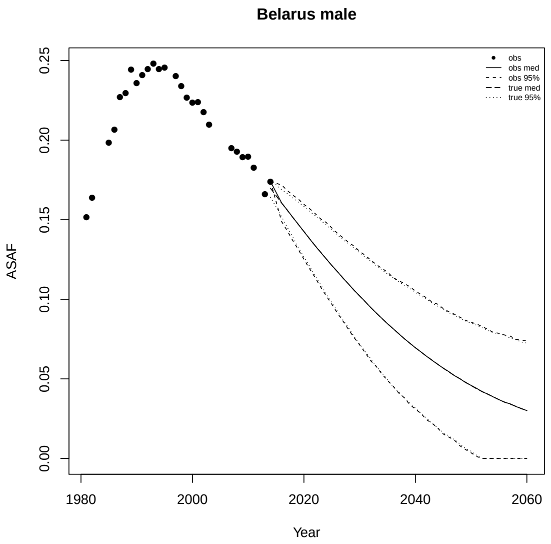
Belarus male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
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0.25
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2020
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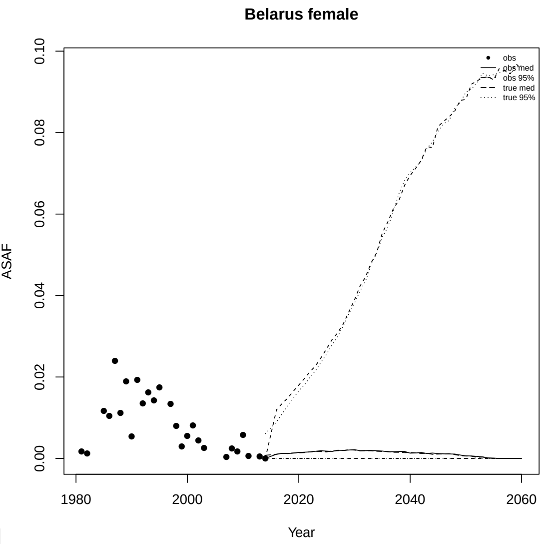
Belarus female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
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0.06
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0.10
1980
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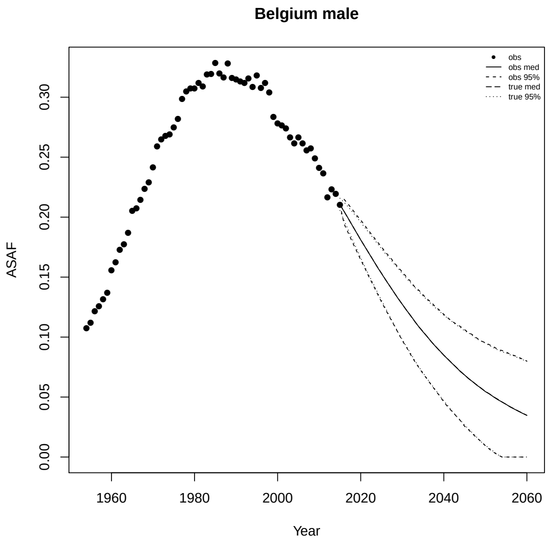
Belgium male
ASAF
Year
0.00
0.05
0.10
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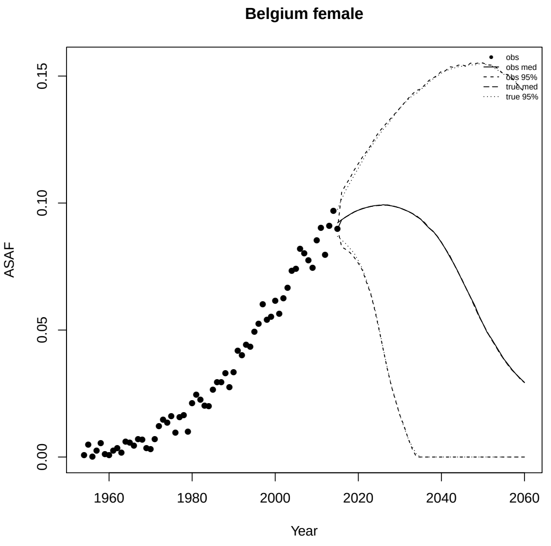
0.30
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Belgium female
ASAF
Year
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1960
1980
2000
2020
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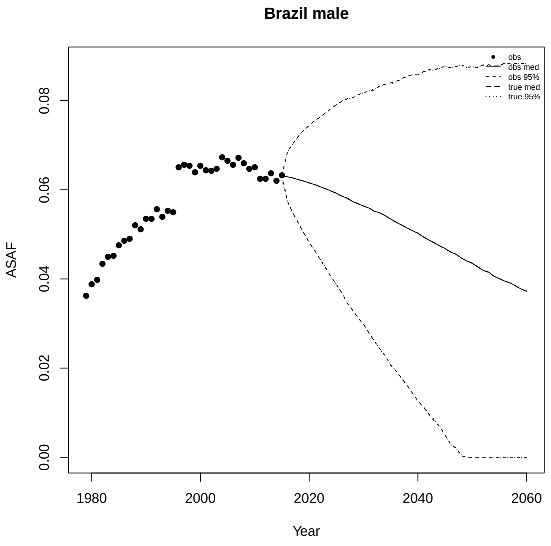
2060
obs
obs med
obs 95%
true med
true 95%


Brazil male
ASAF
Year
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0.02
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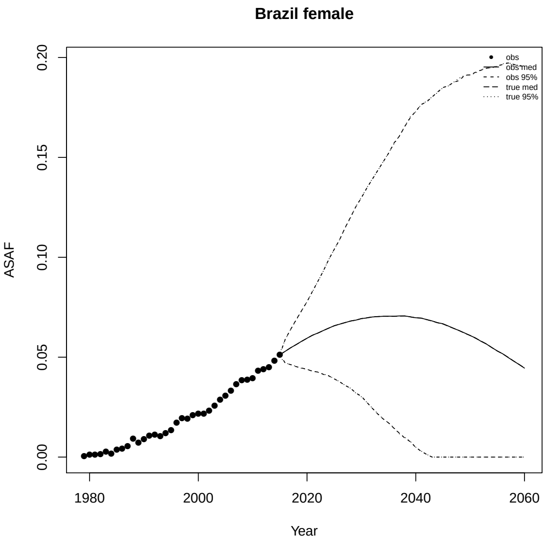
0.06
0.08
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Brazil female
ASAF
Year
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0.05
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0.15
0.20
1980
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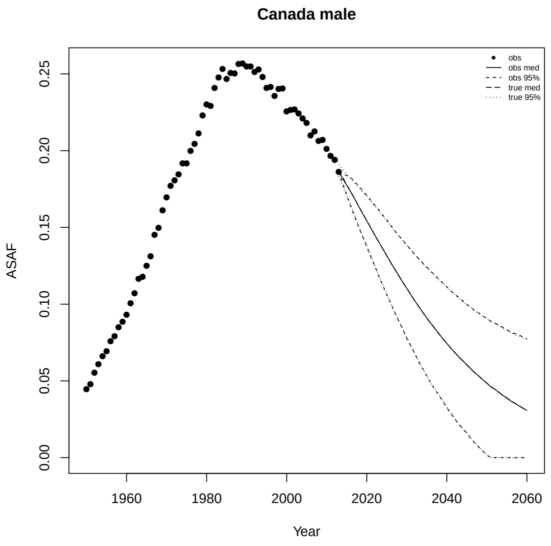
obs
obs med
obs 95%
true med
true 95%


Canada male
ASAF
Year
0.00
0.05
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0.15
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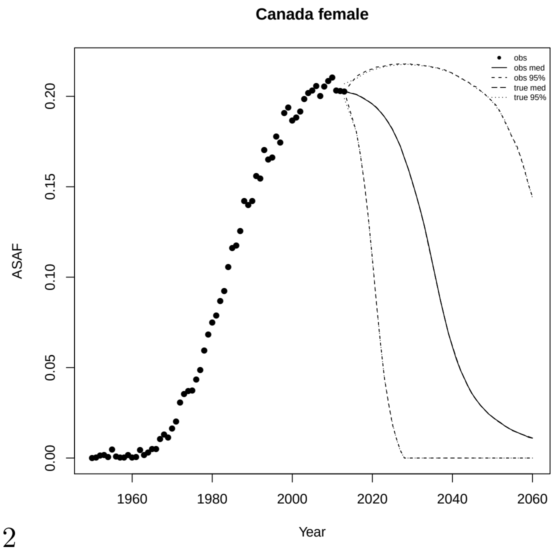
0.25
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Canada female
ASAF
Year
0.00
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0.10
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0.20
1960
1980
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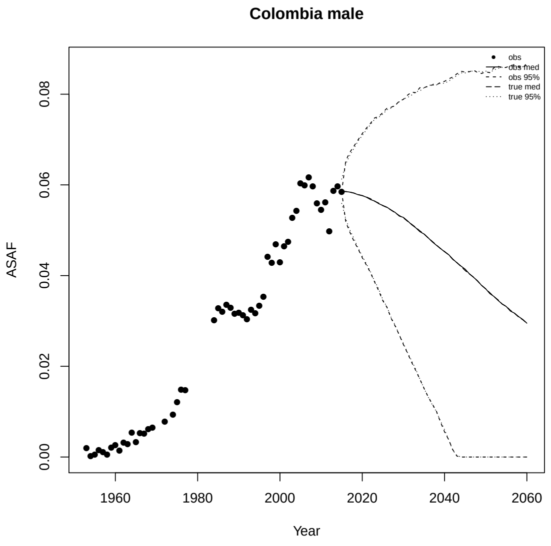
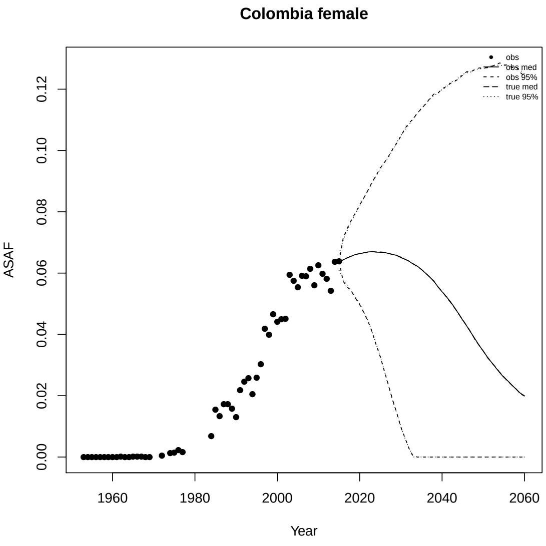
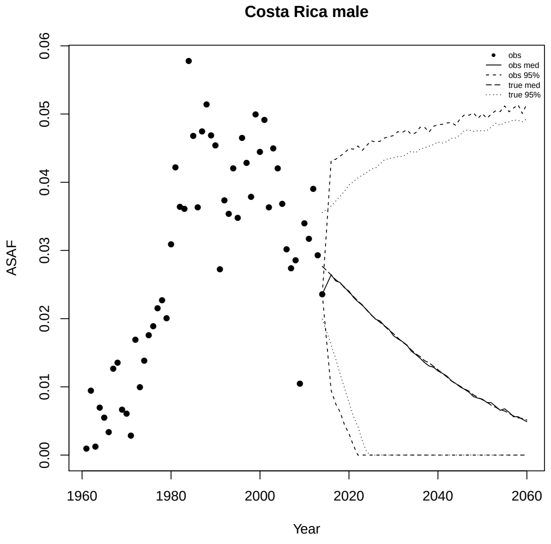
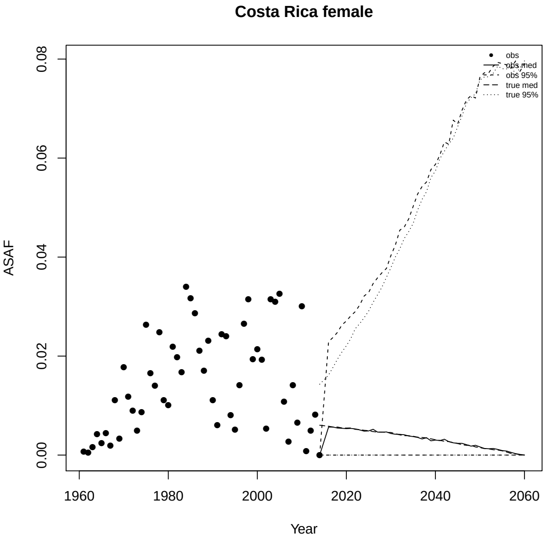
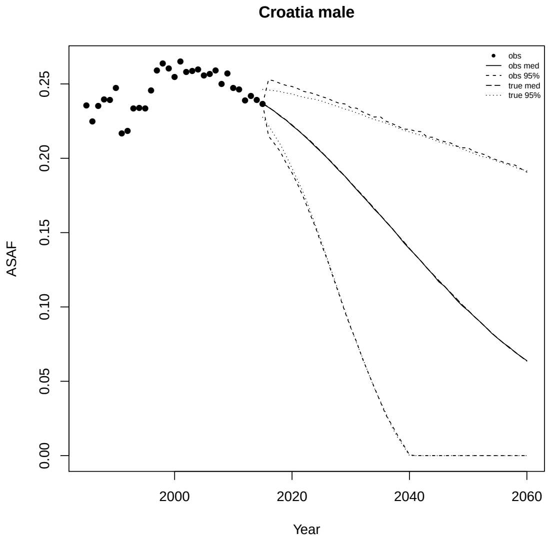
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

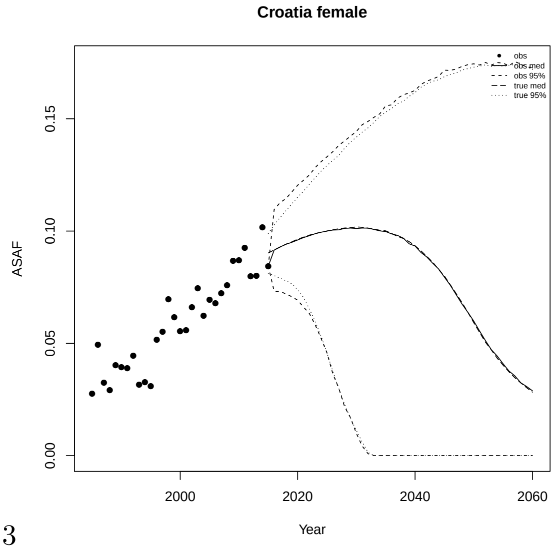

Colombia male

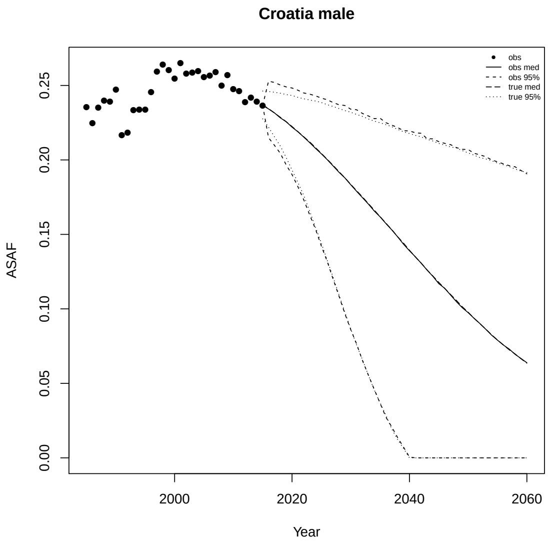

Colombia female

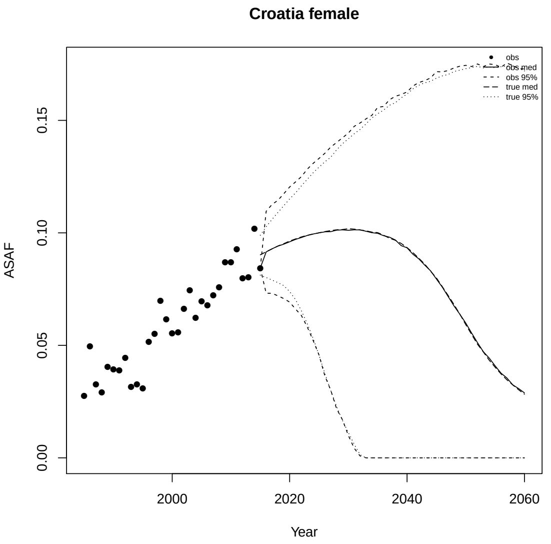

Costa Rica male

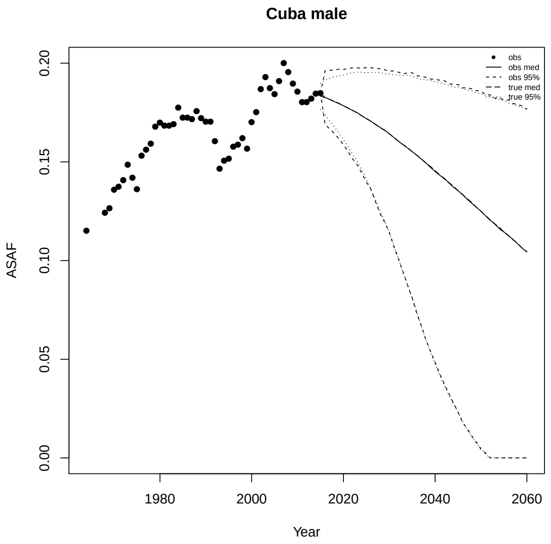

Costa Rica female

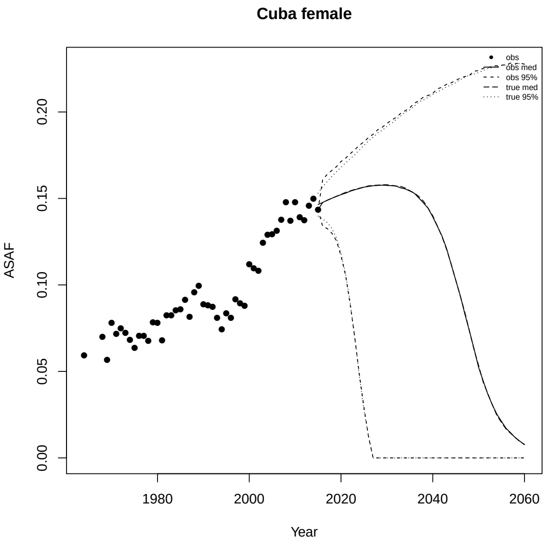

Croatia male

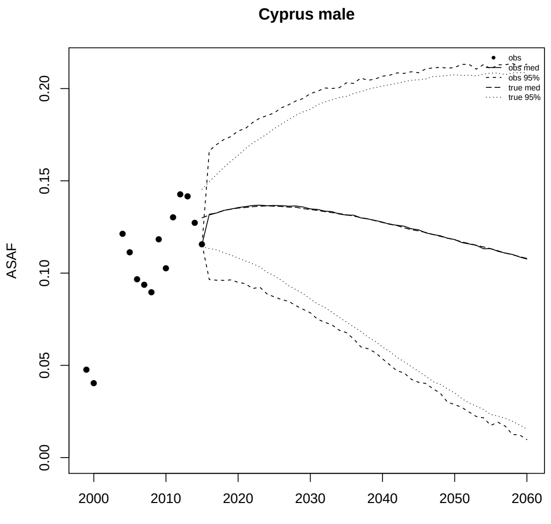

Croatia female

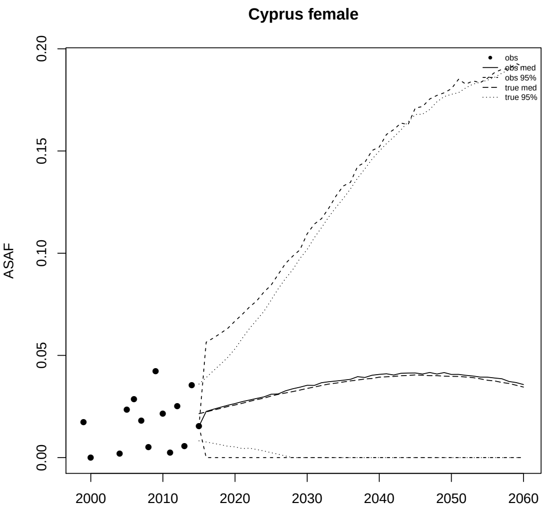

Croatia male

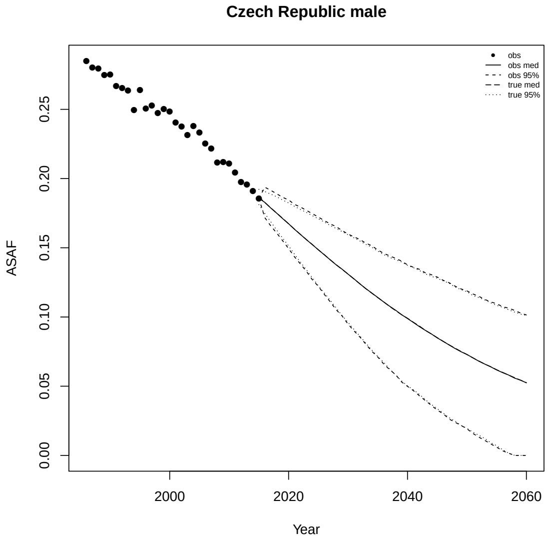

Croatia female


Cuba male


Cuba female


Cyprus male


Cyprus female


Czech Republic male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
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2000
2020
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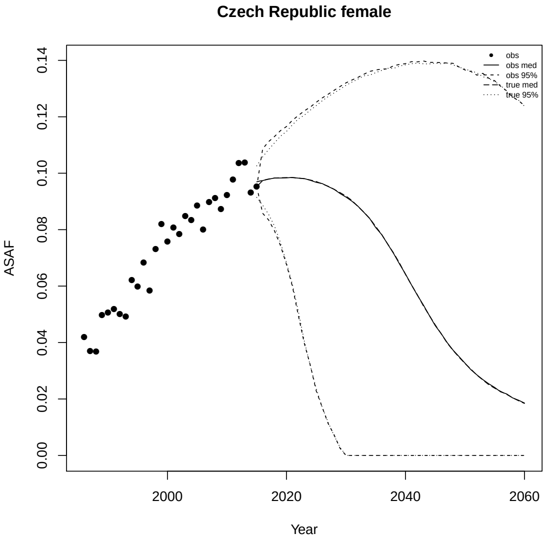
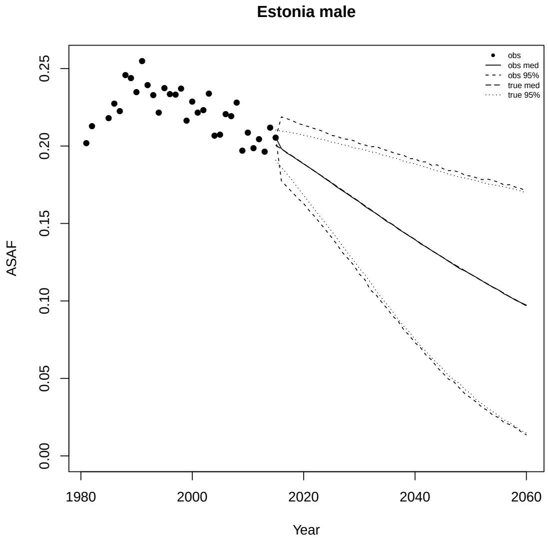
2060
Year


Czech Republic female
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
2000
2020
2040
2060
Year


Estonia male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.05
0.10
0.15
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0.25
1980
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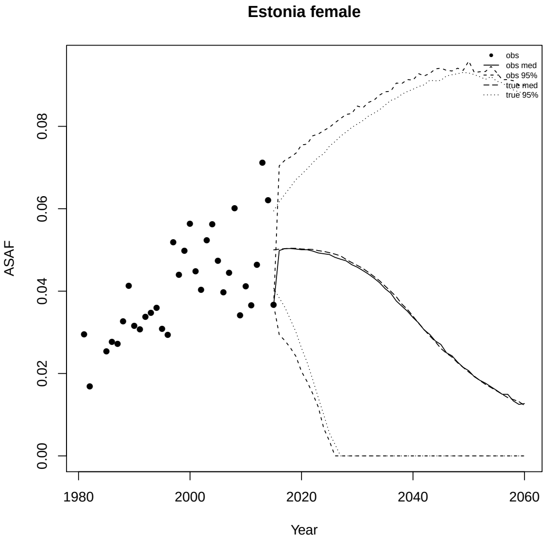
Year


Estonia female
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.02
0.04
0.06
0.08
1980
2000
2020
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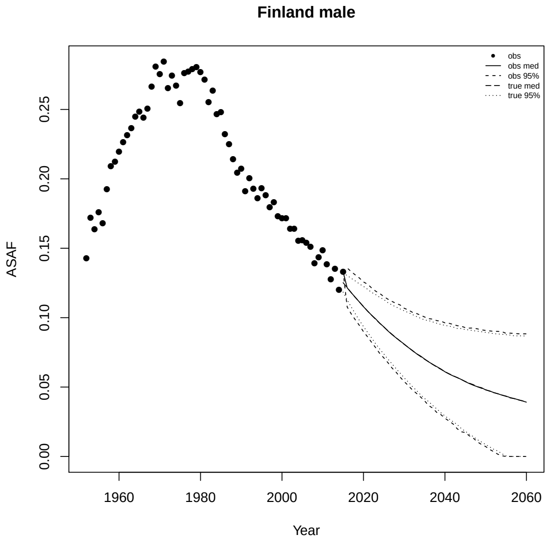
Year


Finland male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.05
0.10
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0.20
0.25
1960
1980
2000
2020
2040
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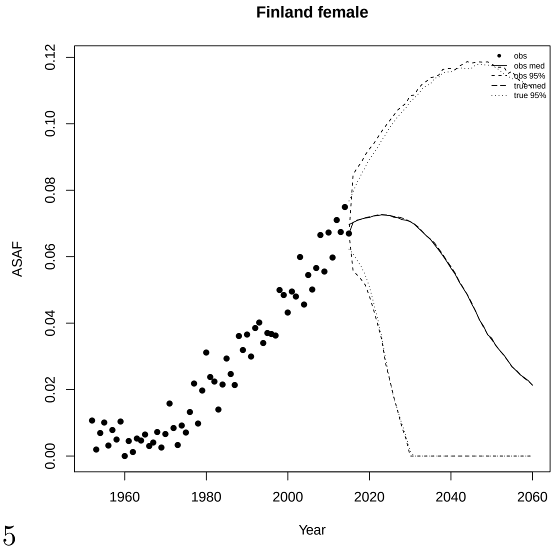
Year


Finland female
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
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0.04
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0.10
0.12
1960
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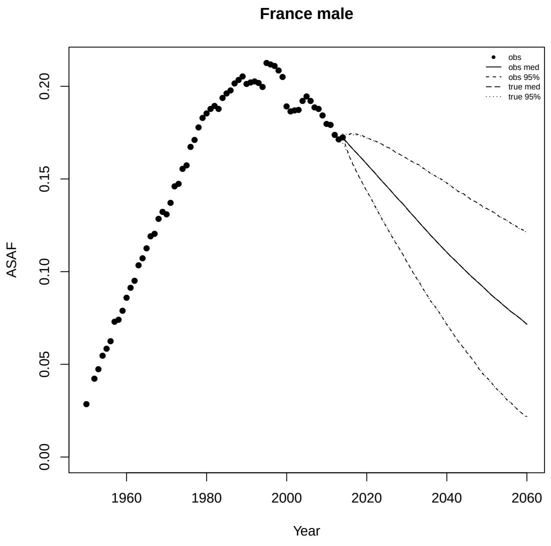
Year


France male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.05
0.10
0.15
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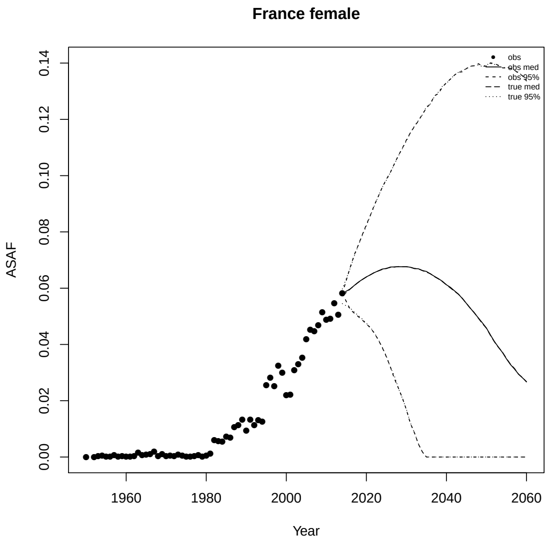
1960
1980
2000
2020
2040
2060
Year


France female
obs
obs med
obs 95%
true med
true 95%
ASAF
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1960
1980
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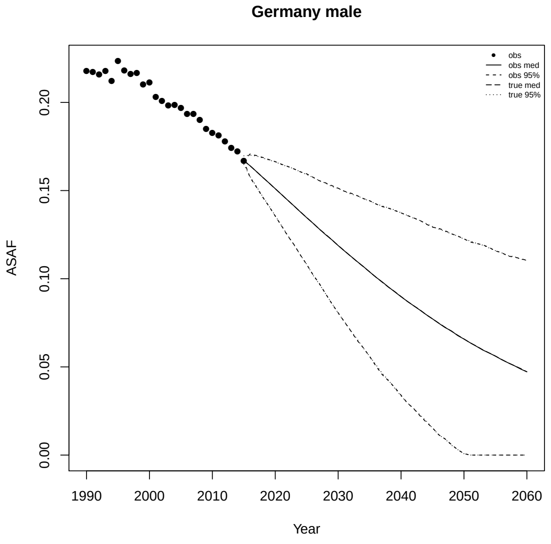
2060
Year


Germany male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
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0.10
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0.20
1990
2000
2010
2020
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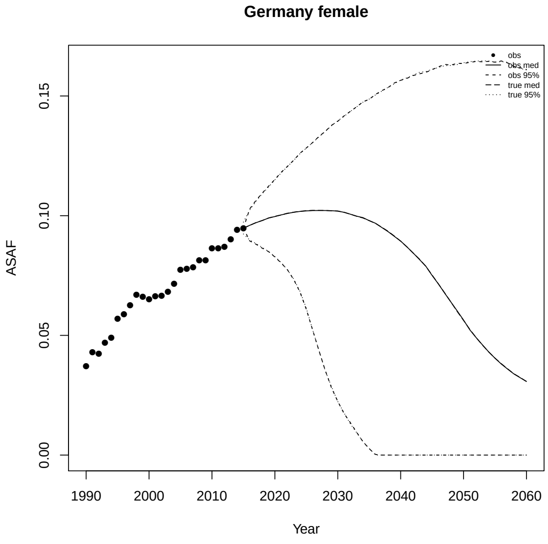
2050
2060
Year


Germany female
obs
obs med
obs 95%
true med
true 95%
ASAF
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0.05
0.10
0.15
1990
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2010
2020
2030
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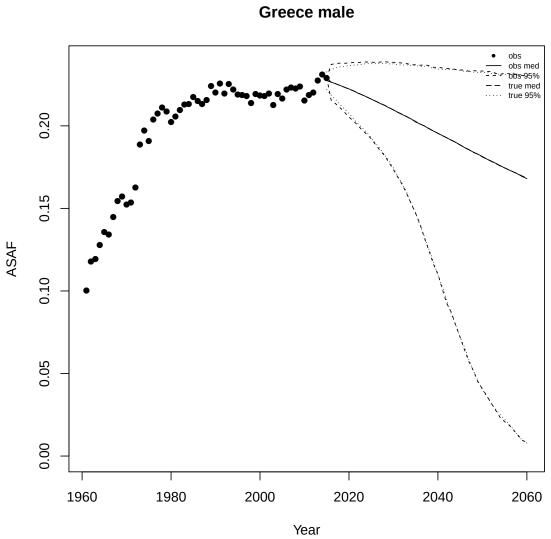
2050
2060
Year


Greece male
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.05
0.10
0.15
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1960
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2000
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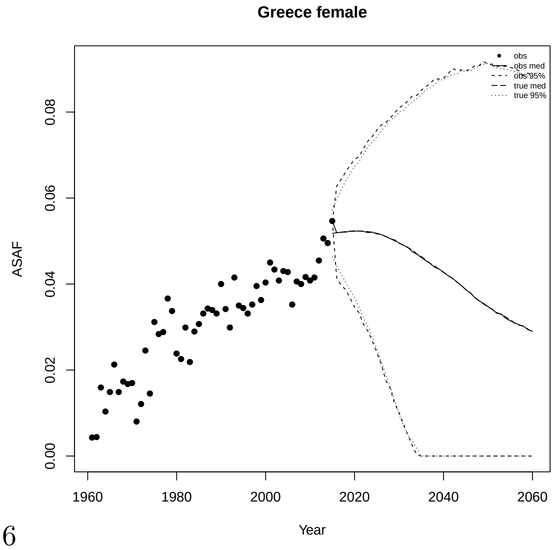
2040
2060
Year


Greece female
obs
obs med
obs 95%
true med
true 95%
ASAF
0.00
0.02
0.04
0.06
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2000
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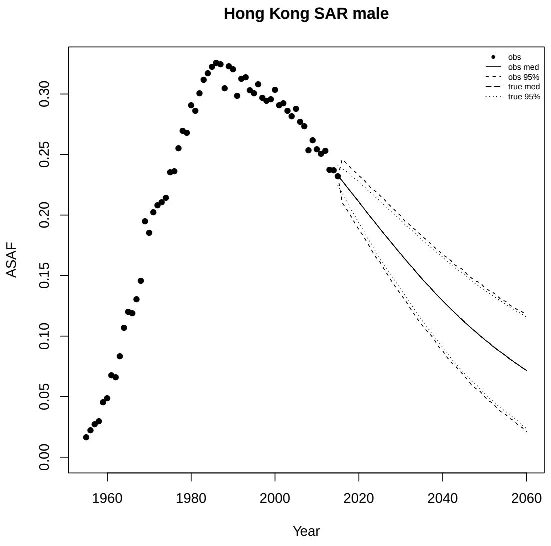
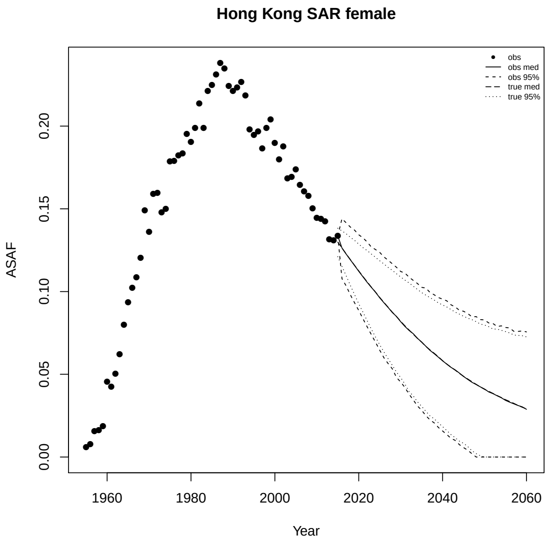
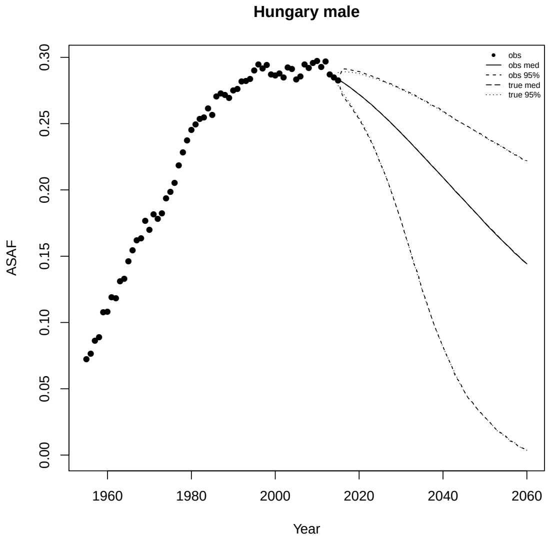
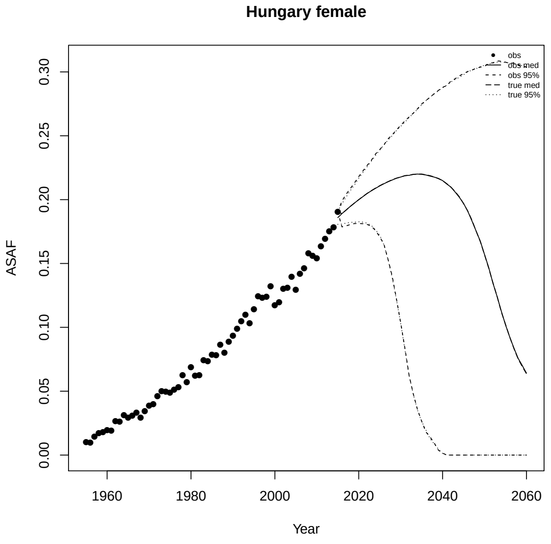
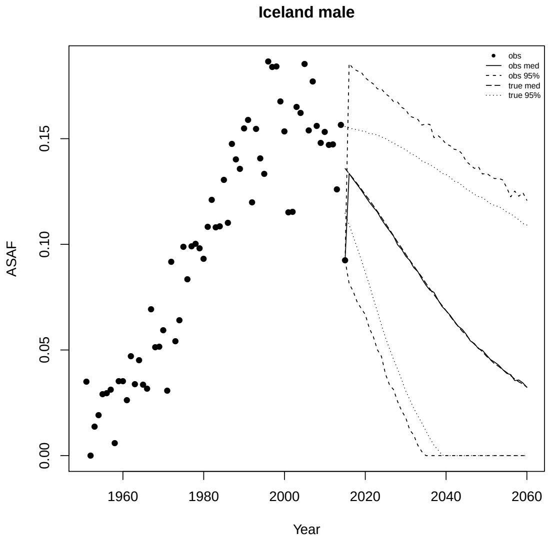
2040
2060
Year

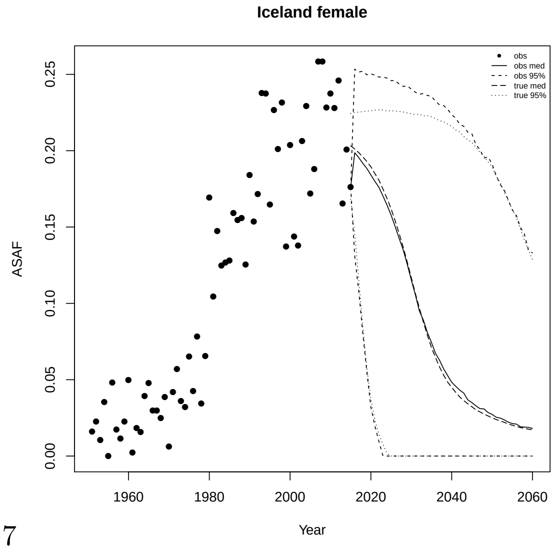

Hong Kong SAR male

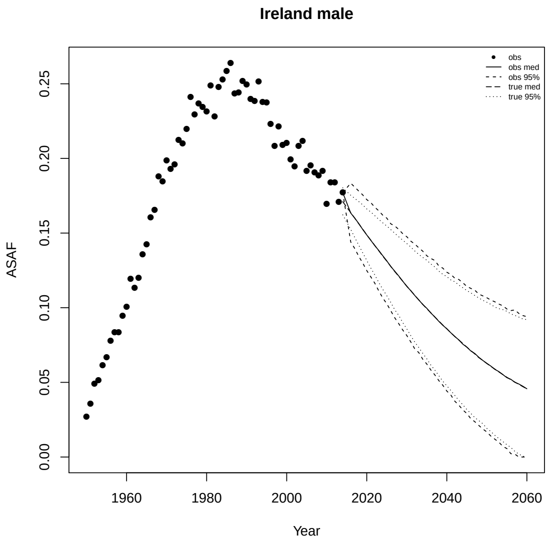

Hong Kong SAR female

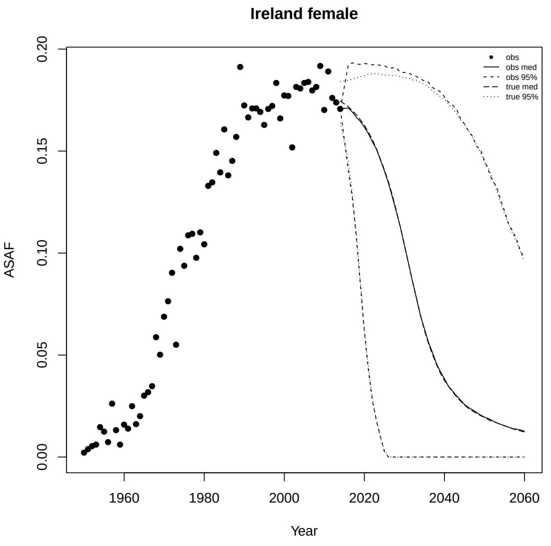

Hungary male

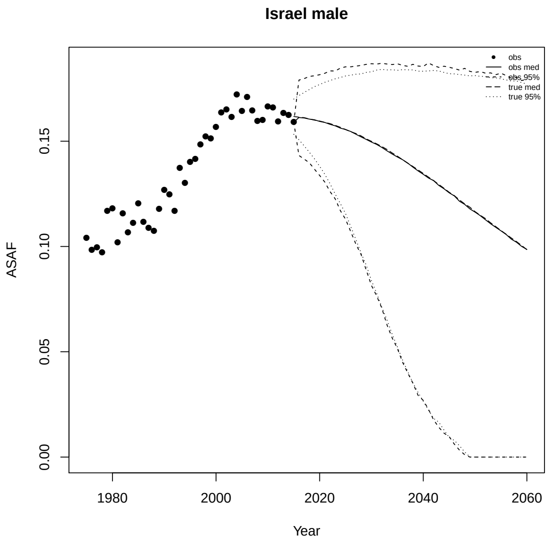

Hungary female

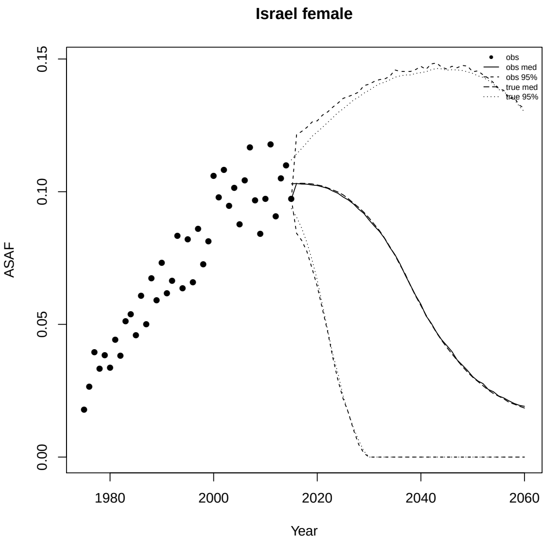

Iceland male

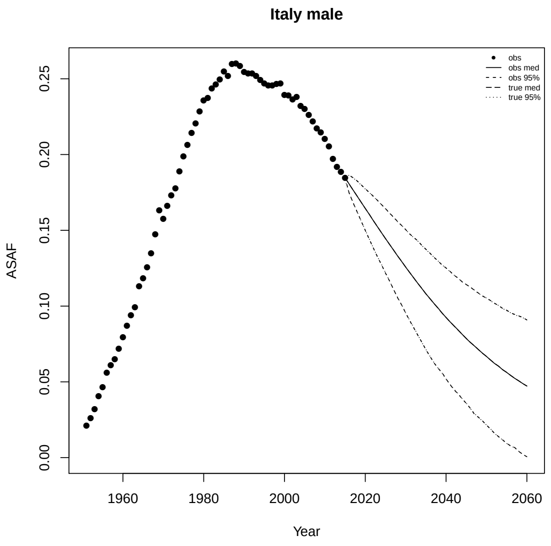

Iceland female

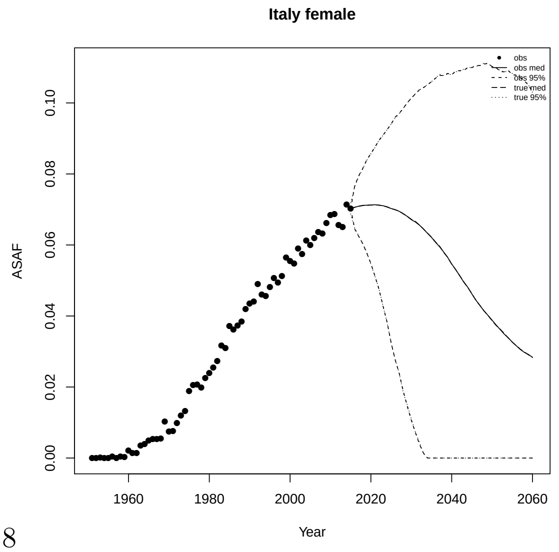

Ireland male

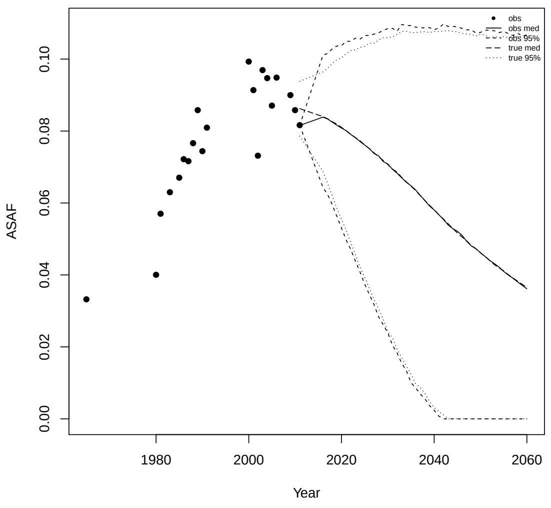

Ireland female


Israel male

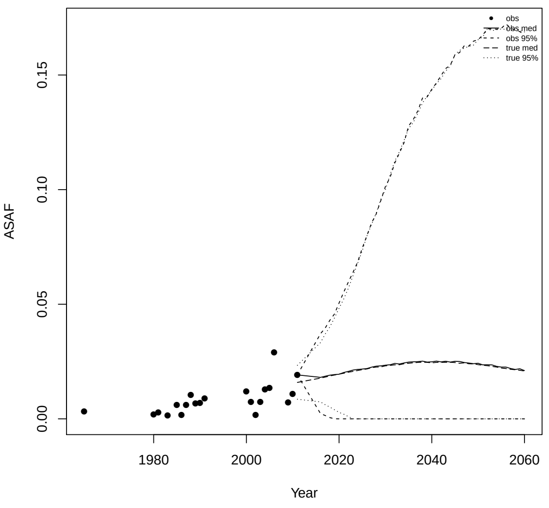

Israel female


Italy male

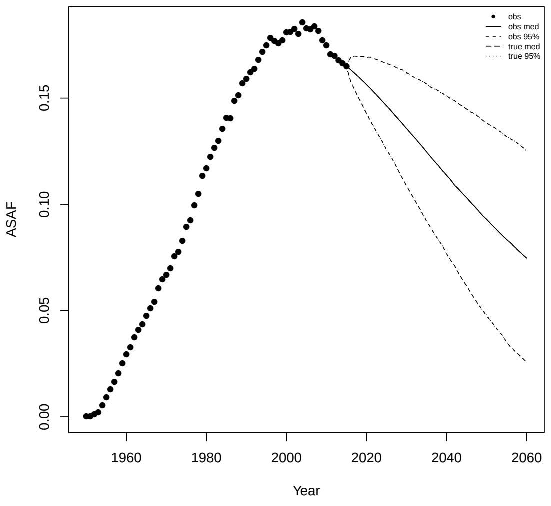

Italy female



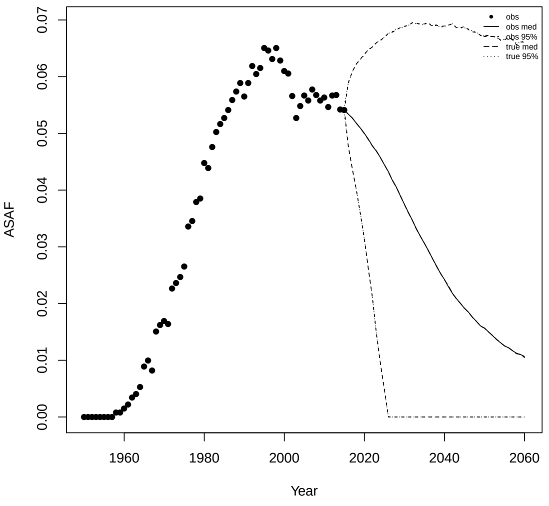
Jamaica male



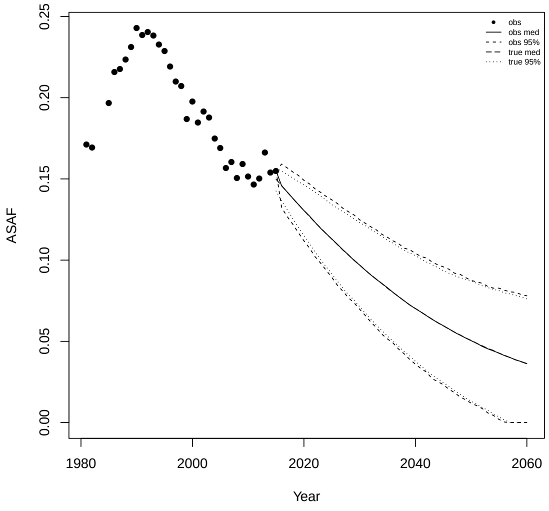
Jamaica female



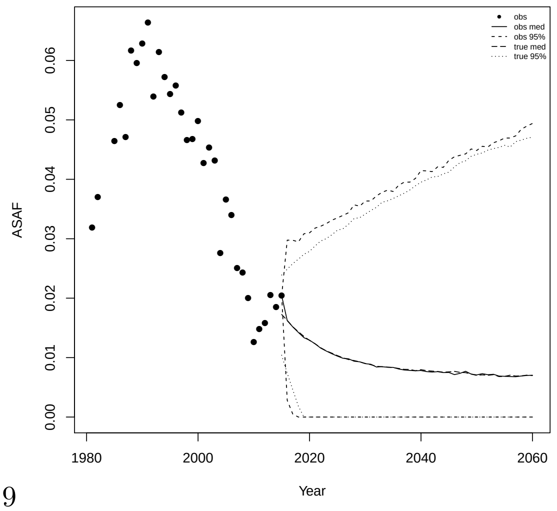
Japan male



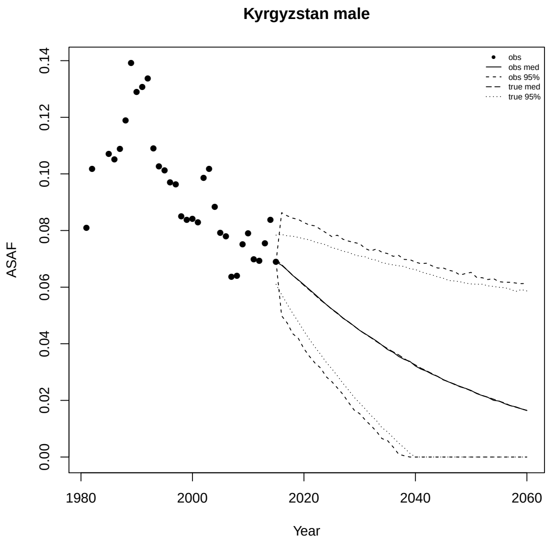
Japan female



Kazakhstan male



Kazakhstan female


Kyrgyzstan male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
1980
2000
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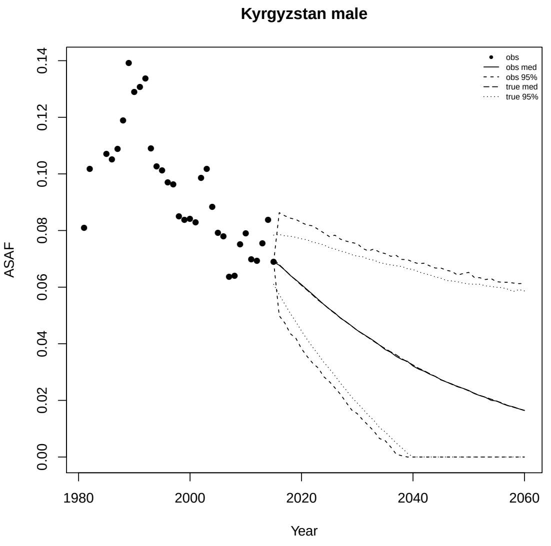
2040
2060


Kyrgyzstan male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
1980
2000
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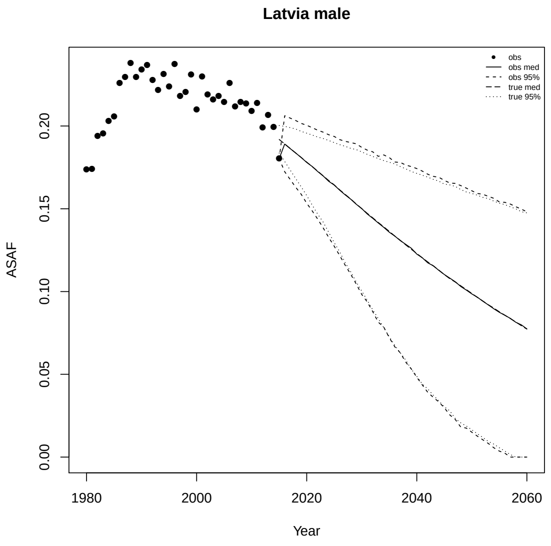
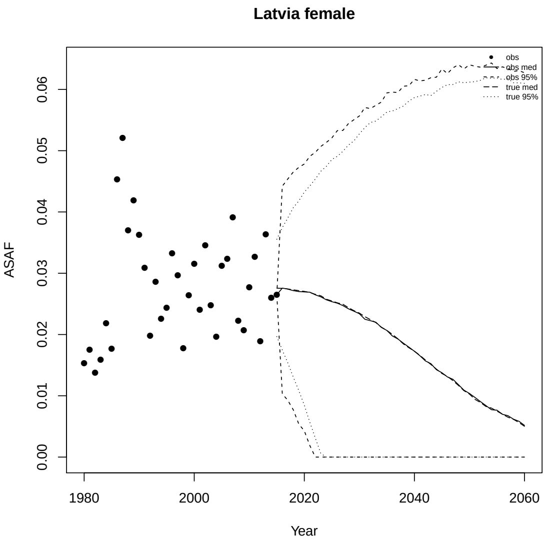
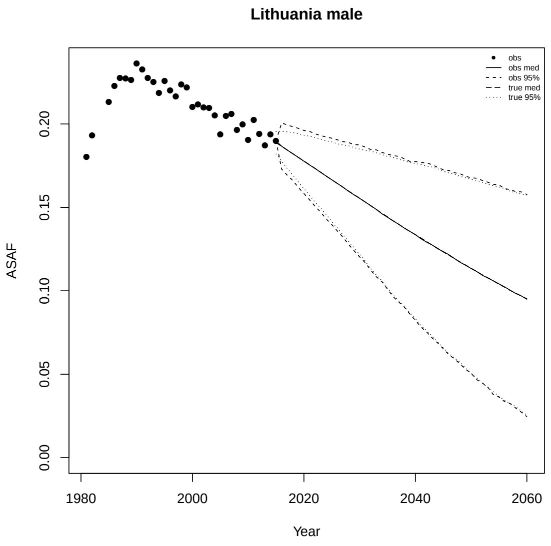
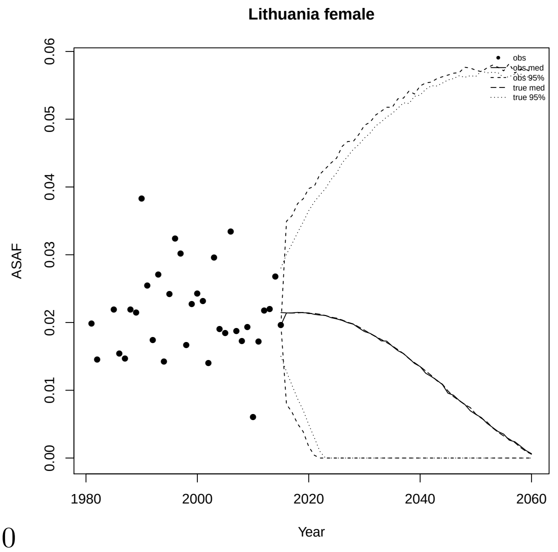
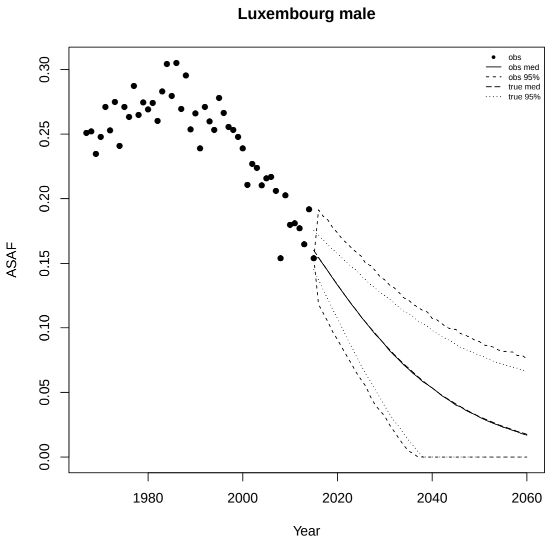
2040
2060

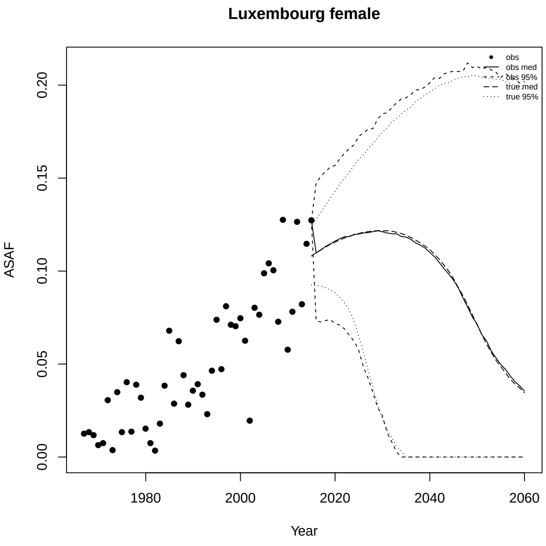

Latvia male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
0.20
1980
2000
2020
2040
2060

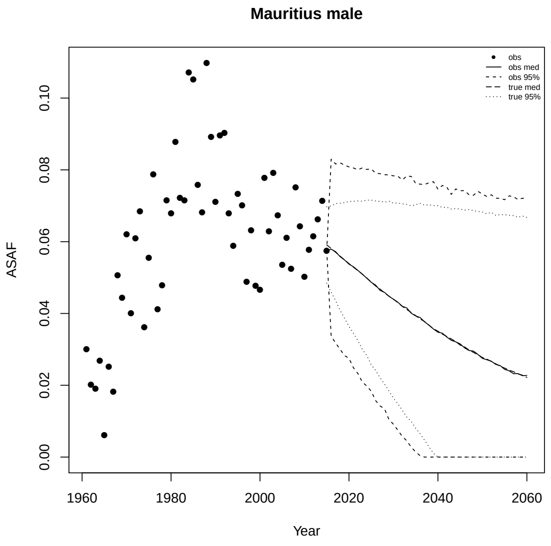

Latvia female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.01
0.02
0.03
0.04
0.05
0.06
1980
2000
2020
2040
2060

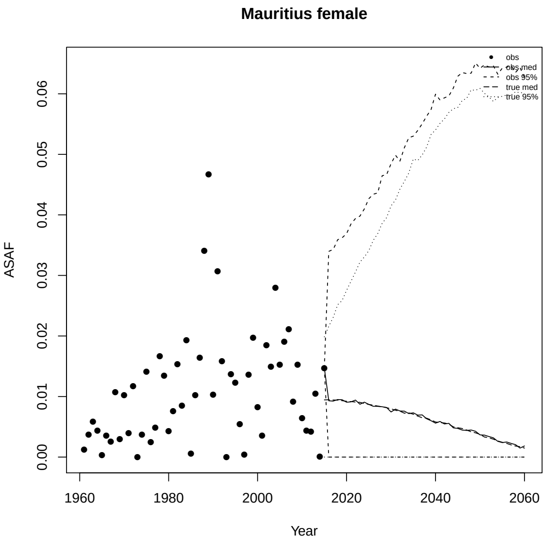

Lithuania male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
0.20
1980
2000
2020
2040
2060

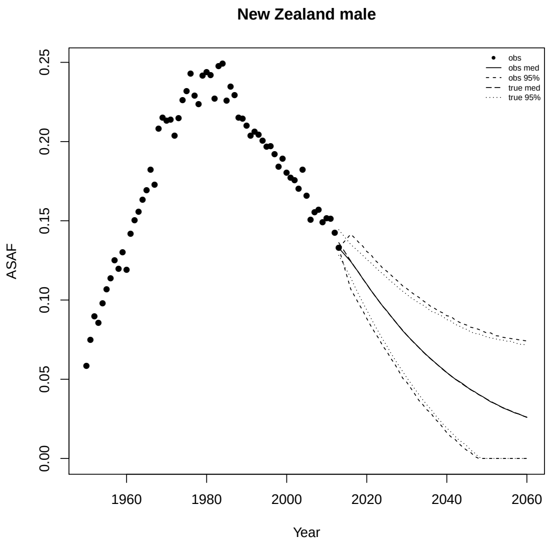

Lithuania female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.01
0.02
0.03
0.04
0.05
0.06
1980
2000
2020
2040
2060

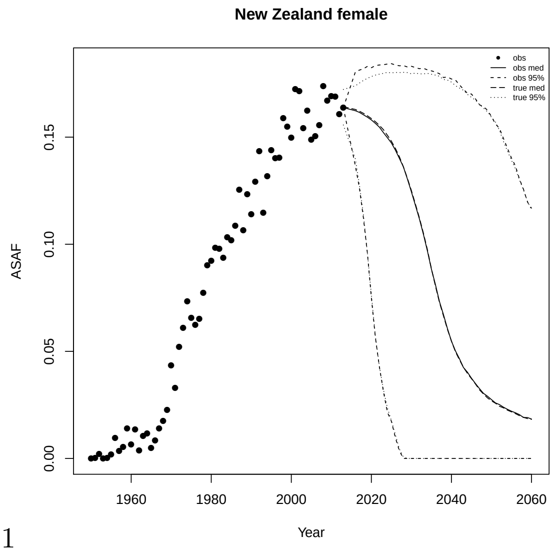

Luxembourg male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
0.25
0.30
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

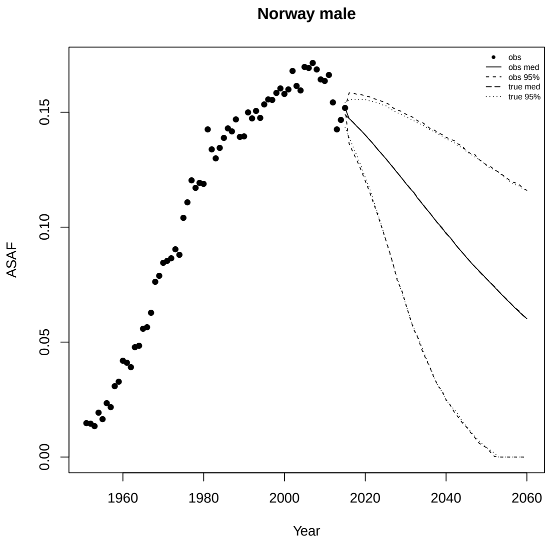

Luxembourg female
ASAF
Year
0.00
0.05
0.10
0.15
0.20
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

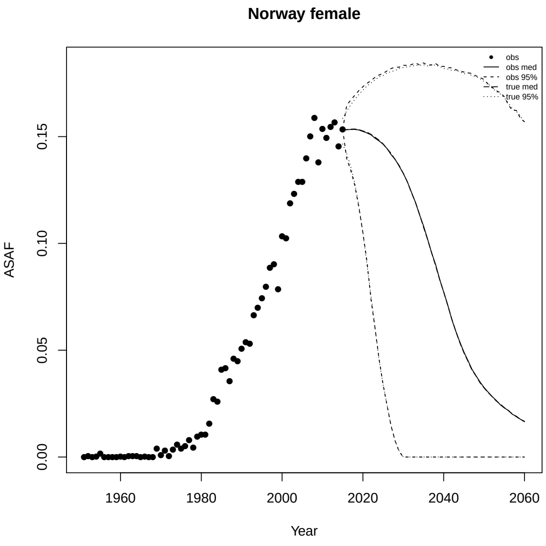

Mauritius male
ASAF
Year
0.00
0.02
0.04
0.06
0.08
0.10
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

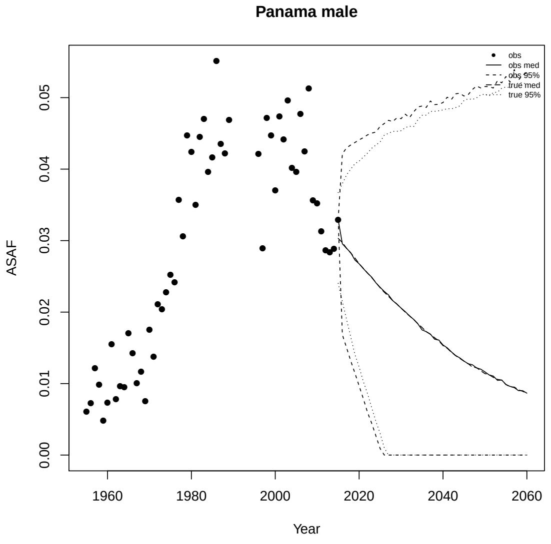

Mauritius female
ASAF
Year
0.00
0.01
0.02
0.03
0.04
0.05
0.06
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

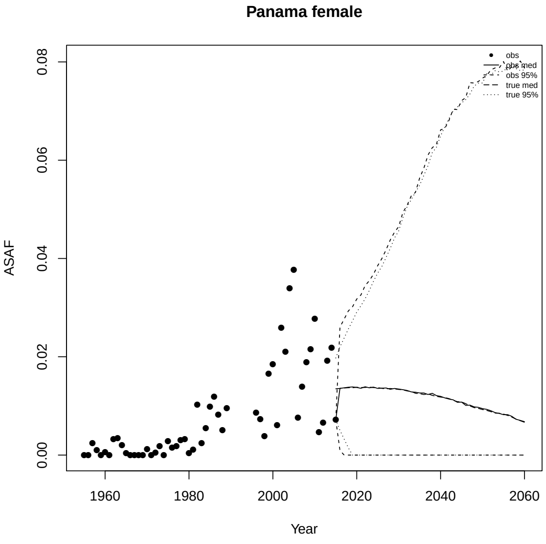

New Zealand male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
0.25
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

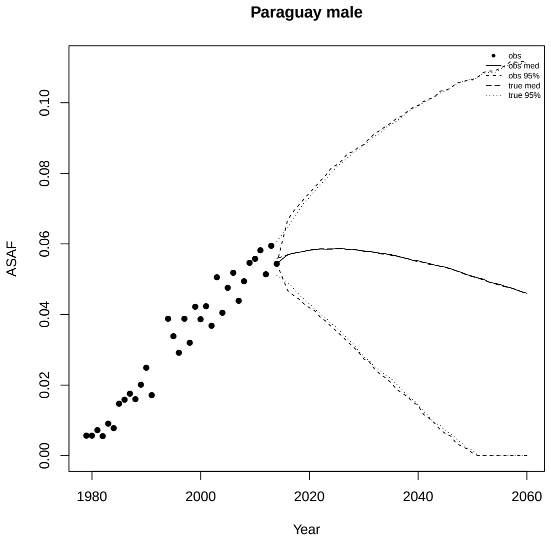

New Zealand female
ASAF
Year
0.00
0.05
0.10
0.15
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

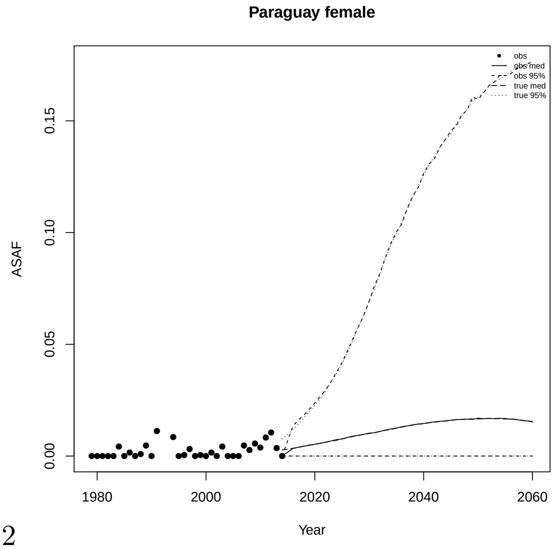

Norway male

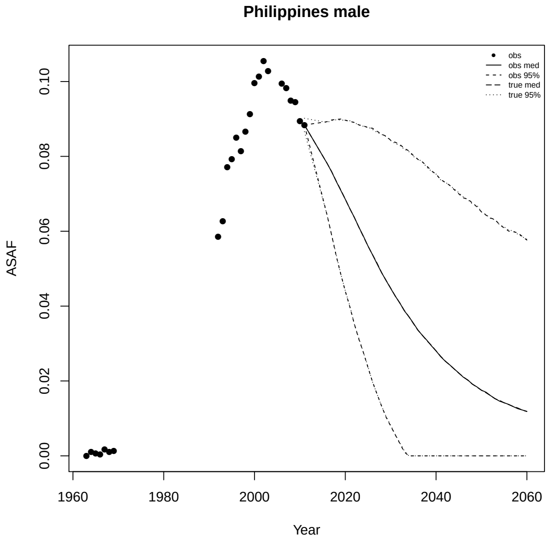

Norway female


Panama male

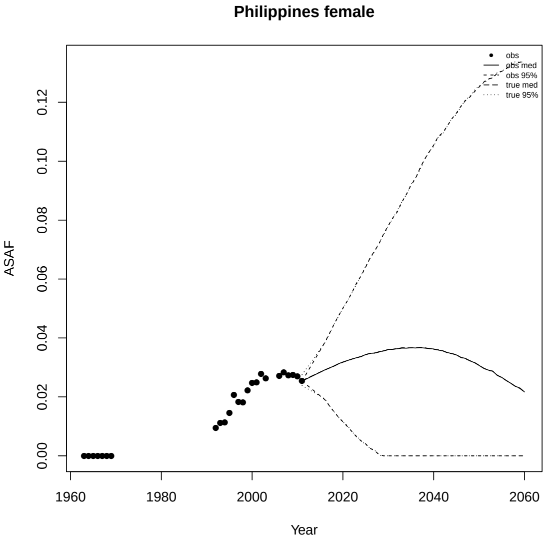

Panama female


Paraguay male

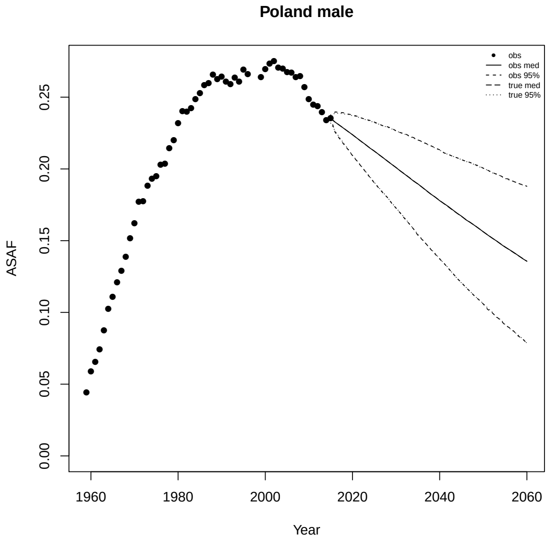

Paraguay female



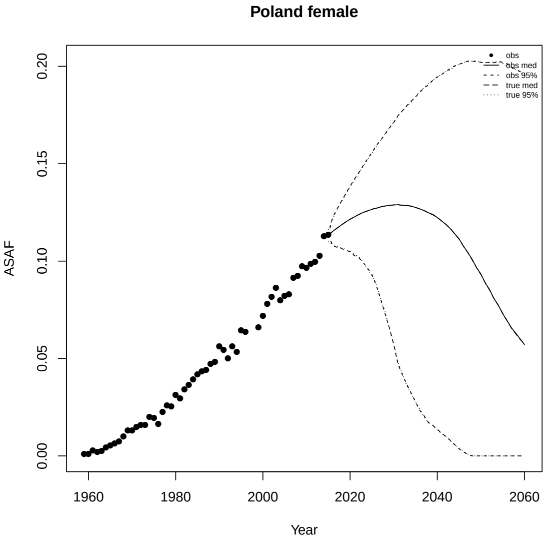
Philippines male



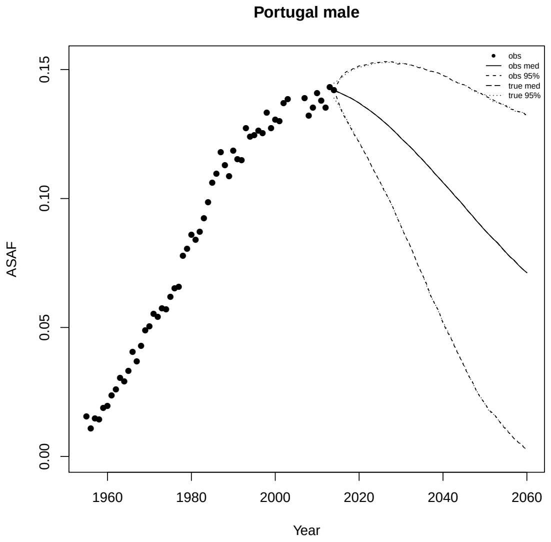
Philippines female



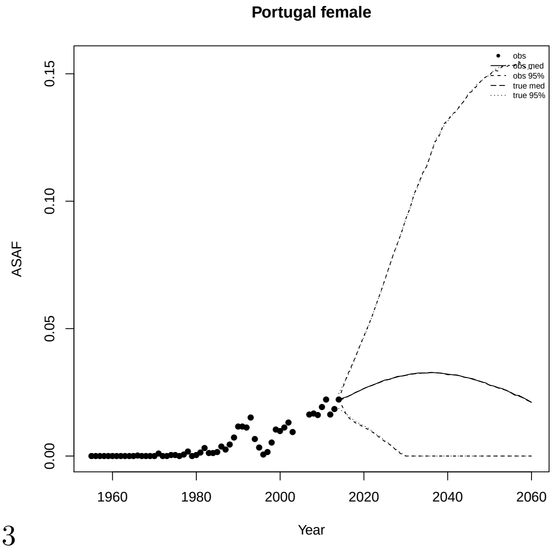
Poland male



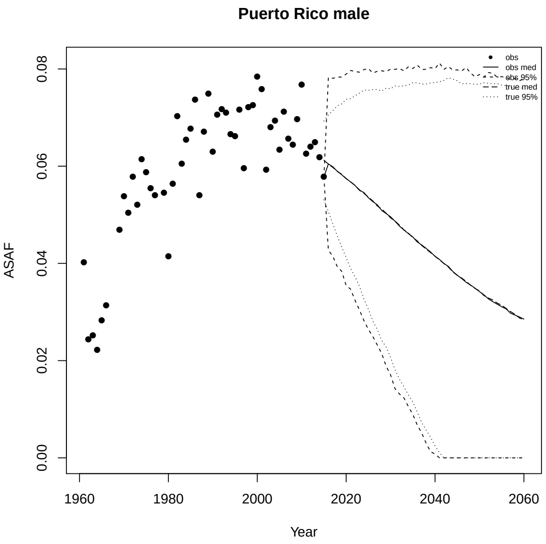
Poland female

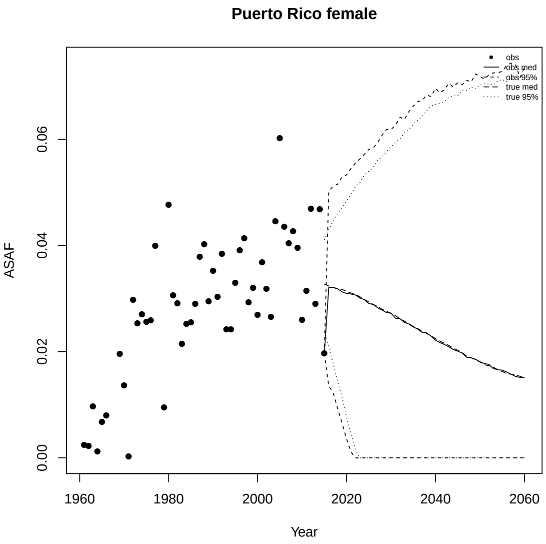


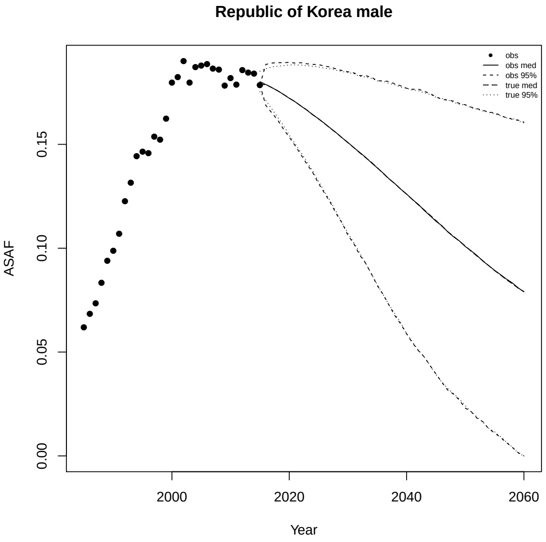
Portugal male

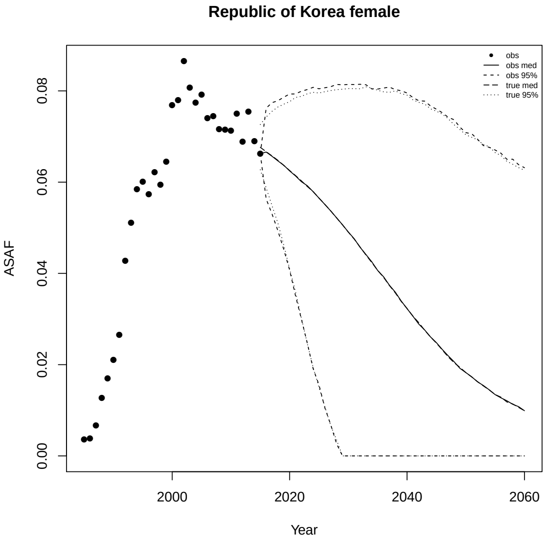


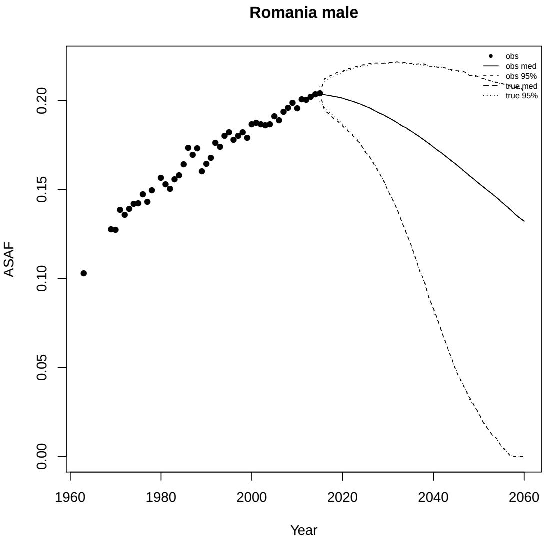
Portugal female

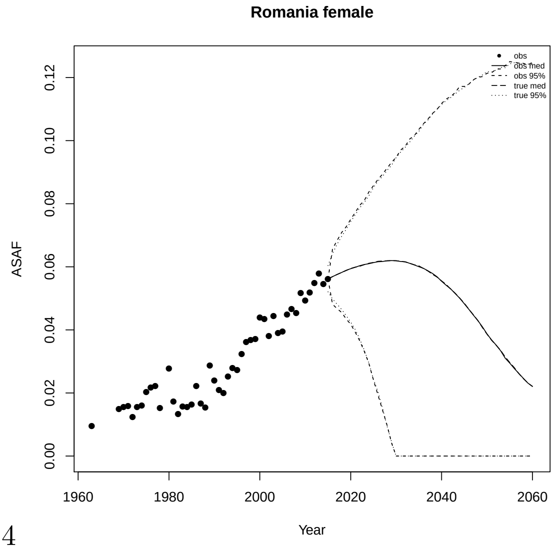

Puerto Rico male
ASAF
Year
0.00
0.02
0.04
0.06
0.08
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

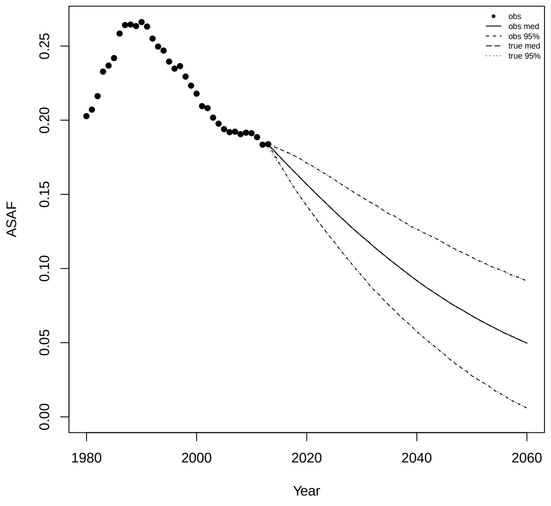

Puerto Rico female
ASAF
Year
0.00
0.02
0.04
0.06
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Republic of Korea male
ASAF
Year
0.00
0.05
0.10
0.15
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

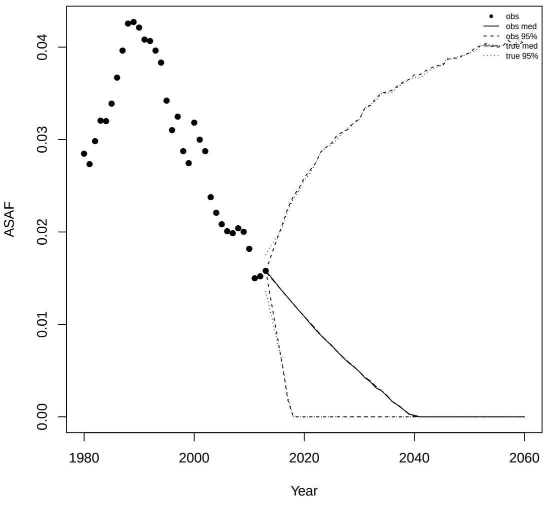

Republic of Korea female
ASAF
Year
0.00
0.02
0.04
0.06
0.08
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Romania male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

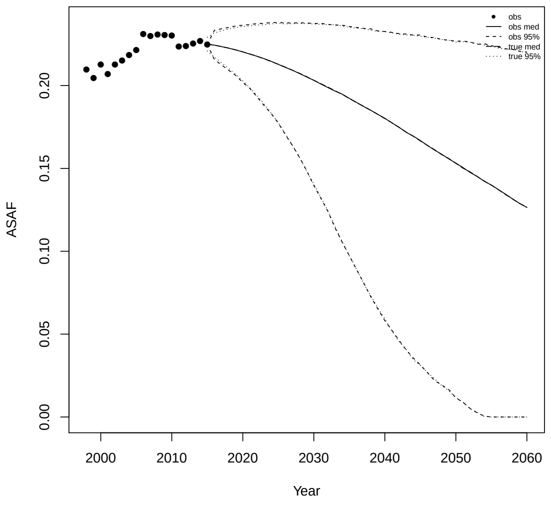

Romania female
ASAF
Year
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%



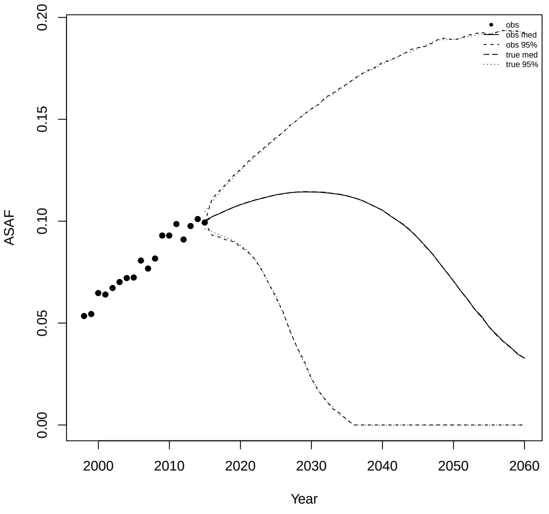
Russian Federation male



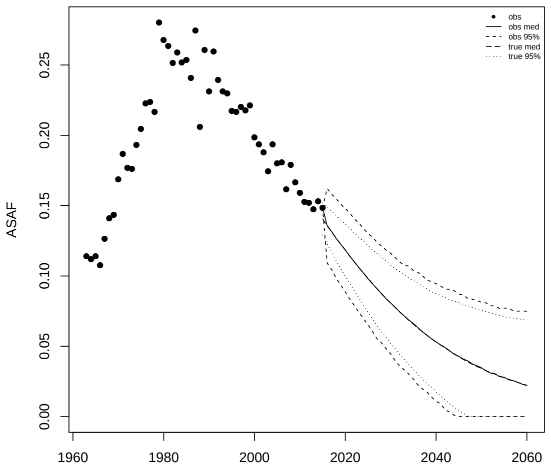
Russian Federation female



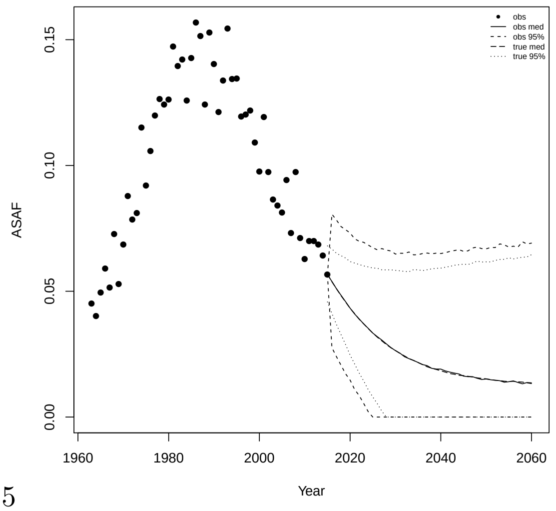
Serbia male



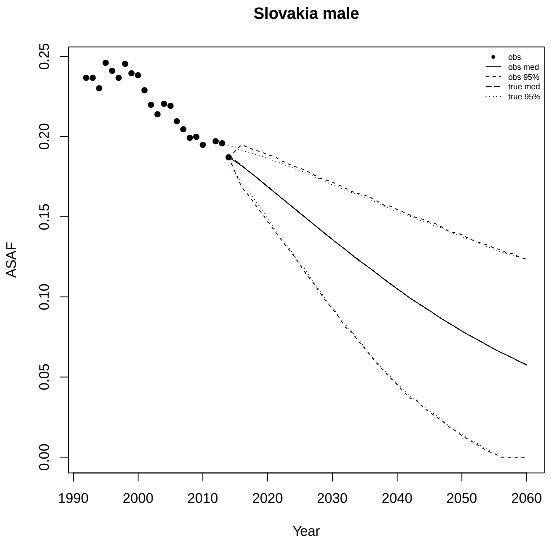
Serbia female

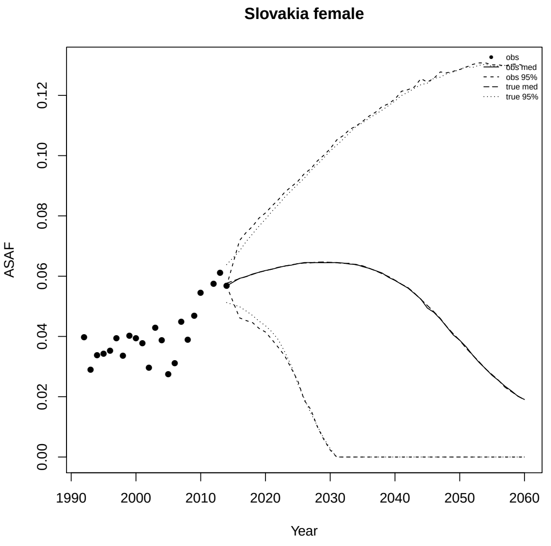


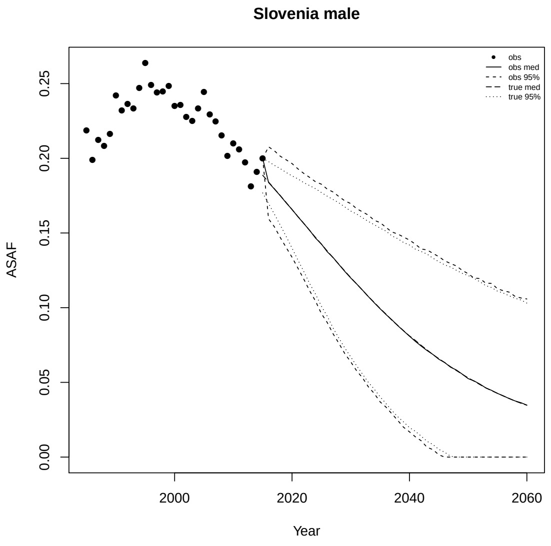
Singapore male

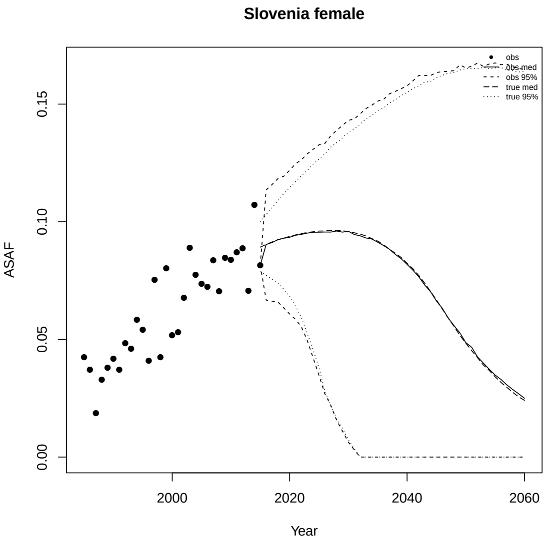


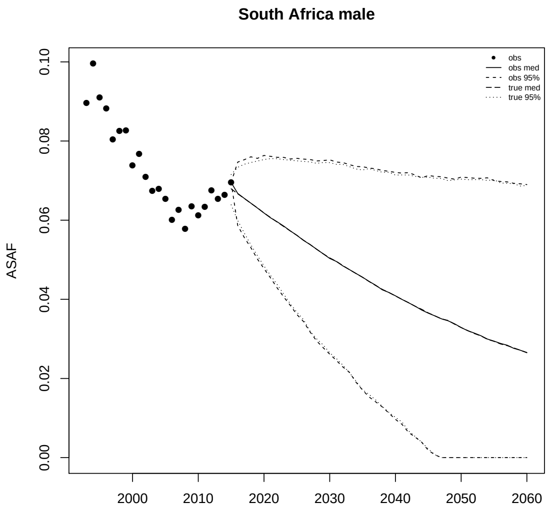
Singapore female

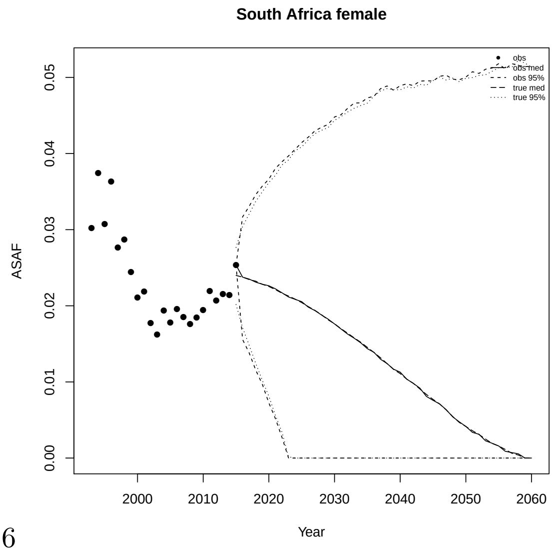

Slovakia male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
0.20
0.25
1990
2000
2010
2020
2030
2040
2050
2060

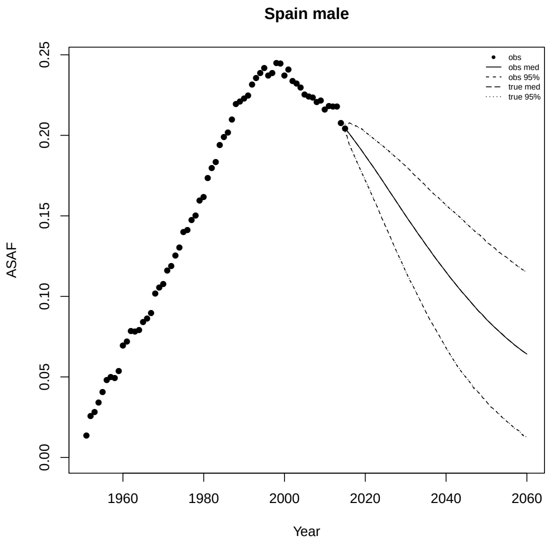

Slovakia female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1990
2000
2010
2020
2030
2040
2050
2060

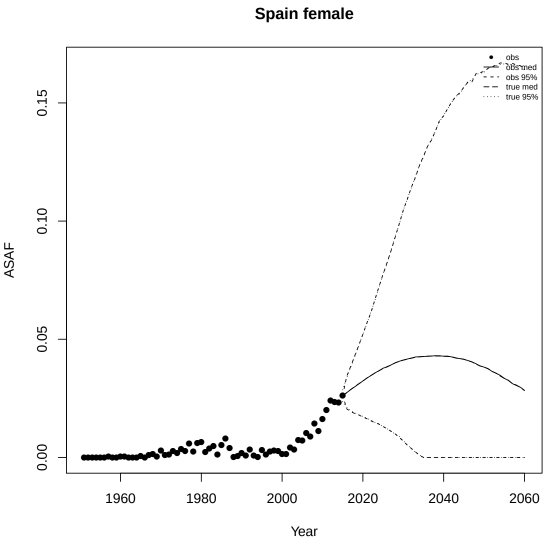

Slovenia male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
0.20
0.25
2000
2020
2040
2060

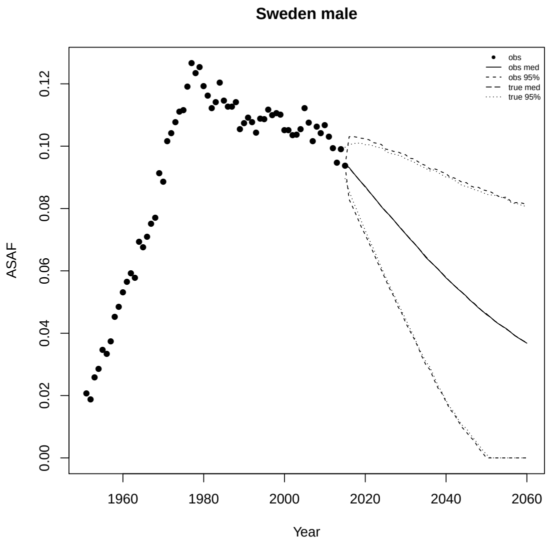

Slovenia female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
2000
2020
2040
2060

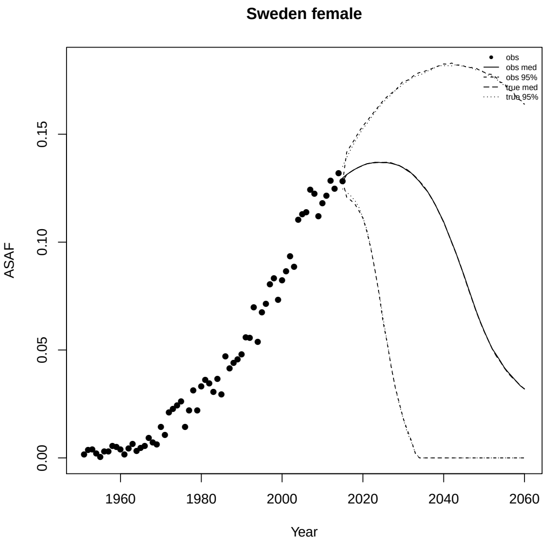

South Africa male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
0.04
0.06
0.08
0.10
2000
2010
2020
2030
2040
2050
2060

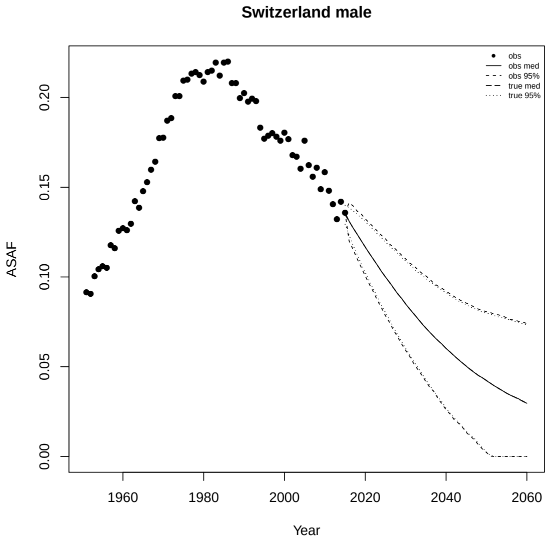

South Africa female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.01
0.02
0.03
0.04
0.05
2000
2010
2020
2030
2040
2050
2060

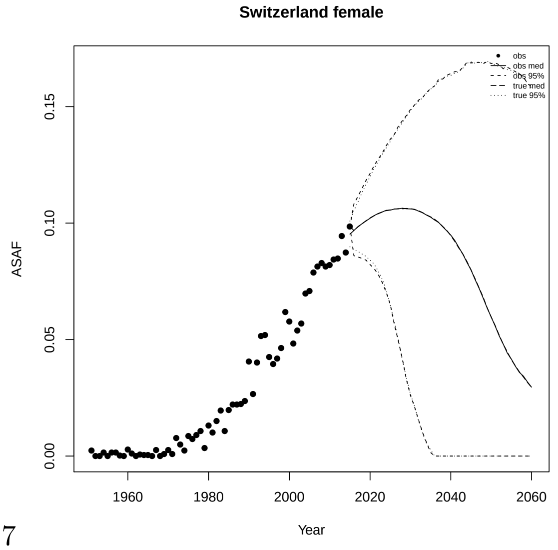

Spain male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
0.25
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

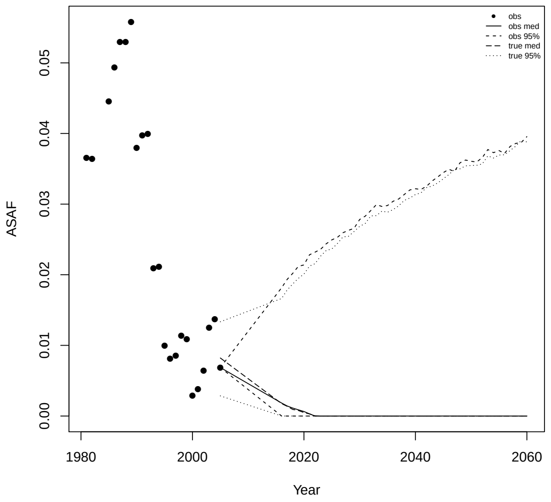

Spain female
ASAF
Year
0.00
0.05
0.10
0.15
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Sweden male
ASAF
Year
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

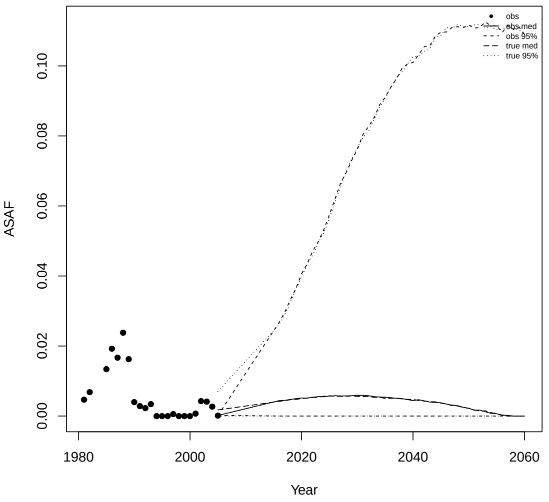

Sweden female
ASAF
Year
0.00
0.05
0.10
0.15
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Switzerland male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

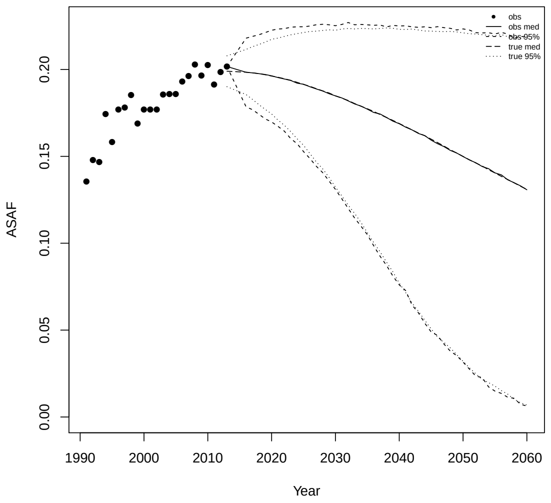

Switzerland female
ASAF
Year
0.00
0.05
0.10
0.15
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%



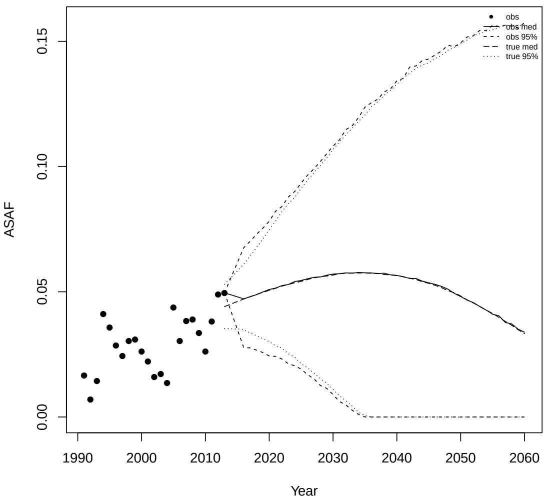
Tajikistan male



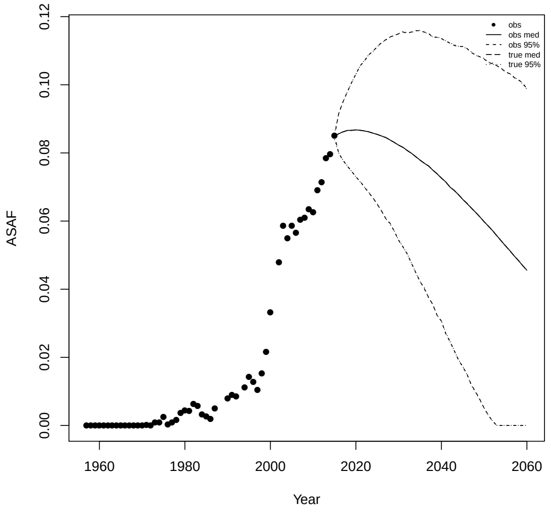
Tajikistan female



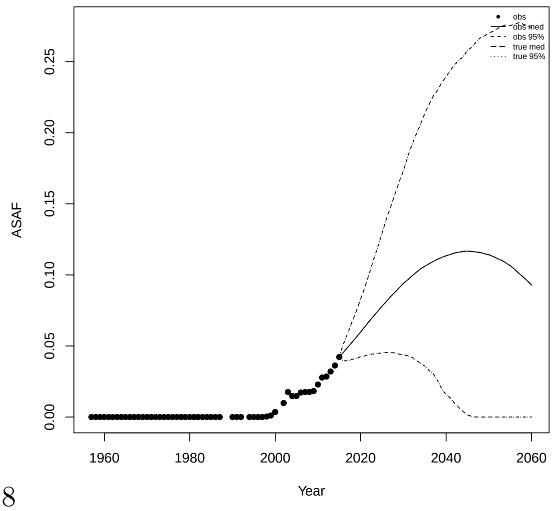
TFYR Macedonia male



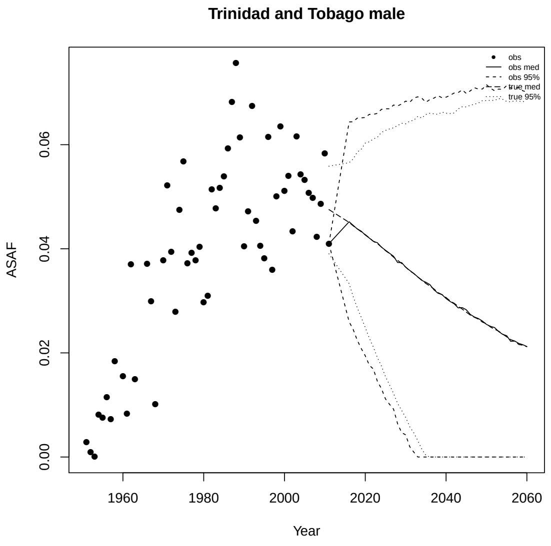
TFYR Macedonia female

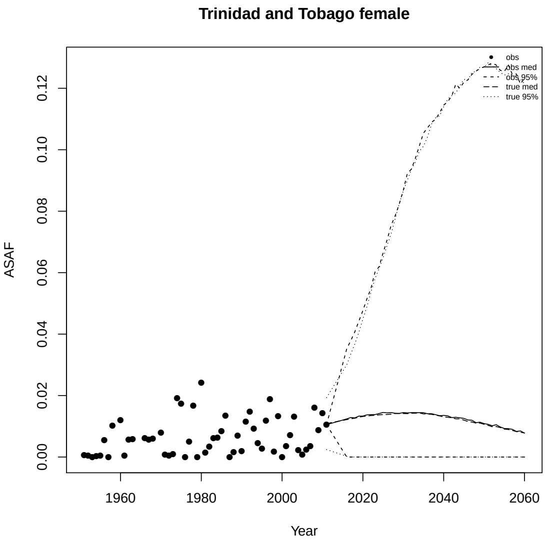


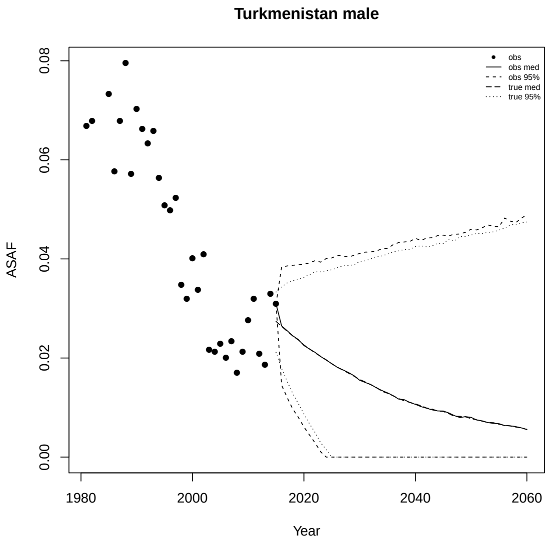
Thailand male

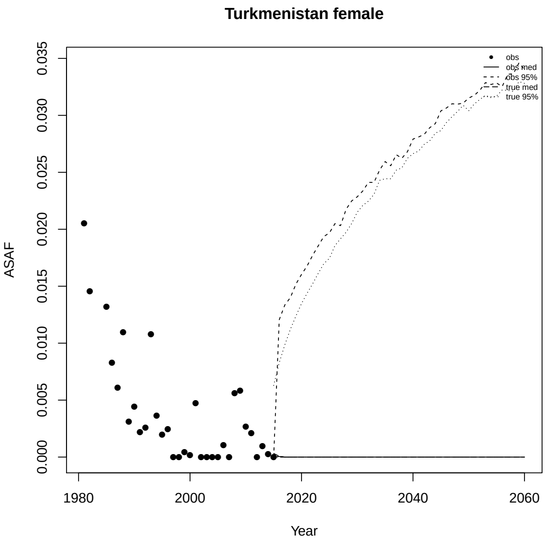


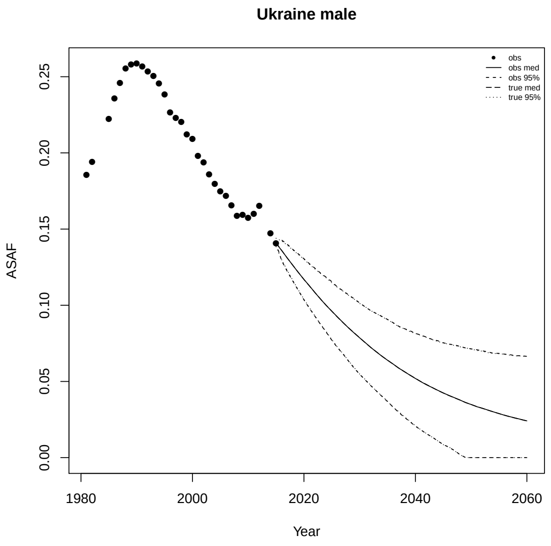
Thailand female

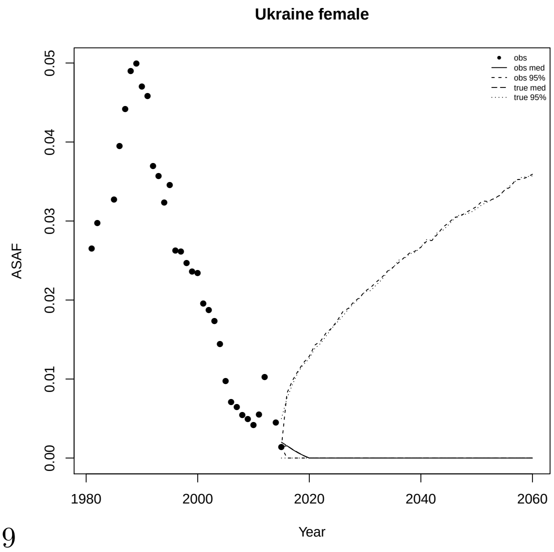

Trinidad and Tobago male
ASAF
Year
0.00
0.02
0.04
0.06
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

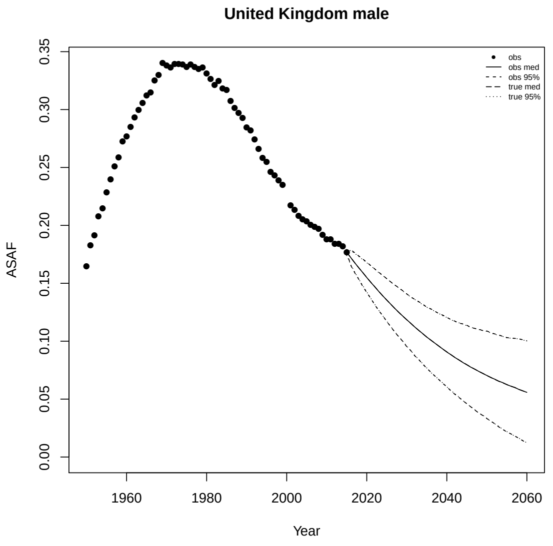

Trinidad and Tobago female
ASAF
Year
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

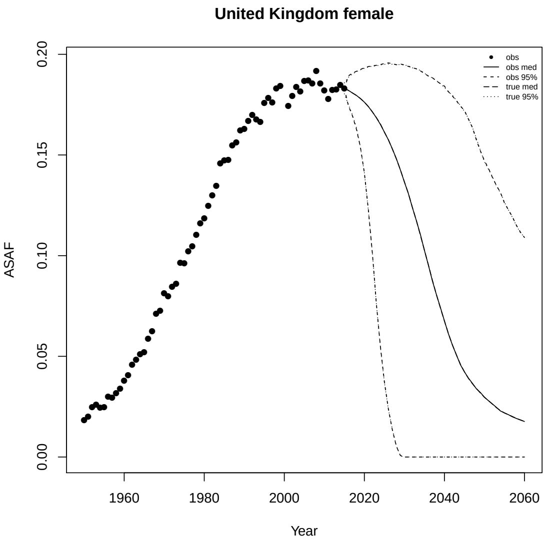

Turkmenistan male
ASAF
Year
0.00
0.02
0.04
0.06
0.08
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

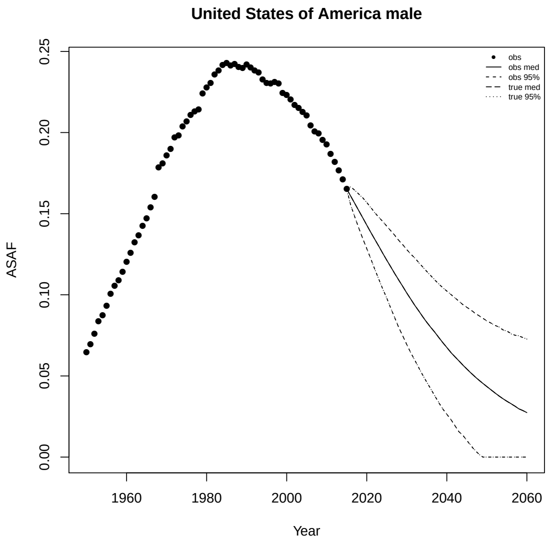

Turkmenistan female
ASAF
Year
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

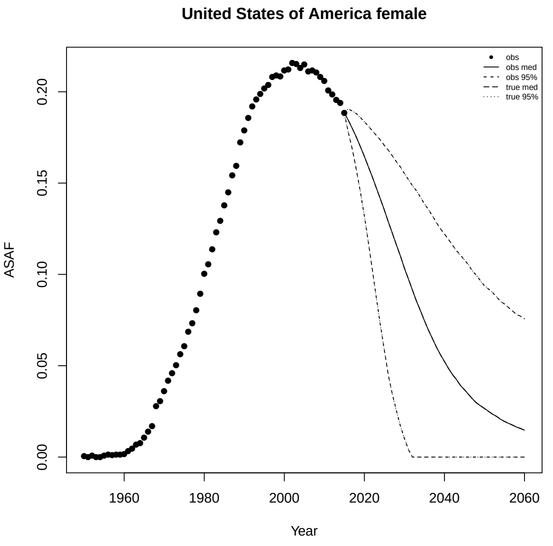

Ukraine male
ASAF
Year
0.00
0.05
0.10
0.15
0.20
0.25
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

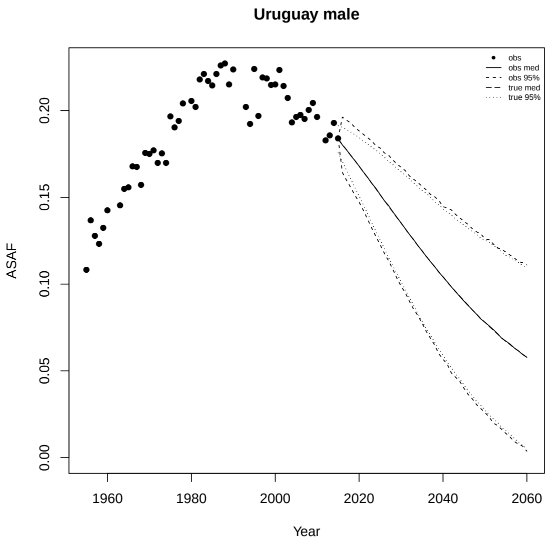

Ukraine female
ASAF
Year
0.00
0.01
0.02
0.03
0.04
0.05
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

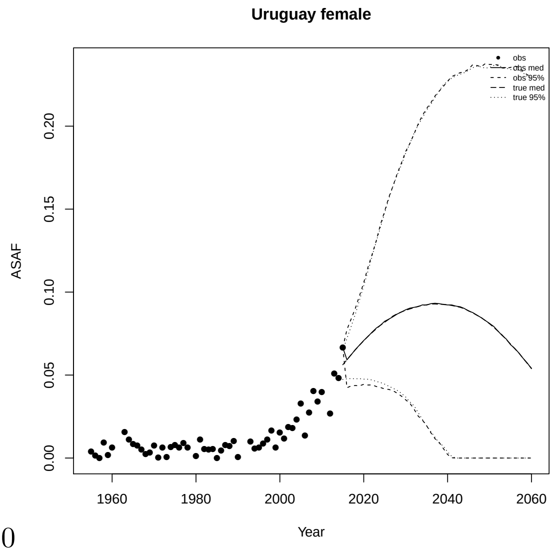

United Kingdom male
ASAF
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

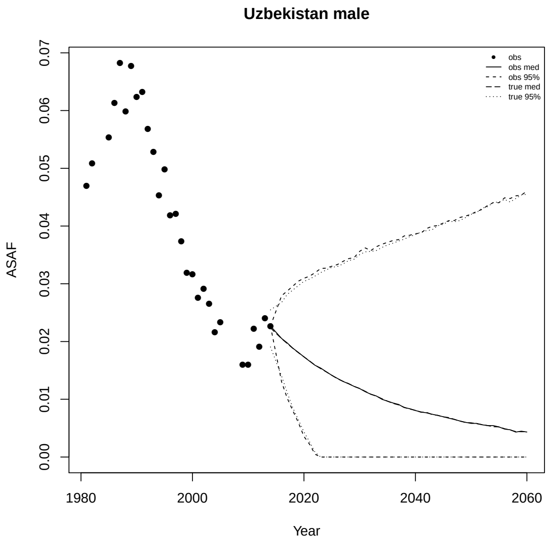

United Kingdom female
ASAF
0.00
0.05
0.10
0.15
0.20
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

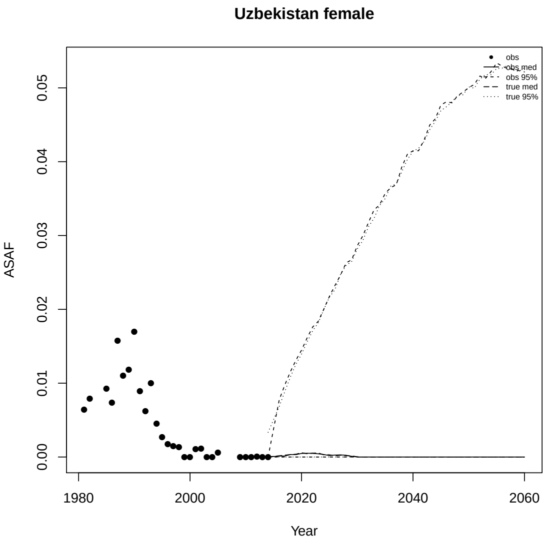

United States of America male
ASAF
0.00
0.05
0.10
0.15
0.20
0.25
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

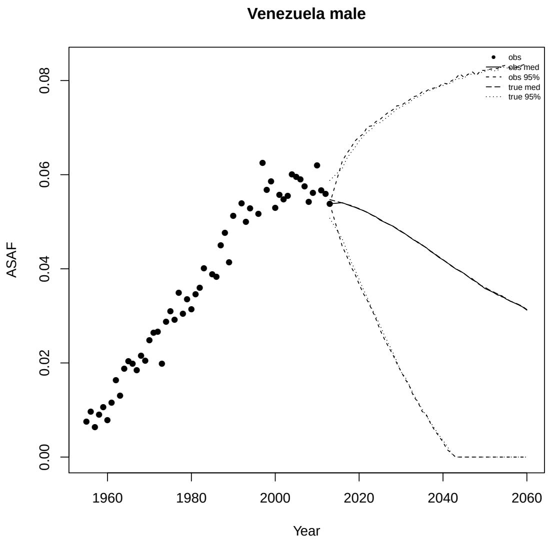

United States of America female
ASAF
0.00
0.05
0.10
0.15
0.20
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%

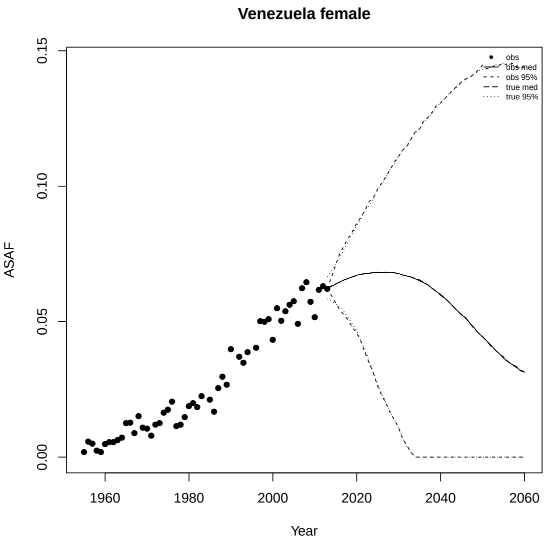

Uruguay male
ASAF
0.00
0.05
0.10
0.15
0.20
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Uruguay female
ASAF
0.00
0.05
0.10
0.15
0.20
Year
1960
1980
2000
2020
2040
2060
obs
obs med
obs 95%
true med
true 95%


Uzbekistan male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
1980
2000
2020
2040
2060


Uzbekistan female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.01
0.02
0.03
0.04
0.05
1980
2000
2020
2040
2060


Venezuela male
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.02
0.04
0.06
0.08
1960
1980
2000
2020
2040
2060


Venezuela female
ASAF
Year
obs
obs med
obs 95%
true med
true 95%
0.00
0.05
0.10
0.15
1960
1980
2000
2020
2040
2060

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