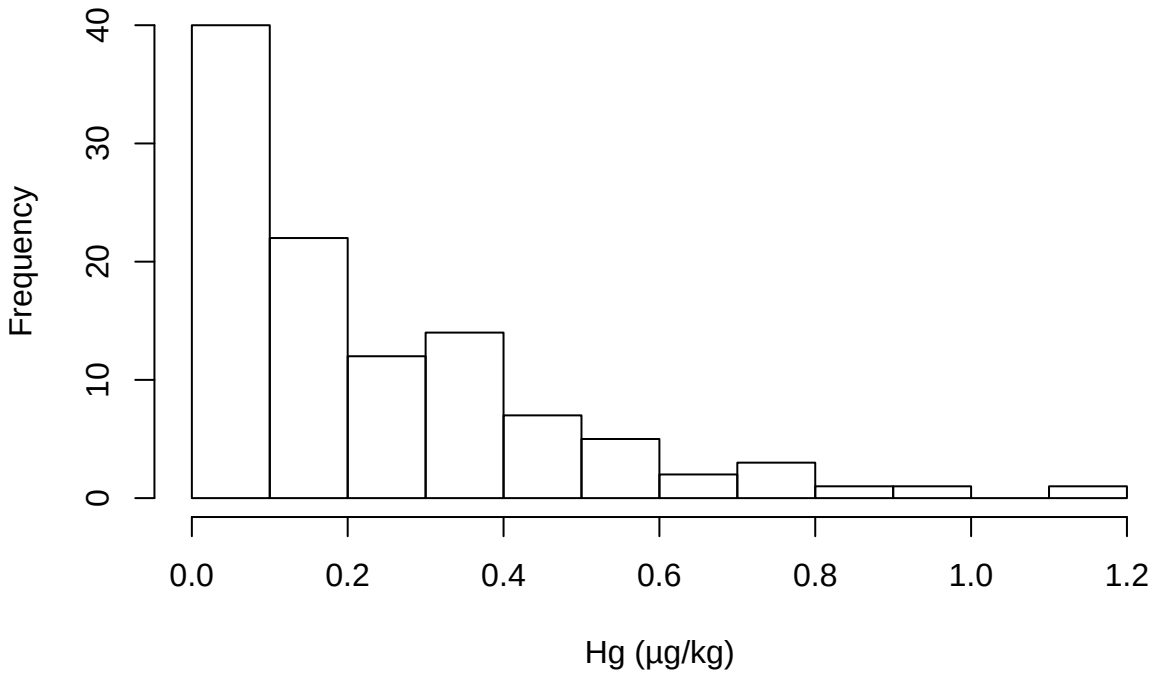
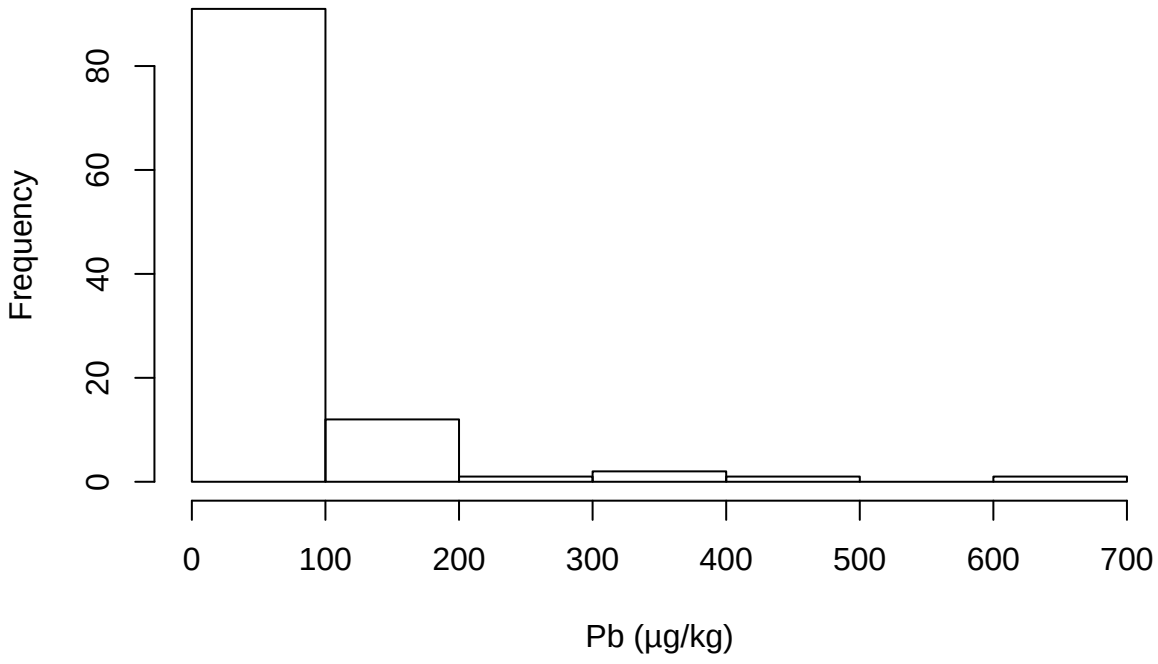
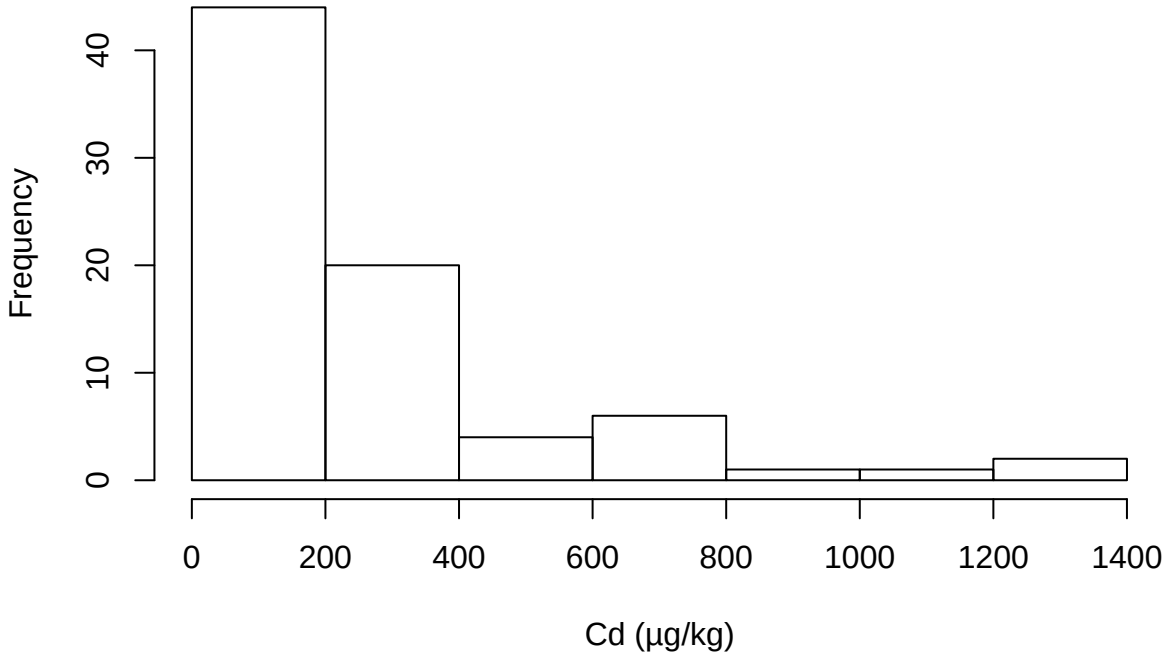
conger

Initial data inspection






Frequency
0
10
20
30
40
0
200
400
600
800
1000
1200
1400
Cd (µg/kg)

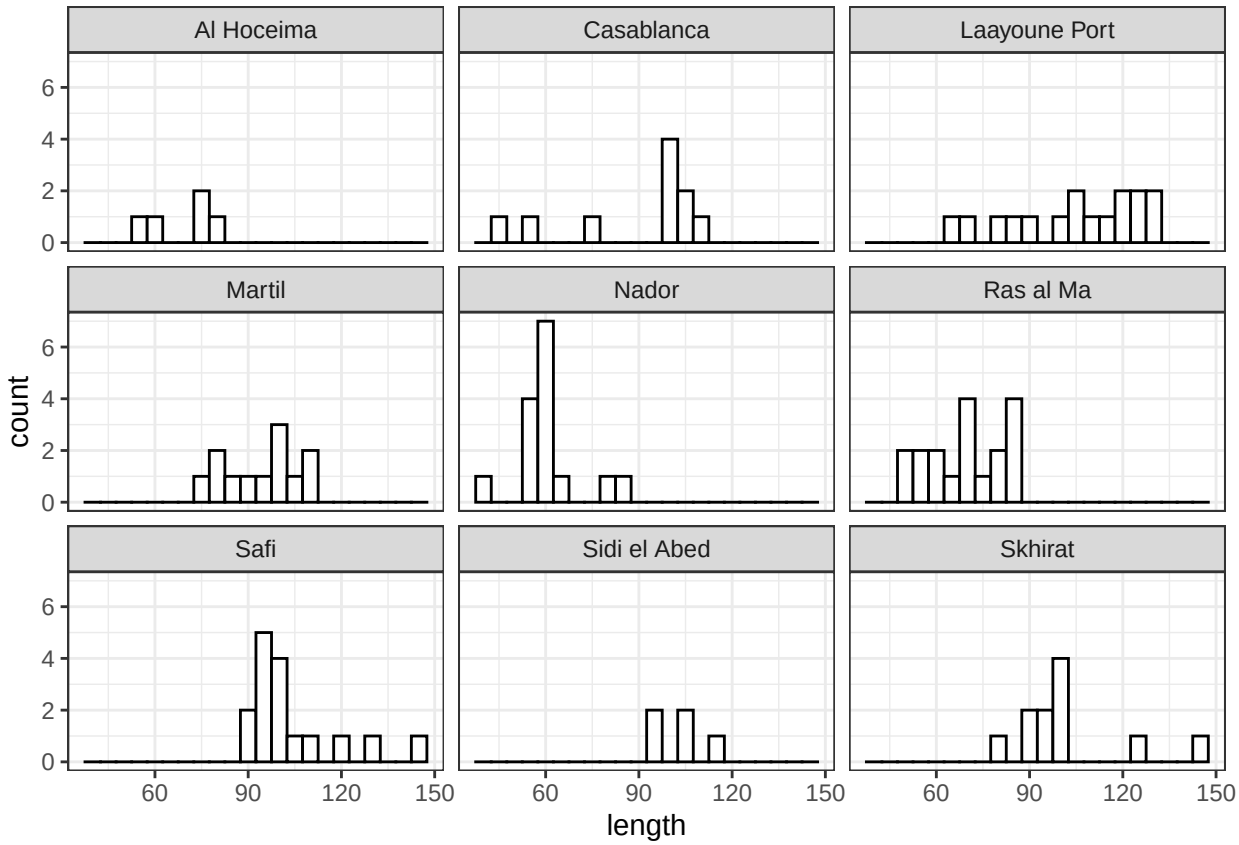
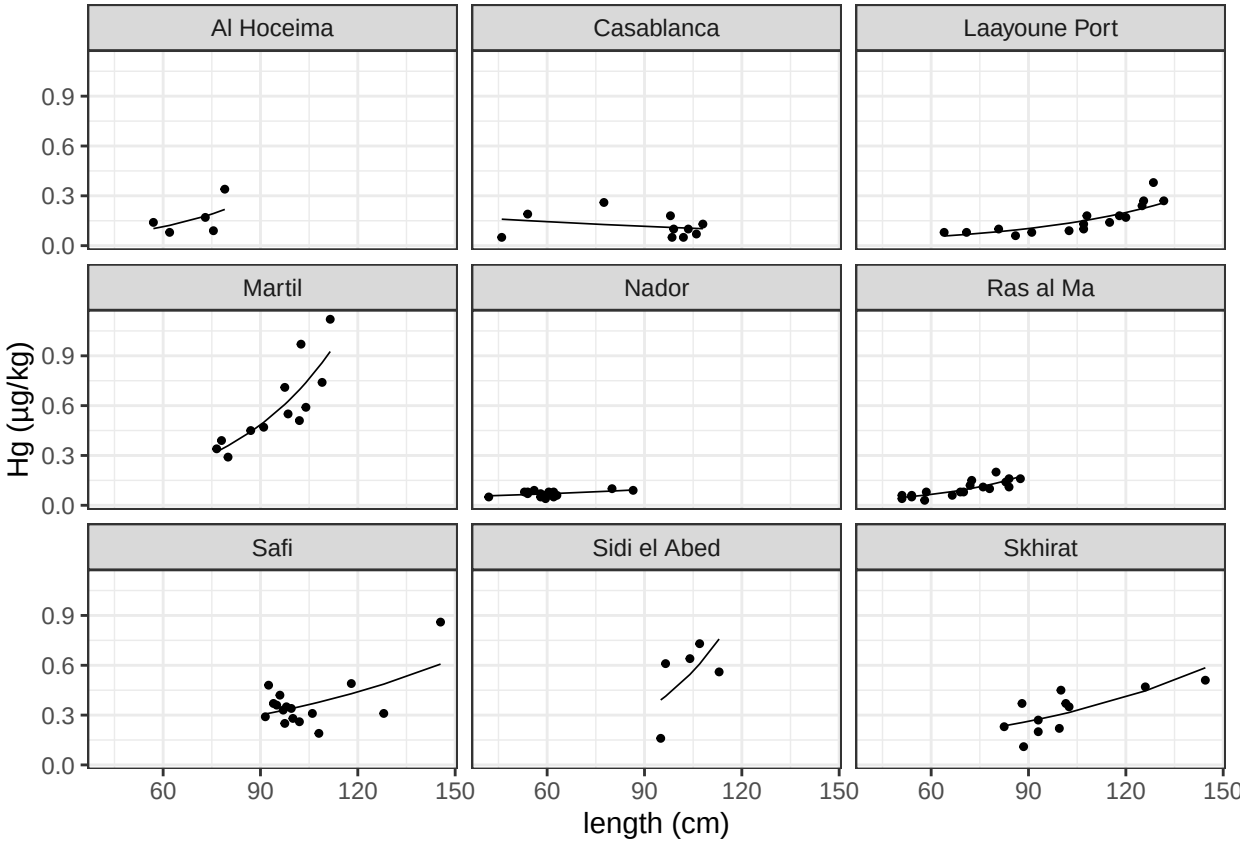
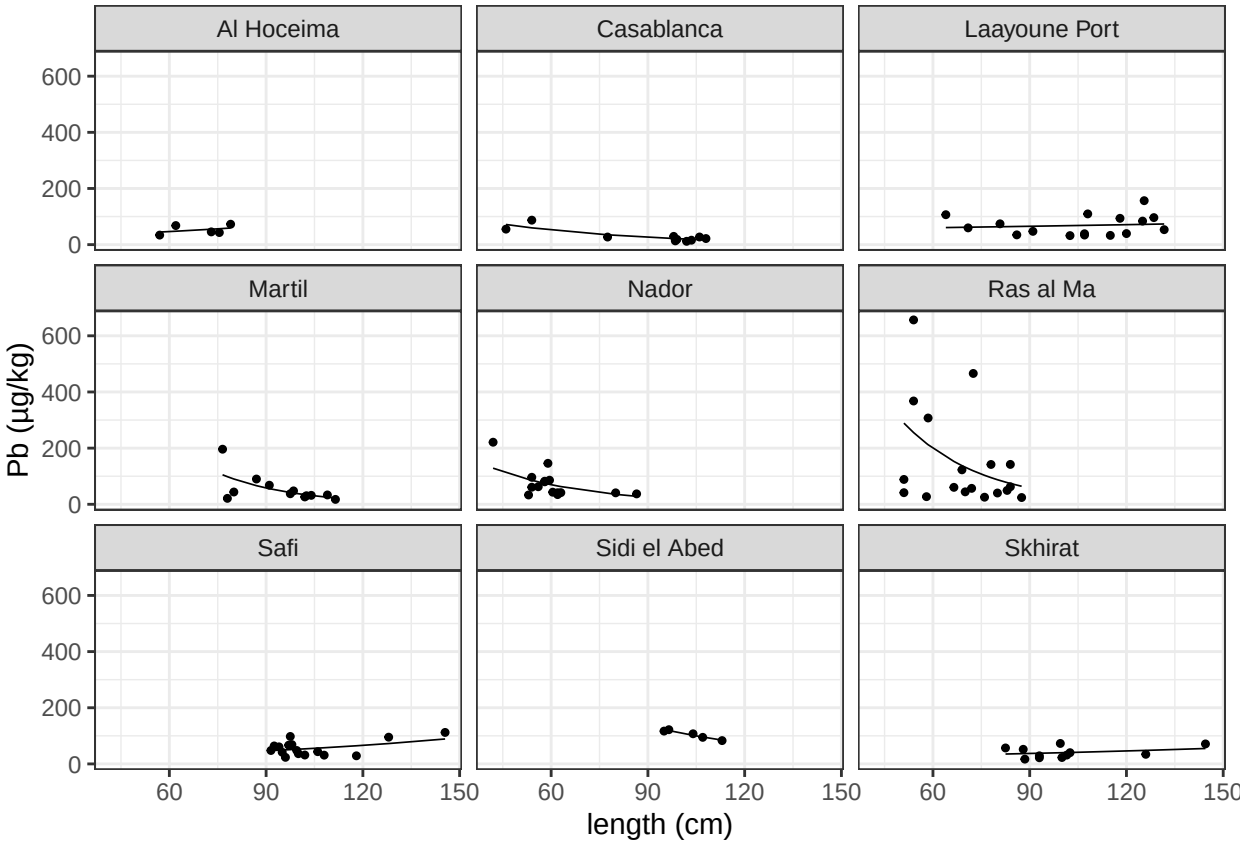


Fig 1 Overview of data distribution

Plotting the model results





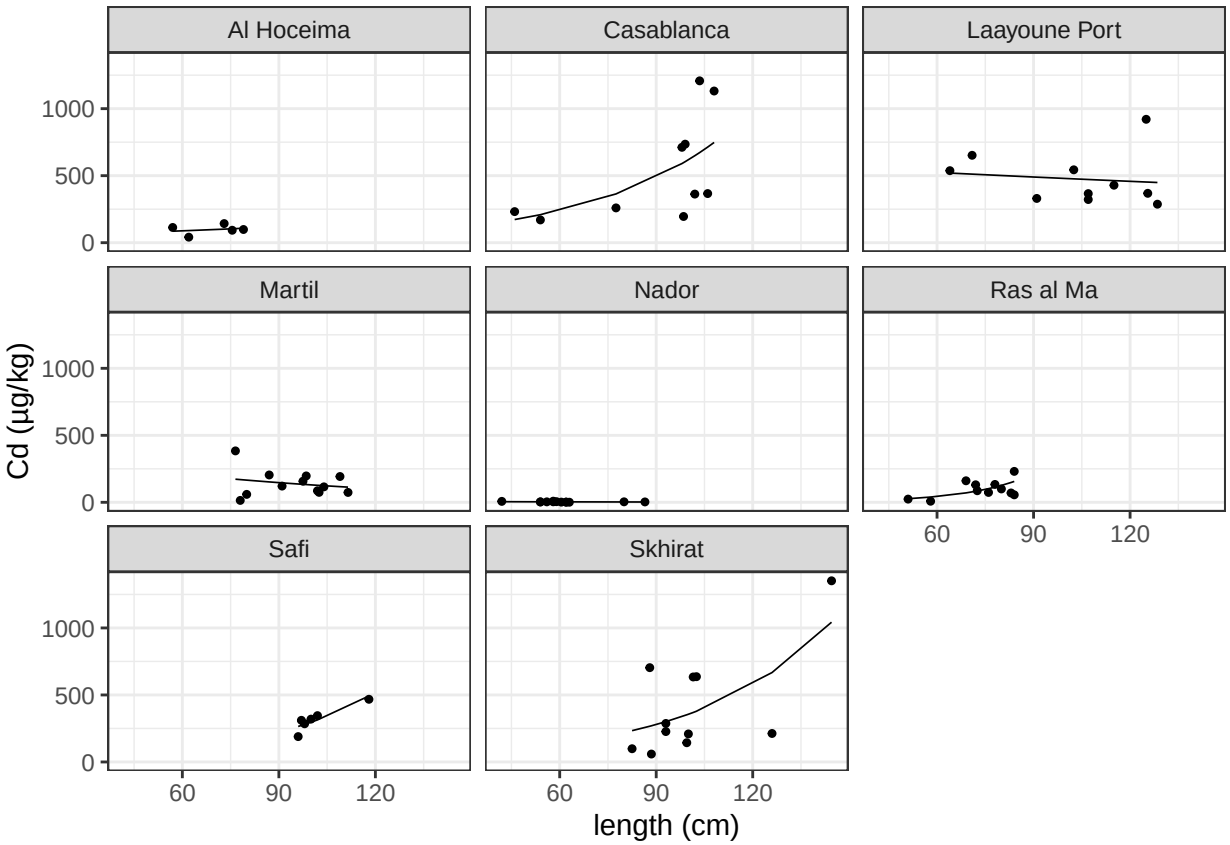
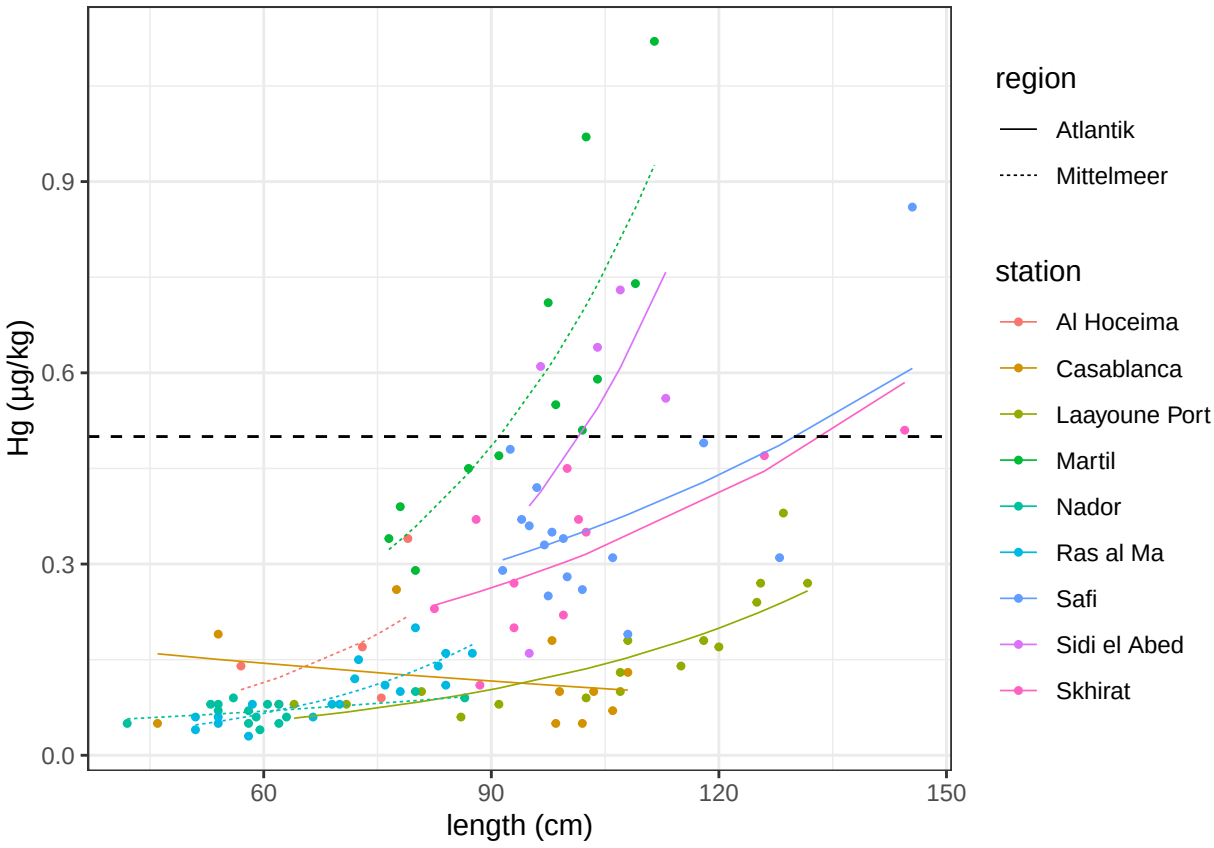
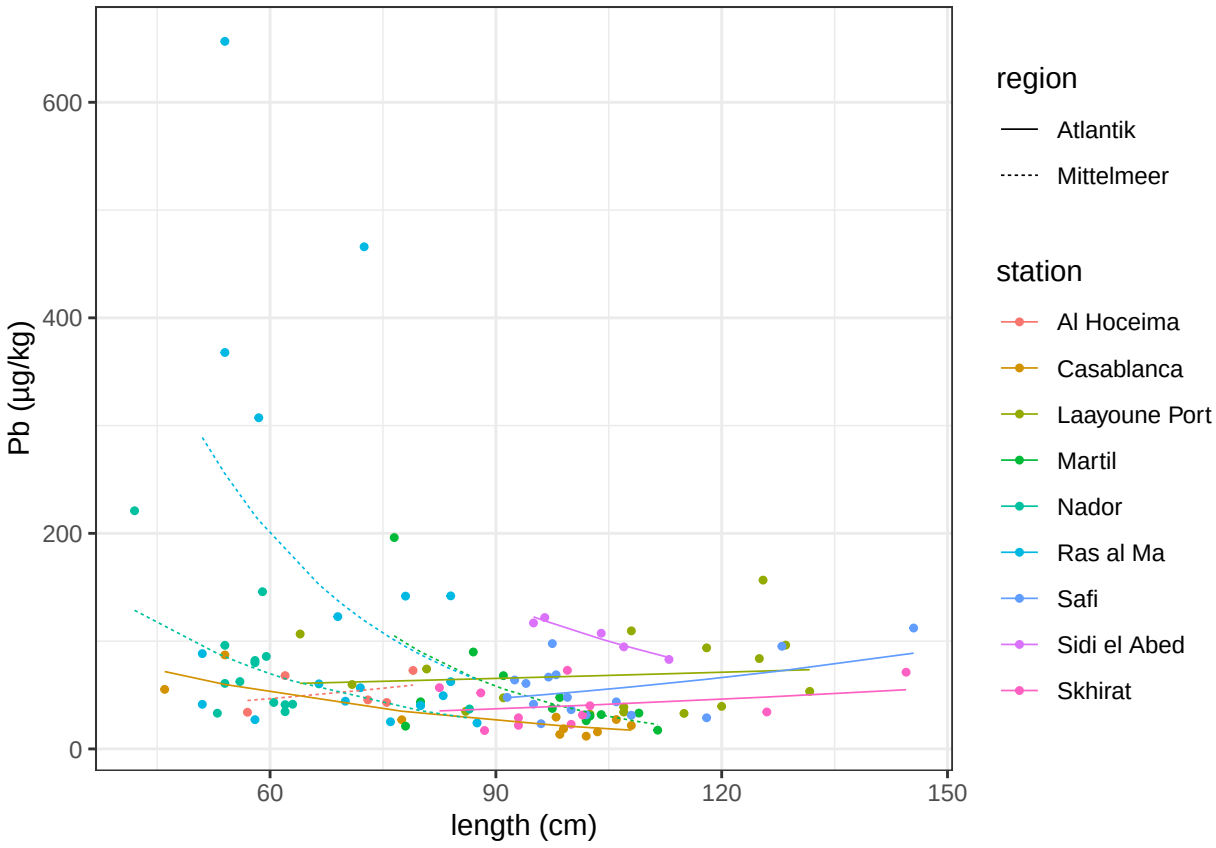


Fig 2a Raw data and GLM predictions of contaminat levels in COnger per Station as panel


Hg (µg/kg)
0.0
0.3
0.6
0.9
60
90
120
150
length (cm)
region
Atlantik
Mittelmeer
station
Al Hoceima
Casablanca
Laayoune Port
Martil
Nador
Ras al Ma
Safi
Sidi el Abed
Skhirat


Pb (µg/kg)
600
400
200
0
60
90
120
150
length (cm)
region
Atlantik
Mittelmeer
station
Al Hoceima
Casablanca
Laayoune Port
Martil
Nador
Ras al Ma
Safi
Sidi el Abed
Skhirat

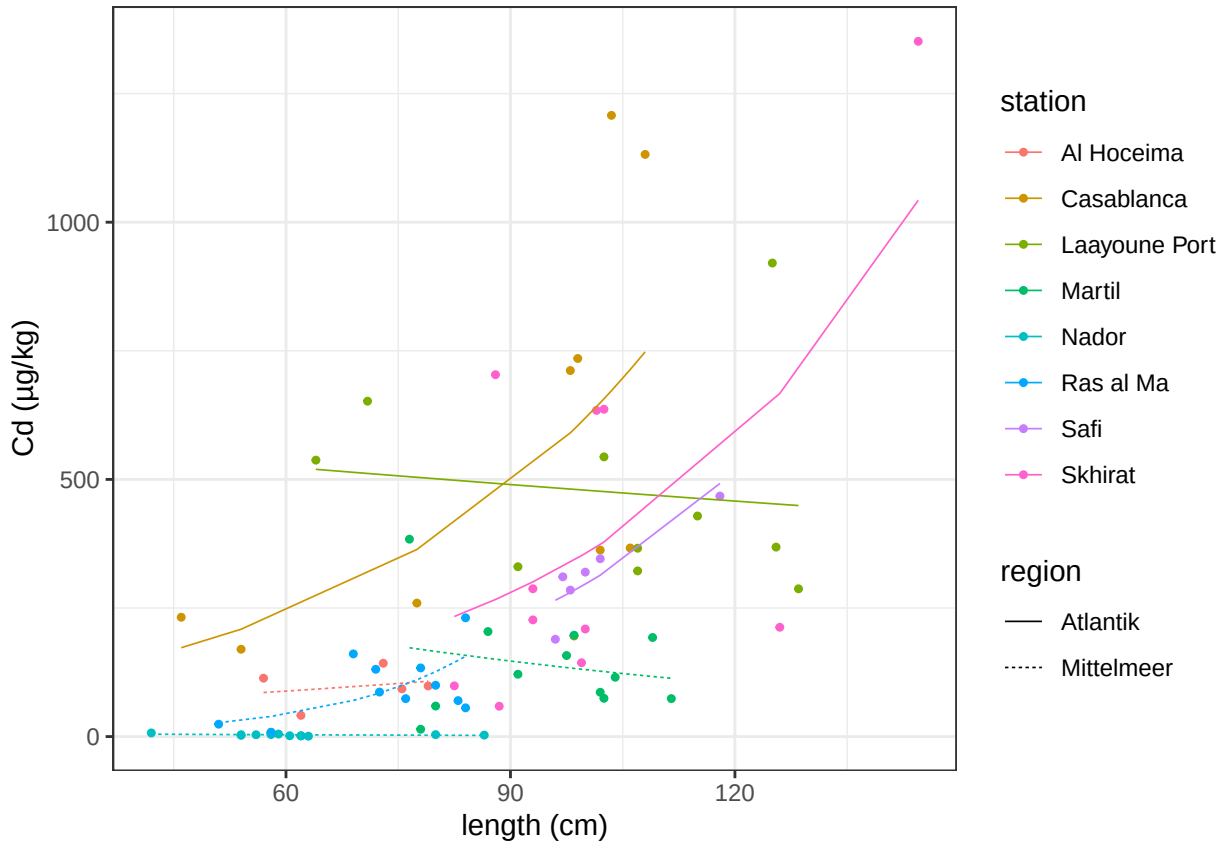


Fig 2b Raw data and GLM predictions of contaminat levels in COnger in single graph

Tab 1 Model statistics. Coefficients give the mean contamination at mean length of all congers on the log scale (i.e. exp of estimate provides the values given in Tab 2). p-values (last column, now header) indicate whether they are different from 0.
Coefficients with the suffix ":scale(length…" give the slope for the respective station. p-values (last column, no header) indicate whether the slopes are significant (i.e. different from 0) - have to double check if that is the correct interpretation but I think so.

Hg_Coefficient	Estimate	std_error	t_value	p_value
stationAl Hoceima	-1.211	0.367	-3.302	0.001
stationCasablanca	-2.139	0.106	-20.254	0.000
stationLaayoune Port	-2.314	0.109	-21.313	0.000
stationMartil	-0.781	0.111	-7.031	0.000
stationNador	-2.369	0.247	-9.602	0.000
stationRas al Ma	-1.729	0.146	-11.875	0.000
stationSafi	-1.225	0.126	-9.692	0.000
stationSidi el Abed	-1.192	0.366	-3.255	0.002
stationSkhirat	-1.364	0.128	-10.679	0.000
stationAl Hoceima:scale(length, scale = F)	0.034	0.018	1.922	0.058
stationCasablanca:scale(length, scale = F)	-0.007	0.005	-1.440	0.153

Hg_Coefficient	Estimate	std_error	t_value	p_value
stationLaayoune Port:scale(length, scale = F)	0.022	0.004	5.357	0.000
stationMartil:scale(length, scale = F)	0.030	0.008	3.622	0.000
stationNador:scale(length, scale = F)	0.011	0.008	1.283	0.203
stationRas al Ma:scale(length, scale = F)	0.035	0.007	5.417	0.000
stationSafi:scale(length, scale = F)	0.013	0.006	2.151	0.034
stationSidi el Abed:scale(length, scale = F)	0.037	0.022	1.647	0.103
stationSkhirat:scale(length, scale = F)	0.015	0.006	2.535	0.013

Pb_Coefficient	Estimate	std_error	t_value	p_value
stationAl Hoceima	4.196	0.658	6.381	0.000
stationCasablanca	3.311	0.189	17.490	0.000
stationLaayoune Port	4.175	0.195	21.448	0.000
stationMartil	4.144	0.199	20.807	0.000
stationNador	3.292	0.442	7.441	0.000
stationRas al Ma	4.136	0.261	15.840	0.000
stationSafi	3.822	0.227	16.861	0.000
stationSidi el Abed	4.949	0.656	7.540	0.000
stationSkhirat	3.603	0.229	15.729	0.000
stationAl Hoceima:scale(length, scale = F)	0.013	0.032	0.395	0.694
stationCasablanca:scale(length, scale = F)	-0.023	0.009	-2.565	0.012
stationLaayoune Port:scale(length, scale = F)	0.003	0.007	0.380	0.705
stationMartil:scale(length, scale = F)	-0.044	0.015	-2.940	0.004
stationNador:scale(length, scale = F)	-0.034	0.015	-2.259	0.026
stationRas al Ma:scale(length, scale = F)	-0.041	0.012	-3.511	0.001
stationSafi:scale(length, scale = F)	0.012	0.011	1.098	0.275
stationSidi el Abed:scale(length, scale = F)	-0.020	0.040	-0.511	0.610
stationSkhirat:scale(length, scale = F)	0.007	0.010	0.688	0.493

Cd_Coefficient	Estimate	std_error	t_value	p_value
stationAl Hoceima	4.756	0.606	7.848	0.000
stationCasablanca	6.109	0.189	32.250	0.000
stationLaayoune Port	6.202	0.241	25.683	0.000
stationMartil	5.032	0.211	23.839	0.000

Cd_Coefficient	Estimate	std_error	t_value	p_value
stationNador	0.874	0.419	2.085	0.041
stationRas al Ma	5.182	0.291	17.826	0.000
stationSafi	5.312	0.553	9.608	0.000
stationSkhirat	5.549	0.238	23.277	0.000
stationAl Hoceima:scale(length, scale = F)	0.010	0.032	0.327	0.745
stationCasablanca:scale(length, scale = F)	0.024	0.009	2.671	0.010
stationLaayoune Port:scale(length, scale = F)	-0.002	0.009	-0.255	0.799
stationMartil:scale(length, scale = F)	-0.012	0.015	-0.812	0.420
stationNador:scale(length, scale = F)	-0.015	0.015	-0.986	0.328
stationRas al Ma:scale(length, scale = F)	0.053	0.018	3.034	0.004
stationSafi:scale(length, scale = F)	0.028	0.032	0.869	0.388
stationSkhirat:scale(length, scale = F)	0.024	0.010	2.339	0.023

Comparison of stations

Tab 2 Predictions of contamination at mean length (or mean for Pb)

station	length	Hg_at_length	Pb_mean	Cd_at_length
Al Hoceima	88.11944	0.29791902	52.67600	118.316697
Casablanca	88.11944	0.11782209	30.77000	467.503260
Laayoune Port	88.11944	0.09887047	68.35375	492.047724
Martil	88.11944	0.45791590	53.58667	150.176789
Nador	88.11944	0.09356289	73.66667	2.337954
Ras al Ma	88.11944	0.17739032	151.30722	194.220621
Safi	88.11944	0.29368549	56.08875	212.304914
Sidi el Abed	88.11944	0.30371141	104.74800	
Skhirat	88.11944	0.25555776	40.84091	267.362864

station	geom_mean
Al Hoceima	50.55120
Casablanca	25.28859
Laayoune Port	60.22591
Martil	41.85656

station	geom_mean
Nador	62.35228
Ras al Ma	87.80458
Safi	50.63021
Sidi el Abed	103.73526
Skhirat	36.69675