Comparision of calculated and measured paleo-sea level using different lower mantle viscosity values and PaleoMIST 1.0

As a supplement to "*A new global ice sheet reconstruction for the past 80 000 years*" by Evan J. Gowan, Xu Zhang, Sara Khosravi, Alessio Rovere, Paolo Stocchi, Anna L. C. Hughes, Richard Gyllencreutz, Jan Mangerud, John-Inge Svendsen & Gerrit Lohmann

Evan James Gowan

Contents

1 Purpose of this document

In this report there is a detailed summary, including plots, of a worldwide compilation of paleo-sea level data, and six ice sheet-Earth models. In this particular report, we compare the standard version of PaleoMIST 1.0 (with 2500 year time steps and using a lower mantle viscosity of 4×10^{22} Pa s), with five other Earth models with viscosity values ranging between 10^{21} and 10^{23}. When developing PaleoMIST 1.0, a variety of lower mantle viscosity values were tested, and it was found that a value approaching 10^{23} Pa s provided the best trade-off between increasing the amount of ice in the center of the Laurentide Ice Sheet and fitting the sea level data. This ended up being true for the Eurasian ice sheets as well. PaleoMIST 1.0 was tuned to an Earth model with a viscosity of 4×10^{22} Pa s, but the comparison shown in this document demonstrate that a slightly higher value of 10^{23} Pa s provides an even better fit.

The accompanying paper is (Gowan et al., 2021).

Update on October 22, 2021:

This document has been updated to include several additional sites at the LGM and MIS 3. It also has fixed an error in the Cairns and Mackay sites caused by incorrectly subtracting half of the depth range rather than adding it. I apologize for this error. For the coral data for Tahiti and Huon Peninsula, it was originally set to be marine limiting, since the living range was tens of meters. We now use the 2-sigma range determined by Hibbert et al. (2016). We include the interpretations of sea level range by Ishiwa et al. (2019) and Yokoyama et al. (2000) for the Bonaparte Gulf shallow marine/estuary/intertidal data in addition to my conservative marine limiting assignment. I also included the interpreted sea level of Huon Peninsula by de Gelder et al. (2021) for MIS 3 to compare with the coral depth range interpretation by Hibbert et al. (2016). Finally, I also recalibrated all the radiocarbon dates using updated calibration curves published in 2020 (Heaton et al., 2020; Hogg et al., 2020; Reimer et al., 2020).

2 Summary of ice and Earth models

In order to make the figures compact, I have made shorthand codes for the ice and Earth models. I calculate each ice sheet separately, and the numbers refer to the "run number", which is a sequential number that I used to distinguish git commits (see `https://github.com/evangowan/icesheet`). The ice model numbering scheme is as follows:

"North America"_"Europe"_"Antarctica"_"Patagonia"

For PaleoMIST 1.0, the minimal MIS 3 configuration reconstruction is 72_73_74_75, while the maximal configuration is 82_83_85_85

For the Earth models, I created a shorthand scheme during my PHD, which I have continued to use. A full explanation can be found on the github page:

`hhttps://github.com/evangowan/icesheet/blob/master/global/earth_model_format_codes.txt`

The full description of each model compared in this document is in this section.

2.1 Ice models

72_73_74_75 - PaleoMIST 1.0 - reduced MIS 3 Laurentide Ice Sheet scenario, with Hudson Bay fully deglaciated

2.2 Earth models

ehgA - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 1×10^{21} Pa s lower mantle

ehgC - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 1.58×10^{21} Pa s lower mantle

ehgG - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 4×10^{21} Pa s lower mantle

ehgk - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 1×10^{22} Pa s lower mantle

ehgK - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 1×10^{23} Pa s lower mantle

ehgr - 120 km thick lithopshere, 4×10^{20} Pa s upper mantle, 4×10^{22} Pa s lower mantle

3 Paleo-sea level compilations

This is a list of paleo-sea level compilations, which served as the basis for this report. We acknowledge the hard work of the people compiling the data, as well as acknowledging those who collected the original data.

3.1 North America

- Canada and Greenland - A.S. Dyke and T.S. James (unpublished, though some of it was summarized in Dyke and Peltier (2000b))
- Eastern Canada - Vacchi et al. (2018)
- Hudson Bay - Simon et al. (2016)
- Hudson Bay and northern mainland Canada - Gowan et al. (2016)

I have made some changes and corrections from the compilations above.

At Churchill, there is a site, denoted with the radiocarbon date S-738, which was originally assigned to be a marine limiting indicator. It was described in Morlan et al. (2000) as "shells enclosed in gravel in a quartzite ridge". It was originally interpreted as being a sea level indicator, with sea level at around 35 m. Using IMCalc (Lorscheid and Rovere, 2019), and a tidal amplitude of 1.6 m based on the tide gauge at Churchill (Ray, 2016), assuming the landform represents a beach ridge, and including a 20% uncertainty on the original 35 m elevation (to account for the lack of information on elevation measurement), the sea level indicator is 32.8 ± 7 m.

There were many data that refered just to compilations rather than the original sources. I have tried to track down the original sources as much as possible, but in some cases it was not possible, as they were neither listed in the Vacchi compilation nor the Dyke and James compilation.

The compilation of sea level indicators in the eastern United States was done by Engelhart and Horton (2012). Thanks to Simon Engelhart for sending me a copy of the dataset with the reservoir corrections used for marine organisms.

The MIS 3-5 data from the east coast of the United States was compiled by Pico et al. (2017).

3.2 Europe

The Baltic Sea sea level indicators are from (Rosentau et al., 2021). The version that is currently included here was based on an earlier version of the compilation provided by Holger Steffen, and has yet to be updated, and is likely to have differences from the final published version. This will be updated in the future, as I will also need to add all the references.

Scandinavia sea level indicators are from and unpublished compilation by Jan Mangerud, Kristian Vasskog and Øystein Lohne. Some parts of the compilation can be found in:

- Svalbard - Bondevik et al. (1995)

- Northern Europe - Forman et al. (2004)
- Norway - Lohne et al. (2007); Romundset et al. (2010, 2011, 2015, 2018); Vasskog et al. (2019)

The compilation of sea level indicators for Rotterdam in the Netherlands is from Hijma and Cohen (2019).

3.3 Eurasian Arctic

The sea level indicators for northern Norway and Svalbard are from and unpublished compilation by Jan Mangerud, Kristian Vasskog and Øystein Lohne (see details in Section 3.2).

The compilation of sea level indicators for northern Russia comes from Baranskaya et al. (2018a). Thank you to Alisa V. Baranskaya for sending the references (including translations from Russian) that were missing from the published compilation.

3.4 Southeastern Asia

The sea level indicators from southeastern Asia were compiled by Mann et al. (2019).

3.5 Tropical Corals

Corals from tropical regions were compiled by Hibbert et al. (2016). In this report, we have taken indicators for Huon Peninsula, Vanuatu and French Polynesia from this database.

4 Summary of results

This is a summary of the results of the modelling. There are a total of six models with which are compared. In addition, these tables give how many sea level indicators, number of marine limiting, number of terrestrial limiting, and number of sea level index points.

The sea level is calculated at the location of each data point. To evaluate how well the calculated curve fits the data point, a score is assigned. This metric was originally used by Gowan et al. (2016). The score is the discrepancy, in number of meters, the calculated sea level falls outside of the constraint plus the error bars. A score is zero if the calculated sea level is consistent with the data point. As an example, if the calculated sea level curve is below a terrestrial limiting point, it is given a score of zero. The sum of the scores for each location for each model are shown in the tables. A warning about the scores is that a lower score does not necessarily mean a better fit, as it will depend on the age distribution of the indicators, and the number of indicators of a specific kind. For example, if there are a lot of marine limiting data points, a calculated curve that is over a hundred meters above those indicators may provide a good score, but it is not necessarily a good fit. As a result, it is a good idea to also look at the plotted curves for visual inspection.

4.1 Australia

Table 1: Number of data points and model scores for Northeastern Australia

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	556	54	0	502	2228	2204	2110	1935	1639	1582
Cairns	253	11	0	242	1025	1009	933	818	681	660
Mackay	303	43	0	260	1203	1195	1177	1117	958	922

Table 2: Number of data points and model scores for Northwestern Australia

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	201	106	0	95	682	675	645	602	624	632
Bonaparte Gulf	90	84	0	6	96	95	90	87	106	111
Bonaparte Gulf SLI Yokoyama2000	21	0	0	21	345	342	328	296	270	266
Bonaparte Gulf SLI Ishiwa2019	90	22	0	68	241	238	227	219	248	255

4.2 Caribbean

Table 3: Number of data points and model scores for Lesser Antilles

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	197	0	0	197	814	810	805	816	1182	1392
Barbados	197	0	0	197	814	810	805	816	1182	1392

4.3 East Asia

Table 4: Number of data points and model scores for Ryukyu Islands

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	7	6	1	0	0	0	0	0	0	0
Miyakojima	7	6	1	0	0	0	0	0	0	0

Table 5: Number of data points and model scores for Sea of Japan - East Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	11	5	0	6	264	266	270	265	260	259
Tsushima-Korea Strait	11	5	0	6	264	266	270	265	260	259

4.4 Eurasian Arctic

Table 6: Number of data points and model scores for Franz Josef Land

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	171	22	0	149	902	814	1276	1600	1714	1669
Zemlya Georga	44	4	0	40	187	166	341	450	486	472
Zemlya Zichy	4	3	0	1	73	61	42	33	30	31
Proliv Markama	123	15	0	108	642	587	893	1117	1198	1166

Table 7: Number of data points and model scores for Kara Sea - Novaya Zemlya

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	90	8	19	63	512	423	325	347	362	365
Pechora Sea	5	4	1	0	67	64	69	85	98	102
Yuzhny Island	4	1	3	0	57	40	0	0	0	0
Severny Island West	19	1	0	18	27	4	6	17	22	20
Severny Island North	36	0	0	36	144	98	25	14	10	10
Vaygach Island	3	0	0	3	0	0	0	0	0	0
Baydaratskaya Bay	2	0	2	0	0	0	0	0	0	0
Gulf of Ob	11	0	9	2	0	0	0	0	0	0
Khalmyer Bay	5	0	1	4	217	217	225	231	232	233
Kara Sea shelf	2	2	0	0	0	0	0	0	0	0
Ostrov Sibiryakova	3	0	3	0	0	0	0	0	0	0

Table 8: Number of data points and model scores for Southern Barents Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	54	17	3	34	797	1086	1188	801	484	397
Rolfsoya	5	0	1	4	122	166	182	130	81	65
Norkinn	6	1	1	4	143	195	212	155	101	84
Pechengsky	17	7	0	10	127	206	276	215	146	124
Murmansk	21	8	1	12	248	348	396	264	142	110
Voronya River	5	1	0	4	157	171	122	37	14	14

Table 9: Number of data points and model scores for Svalbard

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	179	26	10	143	1941	1876	2003	2030	1903	1841
Bockfjorden	11	8	0	3	218	158	111	127	174	193
Broggerhalvoya	11	2	1	8	295	255	259	310	383	409
Ytterdalen	11	3	2	6	190	130	80	103	149	168
Sorkapp Land	13	3	2	8	53	57	59	70	106	127
Agardbukta	9	2	0	7	90	66	32	20	14	15
Southern Edgeoya	17	1	1	15	207	240	270	244	191	170
Diskobukta	20	4	1	15	182	166	179	168	118	97
Humla	28	1	1	26	279	378	486	467	374	331
Kapp Ziehen	25	2	2	21	188	214	245	226	154	123
Svartknausflya	20	0	0	20	117	80	108	112	77	57
Kongsoya	14	0	0	14	122	132	174	183	163	151

Table 10: Number of data points and model scores for Western Siberia

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	125	90	23	12	859	879	941	875	742	715
Severnaya Zemlya	16	5	11	0	333	334	327	299	275	270
West Laptev Sea	10	7	1	2	96	100	103	93	84	83
Olenyok Gulf	29	18	11	0	32	34	44	43	32	29
Lena Delta	60	60	0	0	329	340	398	382	302	286
New Siberian Islands	8	0	0	8	2	2	3	6	10	10
Zhokhov Island	2	0	0	2	67	69	66	52	39	37

Table 11: Number of data points and model scores for White Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	177	16	41	120	2991	3119	2673	1627	951	803
Kandalaksha	8	1	0	7	177	216	236	156	94	78
Lesozavodskiy	13	5	0	8	477	520	455	289	161	129
Rugozerskiy Peninsula	15	1	8	6	131	168	165	78	22	11
Chupa Bay	15	0	3	12	959	996	817	496	264	205
Umba	11	2	0	9	521	555	487	311	180	147
Engozero	8	0	1	7	421	450	374	210	86	57
Belomorsk	8	0	7	1	174	175	80	8	0	0
Eastern Kola Peninsula	5	0	5	0	0	0	1	0	0	0
Onega Peninsula	9	3	2	4	24	6	0	3	14	19
Dvina Gulf	82	4	12	66	107	33	58	76	130	157
Kholmogorsky	3	0	3	0	0	0	0	0	0	0

4.5 Europe

Table 12: Number of data points and model scores for Baltic Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	467	64	169	234	9533	11812	12520	9820	7443	6884
Norrbotten	16	0	0	16	1227	1402	1401	1119	875	818
Angermanland	14	0	0	14	430	568	638	459	309	281
Gastrikland	16	0	0	16	595	754	843	684	533	500
Stockholm	16	0	0	16	593	734	796	629	472	438
Aland	3	0	0	3	63	107	139	119	97	92
Oulu	2	0	0	2	198	225	220	179	142	134
Ostrobothnia	5	0	0	5	326	399	415	334	260	245
Turku	35	0	0	35	1279	1696	1944	1643	1356	1287
Gulf Of Finland	121	11	45	65	2798	3804	4200	3175	2161	1895
Gulf Of Riga	39	11	27	1	813	1035	1055	738	453	382
Kaliningrad	110	29	81	0	502	588	579	345	198	170
Bornholm	90	13	16	61	709	500	290	396	587	642

Table 13: Number of data points and model scores for Danish straits - Kattegat - Skagerrak

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	655	339	198	118	2420	1836	1803	1926	2315	2461
Mecklenburg	177	66	52	59	714	490	411	825	1239	1346
Kiel	48	16	31	1	86	50	48	70	99	110
Great Belt	155	85	56	14	429	220	149	161	300	358
Copenhagen	78	28	49	1	199	152	150	75	71	77
Kattegat	33	32	0	1	29	3	5	5	5	6
Northern Jylland	56	51	1	4	48	45	74	49	20	13
Limfjord	56	52	4	0	218	74	64	47	44	46
Halland	13	0	0	13	468	554	556	405	265	234
Halden	9	4	2	3	19	4	20	25	33	35
Ski	12	5	2	5	74	85	101	68	76	83
Kragerod Porsgrunn	18	0	1	17	136	159	225	196	163	153

Table 14: Number of data points and model scores for North Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	102	0	52	50	329	318	286	308	301	299
Rotterdam	102	0	52	50	329	318	286	308	301	299

Table 15: Number of data points and model scores for Western Norway

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	103	9	8	86	1850	2064	1883	1227	965	950
Stavanger	17	8	3	6	221	211	160	73	38	36
Sotra	41	1	2	38	314	364	307	211	308	345
Torvikbygd	8	0	1	7	81	70	85	105	118	121
Sula	9	0	2	7	280	317	302	205	117	94
Bjugn	17	0	0	17	608	692	645	411	236	215
Frosta	11	0	0	11	346	410	384	222	148	139

4.6 French Polynesia

Table 16: Number of data points and model scores for French Polynesia

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	191	0	0	191	229	226	222	207	190	190
Mururoa	12	0	0	12	166	164	159	151	146	146
Tahiti	179	0	0	179	63	62	63	56	44	44

4.7 Melanesia

Table 17: Number of data points and model scores for Melansia

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	82	11	0	71	22	22	20	21	22	22
Vanuatu	82	11	0	71	22	22	20	21	22	22

4.8 MIS 3 - MIS 4

Table 18: Number of data points and model scores for Eastern United States (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	27	8	15	4	192	170	131	104	90	85
US Mid Atlantic	27	8	15	4	192	170	131	104	90	85

Table 19: Number of data points and model scores for French Polynesia (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	19	0	0	19	304	302	297	289	283	283
Mururoa	2	0	0	2	54	53	52	51	50	50
Tahiti	17	0	0	17	250	249	245	238	233	233

Table 20: Number of data points and model scores for Melanesia (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	6	0	0	6	49	50	51	51	50	49
Vanuatu	6	0	0	6	49	50	51	51	50	49

Table 21: Number of data points and model scores for Northeastern Australia (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	25	13	0	12	430	430	424	413	395	389
Cairns	19	7	0	12	430	430	424	413	395	389
Mackay	6	6	0	0	0	0	0	0	0	0

Table 22: Number of data points and model scores for Papua New Guinea (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	52	0	0	52	194	195	193	192	188	186
Huon Peninsula	40	0	0	40	89	90	90	90	90	90
Huon Peninsula de Gelder	12	0	0	12	105	105	103	102	98	96

Table 23: Number of data points and model scores for Sea of Japan - East Sea (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	6	2	1	3	121	119	113	108	104	105
Tsushima-Korea Strait	6	2	1	3	121	119	113	108	104	105

Table 24: Number of data points and model scores for Sundaland (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	29	14	13	2	225	223	219	215	216	216
Sunda Shelf	11	7	3	1	120	118	111	103	95	94
Vietnam Shelf	1	1	0	0	0	0	0	0	0	0
Strait Of Malacca	11	2	9	0	41	39	35	31	28	27
Mekong Delta	1	1	0	0	10	10	12	14	16	17
Chao Phraya	3	3	0	0	41	43	47	53	61	62
Berhala Strait	2	0	1	1	13	13	14	14	16	16

Table 25: Number of data points and model scores for Yellow Sea (MIS3 - MIS4)

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	11	11	0	0	0	0	0	0	3	3
South Bohai Sea	4	4	0	0	0	0	0	0	3	3
Yellow Sea	7	7	0	0	0	0	0	0	0	0

4.9 North America

Table 26: Number of data points and model scores for Eastern United States

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	357	138	38	181	1329	1552	1435	1163	1194	1268
Outer Delaware	60	5	5	50	286	324	279	236	272	297
Inner Delaware	38	2	8	28	134	162	135	110	136	155
Inner Chesapeake	106	99	0	7	395	392	290	241	278	303
Eastern Shore	28	7	6	15	59	82	86	73	78	83
Northern North Carolina	60	23	6	31	306	360	342	269	254	261
Southern North Carolina	24	2	3	19	25	43	63	50	41	41
Northern South Carolina	18	0	8	10	49	76	93	72	55	53
Southern South Carolina	23	0	2	21	75	113	147	112	80	75

Table 27: Number of data points and model scores for Gulf of St Lawrence

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	108	38	32	38	1157	1183	1205	950	571	502
Cape Breton	16	4	7	5	34	10	39	43	3	3
Magdalen Islands	22	2	11	9	107	122	143	118	62	44
Prince Edward Island	31	9	6	16	337	262	191	144	113	133
Chaleur Bay	15	10	5	0	7	20	45	28	5	3
Anticosti Island	24	13	3	8	672	769	787	617	388	319

Table 28: Number of data points and model scores for Hudson Bay

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	243	113	68	62	9230	10322	10588	8523	5682	5025
Kivalliq	31	21	5	5	395	484	553	475	329	271
Churchill	23	9	7	7	650	825	895	674	321	199
West James Bay	17	4	10	3	736	854	896	636	281	194
East James Bay	36	20	9	7	1777	1985	2078	1722	1209	1083
Umiujaq	94	34	33	27	5264	5641	5574	4588	3304	2942
Inukjuak	21	11	2	8	226	300	363	317	219	184
Ivujivik	21	14	2	5	182	233	229	111	19	152

Table 29: Number of data points and model scores for Hudson Strait

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	86	65	18	3	919	1043	1012	741	1120	1531
Sugluk	40	30	10	0	113	175	190	108	533	893
Kangiqsujuaq	14	13	1	0	3	9	13	9	159	281
Western Ungava Bay	21	17	4	0	260	278	251	197	182	175
Southern Ungava Bay	11	5	3	3	543	581	558	427	246	182

Table 30: Number of data points and model scores for Labrador

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	61	16	45	0	497	560	568	400	358	374
Torngat	18	7	11	0	32	42	44	44	250	313
Nain	16	2	14	0	365	392	375	254	80	40
Hamilton Inlet	15	3	12	0	41	55	63	34	0	0
Lake Melville	12	4	8	0	59	71	86	68	28	21

Table 31: Number of data points and model scores for Maritimes

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	207	30	40	137	1384	1187	772	482	321	422
Sable Island	10	1	6	3	54	43	35	17	17	23
Halifax	48	15	4	29	137	75	65	40	42	76
Shelburne	9	0	4	5	19	15	3	3	7	11
Cumberland	112	6	15	91	781	668	370	223	141	217
Passamaquoddy Bay	28	8	11	9	393	386	299	199	114	95

Table 32: Number of data points and model scores for Newfoundland

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	160	53	61	46	1135	1205	1191	955	721	676
Great Northern Peninsula	56	16	23	17	152	128	71	30	107	156
Notre Dame Bay	29	12	13	4	129	138	126	98	66	57
Avalon Peninsula	13	3	5	5	8	8	3	0	2	3
Bay Of Islands	16	5	3	8	301	345	364	287	174	140
Port Aux Basques	46	17	17	12	545	586	627	540	372	320

Table 33: Number of data points and model scores for Northeastern United States

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	479	51	117	311	3010	2583	1399	1256	1966	2369
Eastern Maine	49	0	4	45	456	362	128	91	172	229
Southern Maine	86	24	6	56	752	542	194	195	443	603
Northern Massachusetts	43	3	16	24	151	130	62	55	93	112
Southern Massachusetts	43	12	14	17	265	218	126	133	203	231
Connecticut	95	0	41	54	163	163	100	84	126	148
Long Island	25	0	6	19	283	248	170	165	211	231
New York	76	6	19	51	606	572	347	297	431	498
New Jersey	62	6	11	45	334	348	272	236	287	317

Table 34: Number of data points and model scores for St Laurence Lowlands

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	218	53	50	115	4912	5969	6870	4863	2320	1732
Rimouski	90	17	15	58	2905	3379	3626	2628	1434	1064
Forestville	59	18	7	34	782	863	1063	842	485	374
Quebec City	69	18	28	23	1225	1727	2181	1393	401	294

4.10 South Asia

Table 35: Number of data points and model scores for Bay of Bengal

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	7	5	0	2	84	82	77	71	67	66
Ganges Delta	7	5	0	2	84	82	77	71	67	66

4.11 Southeast Asia

Table 36: Number of data points and model scores for Java Sea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	47	18	2	27	179	180	180	170	186	193
Central Java	6	0	0	6	32	31	30	28	30	31
South Sulawesi	41	18	2	21	147	149	150	142	156	162

Table 37: Number of data points and model scores for Papua New Guinea

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	51	29	0	22	10	10	12	14	24	26
Huon Peninsula	51	29	0	22	10	10	12	14	24	26

Table 38: Number of data points and model scores for Sundaland

Location	number data	marine limiting	terrestrial limiting	index point	72_73_74_75 ehgA	72_73_74_75 ehgC	72_73_74_75 ehgG	72_73_74_75 ehgk	72_73_74_75 ehgr	72_73_74_75 ehgK
Total	404	88	108	208	953	892	787	736	818	859
Chao Phraya	33	5	9	19	96	86	79	90	124	135
Mekong Delta	71	2	24	45	71	80	87	69	49	50
Strait Of Malacca	137	29	45	63	181	160	142	140	180	197
Sunda Shelf	53	7	7	39	333	315	254	222	211	209
Vietnam Shelf	5	1	0	4	25	25	22	14	9	8
Phuket	40	20	13	7	41	38	35	35	45	48
Thale Noi	3	0	1	2	10	9	9	10	12	13
West Malay Peninsula	2	2	0	0	1	1	0	0	1	1
East Malay Peninsula	4	3	1	0	7	6	5	5	7	8
Southeast Malay Peninsula	13	12	0	1	36	32	27	25	31	34
Belitung Island	25	0	0	25	124	113	102	100	116	121
Ca Na	18	7	8	3	28	27	25	26	33	35

5 Australia

5.1 Northeastern Australia

References for the data used in each location.

Cairns: Yokoyama et al. (2018)

Mackay: Yokoyama et al. (2018)

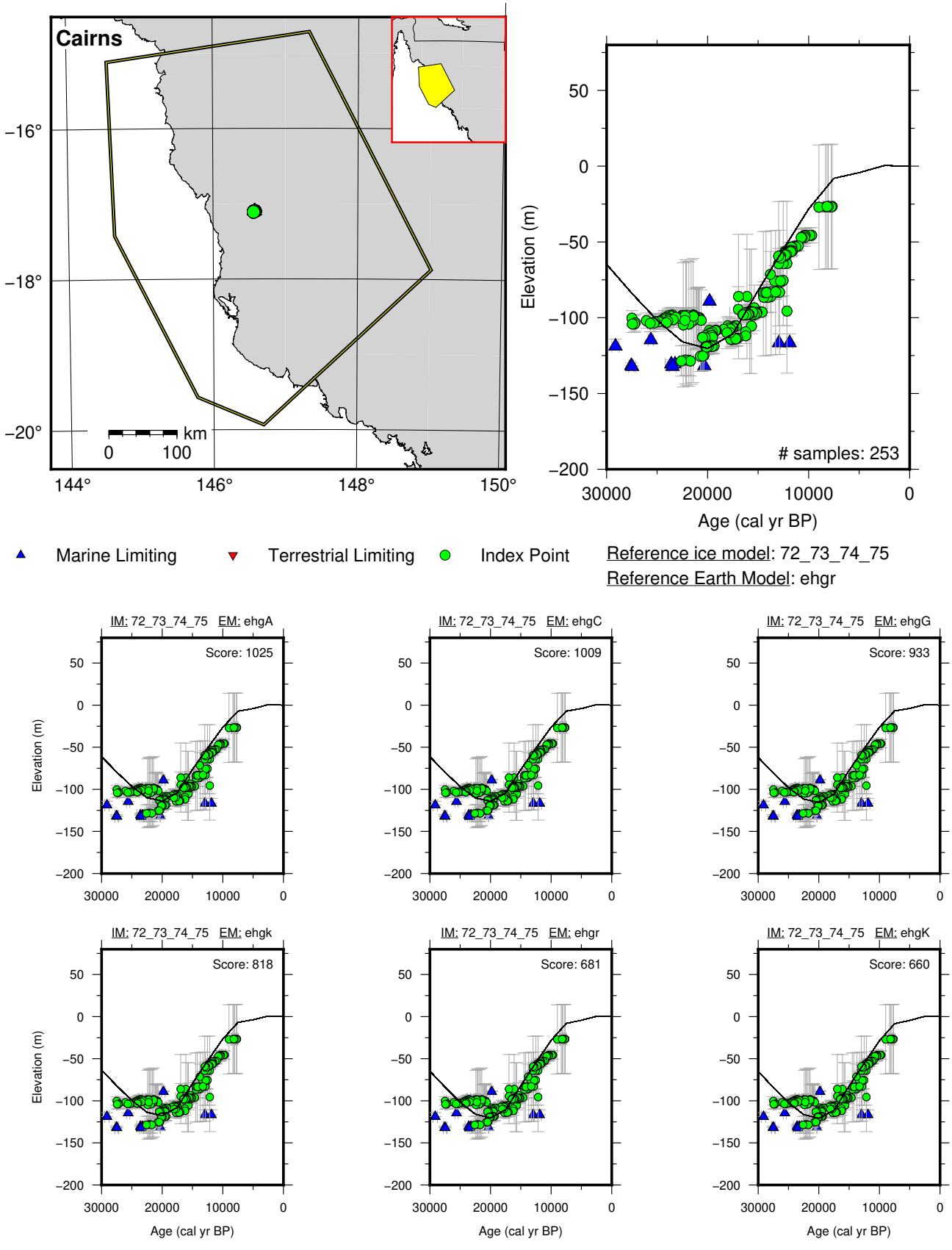


Figure 1: Paleo-sea level and comparison of six models for subregion Northeastern Australia, location Cairns.

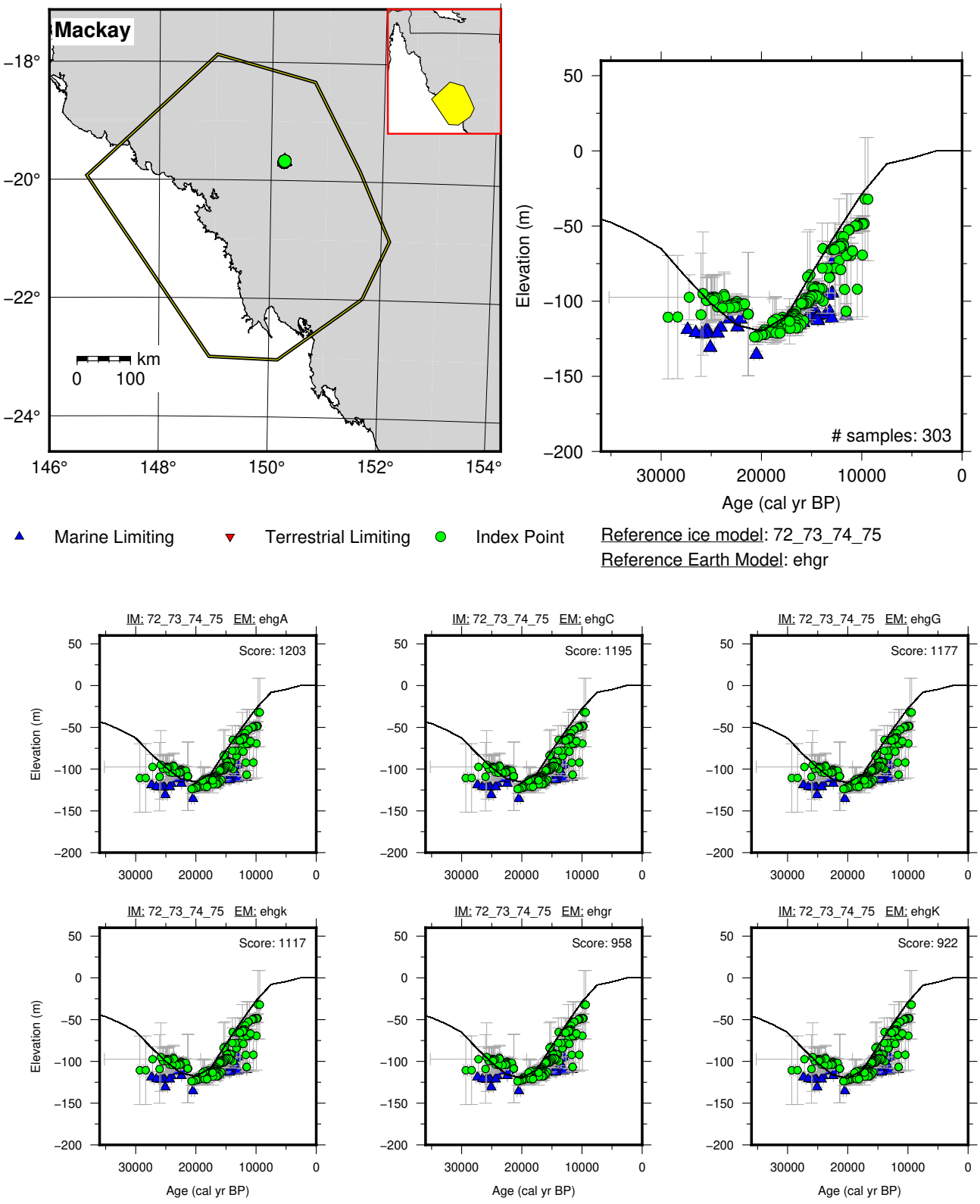


Figure 2: Paleo-sea level and comparison of six models for subregion Northeastern Australia, location Mackay.

5.2 Northwestern Australia

References for the data used in each location.

Bonaparte Gulf: Ishiwa et al. (2019); Yokoyama et al. (2000)

Bonaparte Gulf SLI Yokoyama2000: Yokoyama et al. (2000)

Bonaparte Gulf SLI Ishiwa2019: Ishiwa et al. (2019); Yokoyama et al. (2000)

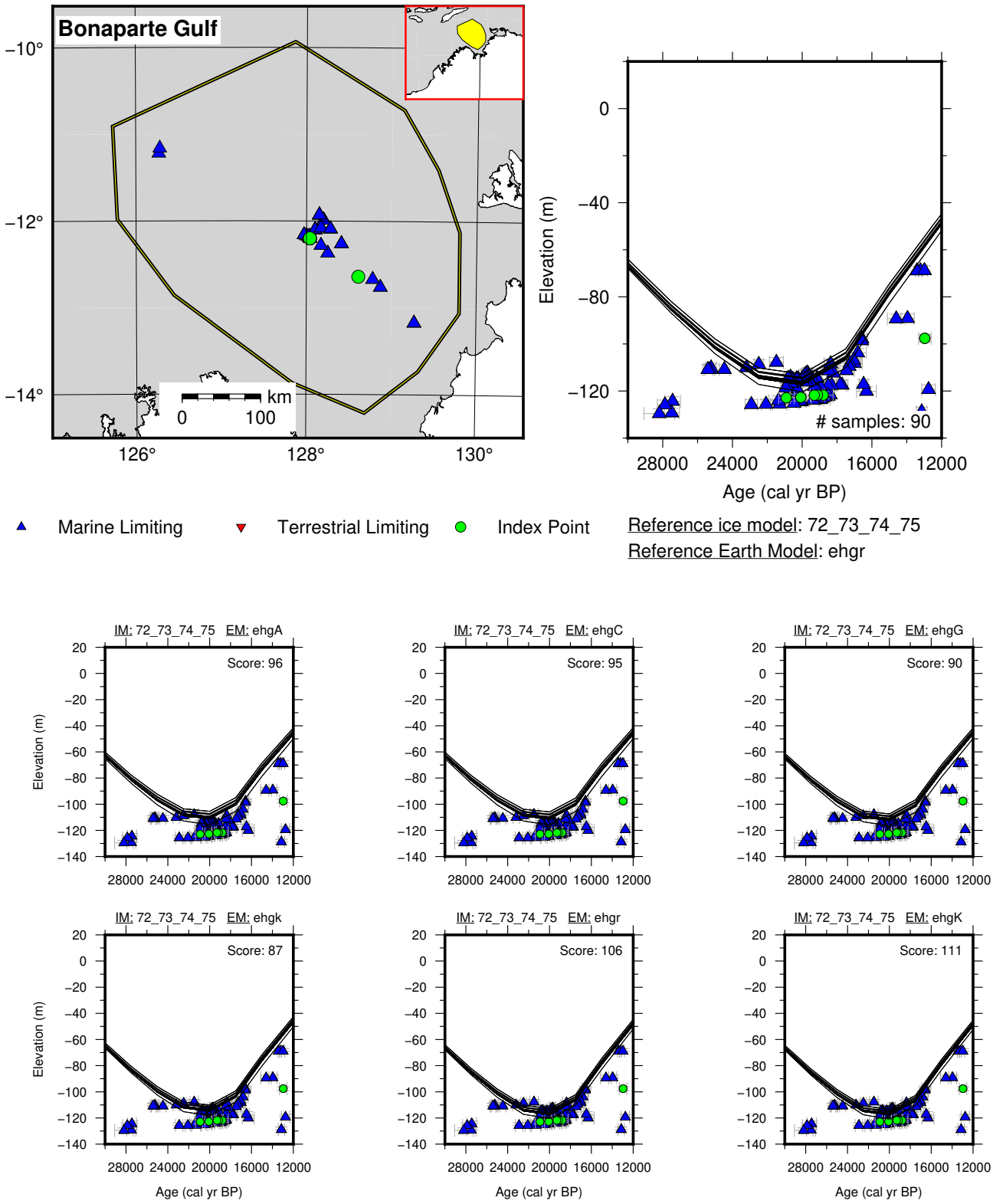


Figure 3: Paleo-sea level and comparison of six models for subregion Northwestern Australia, location Bonaparte Gulf.

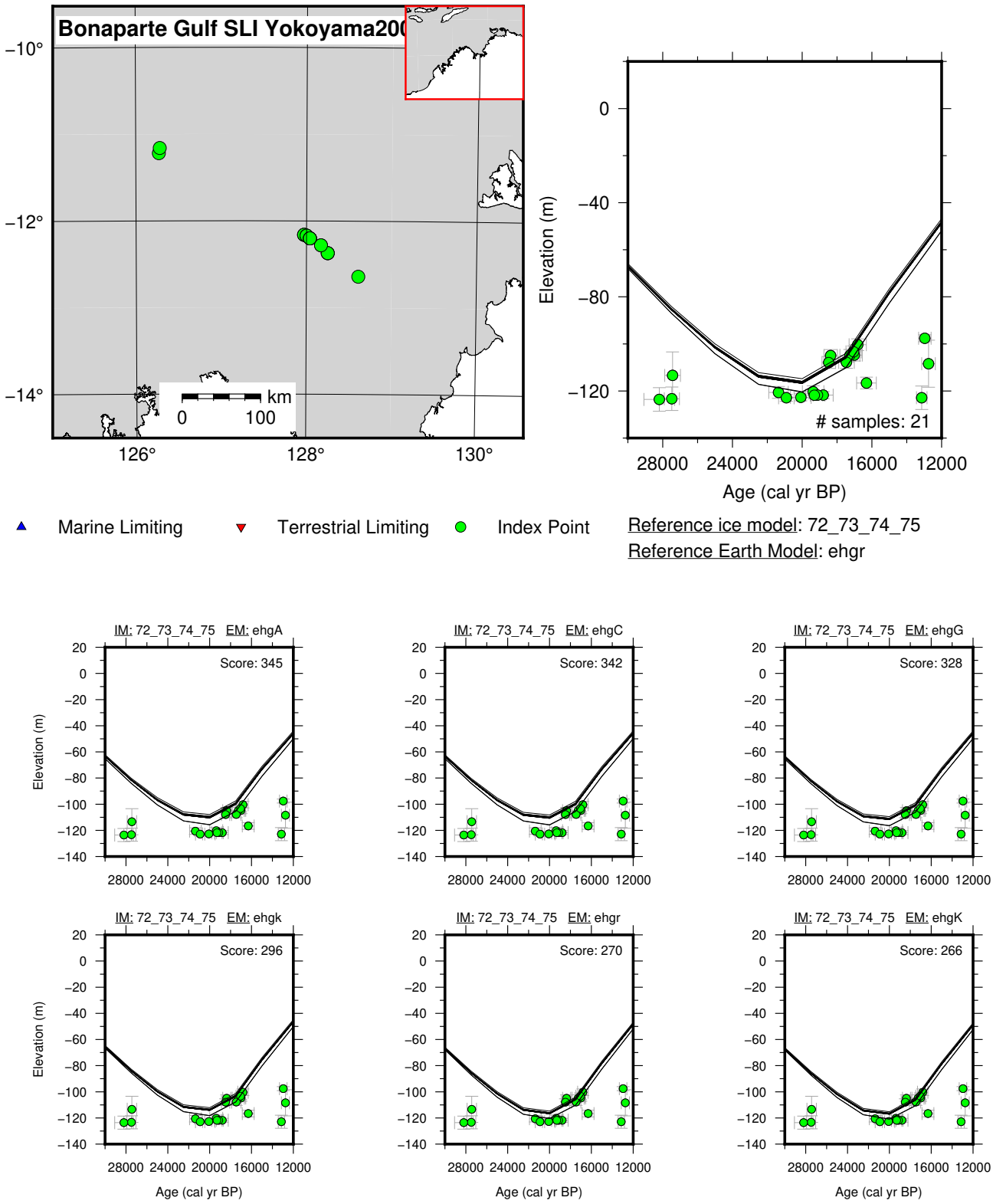


Figure 4: Paleo-sea level and comparison of six models for subregion Northwestern Australia, location Bonaparte Gulf SLI Yokoyama2000.

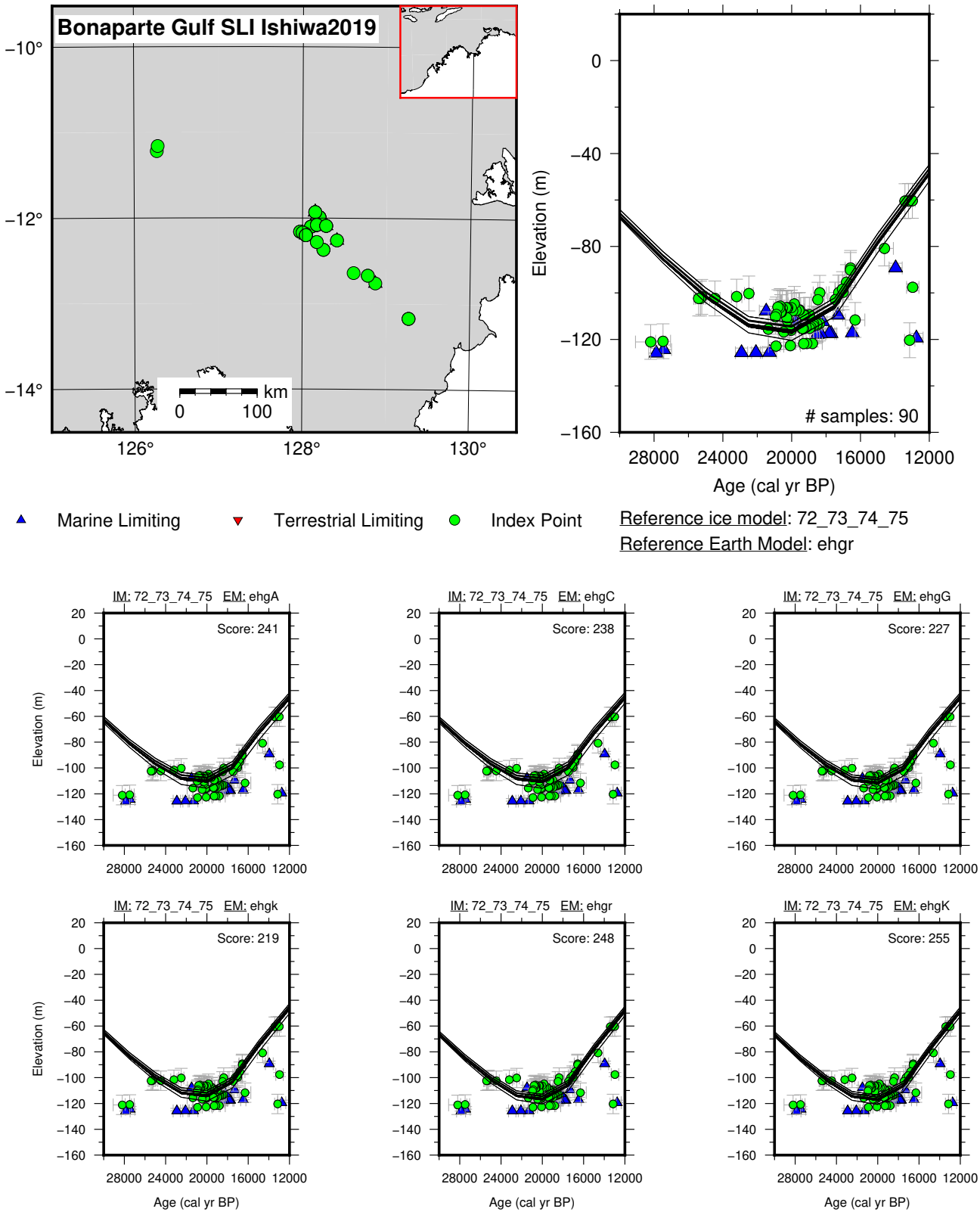


Figure 5: Paleo-sea level and comparison of six models for subregion Northwestern Australia, location Bonaparte Gulf SLI Ishiwa2019.

6 Caribbean

6.1 Lesser Antilles

References for the data used in each location.

Barbados: Abdul et al. (2016); Fairbanks (1988); Peltier and Fairbanks (2006)

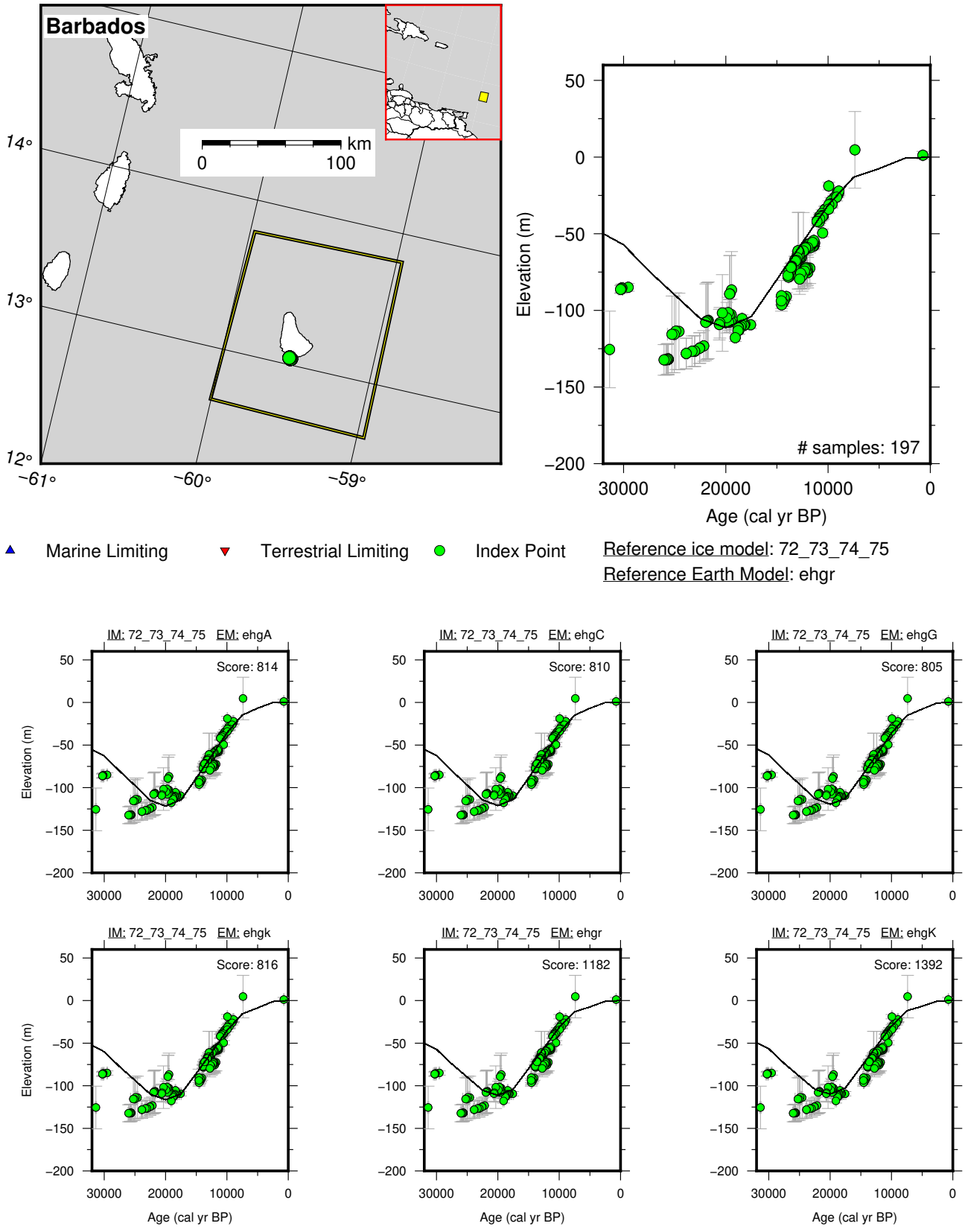


Figure 6: Paleo-sea level and comparison of six models for subregion Lesser Antilles, location Barbados.

7 East Asia

7.1 Ryukyu Islands

References for the data used in each location.

Miyakojima: Sasaki et al. (2006)

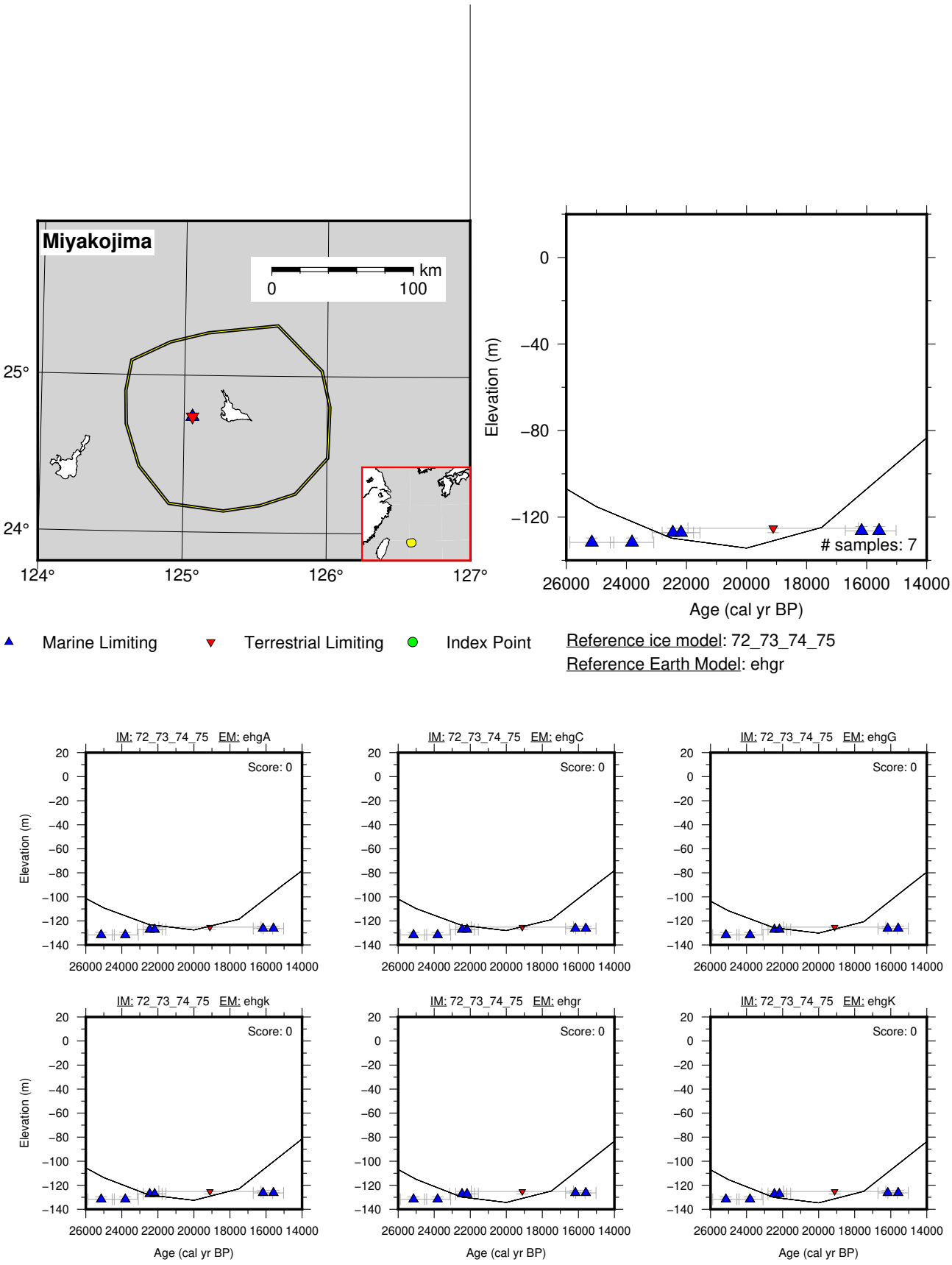


Figure 7: Paleo-sea level and comparison of six models for subregion Ryukyu Islands, location Miyakojima.

7.2 Sea of Japan - East Sea

References for the data used in each location.

Tsushima-Korea Strait: Park et al. (2000)

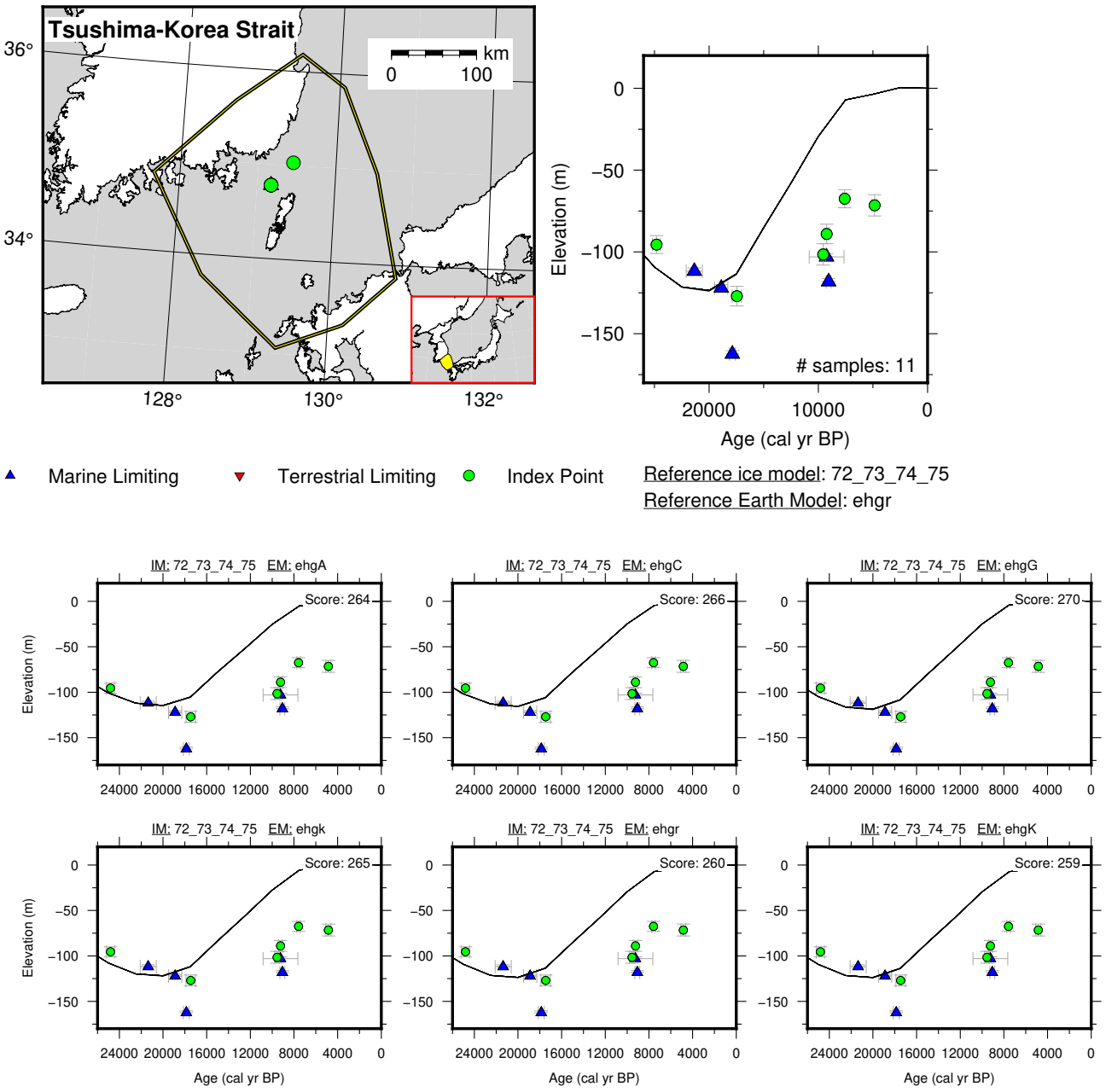


Figure 8: Paleo-sea level and comparison of six models for subregion Sea of Japan - East Sea, location Tsushima-Korea Strait.

8 Eurasian Arctic

8.1 Franz Josef Land

References for the data used in each location.

Zemlya Georga: Bolshiyanov et al. (2009); Dibner (1965); Forman et al. (1996, 2004); Glazovskiy et al. (1992); Grosswald (1973); Kovaleva (1974)

Zemlya Zichy: Bolshiyanov et al. (2009); Gusev et al. (2013b)

Proliv Markama: Bolshiyanov et al. (2009); Forman and Polyak (1997); Forman et al. (1996, 2004); Grosswald (1963, 1973); Gusev et al. (2013b); Kovaleva (1974); Lubinski (1998); Weihe (1996)

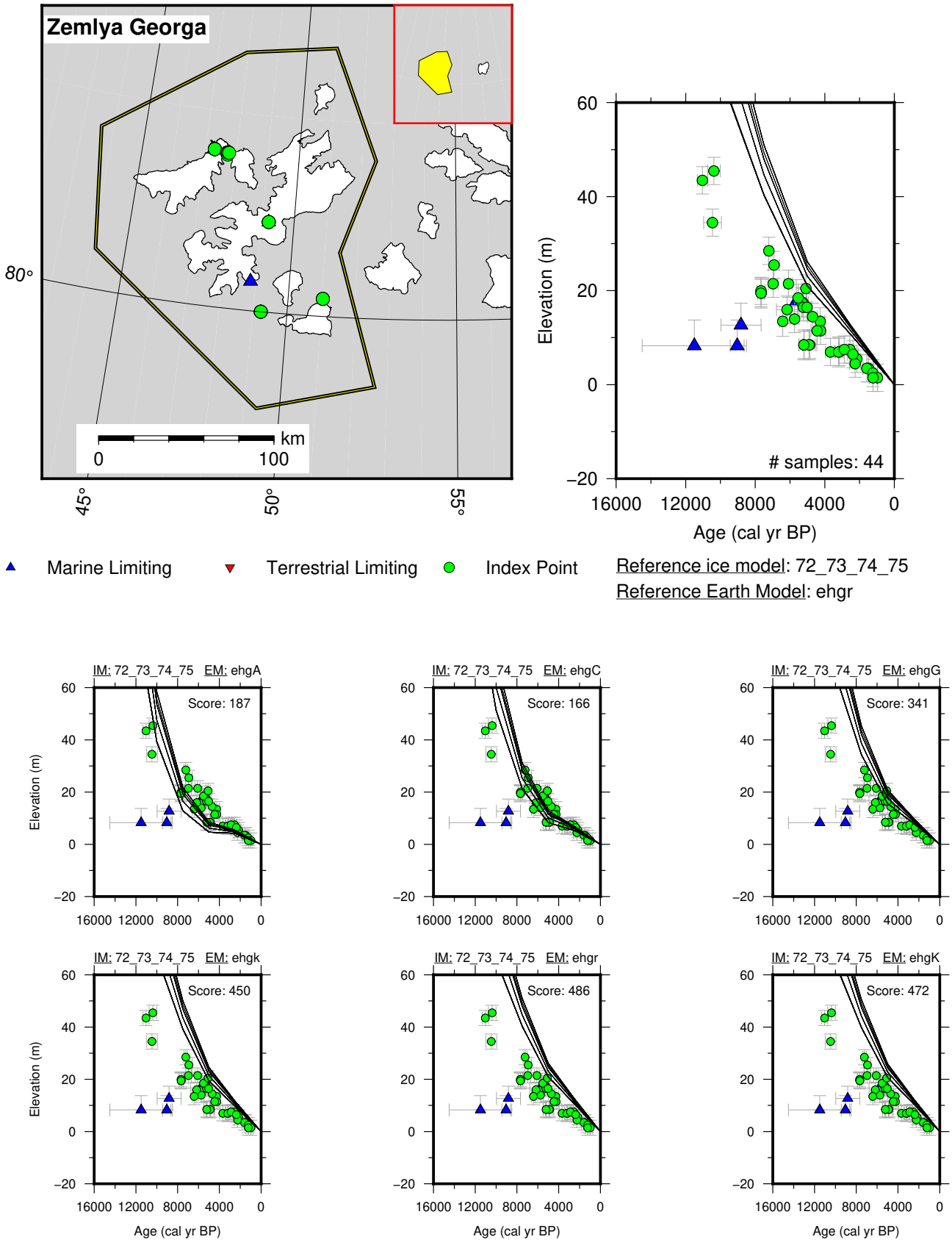
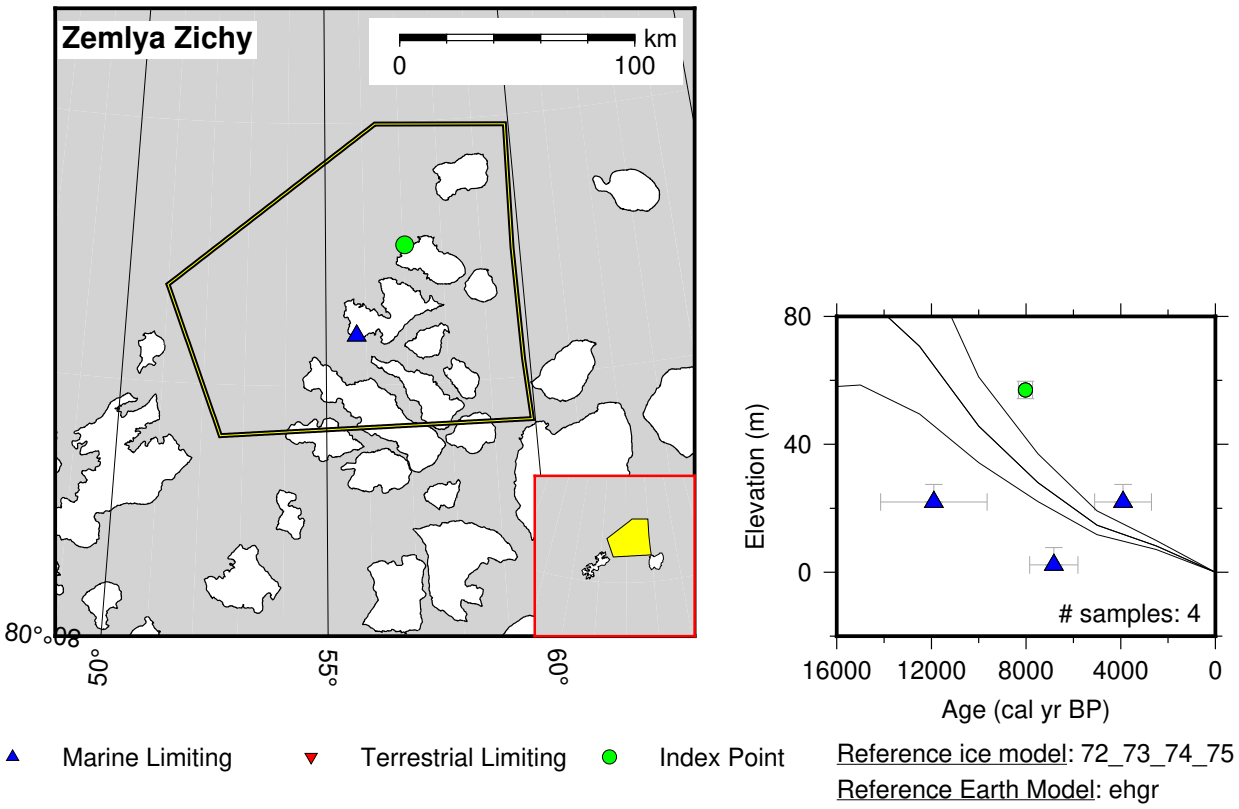


Figure 9: Paleo-sea level and comparison of six models for subregion Franz Josef Land, location Zemlya Georga.



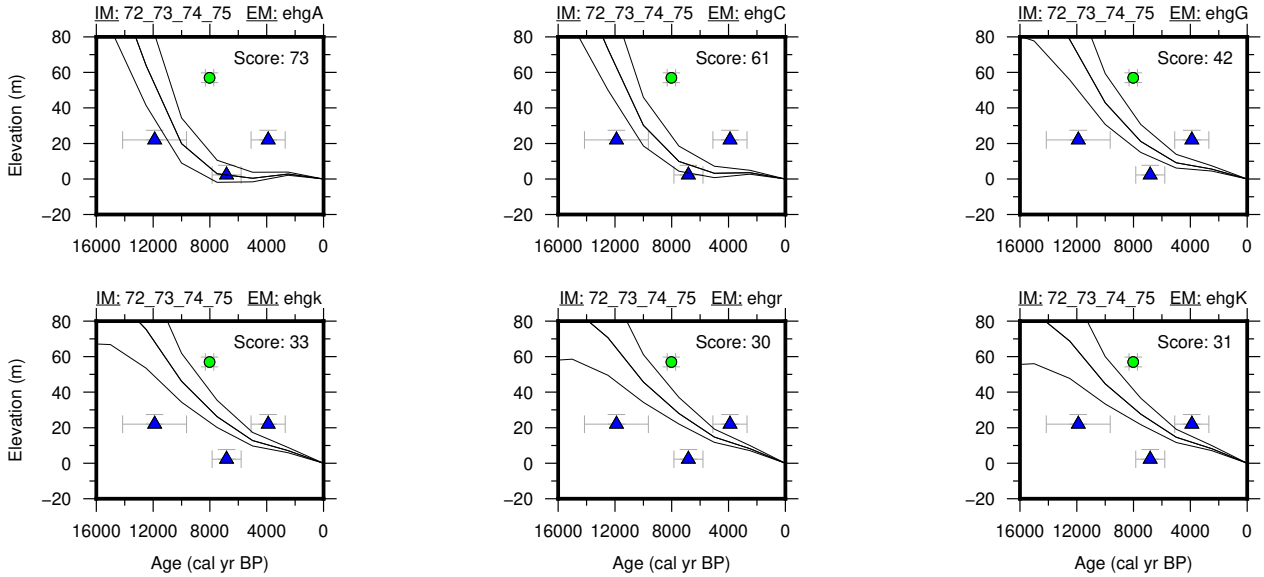
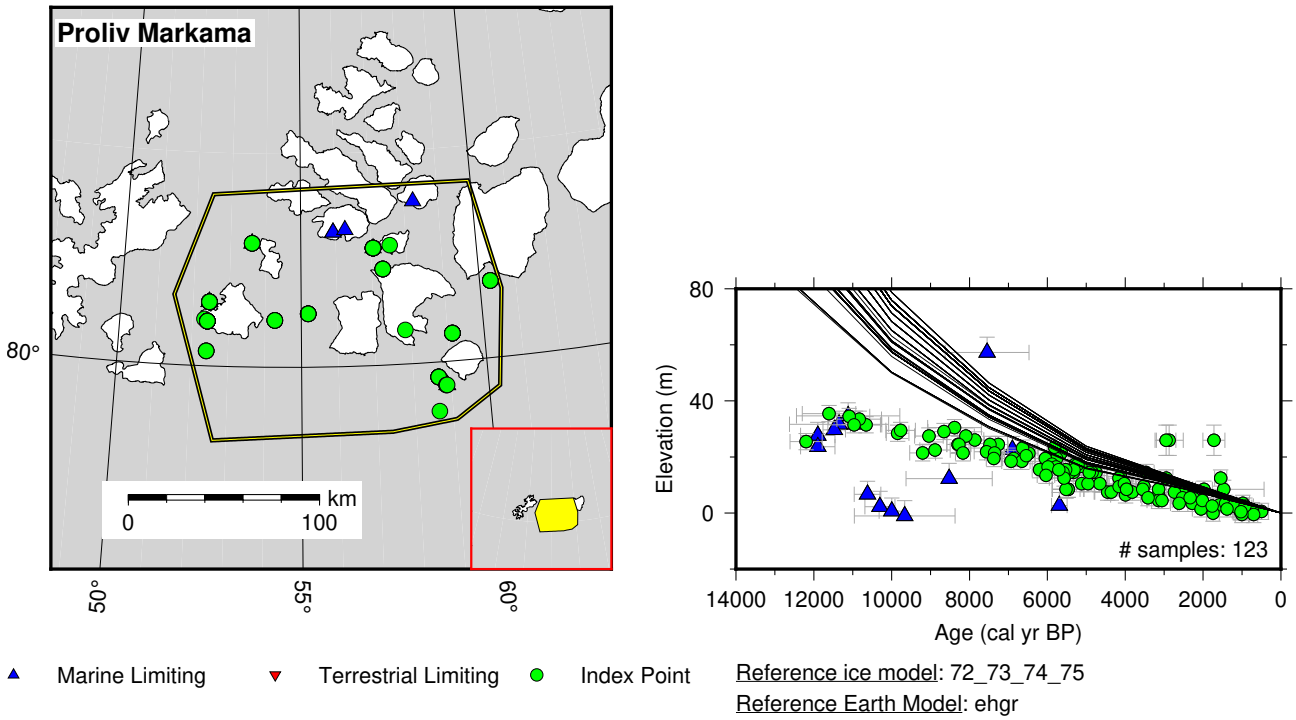


Figure 10: Paleo-sea level and comparison of six models for subregion Franz Josef Land, location Zemlya Zichy.



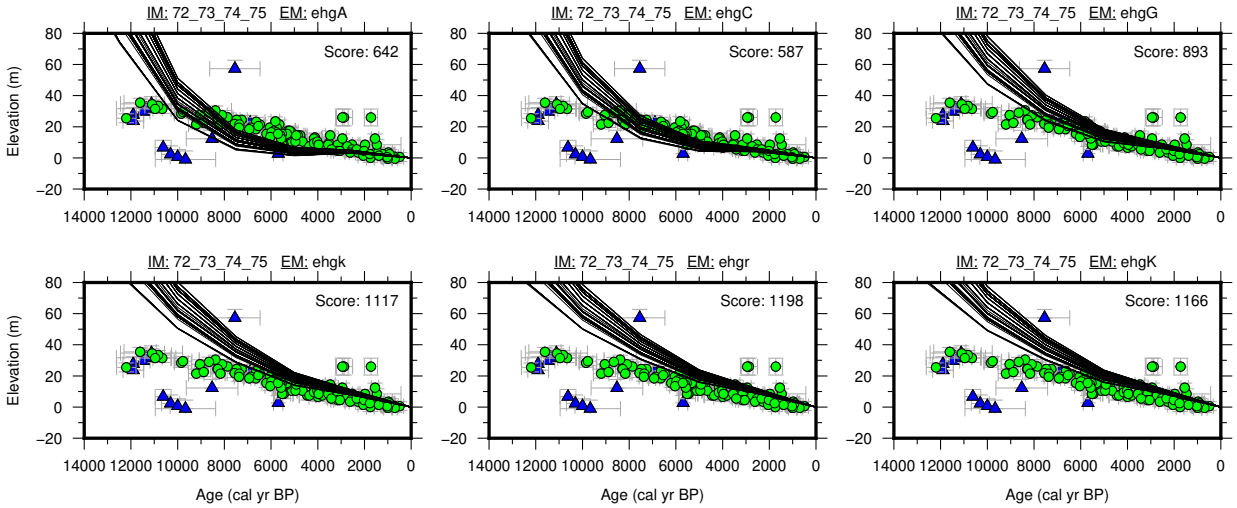


Figure 11: Paleo-sea level and comparison of six models for subregion Franz Josef Land, location Proliv Markama.

8.2 Kara Sea - Novaya Zemlya

References for the data used in each location.

Pechora Sea: Astakhov et al. (2007); Krapivner (2006); Polyak et al. (2000); Zhuravlev et al. (2013)

Yuzhny Island: Bolshiyanov et al. (2006); Mangerud et al. (2008); Zhuravlev et al. (2013)

Severny Island West: Bolshiyanov et al. (2009); Forman et al. (1999, 2004); Zeeberg et al. (2001)

Severny Island North: Forman et al. (1999, 2004); Gawronski and Zeeberg (1997); Zeeberg et al. (2001)

Vaygach Island: Forman et al. (2004); Zeeberg et al. (2001)

Baydaratskaya Bay: Belova (2012); Grigorieva (1987)

Gulf of Ob: Astakhov and Nazarov (2010); Grigorieva (1987); Makeev (1988); Makeev et al. (1988)

Khalmyer Bay: Baranskaya et al. (2018b); Grigorieva (1987); Makeev (1988); Romanenko et al. (2007)

Kara Sea shelf: Levitan et al. (2007); Polyakova and Stein (2004)

Ostrov Sibiryakova: Gusev et al. (2013a)

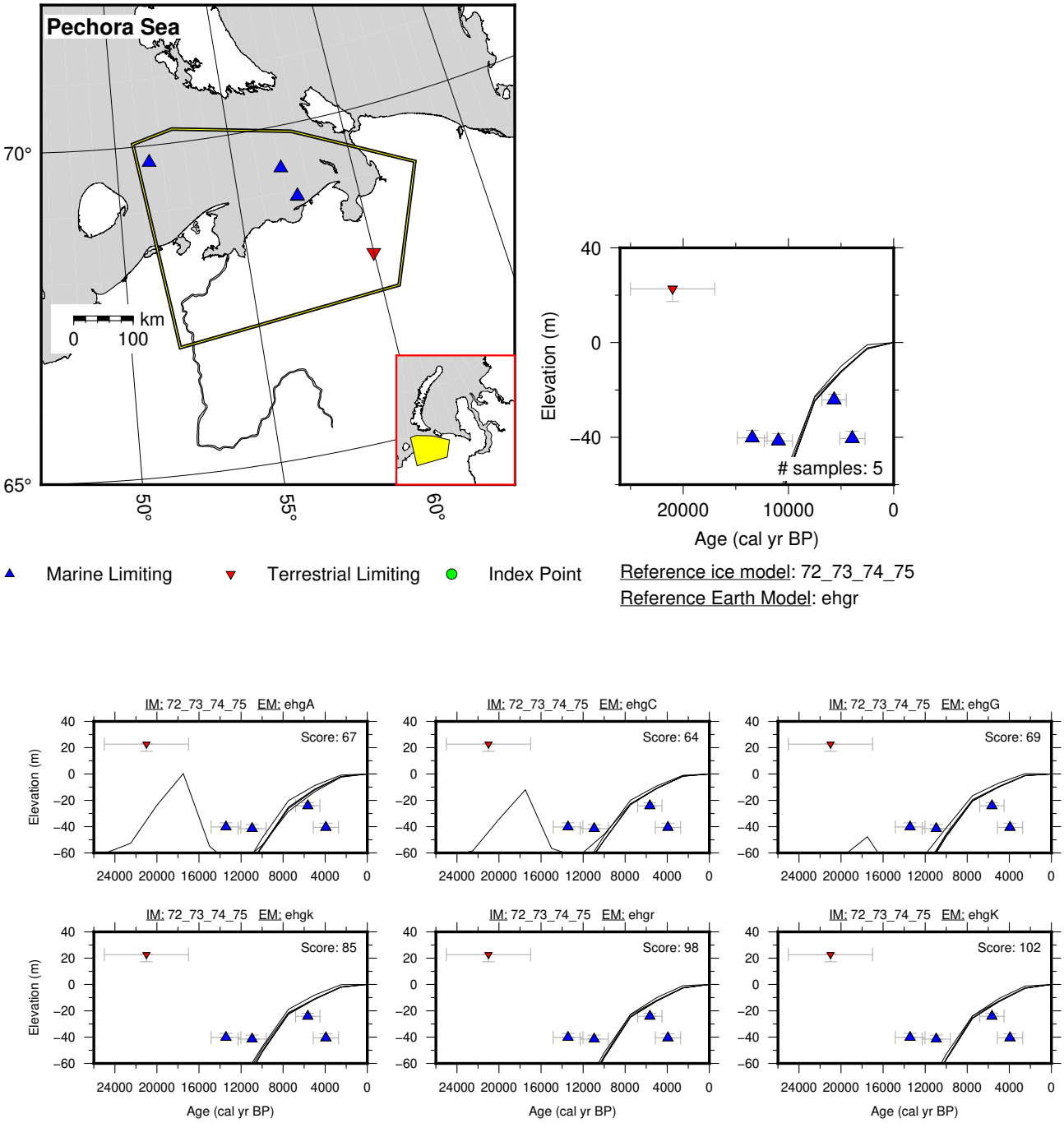
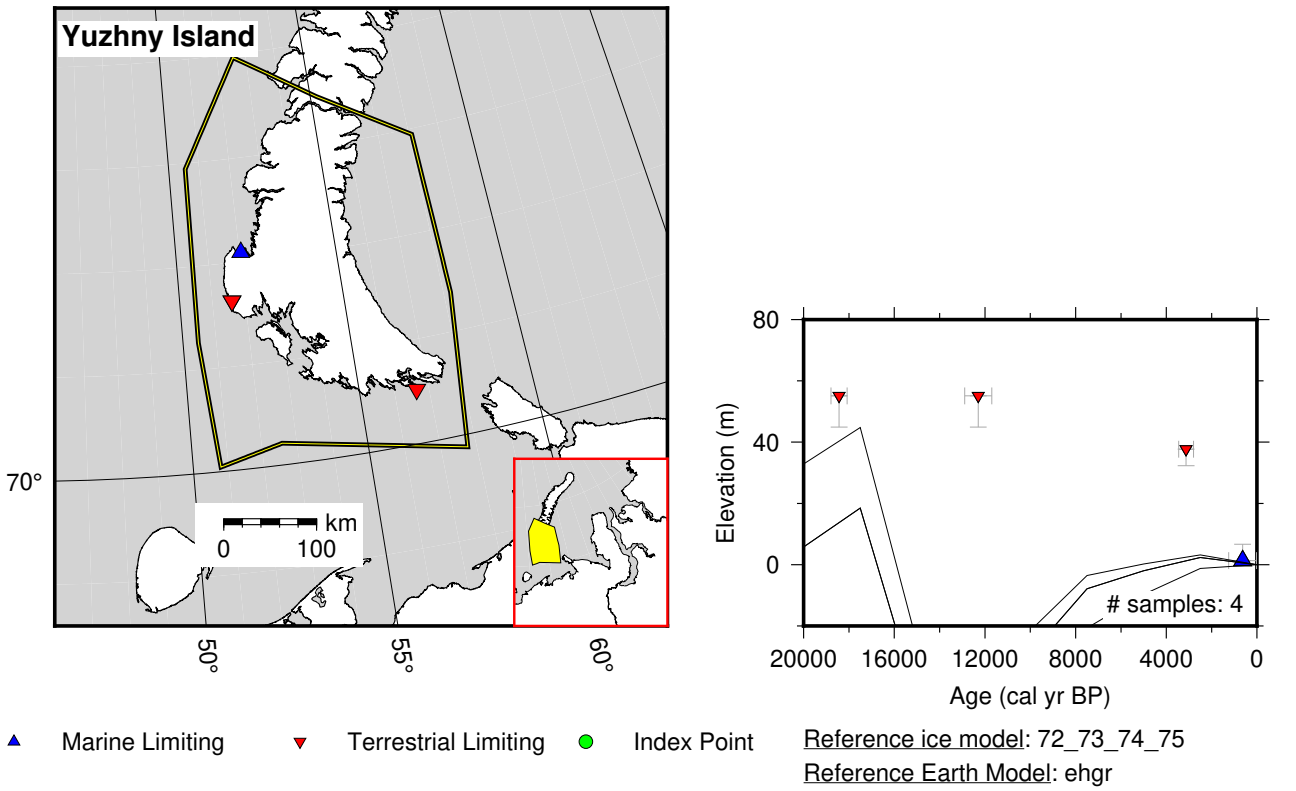


Figure 12: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Pechora Sea.



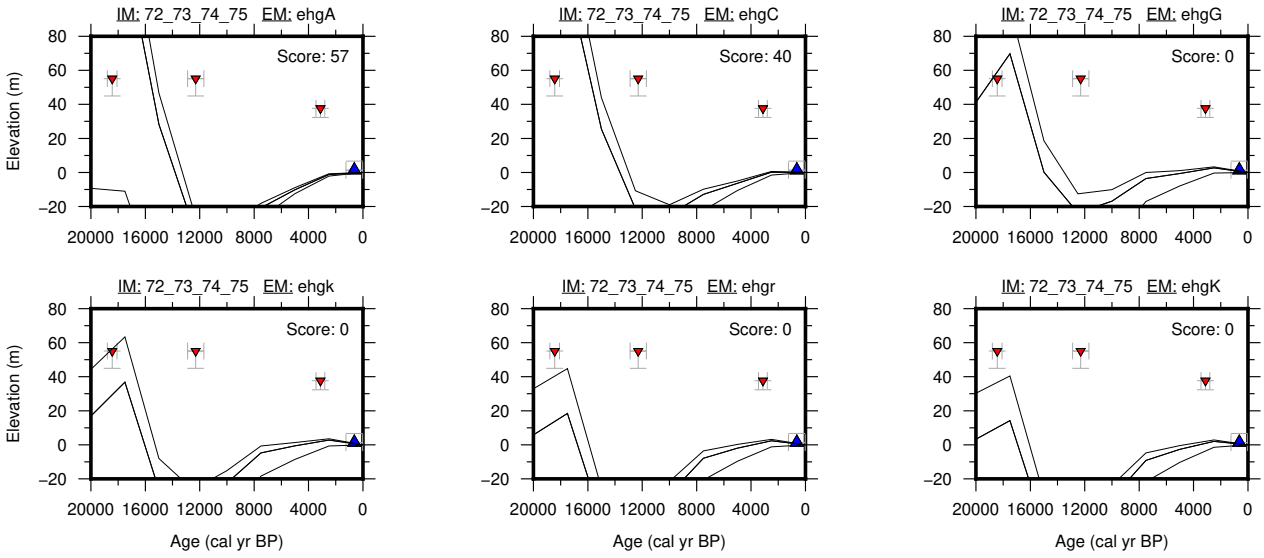


Figure 13: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Yuzhny Island.

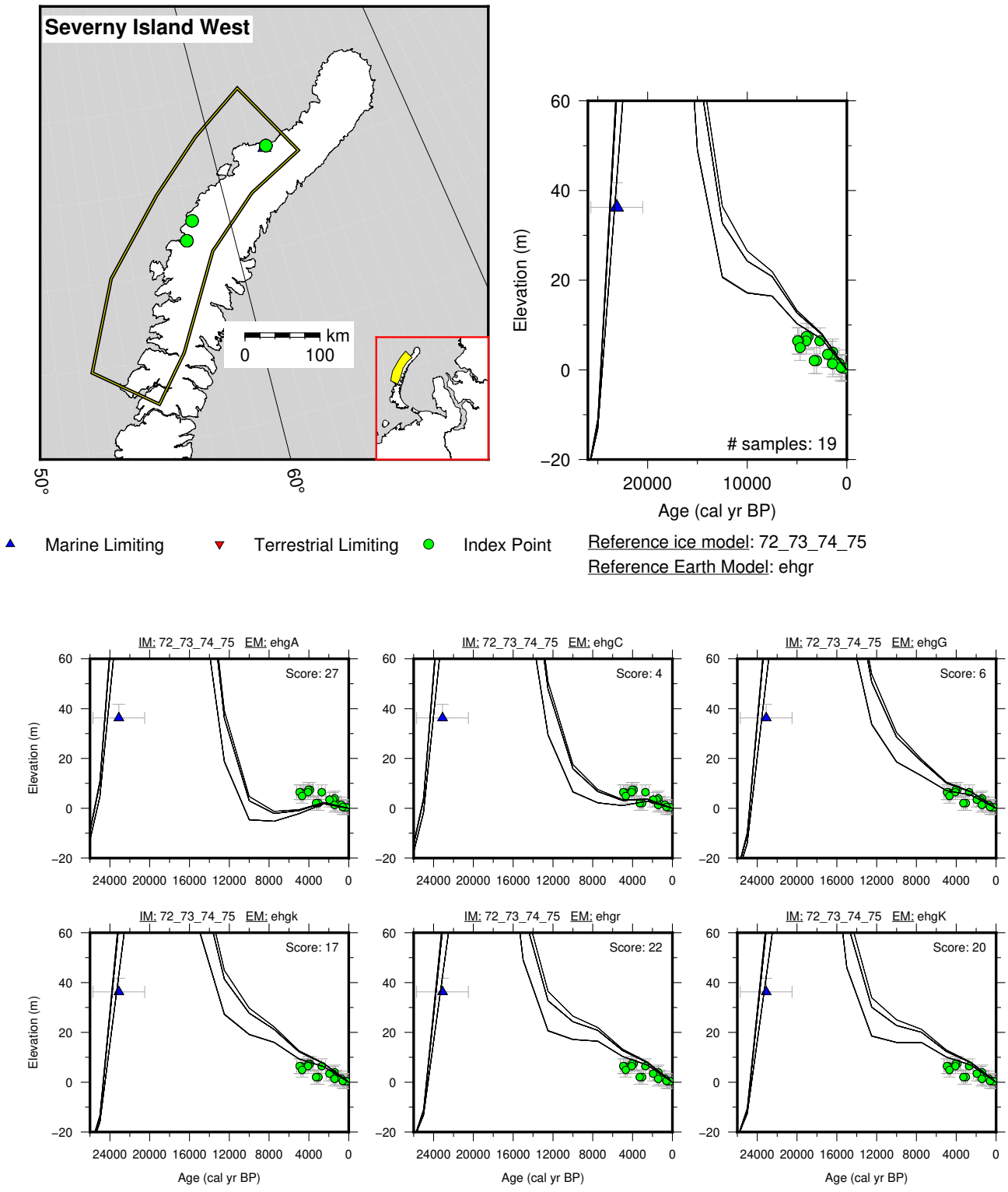


Figure 14: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Severny Island West.

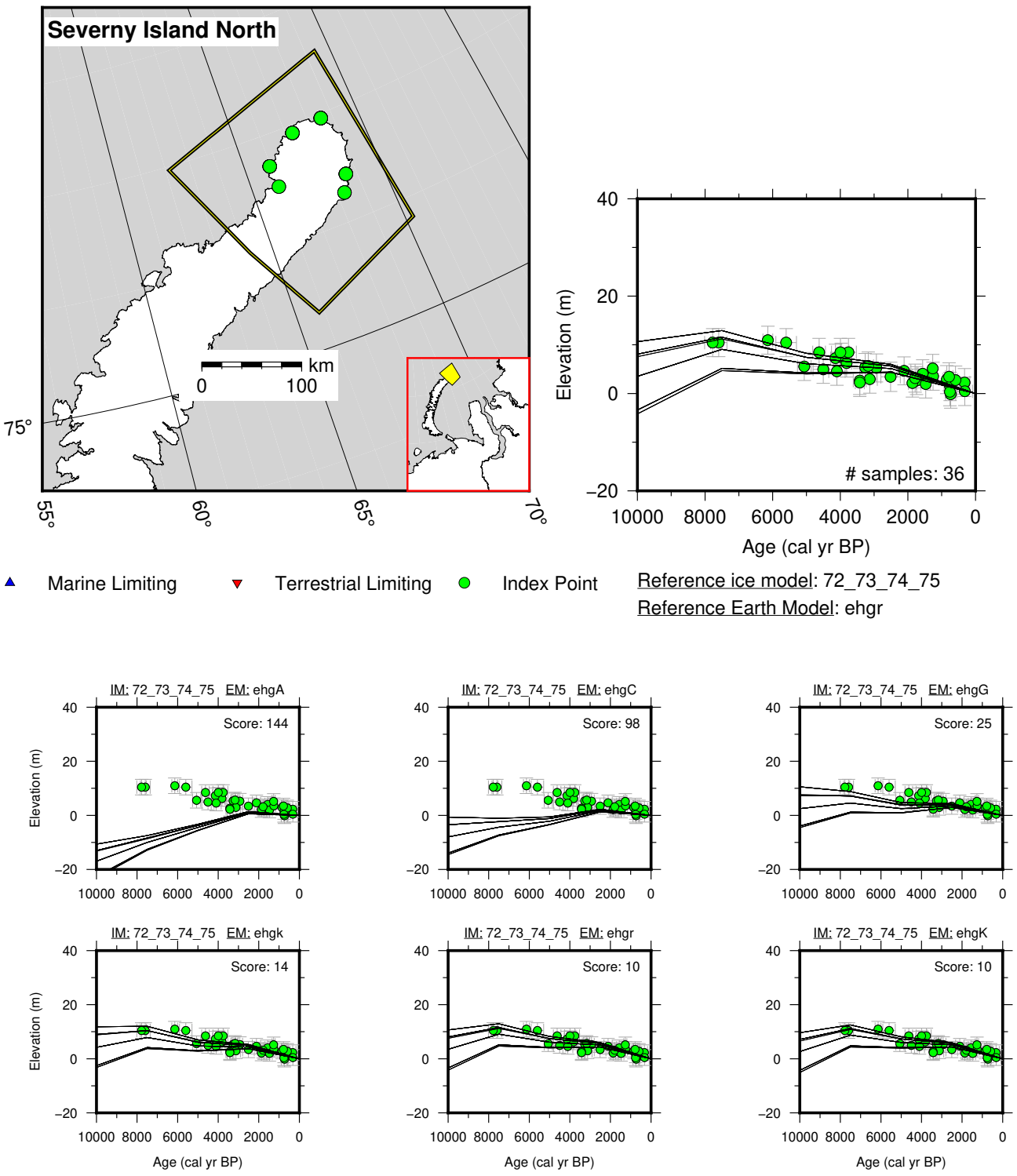
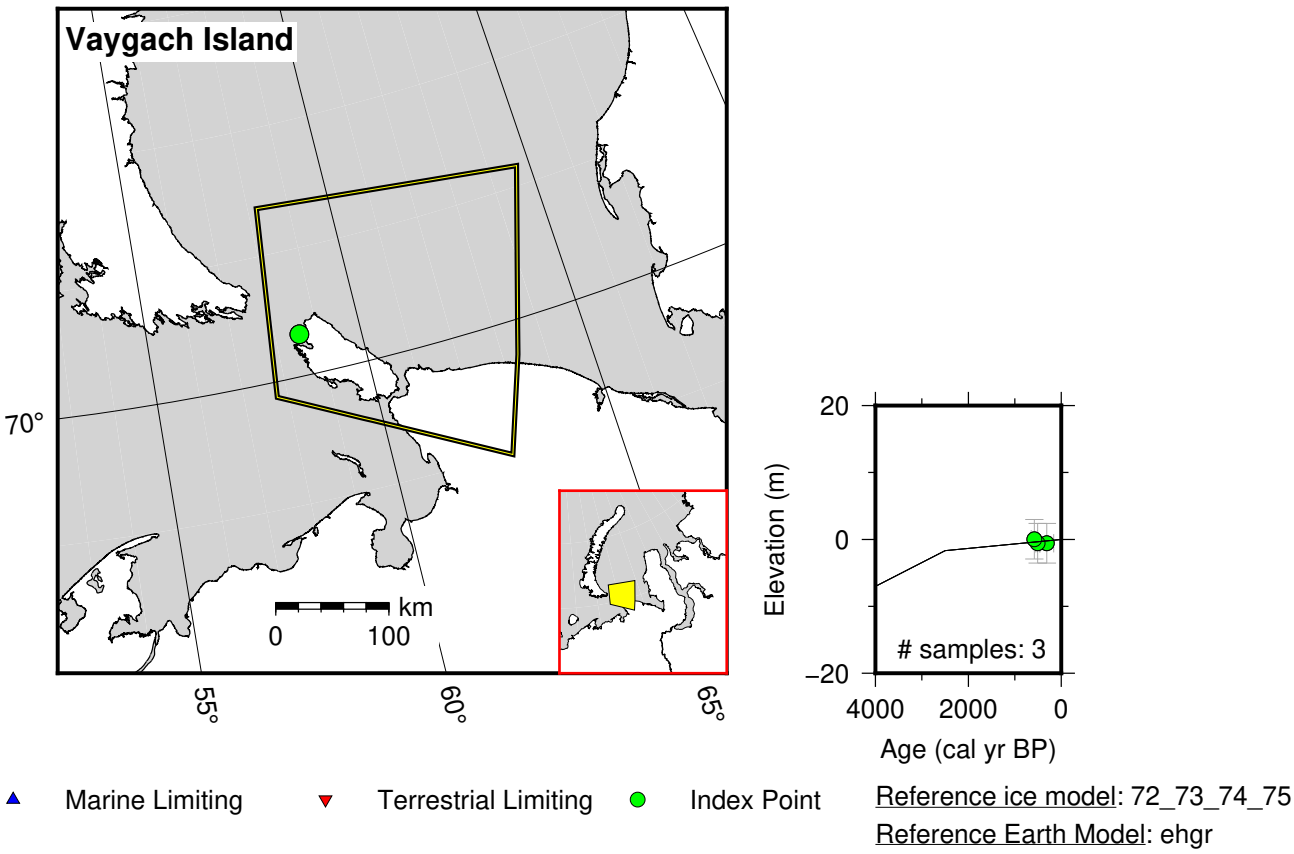


Figure 15: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Severny Island North.



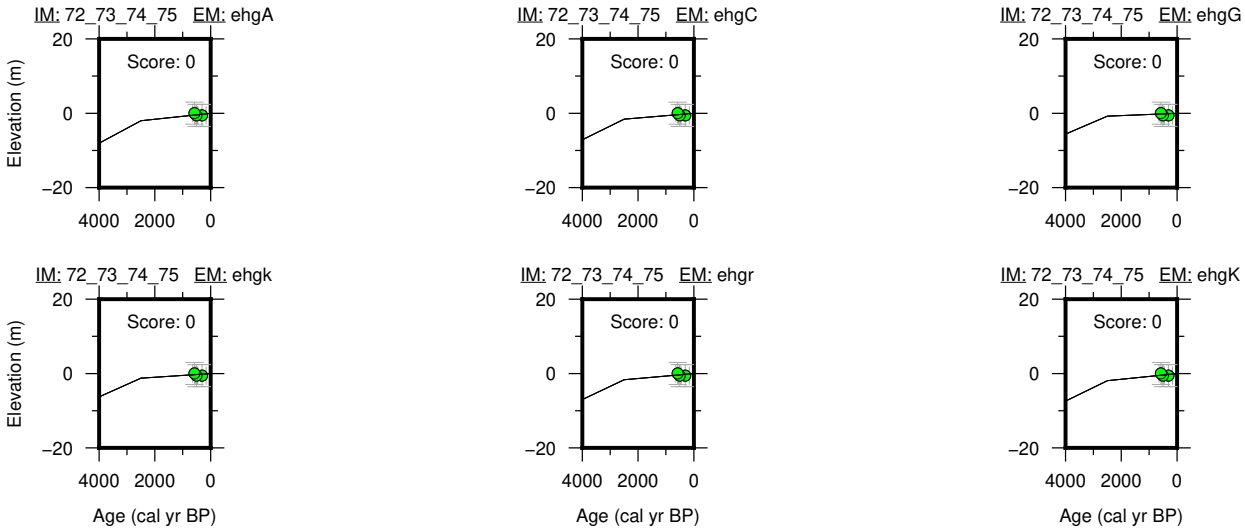
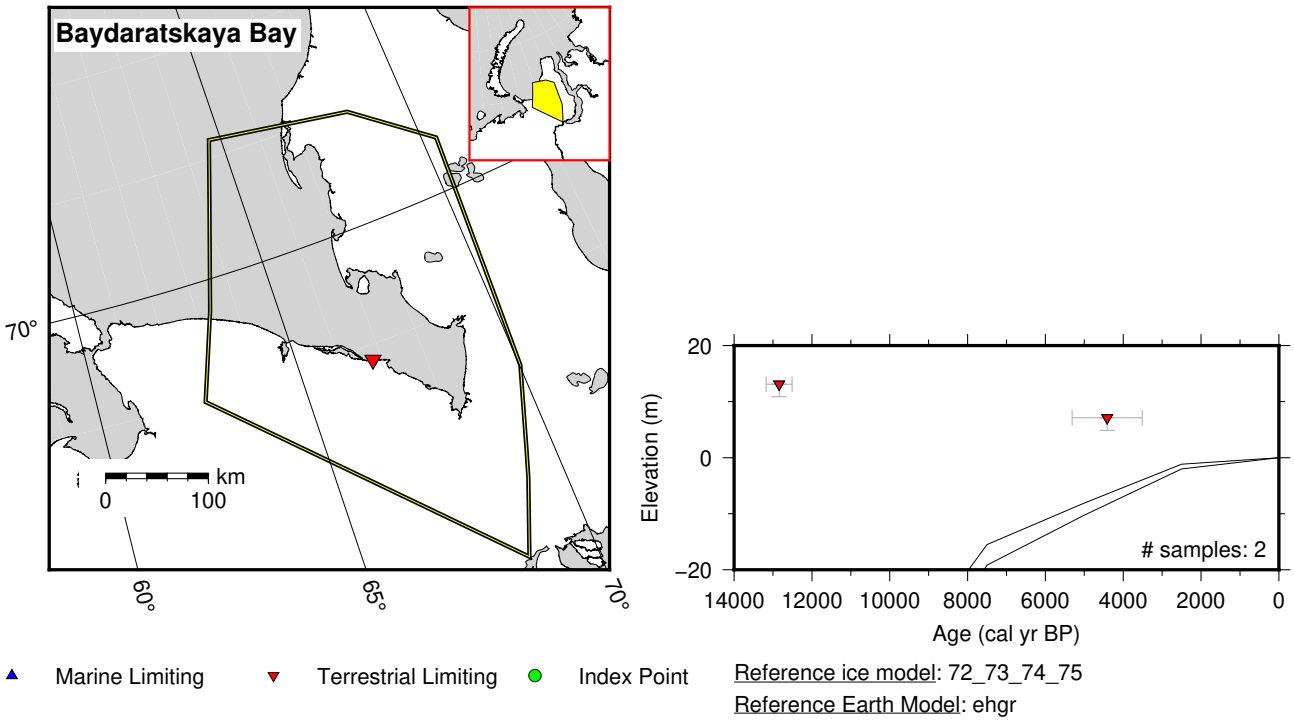


Figure 16: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Vaygach Island.



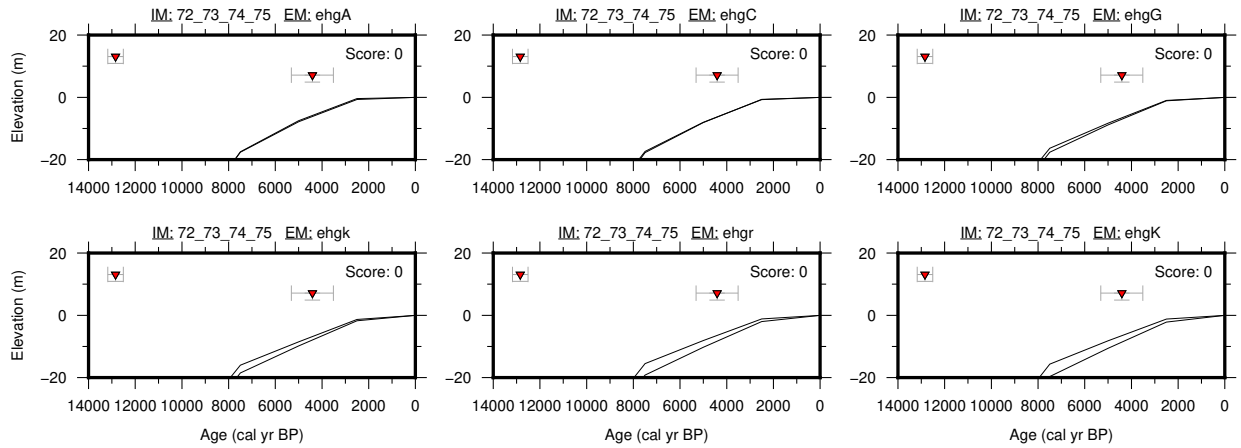


Figure 17: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Baydaratskaya Bay.

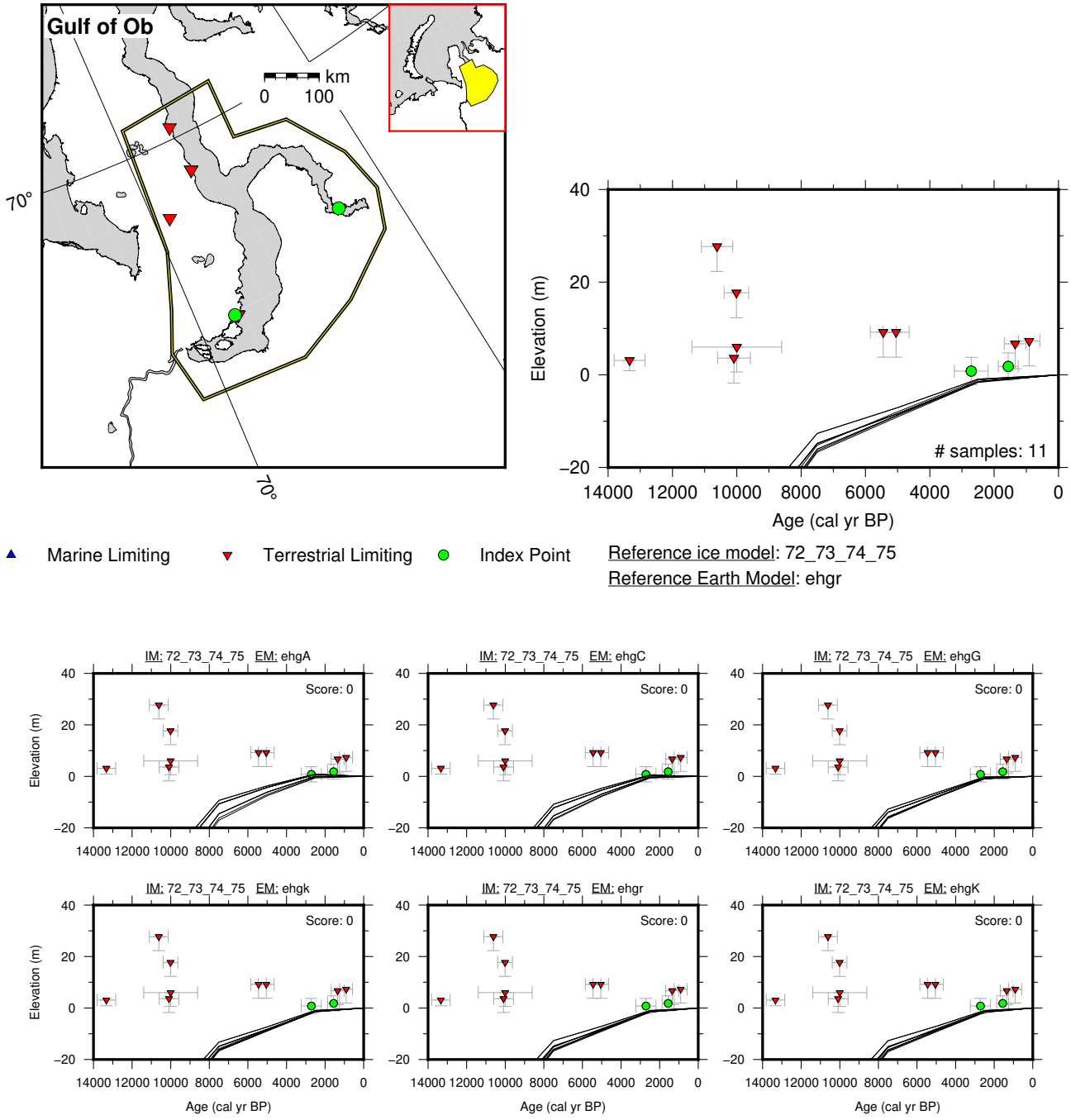
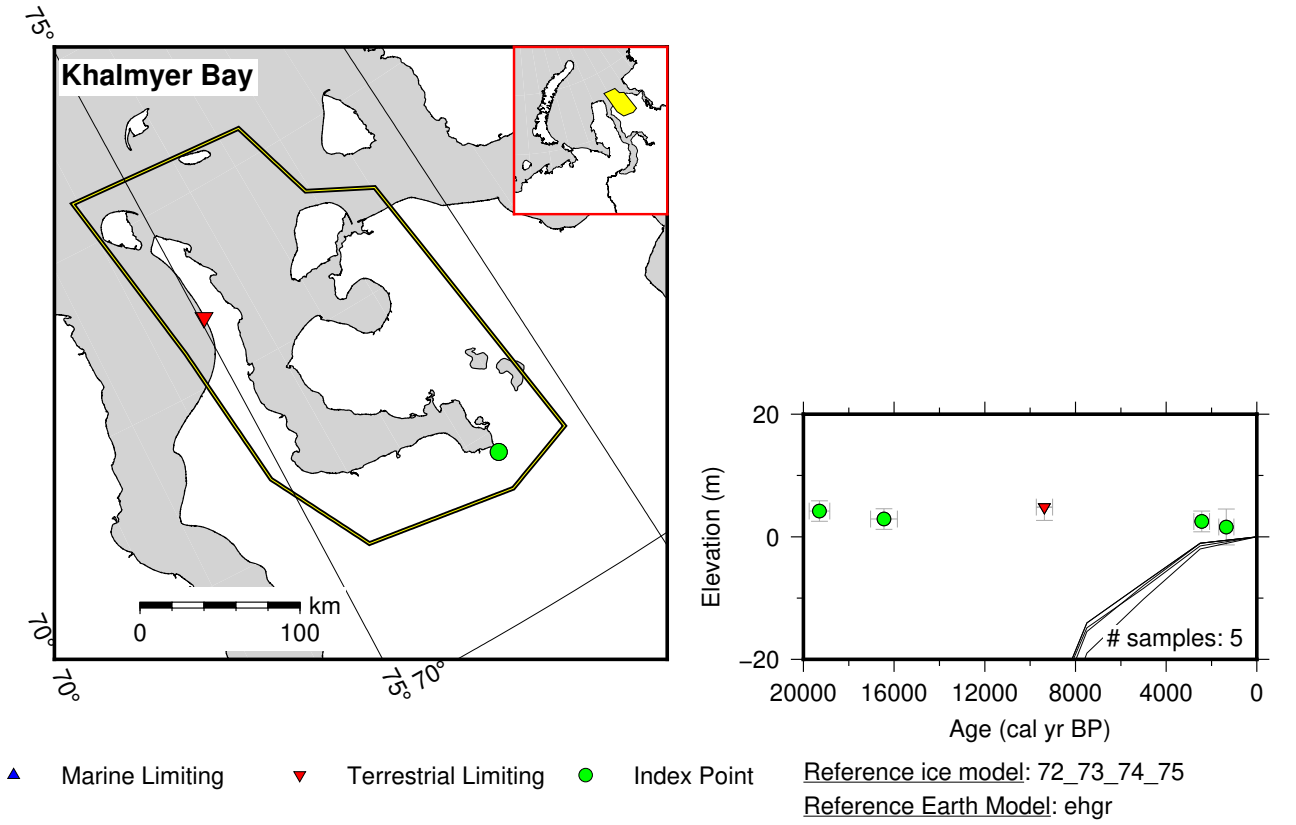


Figure 18: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Gulf of Ob.



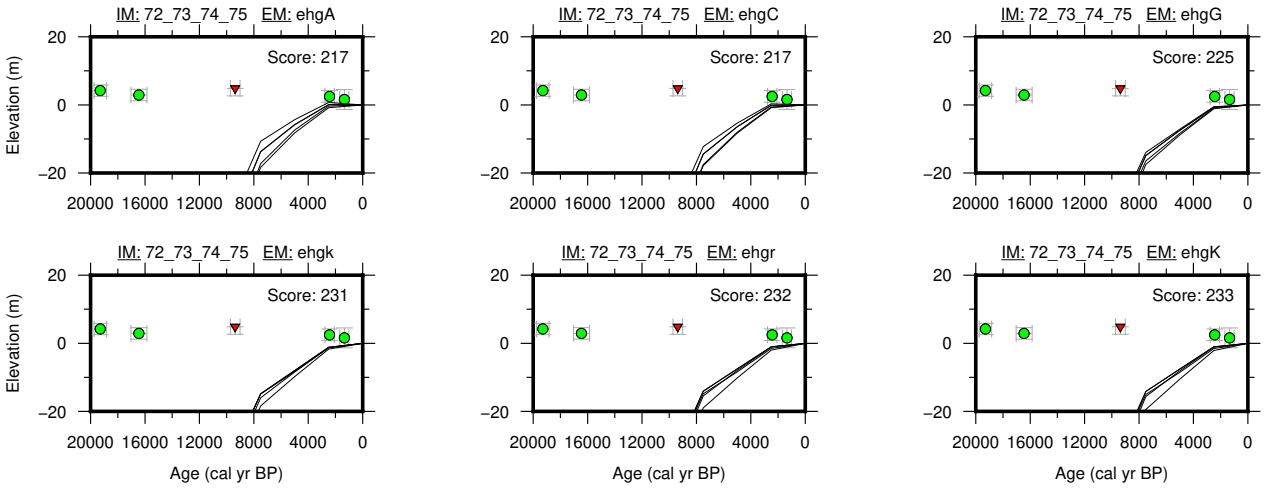


Figure 19: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Khalmyer Bay.

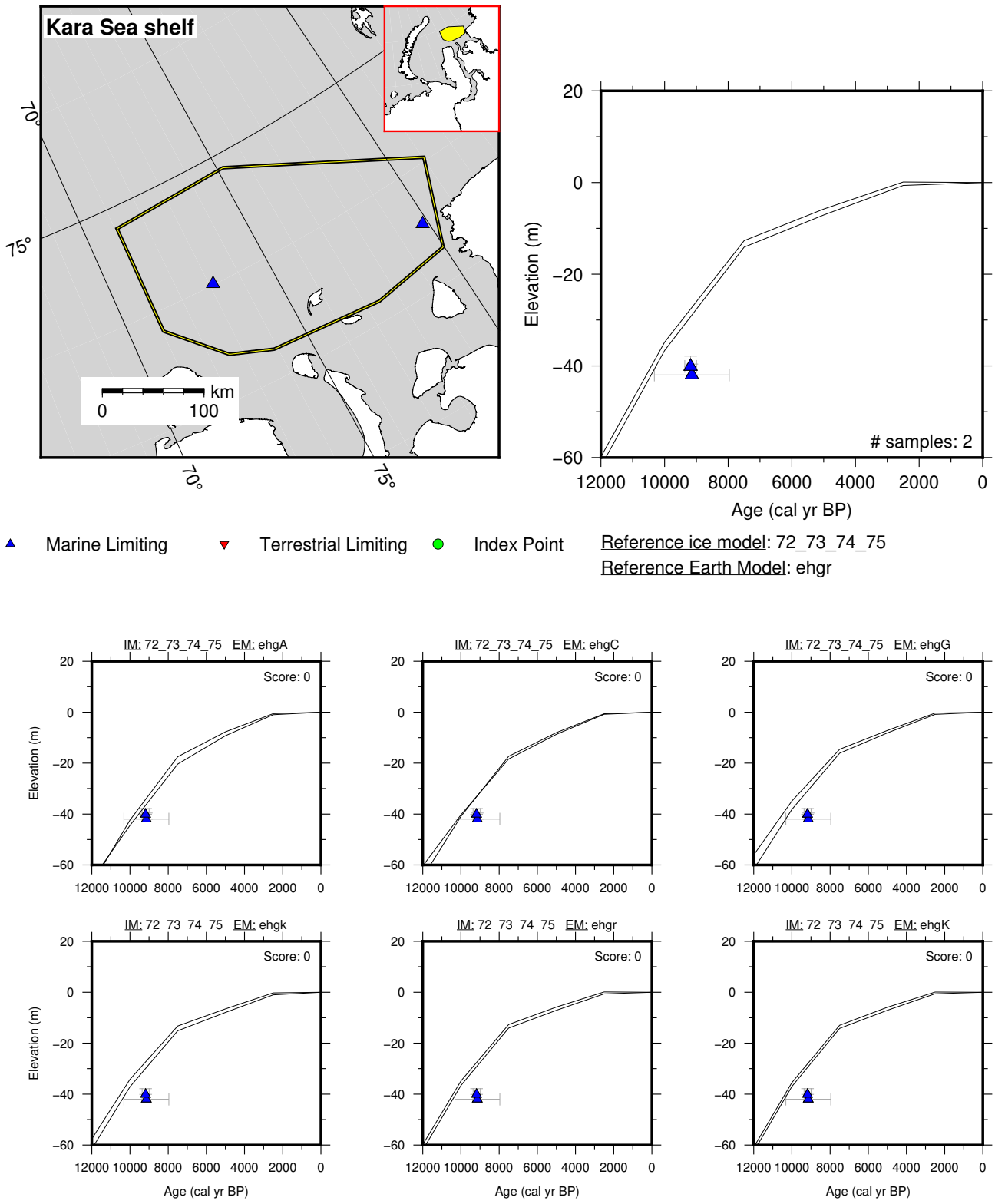
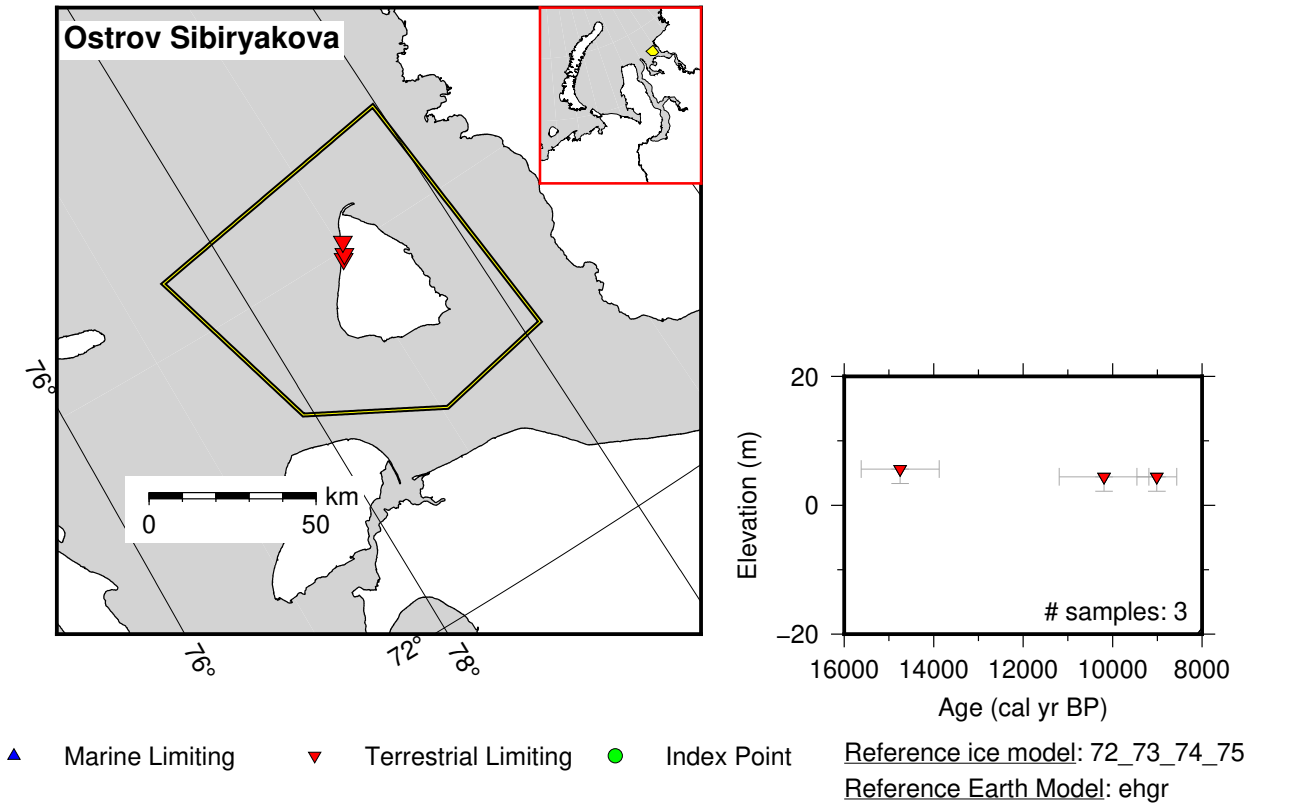


Figure 20: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Kara Sea shelf.



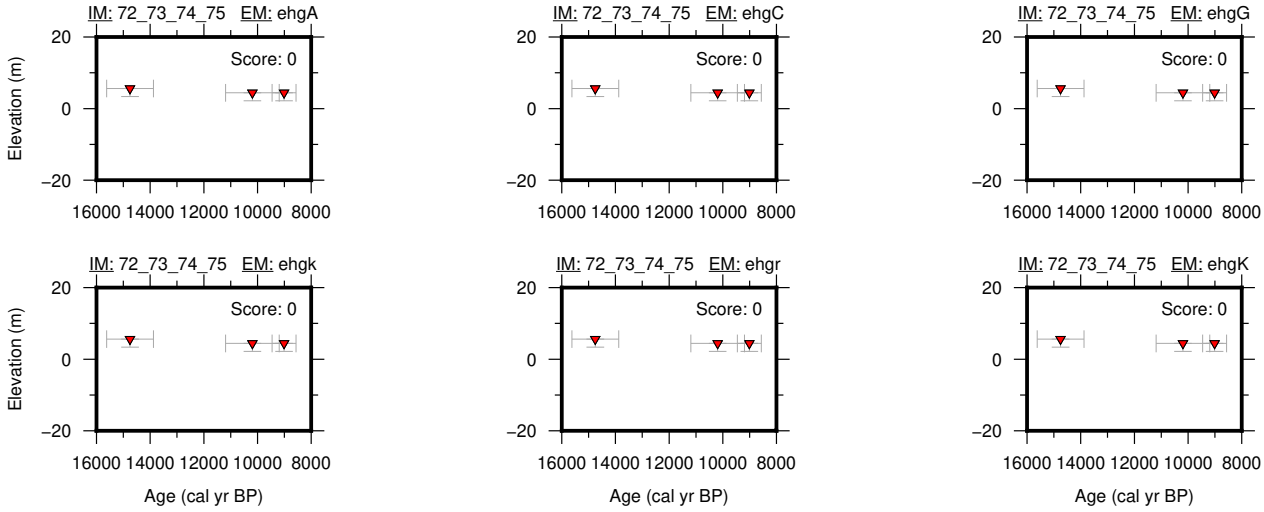


Figure 21: Paleo-sea level and comparison of six models for subregion Kara Sea - Novaya Zemlya, location Ostrov Sibiryakova.

8.3 Southern Barents Sea

References for the data used in each location.

Rolfsoya: Romundset et al. (2011)

Norkinn: Romundset et al. (2011)

Pechengsky: Arslanov et al. (1974); Corner et al. (1999); Koshechkin (1979)

Murmansk: Arslanov et al. (1974); Corner et al. (2001); Gurevich and Liyva (1975); Gurina (1971); Mityaev M. V. (2008); Tanner (1907)

Voronya River: Arslanov et al. (1974); Snyder et al. (1997)

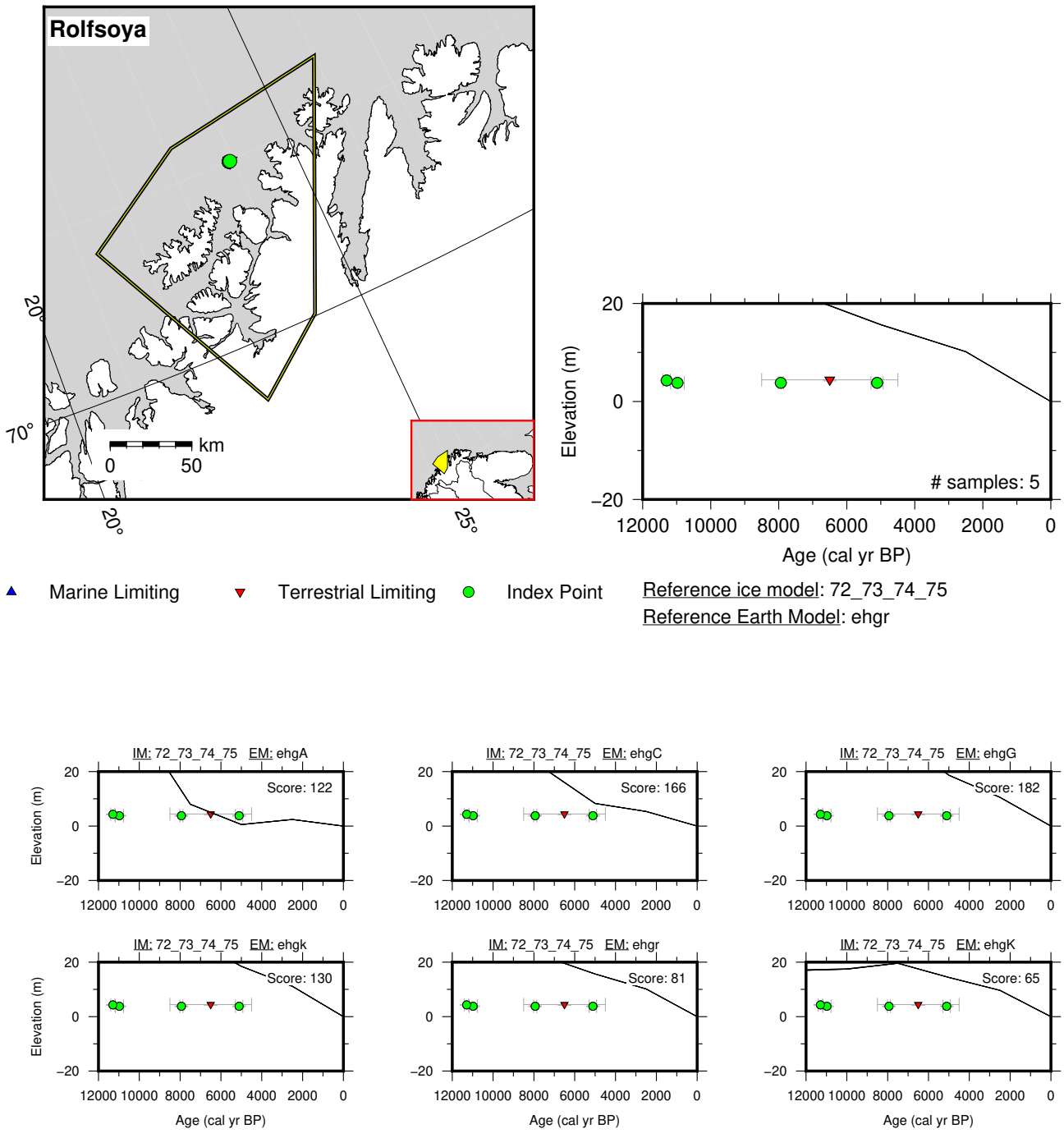


Figure 22: Paleo-sea level and comparison of six models for subregion Southern Barents Sea, location Rolfsoya.

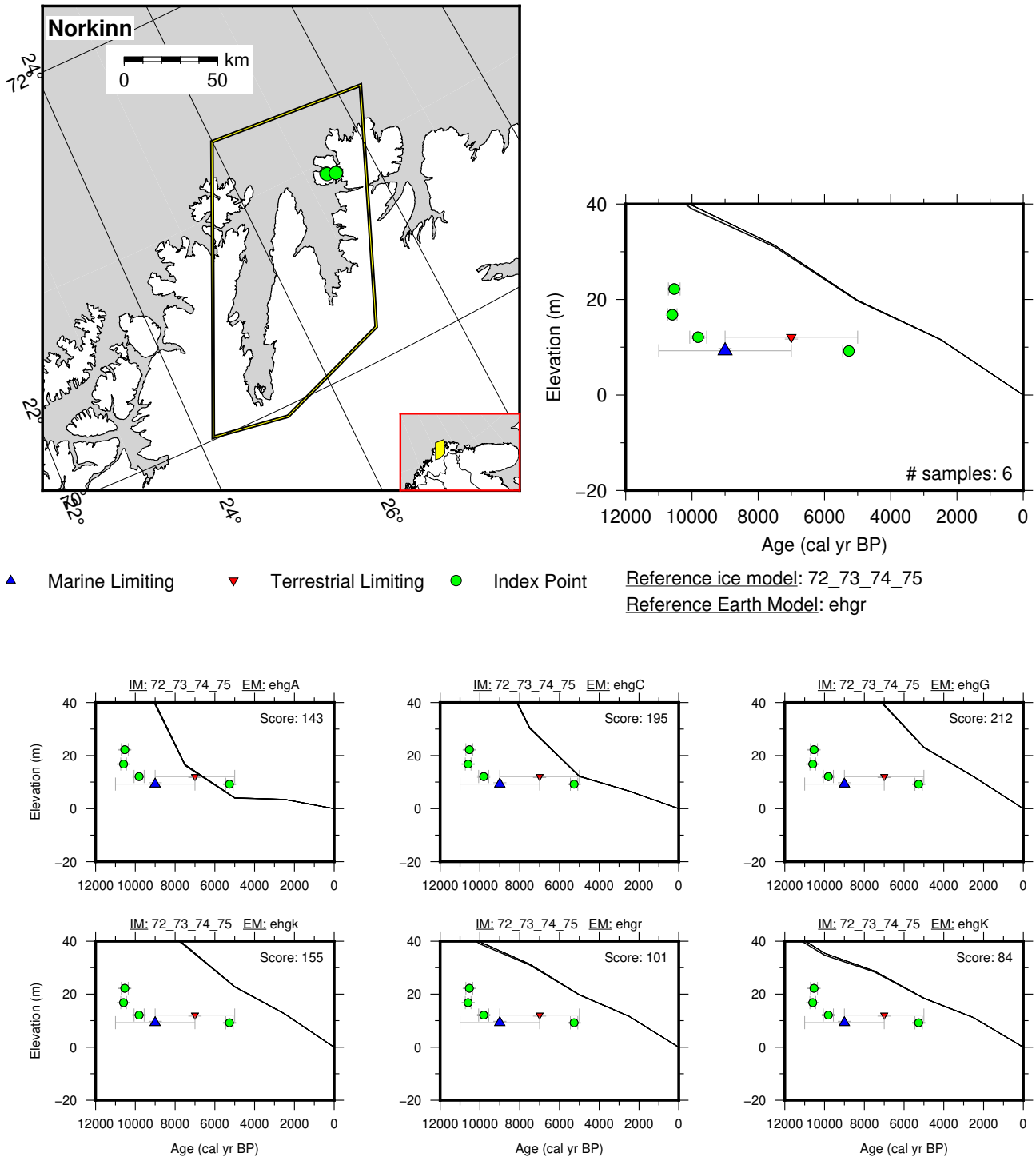


Figure 23: Paleo-sea level and comparison of six models for subregion Southern Barents Sea, location Norkinn.

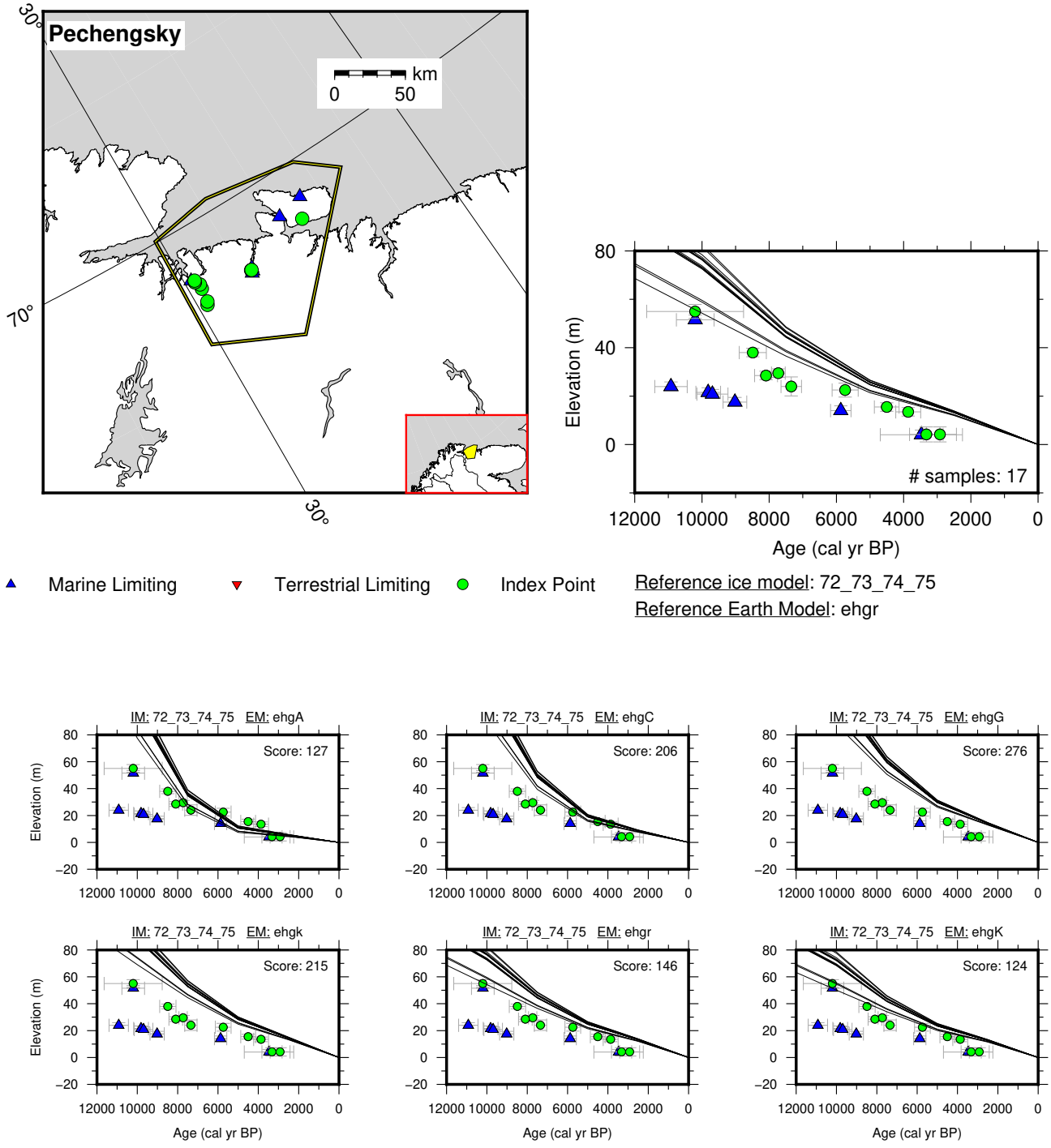


Figure 24: Paleo-sea level and comparison of six models for subregion Southern Barents Sea, location Pechengsky.

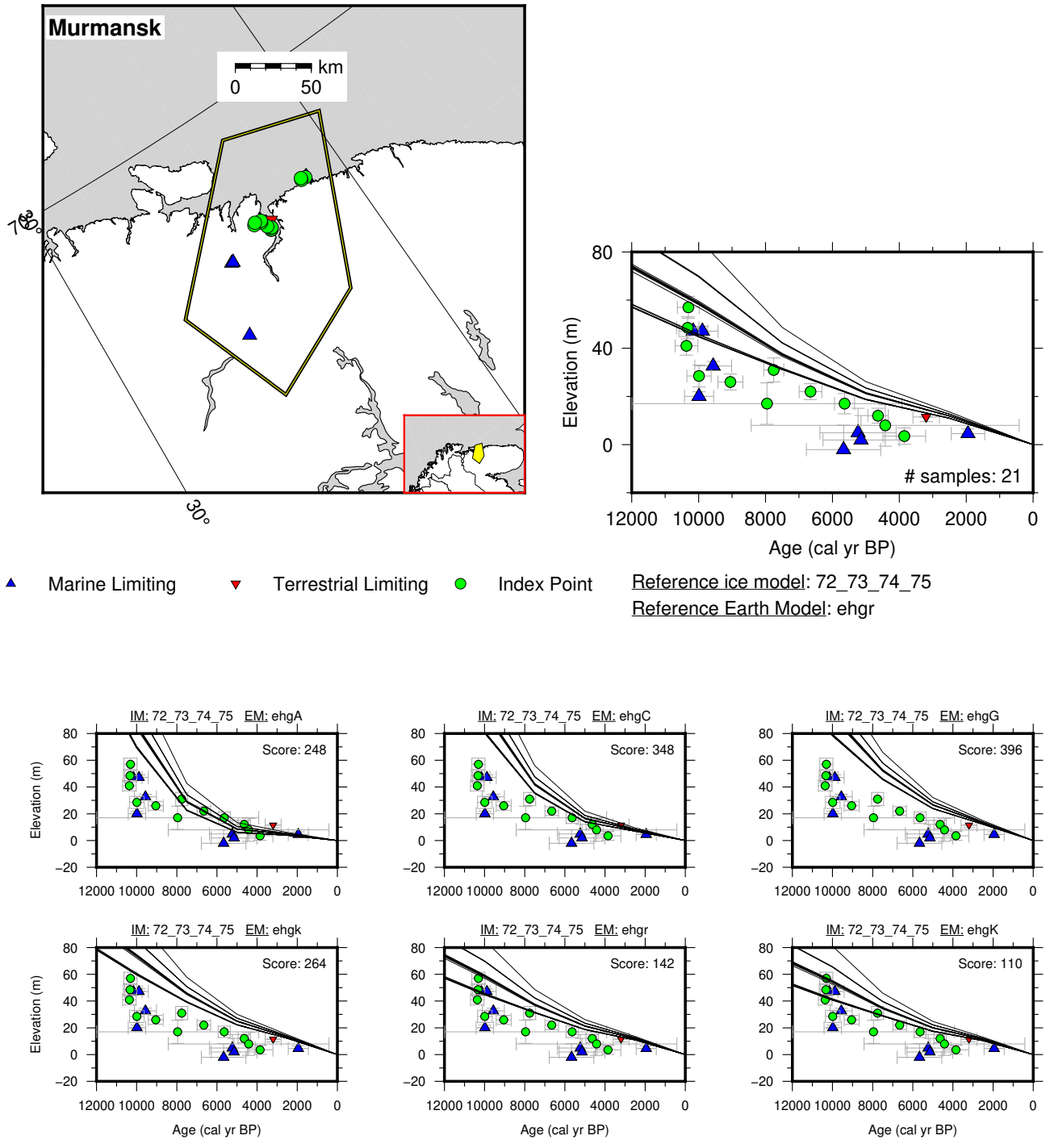


Figure 25: Paleo-sea level and comparison of six models for subregion Southern Barents Sea, location Murmansk.

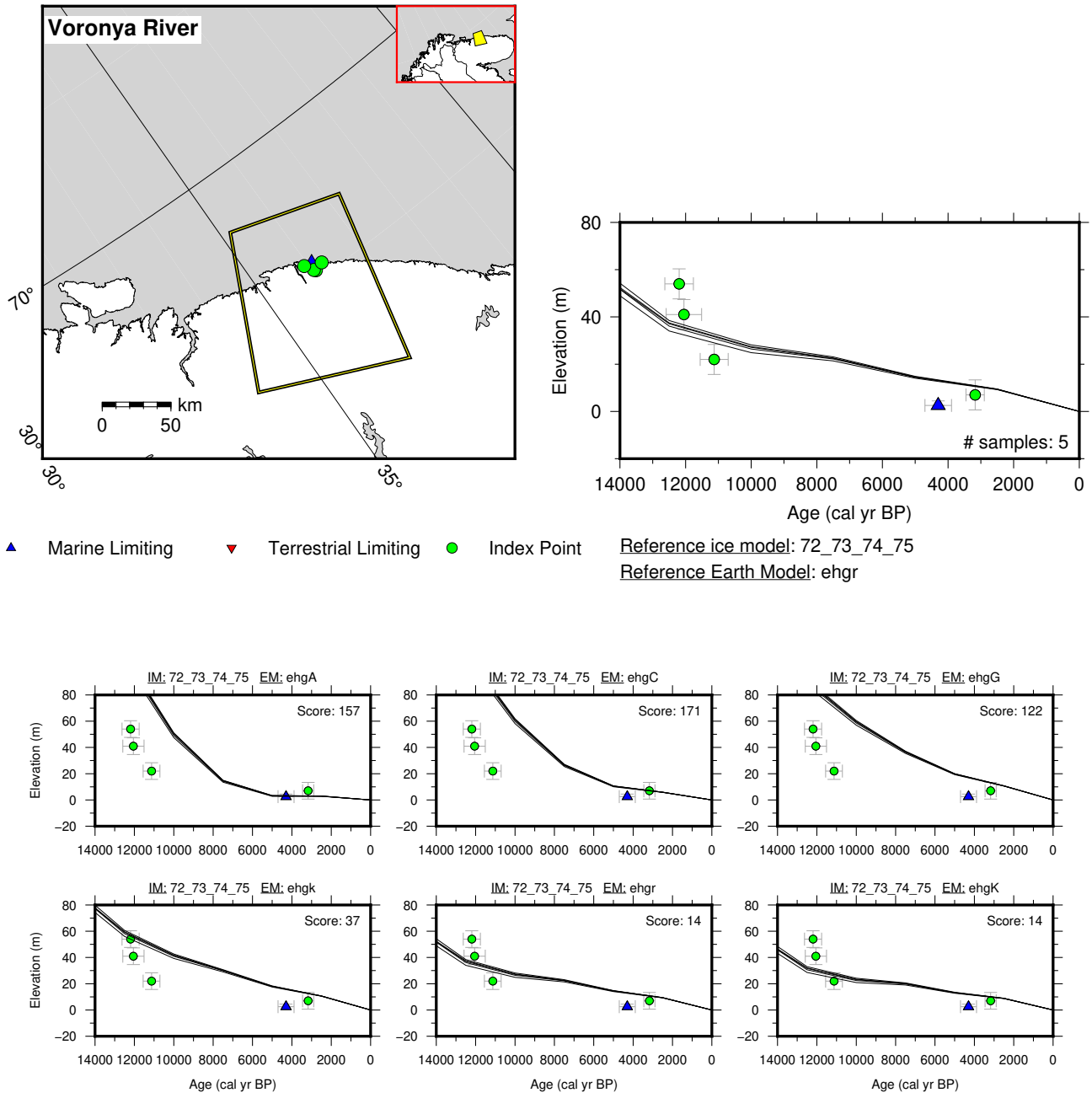


Figure 26: Paleo-sea level and comparison of six models for subregion Southern Barents Sea, location Voronya River.

8.4 Svalbard

References for the data used in each location.

Bockfjorden: Salvigsen and Høgvard (2006)

Broggerhalvoya: Forman et al. (1987, 2004)

Ytterdalen: Landvik et al. (1987)

Sorkapp Land: Salvigsen and Elgersma (1993)

Agardbukta: Salvigsen and Mangerud (1991)

Southern Edgeoya: Bondevik et al. (1995)

Diskobukta: Bondevik et al. (1995)

Humla: Bondevik et al. (1995)

Kapp Ziehen: Bondevik et al. (1995)

Svartknausflya: Salvigsen (1978)

Kongsoya: Salvigsen (1981)

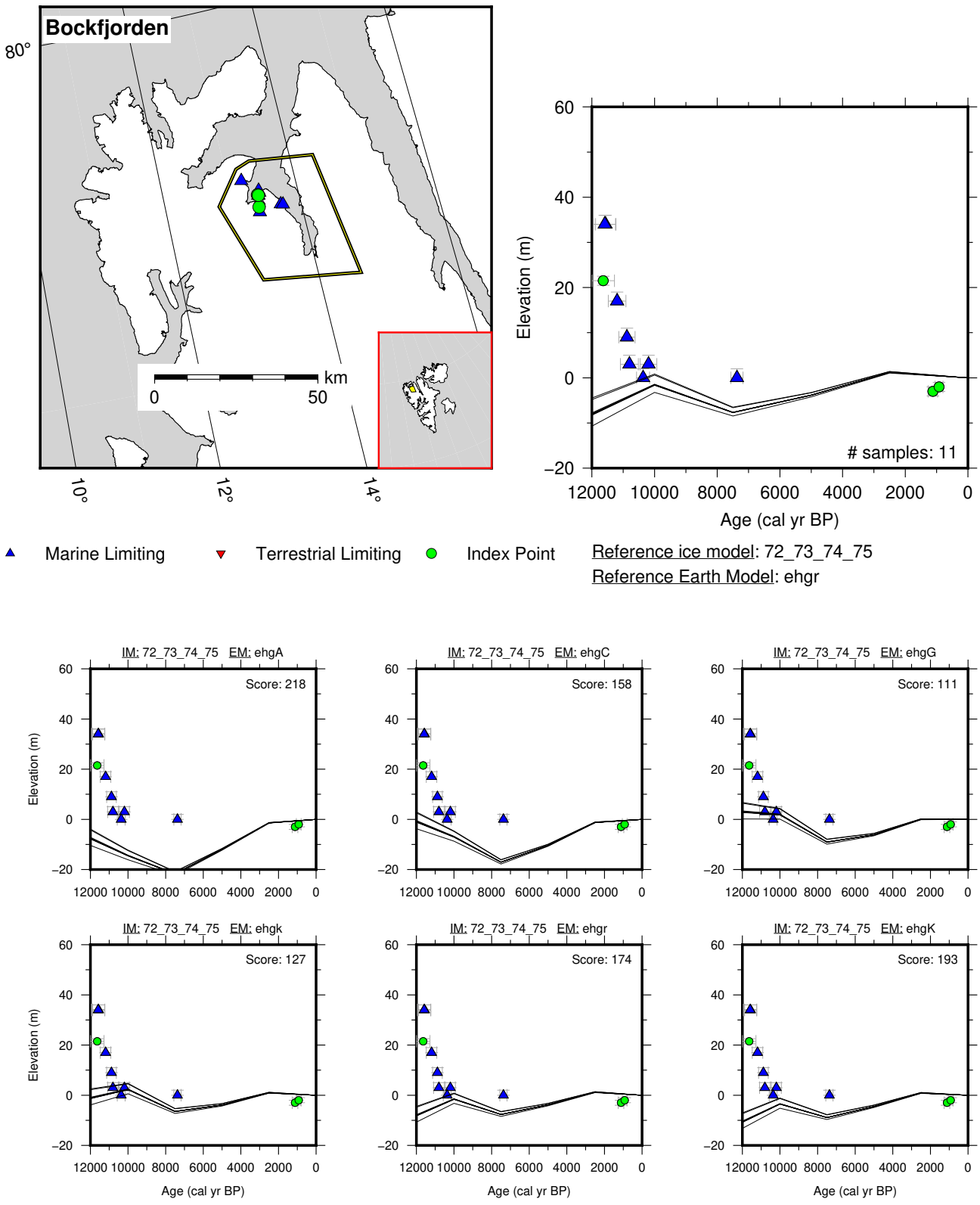


Figure 27: Paleo-sea level and comparison of six models for subregion Svalbard, location Bockfjorden.

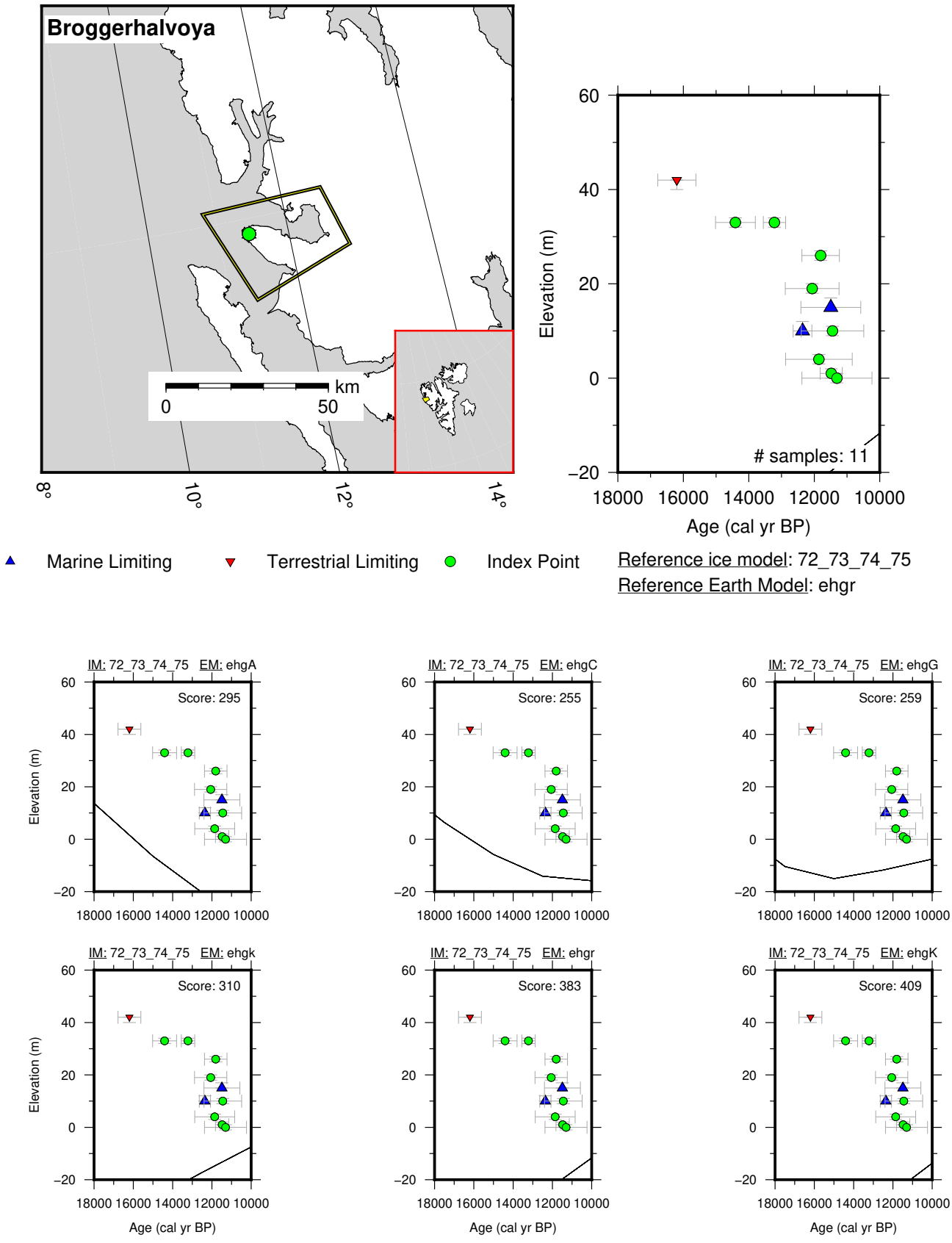


Figure 28: Paleo-sea level and comparison of six models for subregion Svalbard, location Broggerhalvoya.

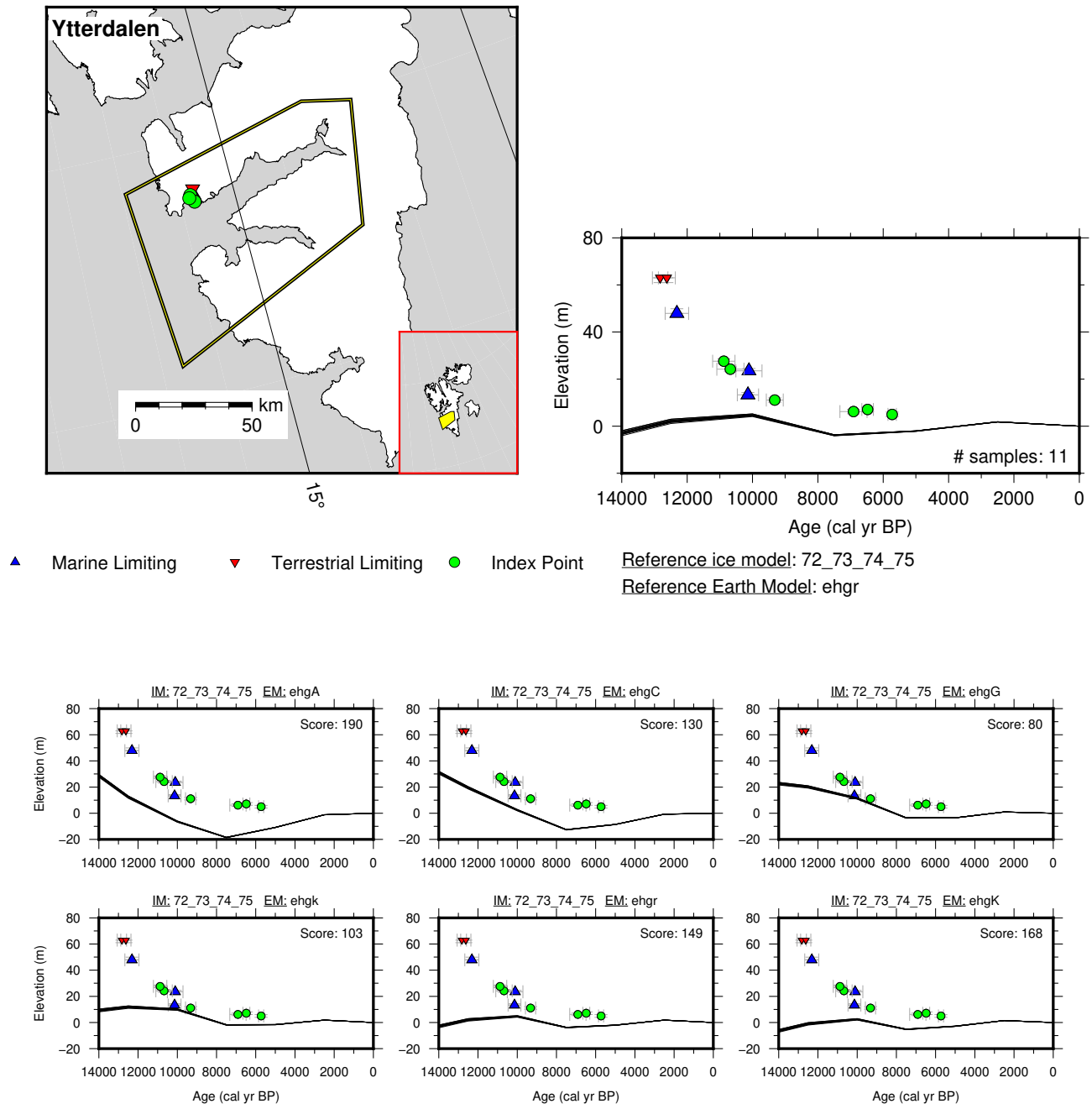


Figure 29: Paleo-sea level and comparison of six models for subregion Svalbard, location Ytterdalen.

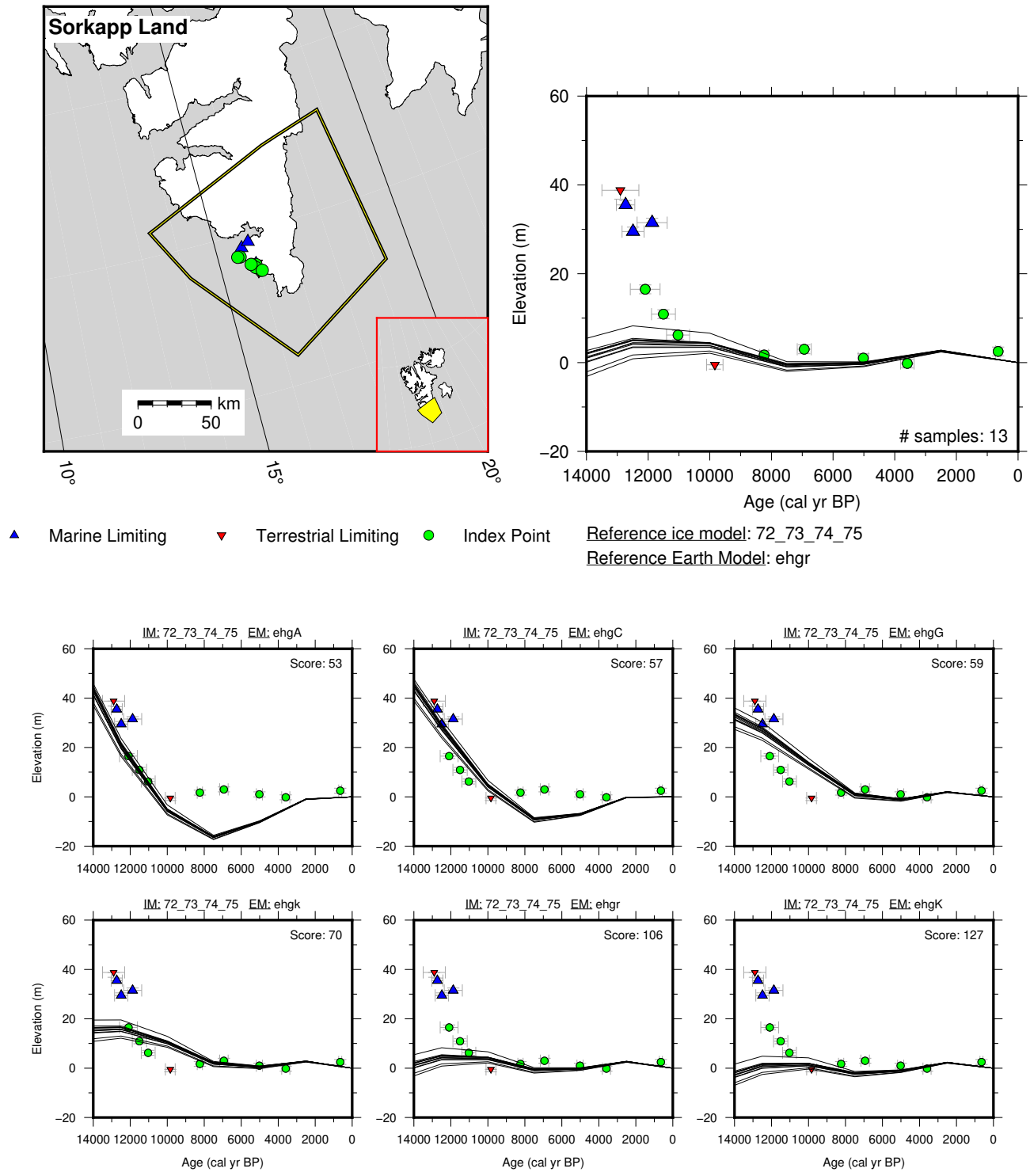
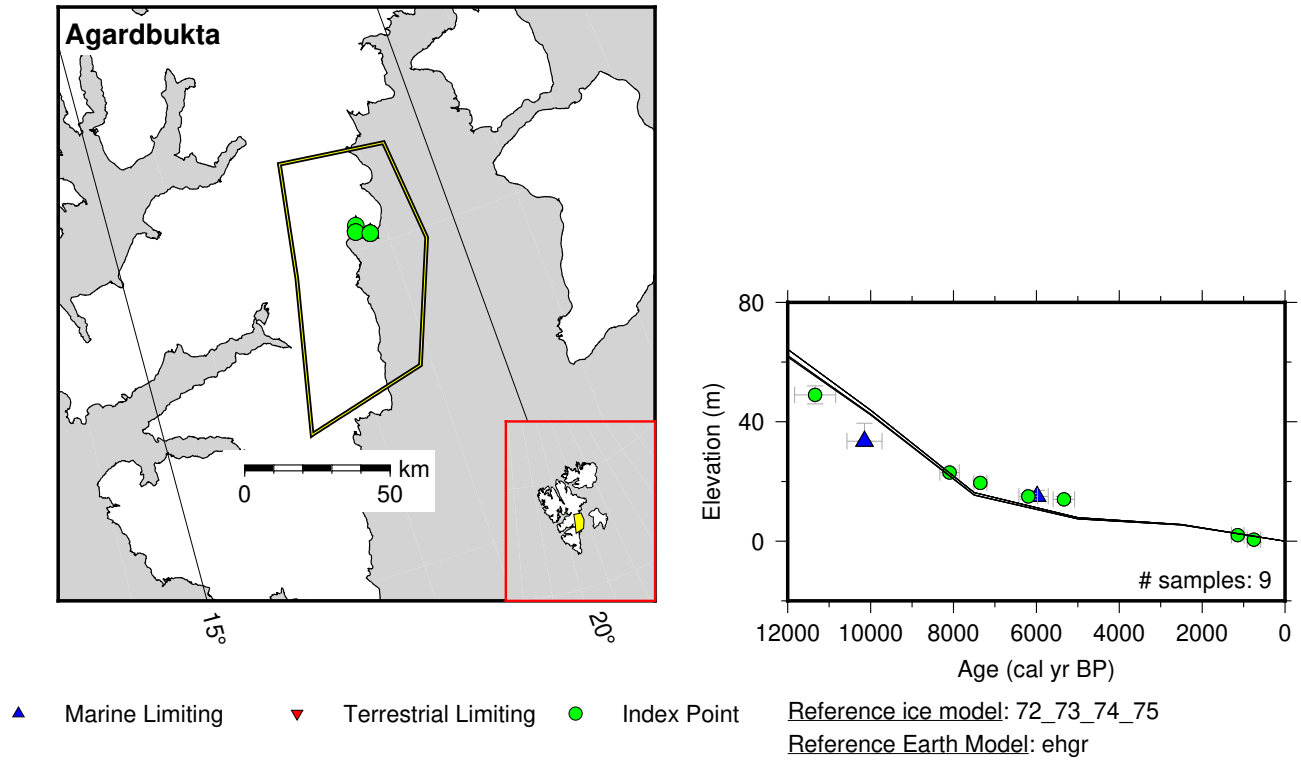


Figure 30: Paleo-sea level and comparison of six models for subregion Svalbard, location Sorkapp Land.



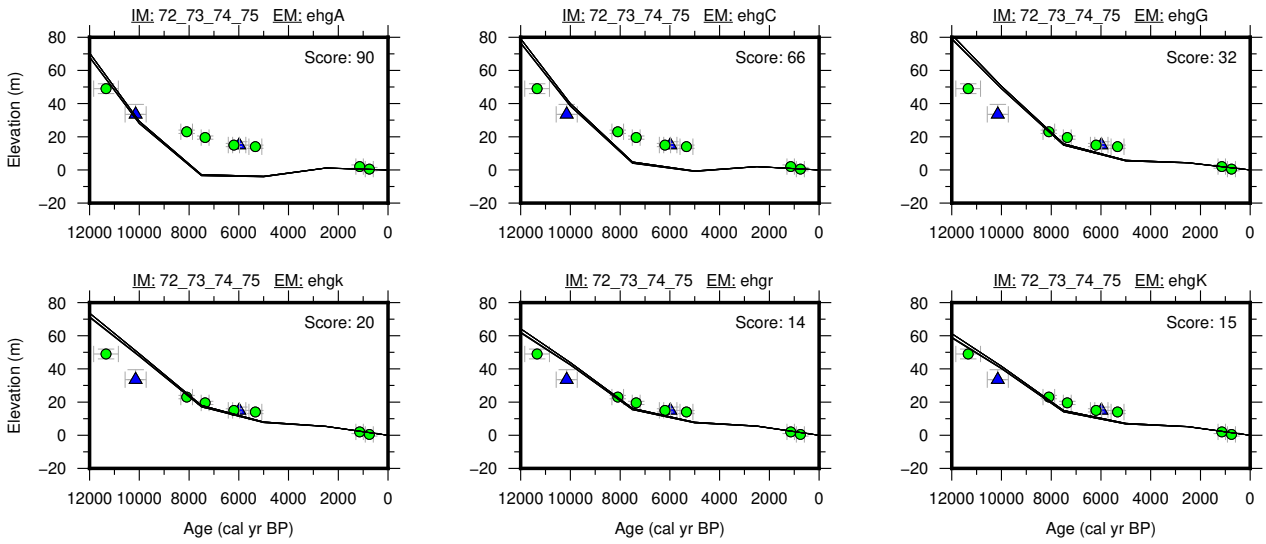


Figure 31: Paleo-sea level and comparison of six models for subregion Svalbard, location Agardbukta.

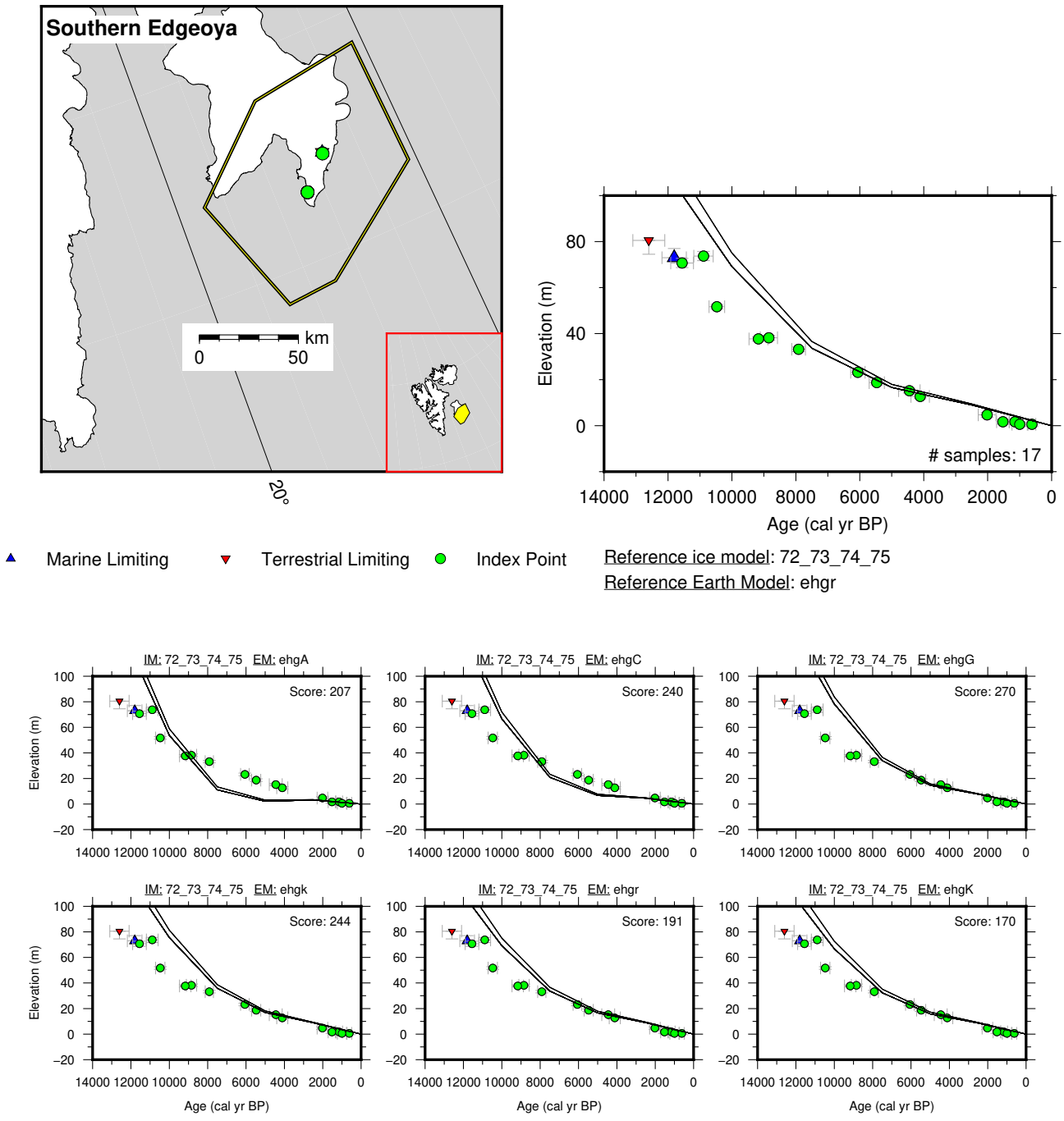
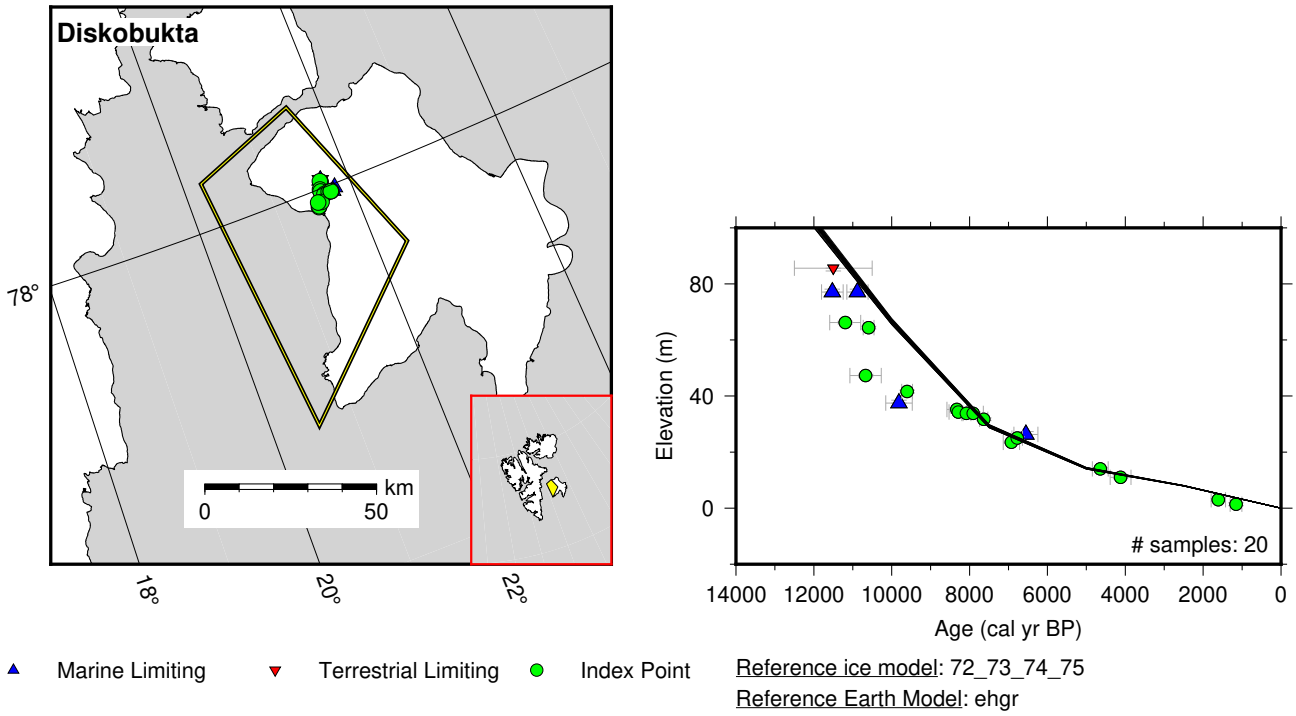


Figure 32: Paleo-sea level and comparison of six models for subregion Svalbard, location Southern Edgeoya.



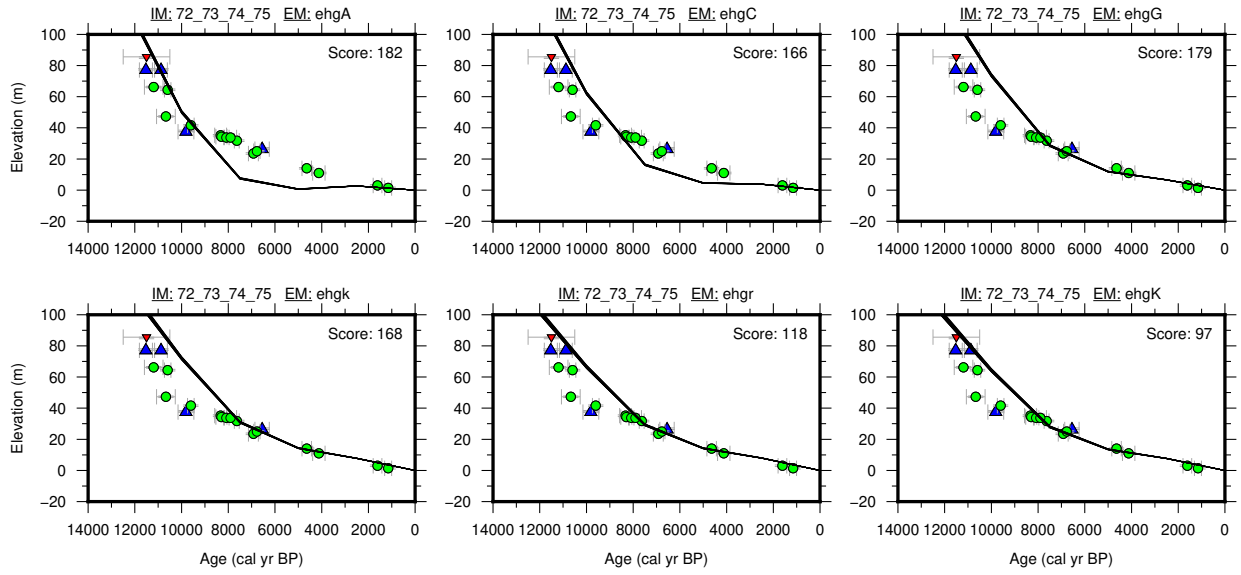


Figure 33: Paleo-sea level and comparison of six models for subregion Svalbard, location Diskobukta.

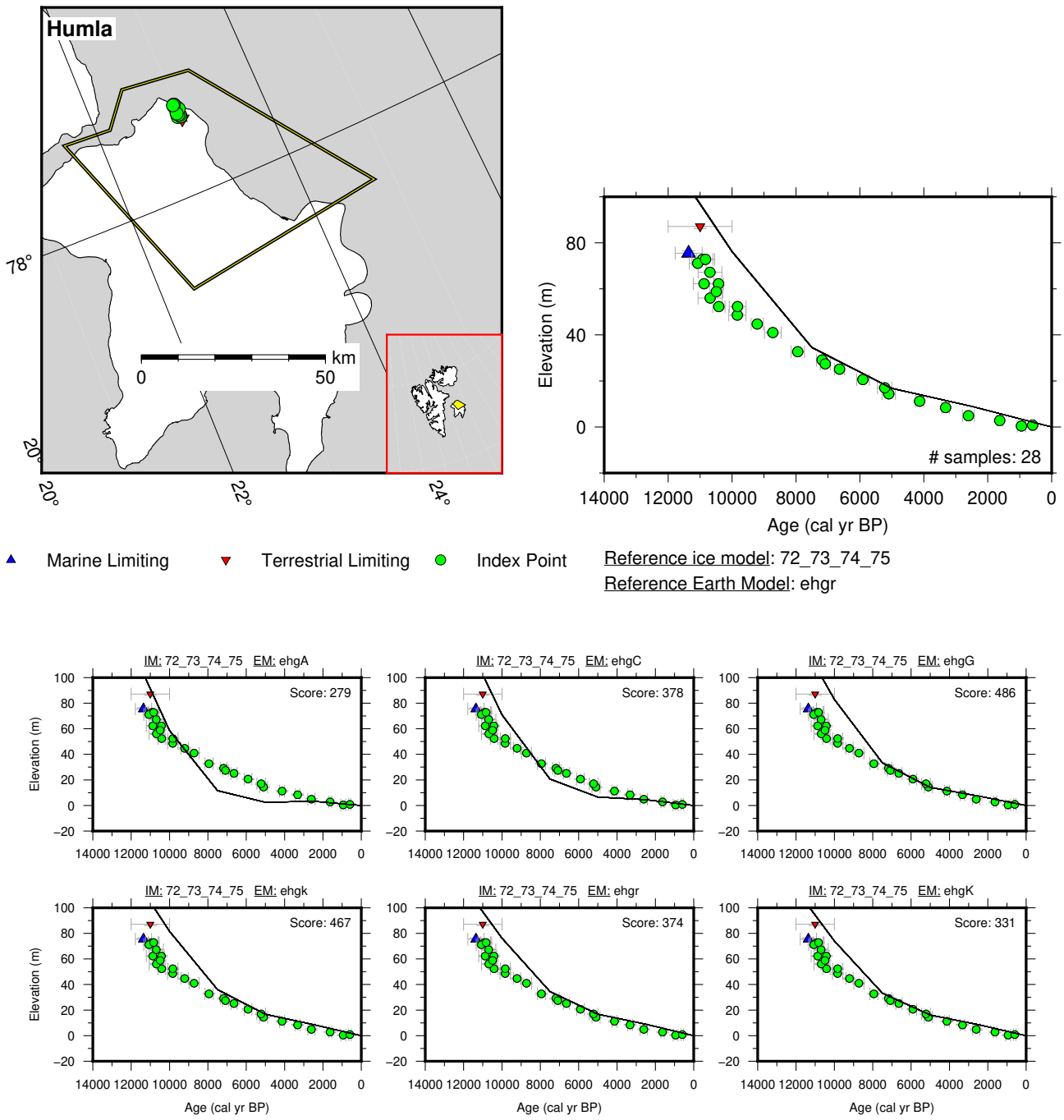


Figure 34: Paleo-sea level and comparison of six models for subregion Svalbard, location Humla.

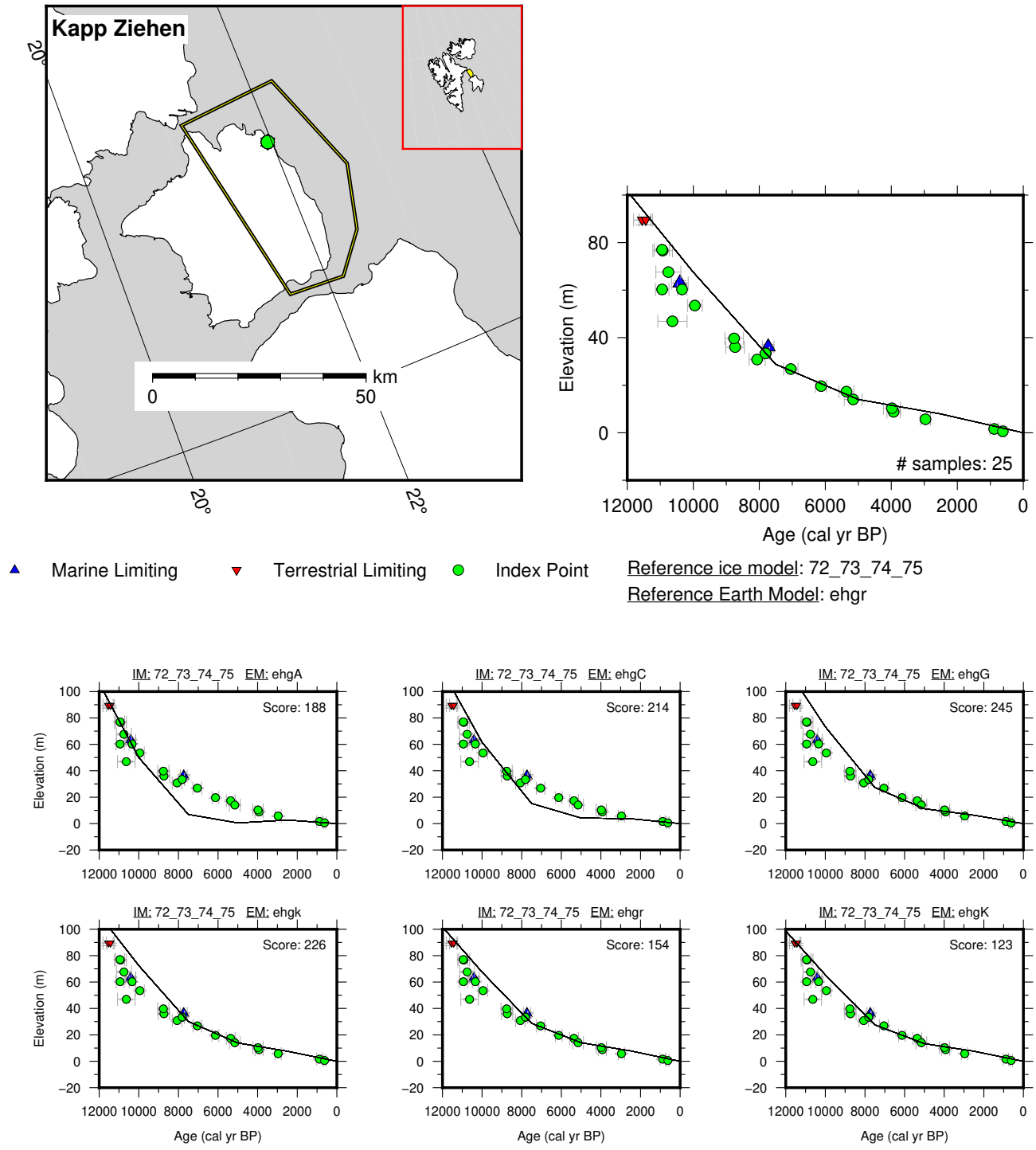


Figure 35: Paleo-sea level and comparison of six models for subregion Svalbard, location Kapp Ziehen.

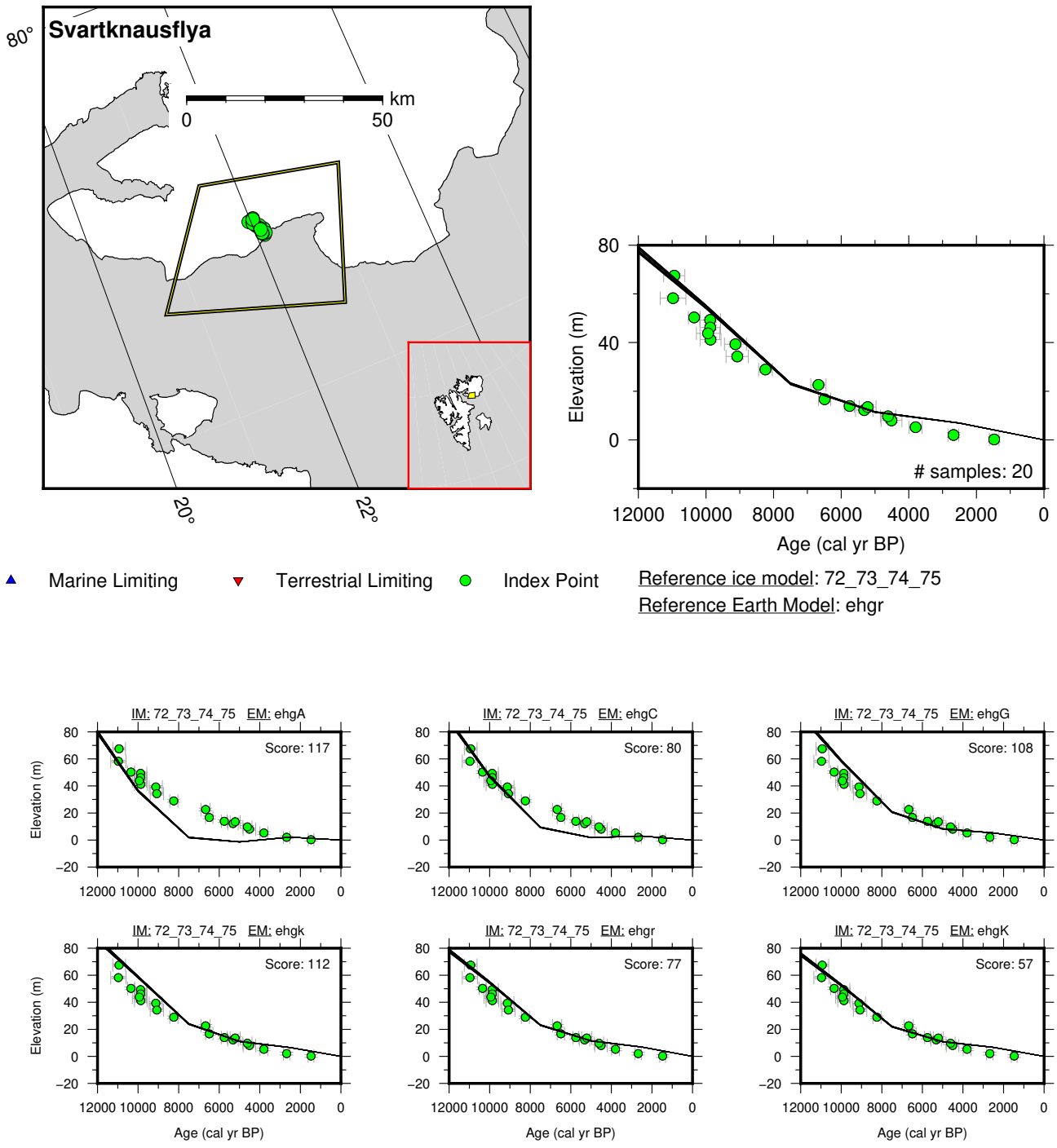


Figure 36: Paleo-sea level and comparison of six models for subregion Svalbard, location Svartknausflya.

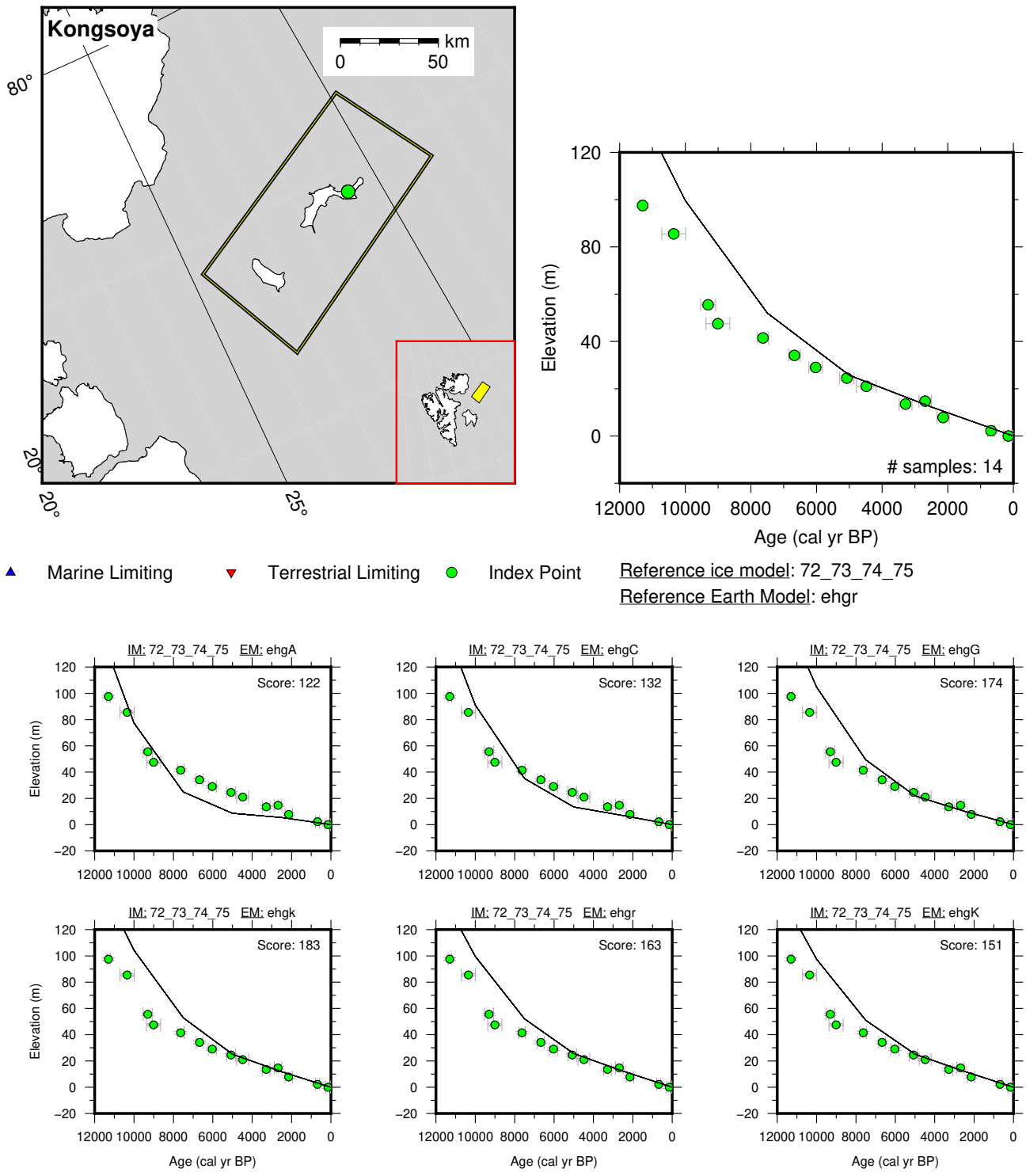


Figure 37: Paleo-sea level and comparison of six models for subregion Svalbard, location Kongsoya.

8.5 Western Siberia

References for the data used in each location.

Severnaya Zemlya: Bolshiyanov and Makeev (1995); Raab et al. (2003)

West Laptev Sea: Bauch et al. (1999); Bolshiyanov et al. (2013); Winterfeld et al. (2011)

Olenyok Gulf: Andreev et al. (2004); Bolshiyanov et al. (2013); Makarov (2009)

Lena Delta: Makarov (2009)

New Siberian Islands: Anisimov et al. (2009a); Bolshiyanov et al. (2013); Polyakova et al. (2005)

Zhokhov Island: Anisimov et al. (2009b)

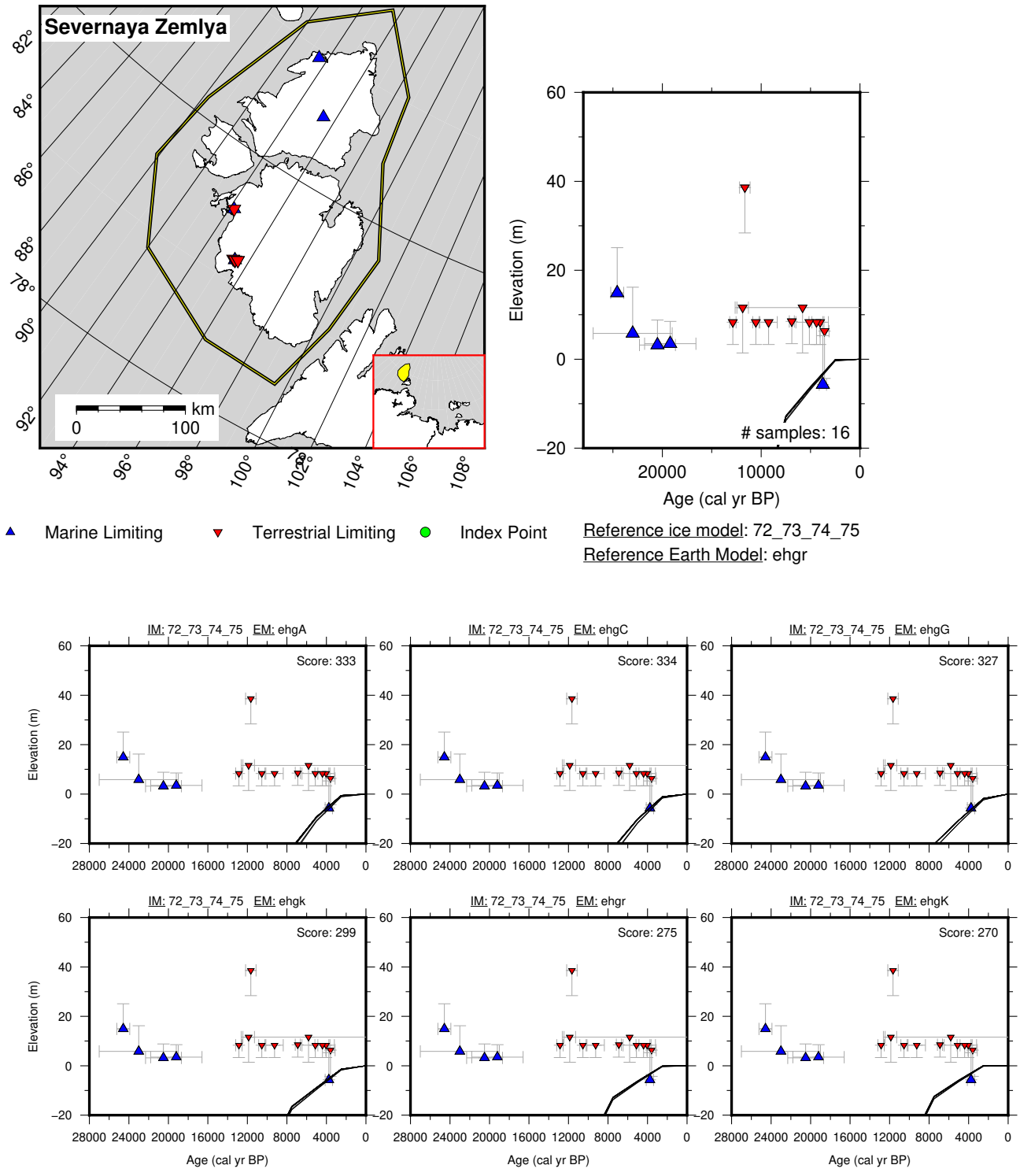


Figure 38: Paleo-sea level and comparison of six models for subregion Western Siberia, location Severnaya Zemlya.

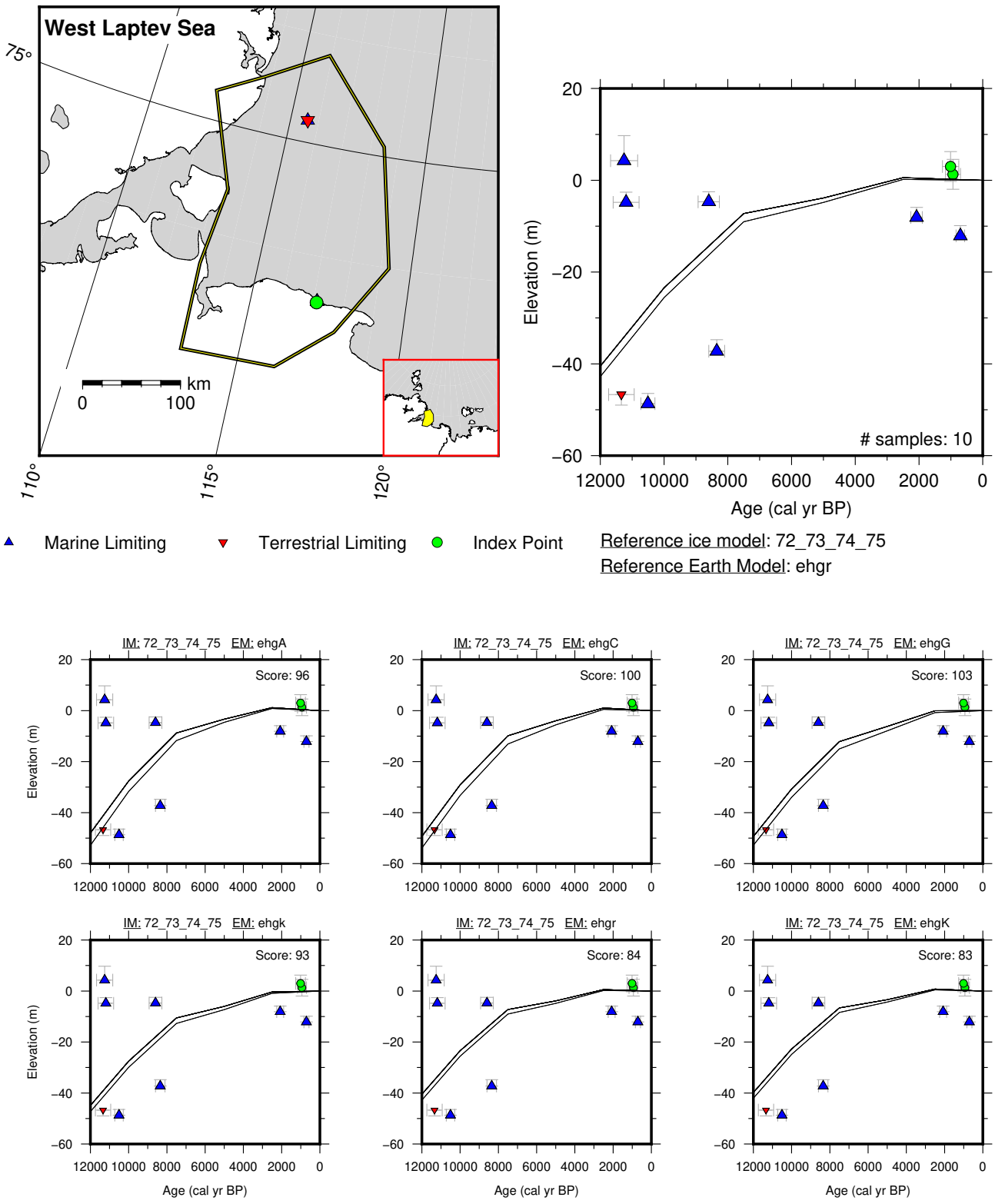
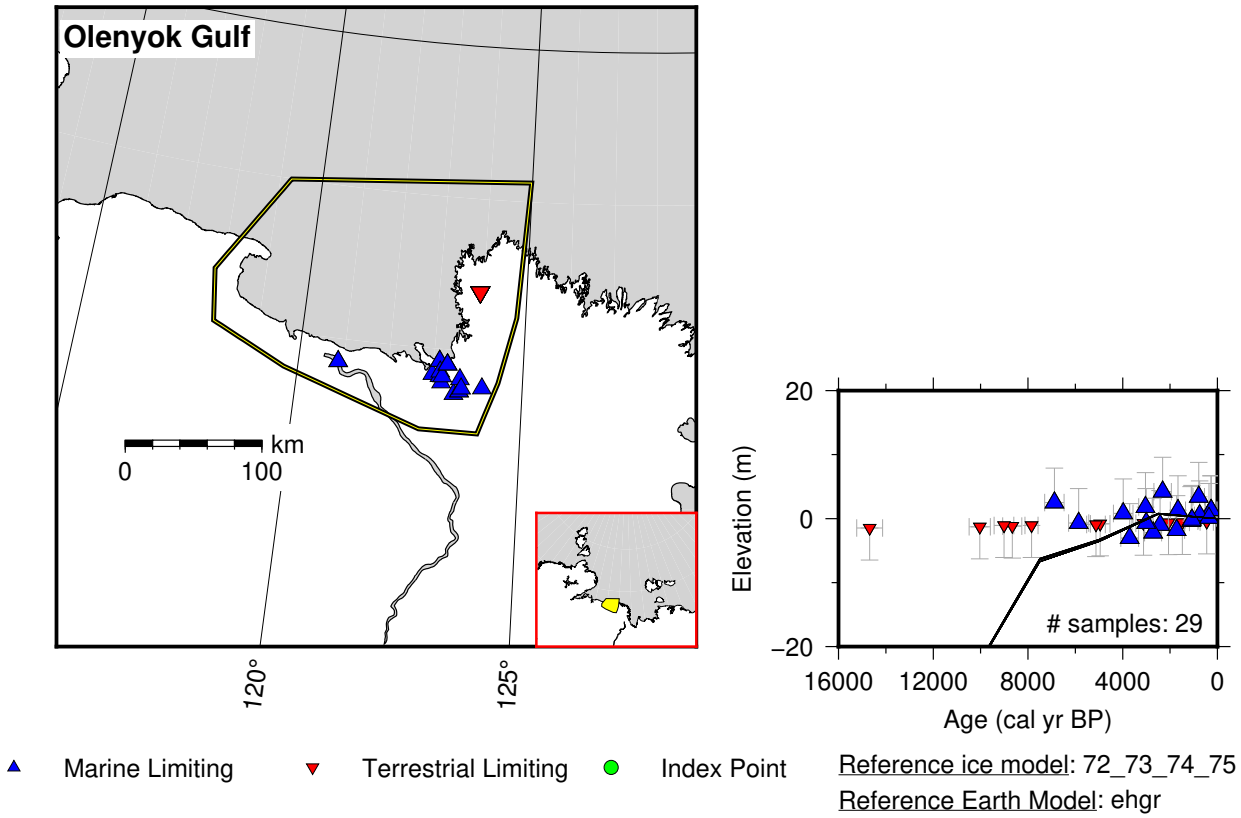


Figure 39: Paleo-sea level and comparison of six models for subregion Western Siberia, location West Laptev Sea.



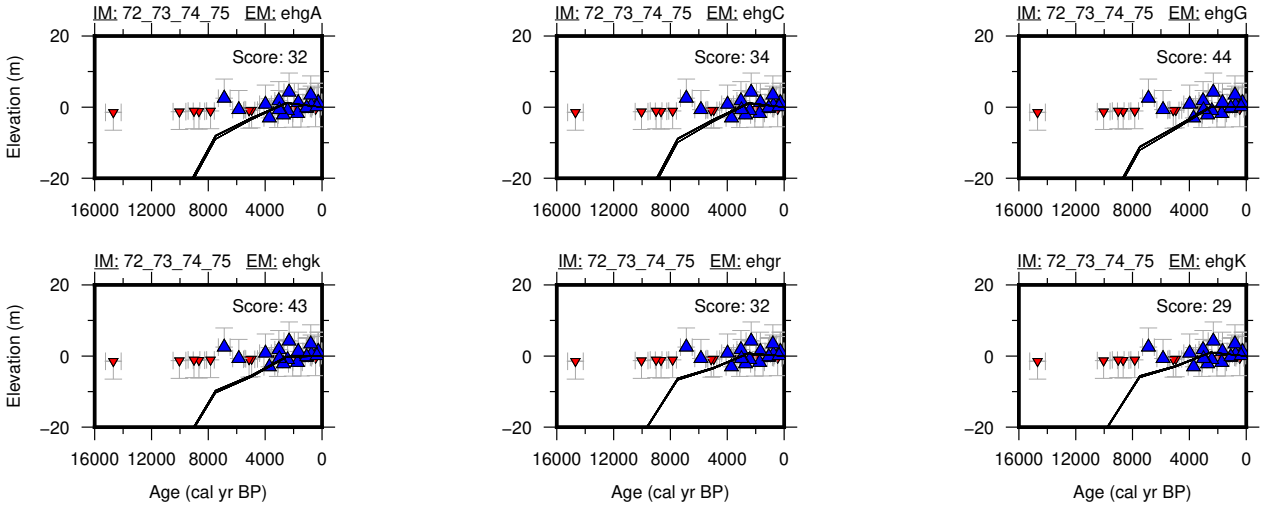


Figure 40: Paleo-sea level and comparison of six models for subregion Western Siberia, location Olenyok Gulf.

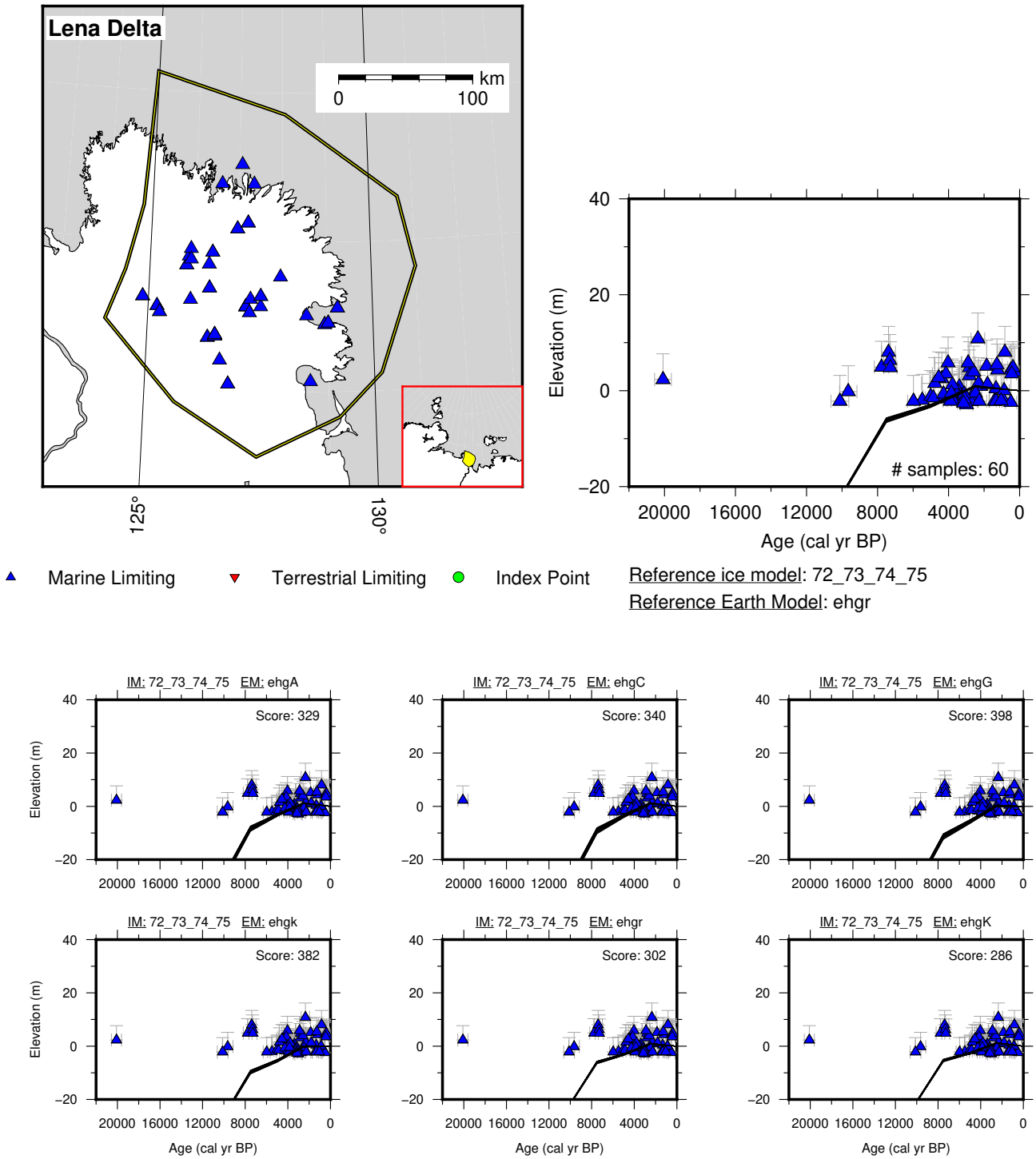


Figure 41: Paleo-sea level and comparison of six models for subregion Western Siberia, location Lena Delta.

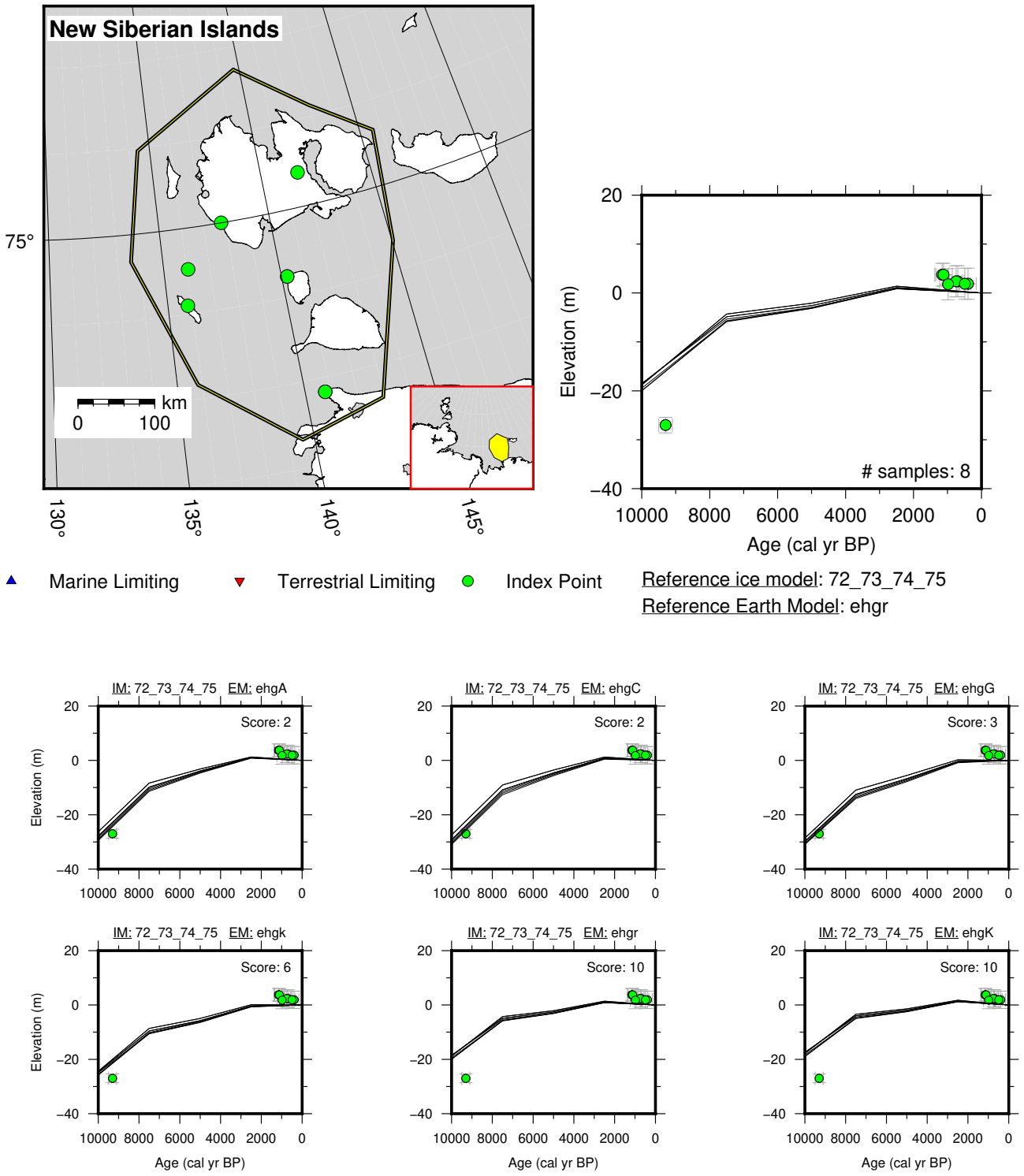
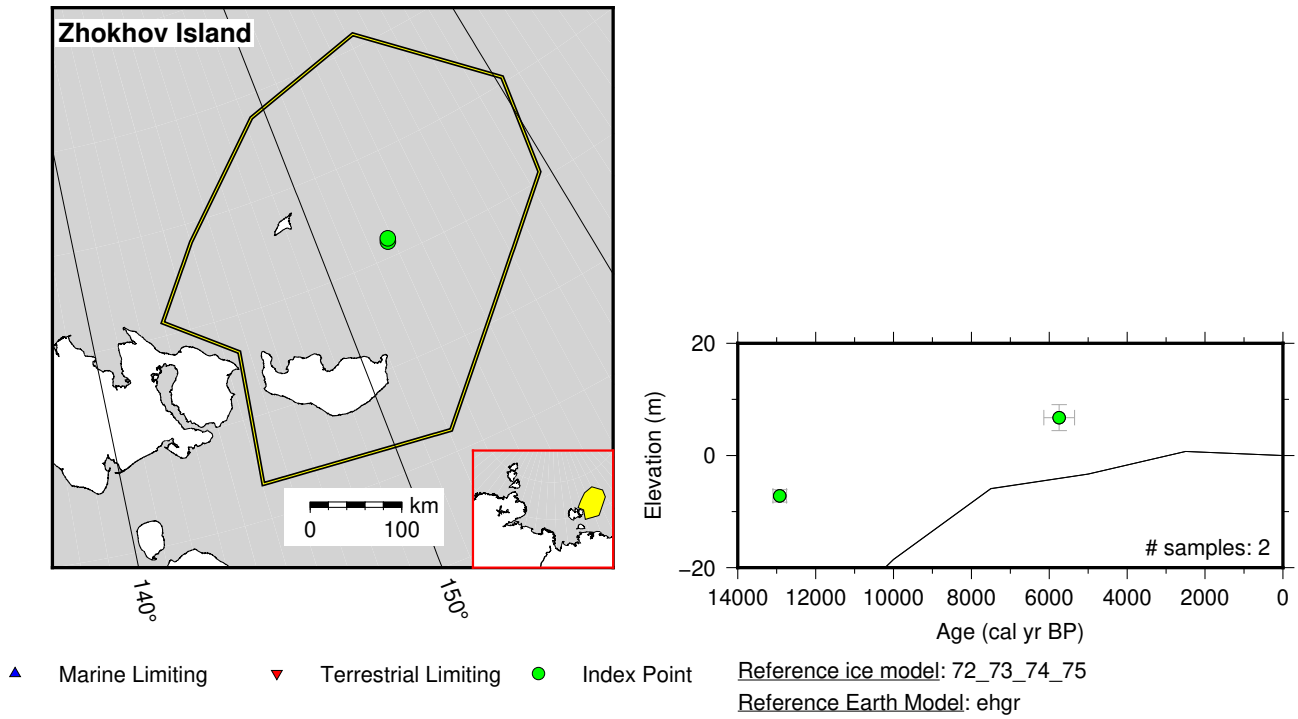


Figure 42: Paleo-sea level and comparison of six models for subregion Western Siberia, location New Siberian Islands.



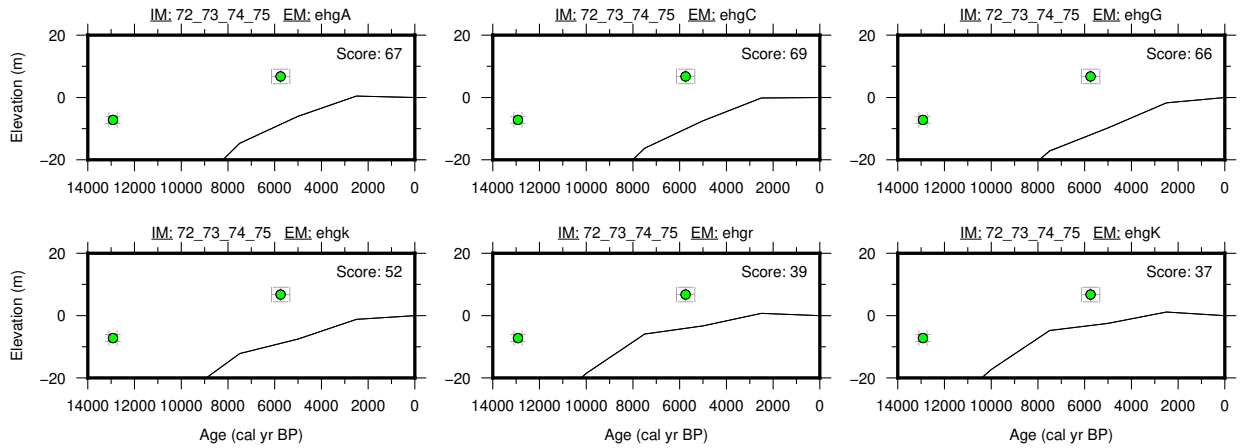


Figure 43: Paleo-sea level and comparison of six models for subregion Western Siberia, location Zhokhov Island.

8.6 White Sea

References for the data used in each location.

Kandalaksha: Arslanov et al. (1974); Kolka and Korsakova (2010); Koshechkin (1979)

Lesozavodskiy: Arslanov et al. (1974); Kolka et al. (2005); Koshechkin et al. (1973)

Rugozerskiy Peninsula: Baranskaya (2015); Repkina and Romanenko (2016); Romanenko and Shilova (2012); Zaretskaya et al. (2013)

Chupa Bay: Baranskaya and Romanenko (2015); Kolka et al. (2015)

Umba: Arslanov et al. (1974); Kolka et al. (2013a); Koshechkin (1979)

Engozero: Kolka et al. (2013b)

Belomorsk: Devyatova and Liyva (1971); Koshechkin (1979); Lunkka et al. (2012)

Eastern Kola Peninsula: Arslanov et al. (1974); Koshechkin (1979)

Onega Peninsula: Boyarskaya et al. (1986); Koshechkin et al. (1973); Repkina et al. (in review)

Dvina Gulf: Koshechkin (1979); Zaretskaya et al. (2011)

Kholmogorsky: Larsen et al. (2006)

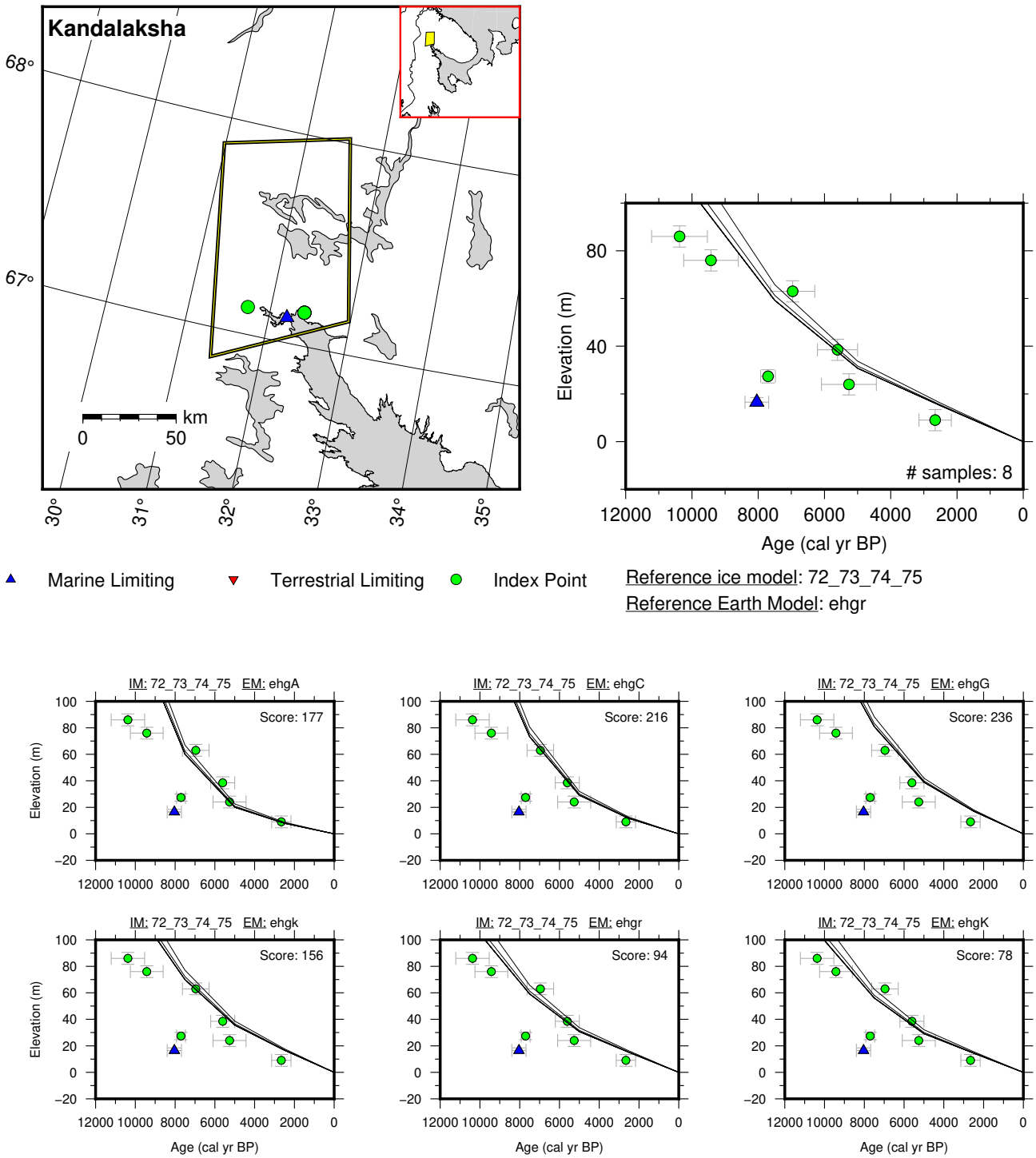


Figure 44: Paleo-sea level and comparison of six models for subregion White Sea, location Kandalaksha.

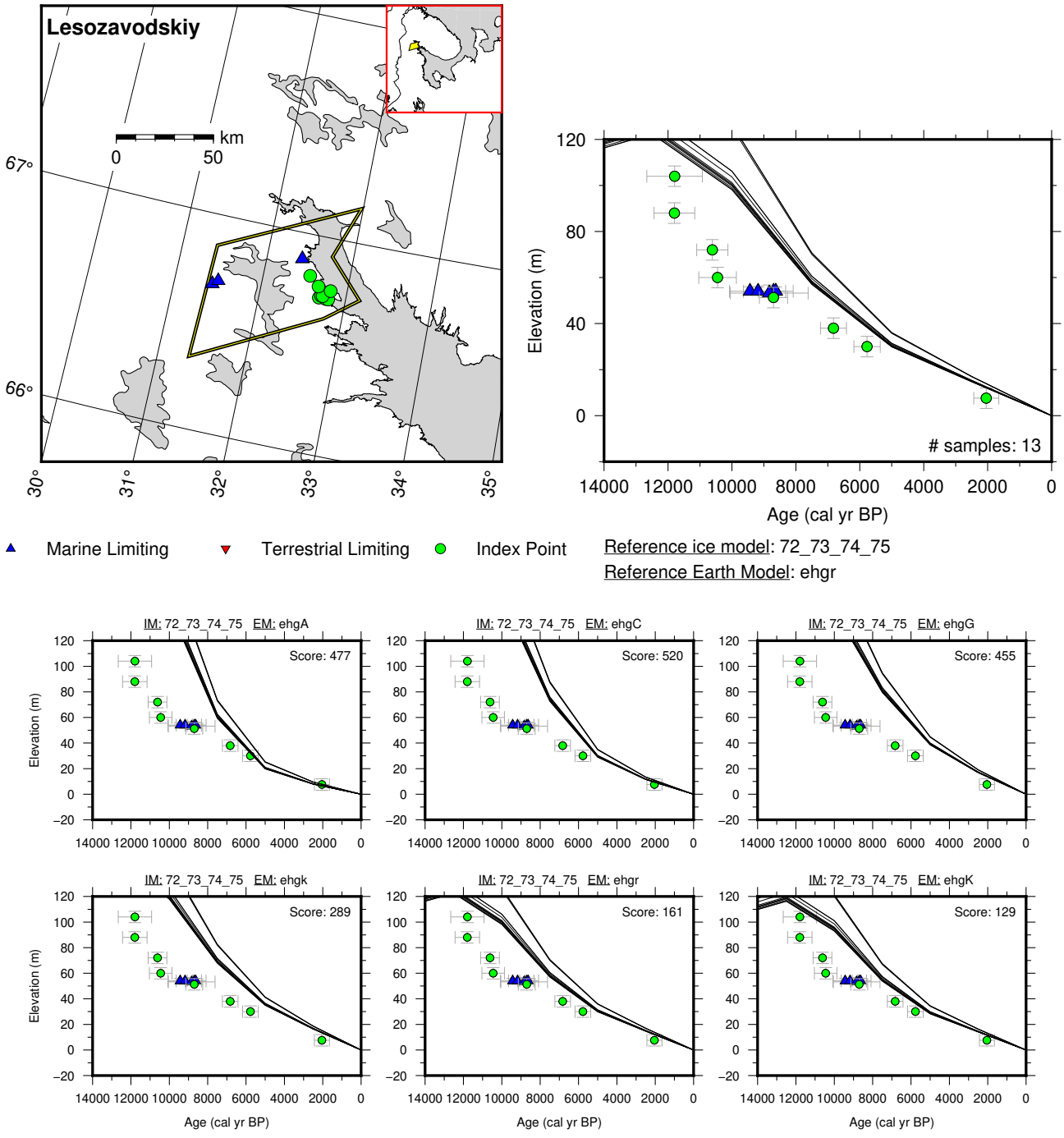


Figure 45: Paleo-sea level and comparison of six models for subregion White Sea, location Lesozavodskiy.

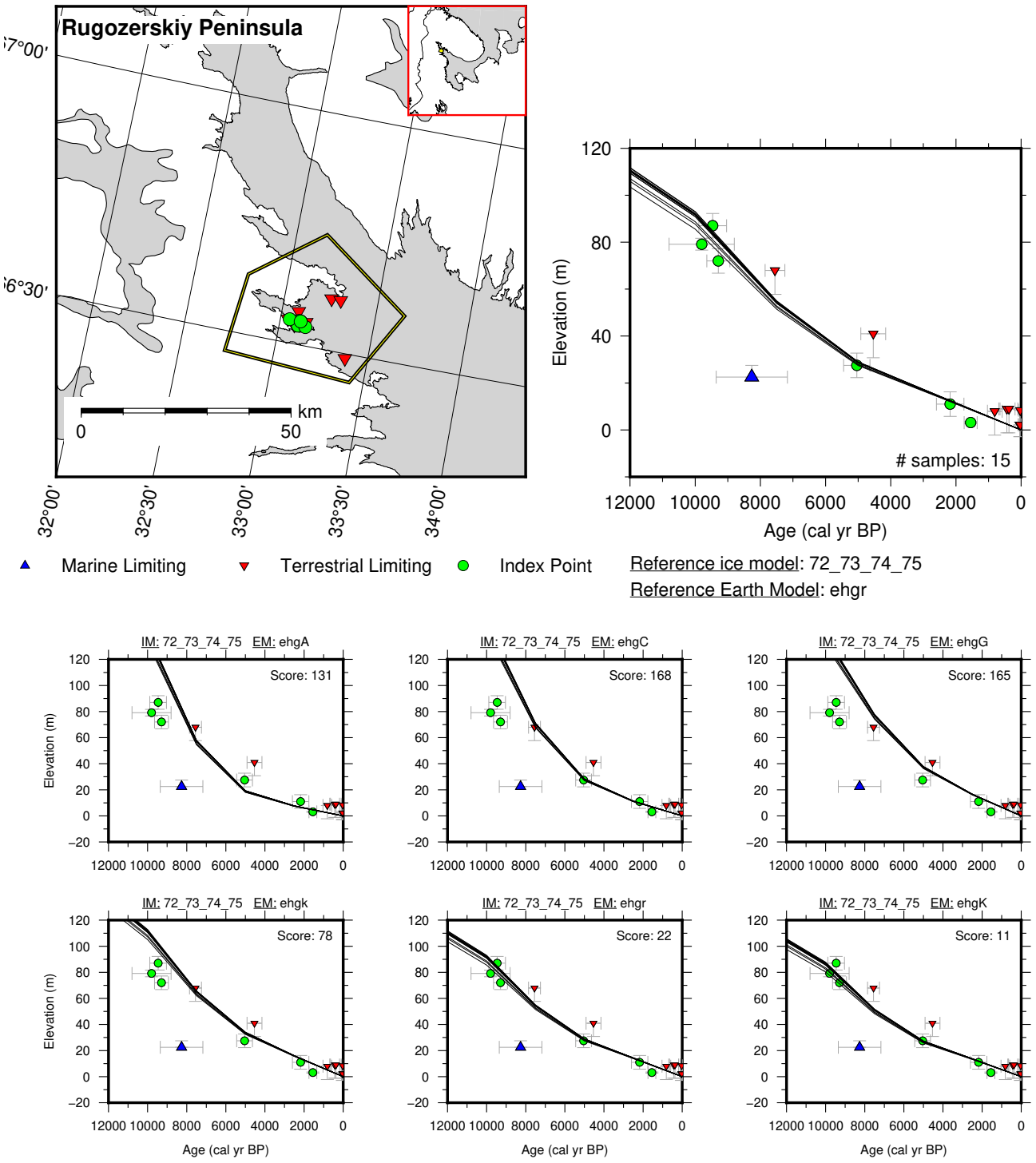


Figure 46: Paleo-sea level and comparison of six models for subregion White Sea, location Rugozerskiy Peninsula.

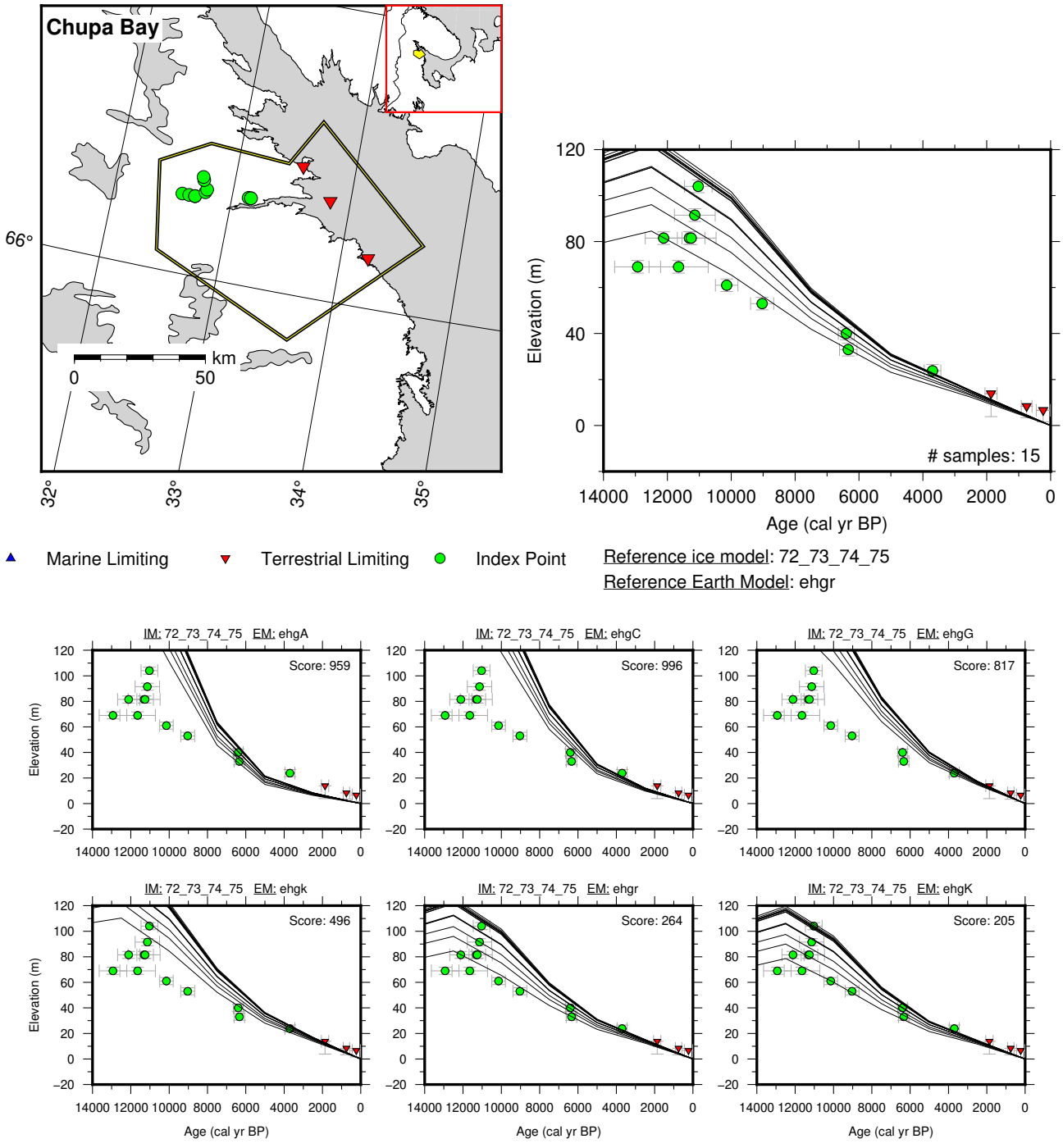


Figure 47: Paleo-sea level and comparison of six models for subregion White Sea, location Chupa Bay.

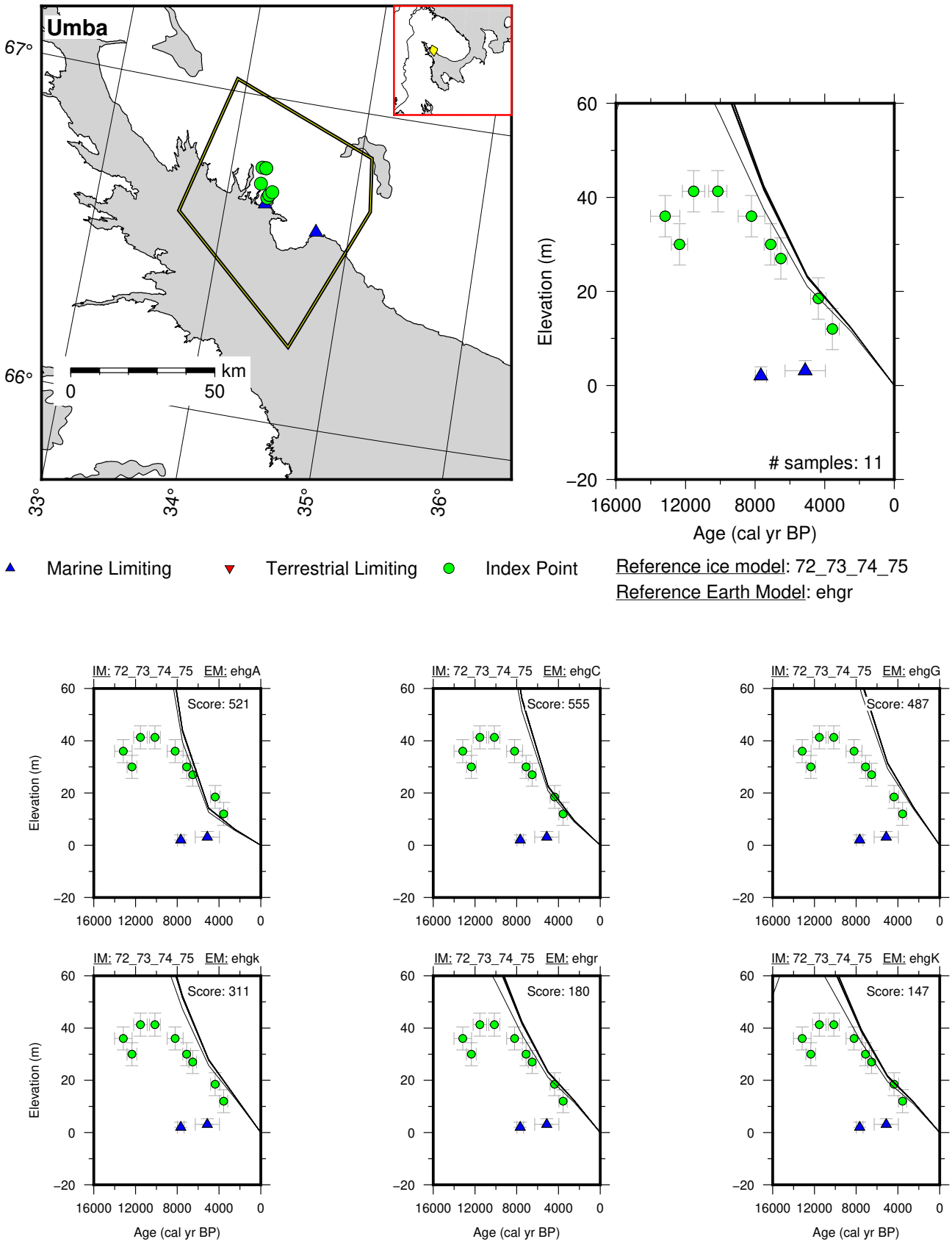


Figure 48: Paleo-sea level and comparison of six models for subregion White Sea, location Umba.

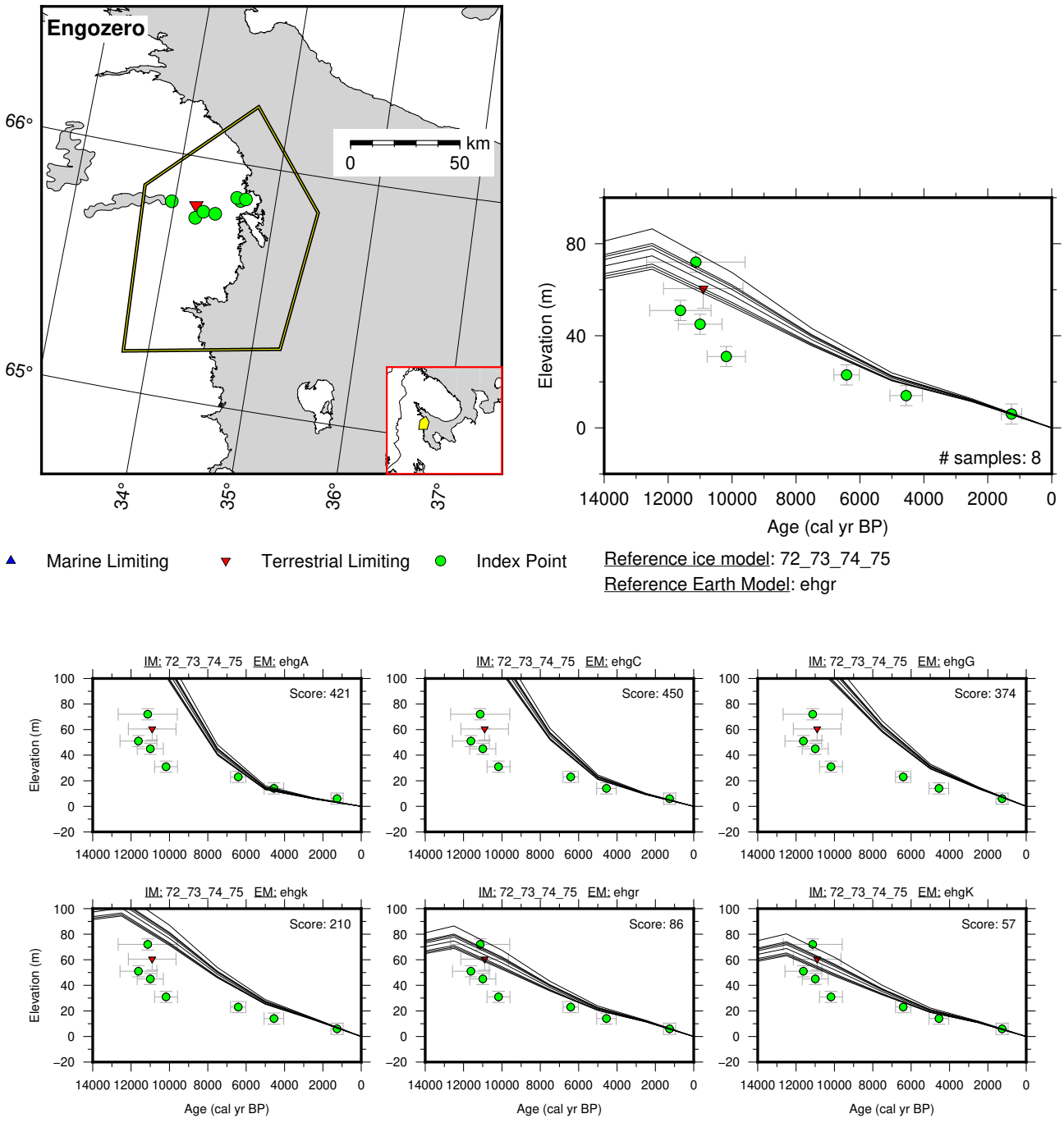


Figure 49: Paleo-sea level and comparison of six models for subregion White Sea, location Engozero.

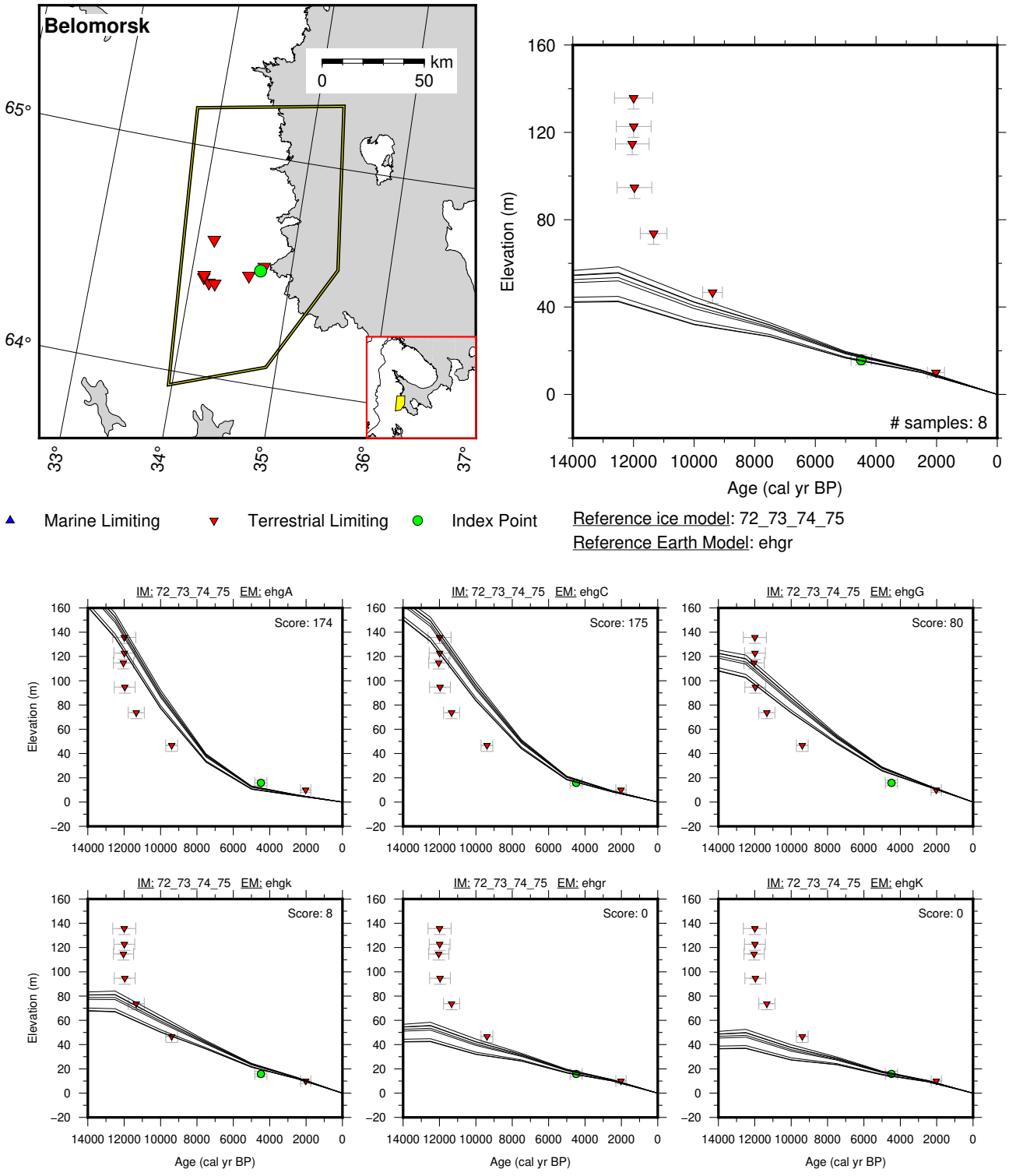


Figure 50: Paleo-sea level and comparison of six models for subregion White Sea, location Belomorsk.

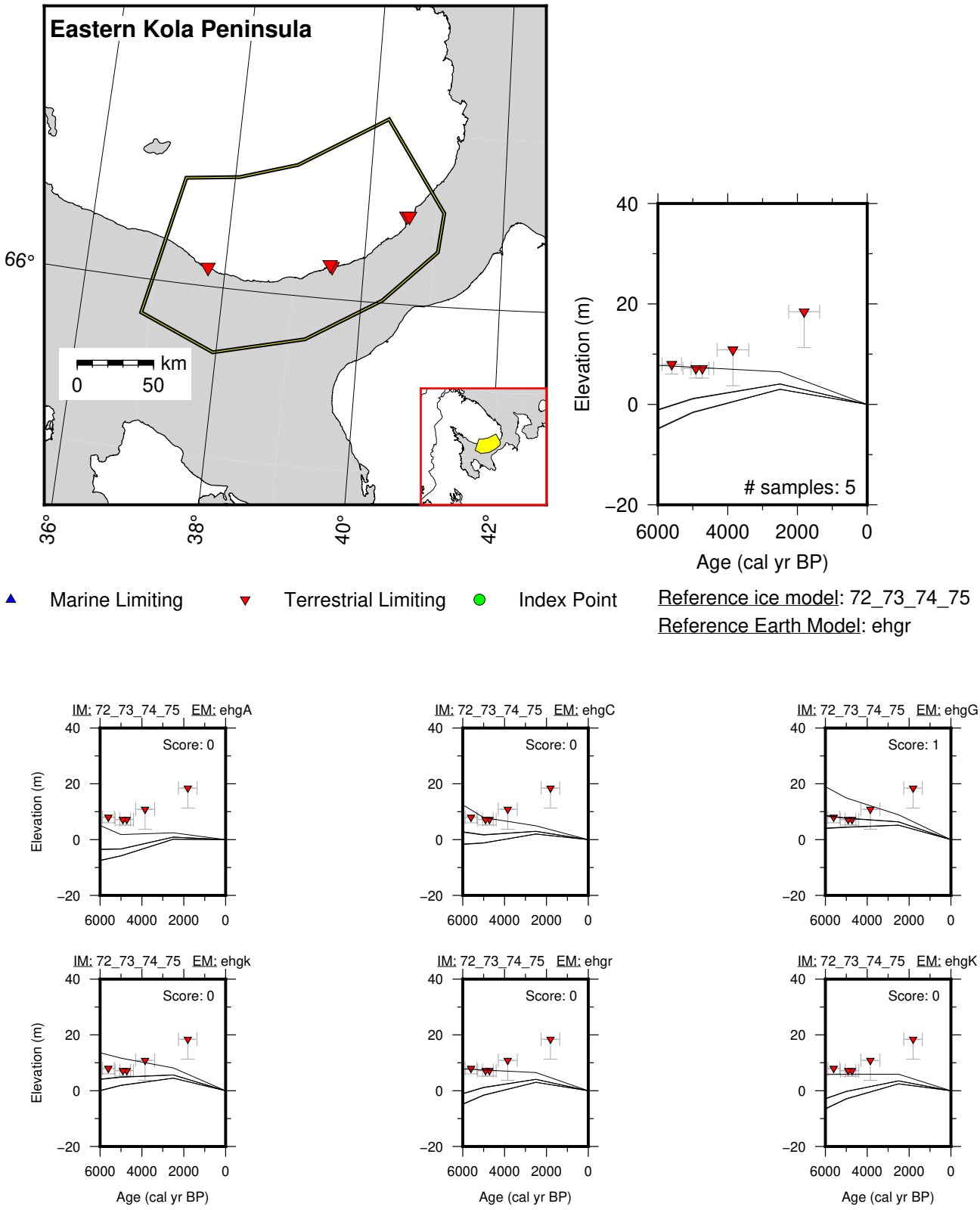


Figure 51: Paleo-sea level and comparison of six models for subregion White Sea, location Eastern Kola Peninsula.

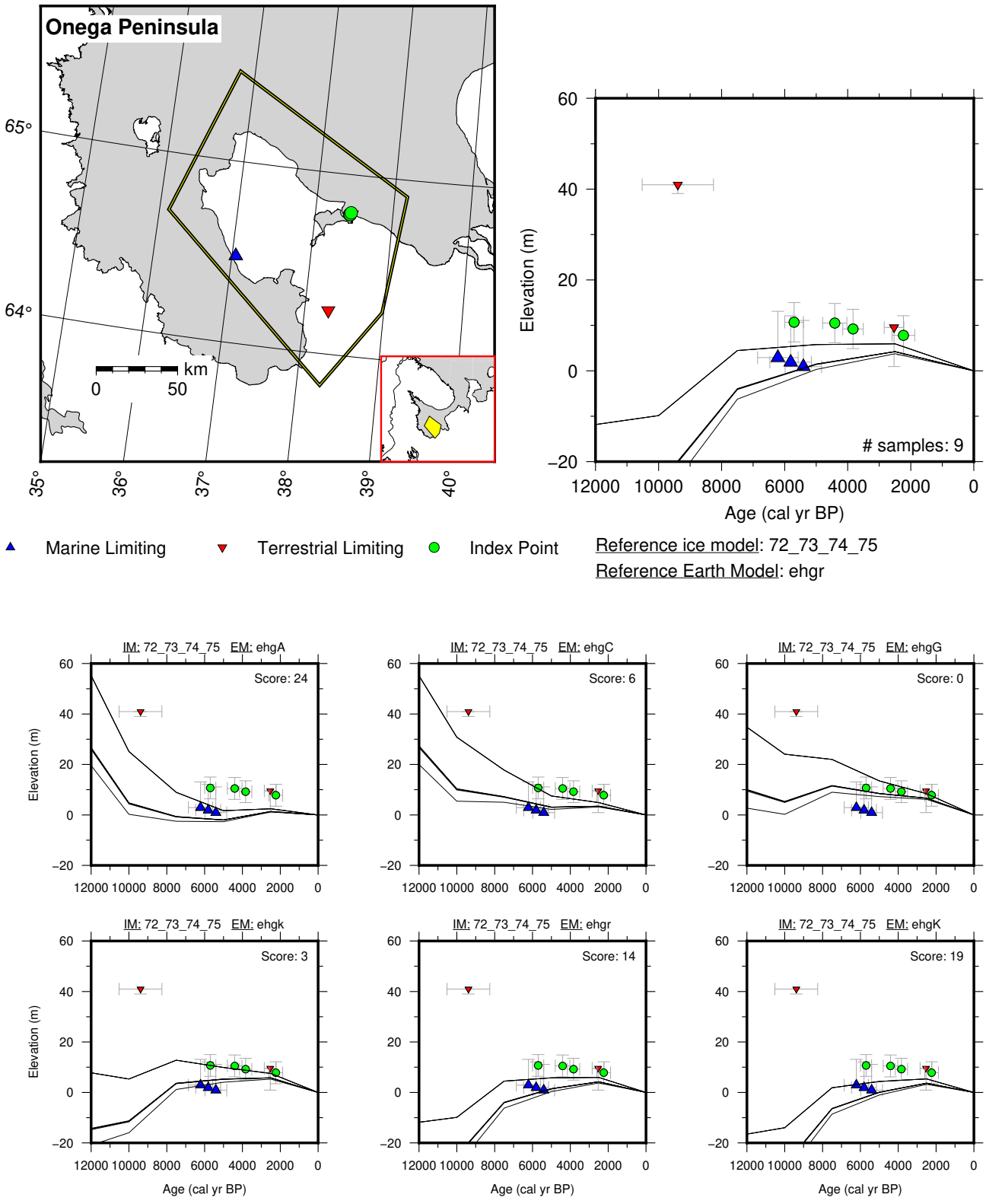


Figure 52: Paleo-sea level and comparison of six models for subregion White Sea, location Onega Peninsula.

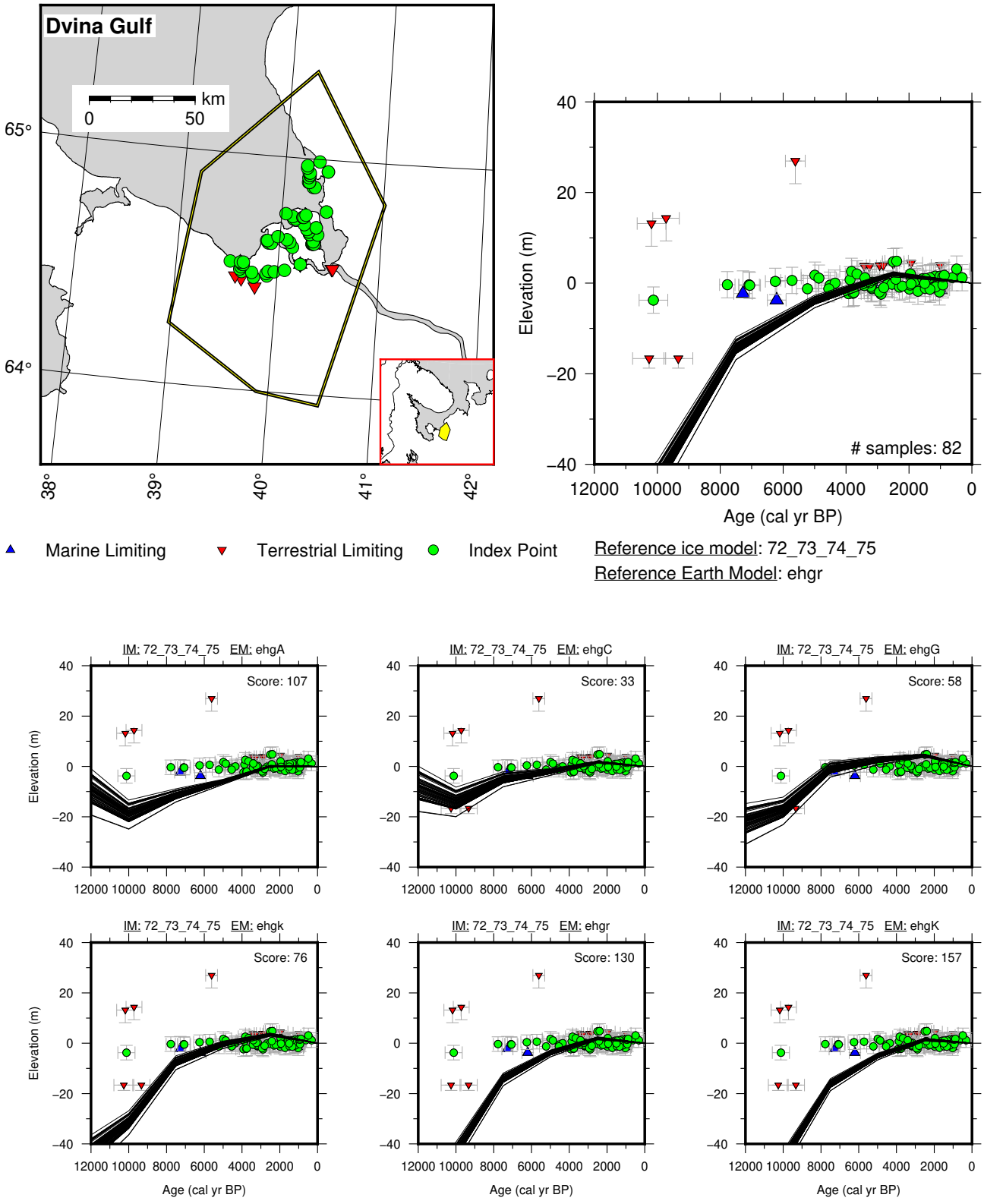


Figure 53: Paleo-sea level and comparison of six models for subregion White Sea, location Dvina Gulf.

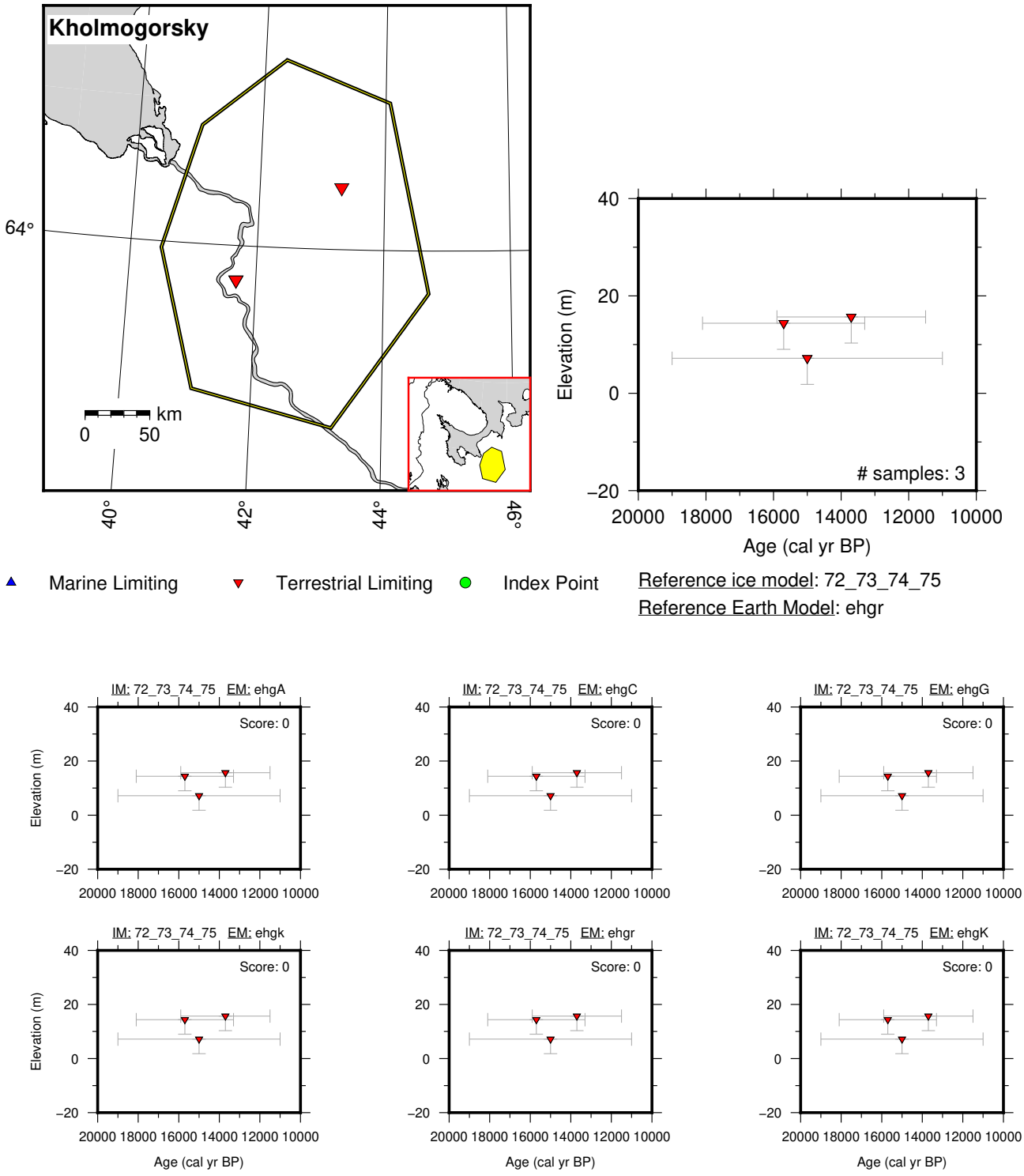


Figure 54: Paleo-sea level and comparison of six models for subregion White Sea, location Kholmogorsky.

9 Europe

9.1 Baltic Sea

References for the data used in each location.

Norrbotten:

Angermanland:

Gastrikland:

Stockholm:

Aland:

Oulu:

Ostrobothnia:

Turku:

Gulf Of Finland:

Gulf Of Riga:

Kaliningrad:

Bornholm:

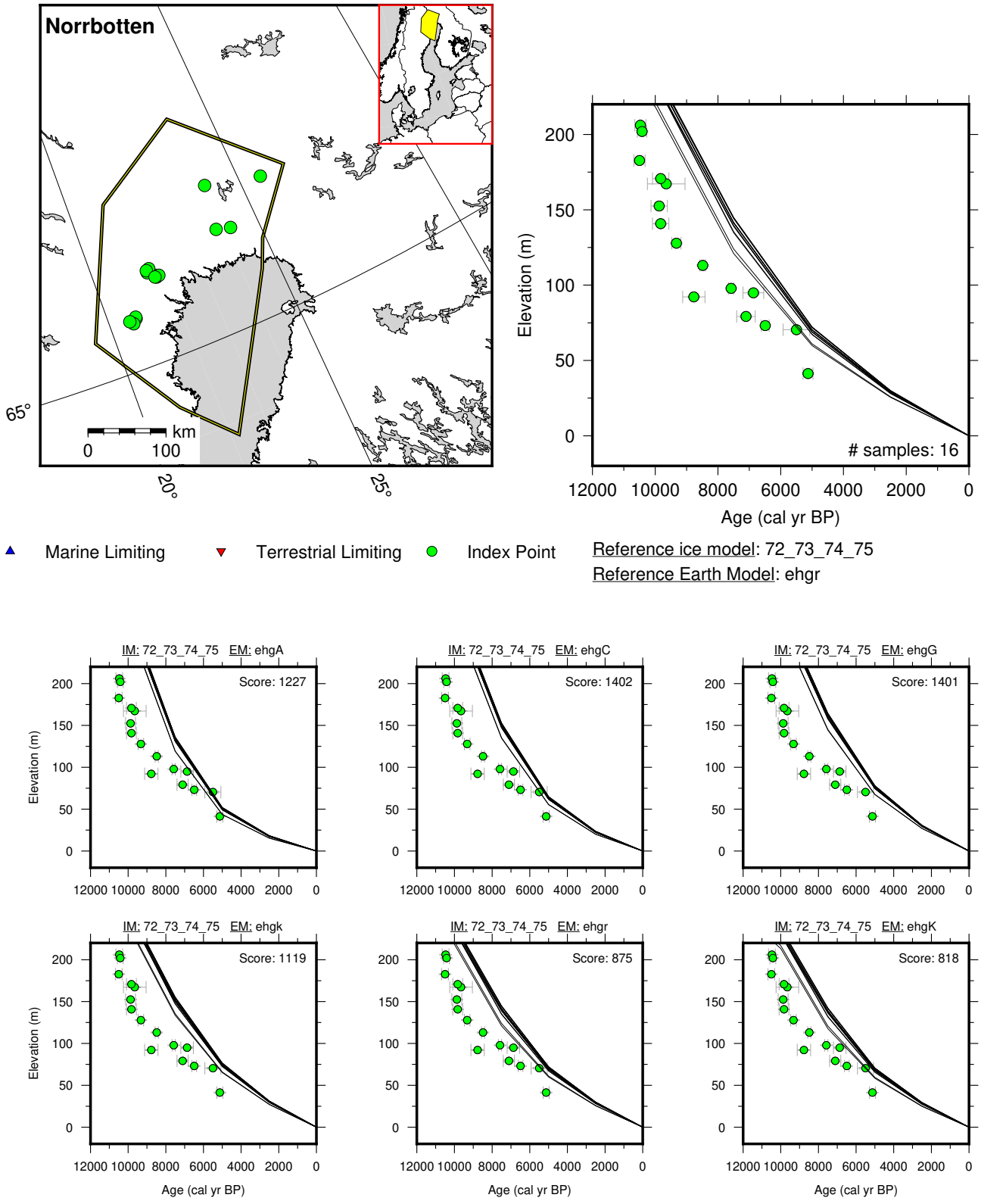


Figure 55: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Norrbotten.

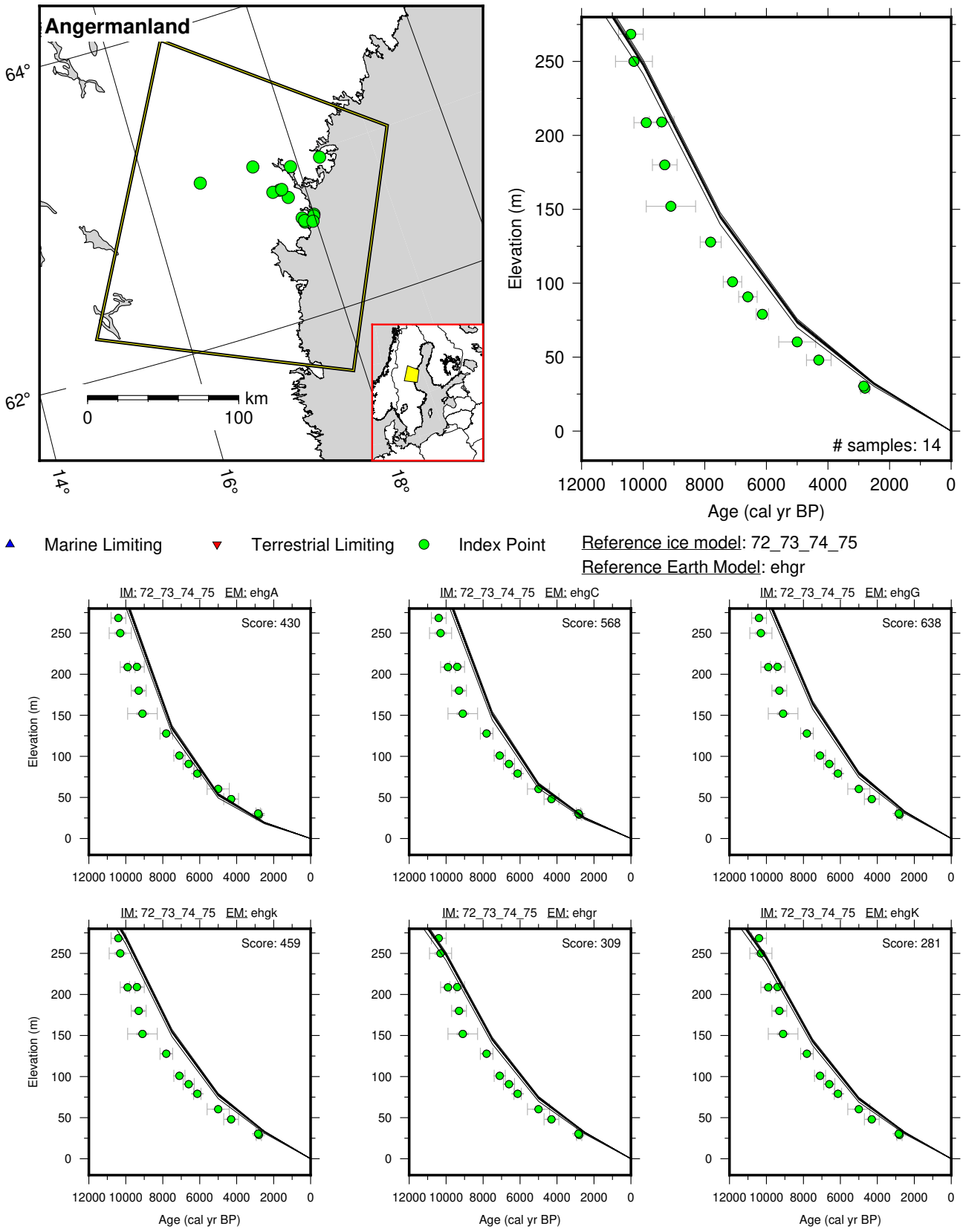


Figure 56: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Angermanland.

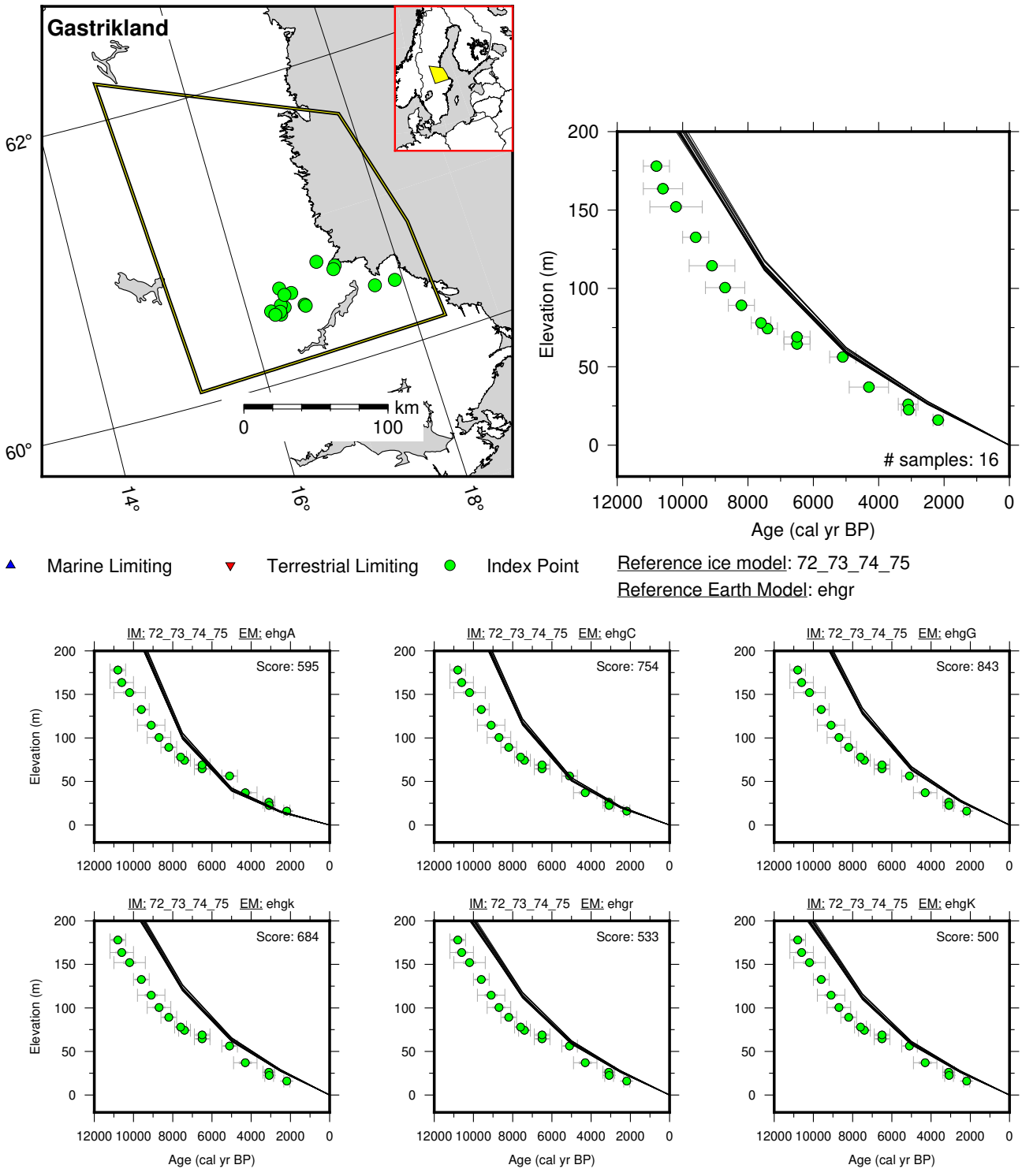


Figure 57: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Gastrikland.

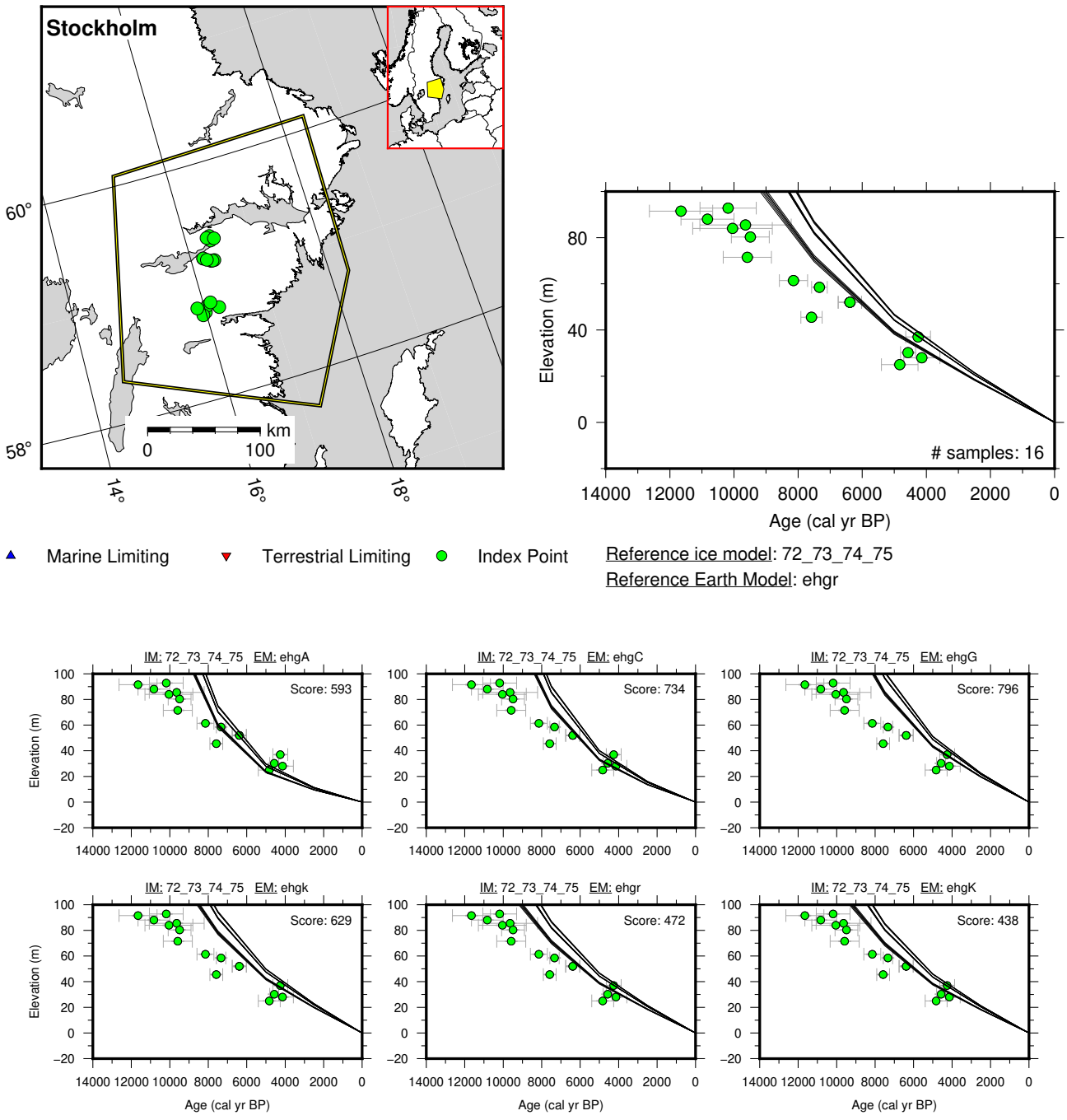


Figure 58: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Stockholm.

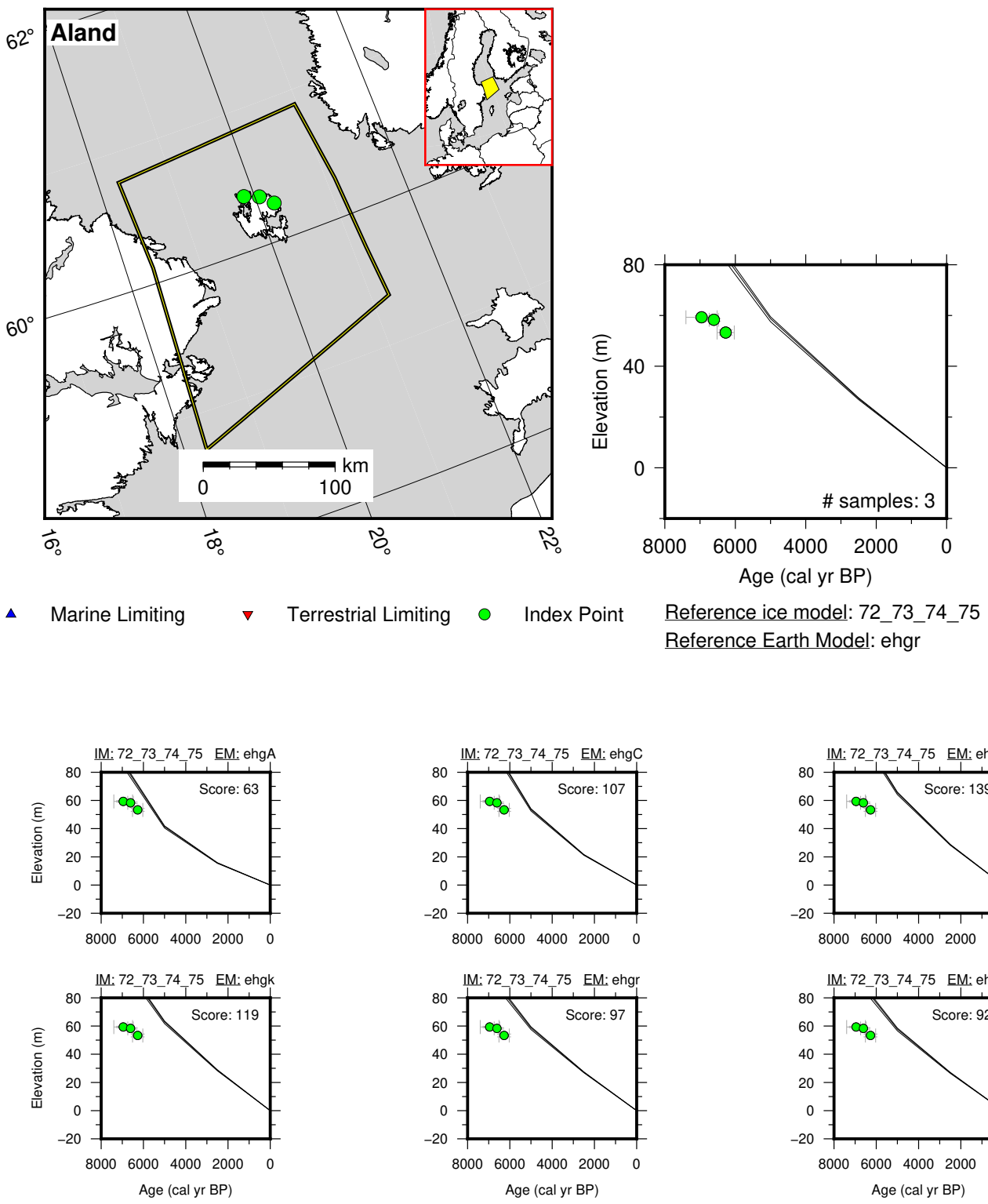


Figure 59: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Aland.

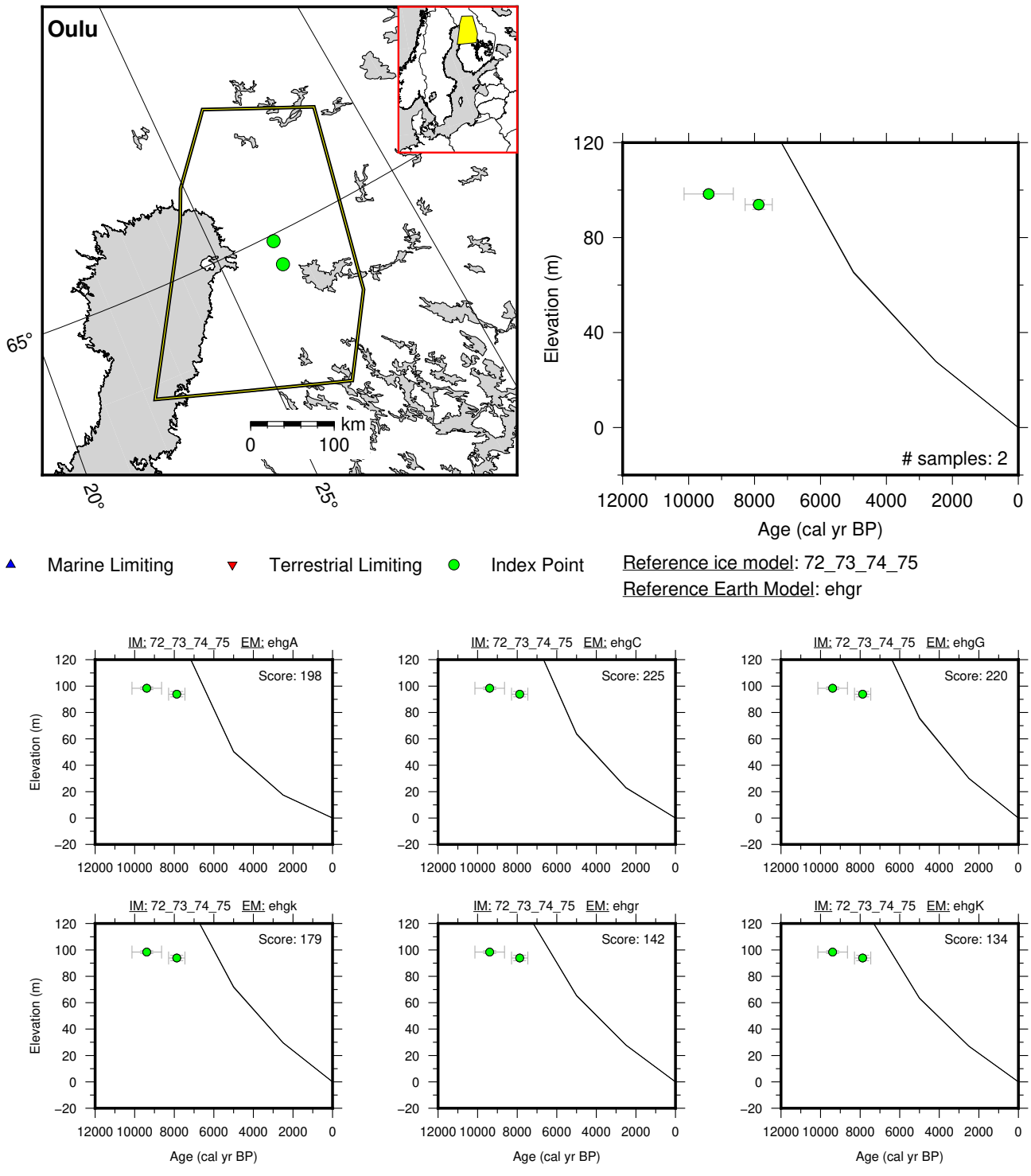


Figure 60: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Oulu.

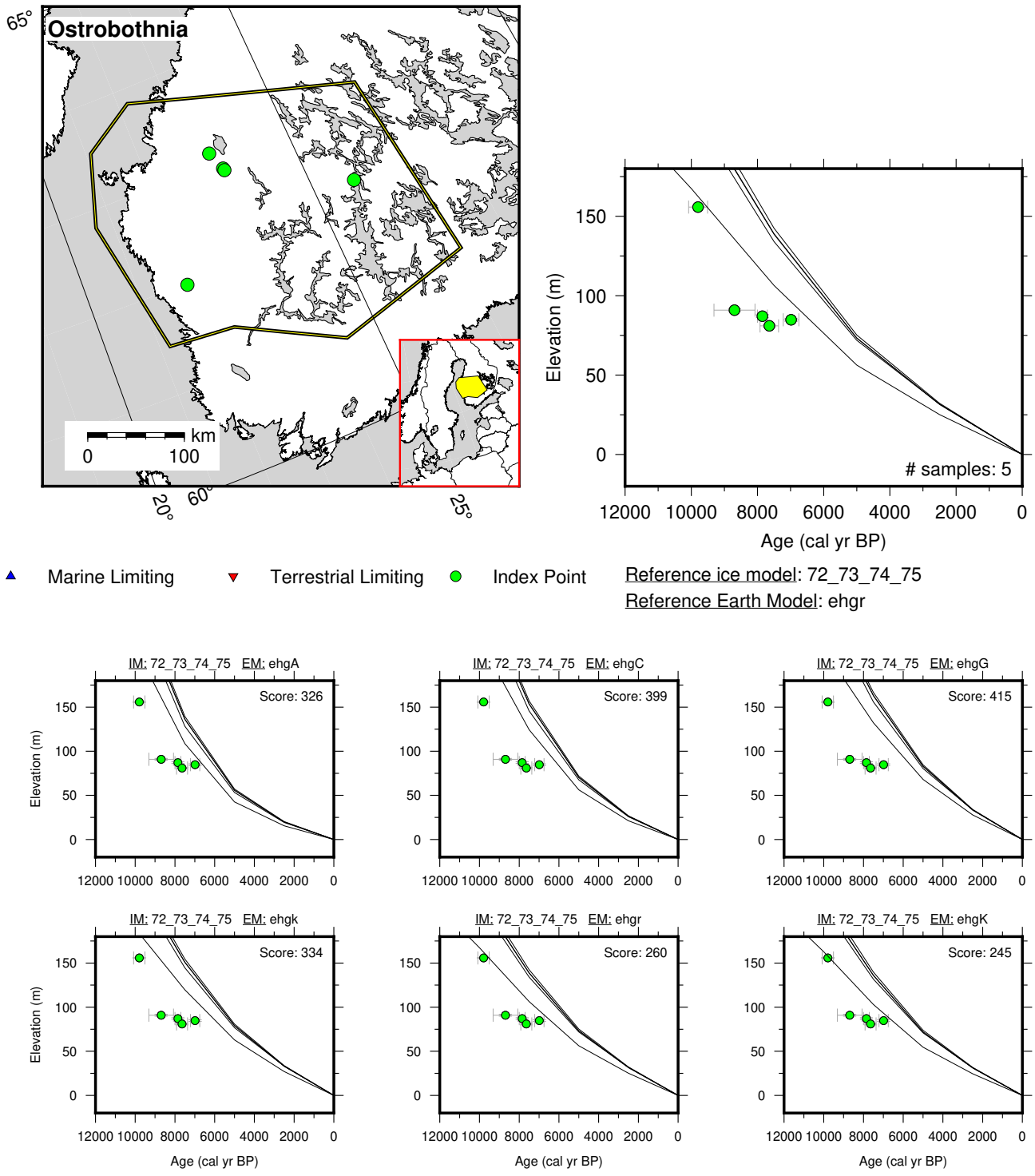


Figure 61: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Ostrobothnia.

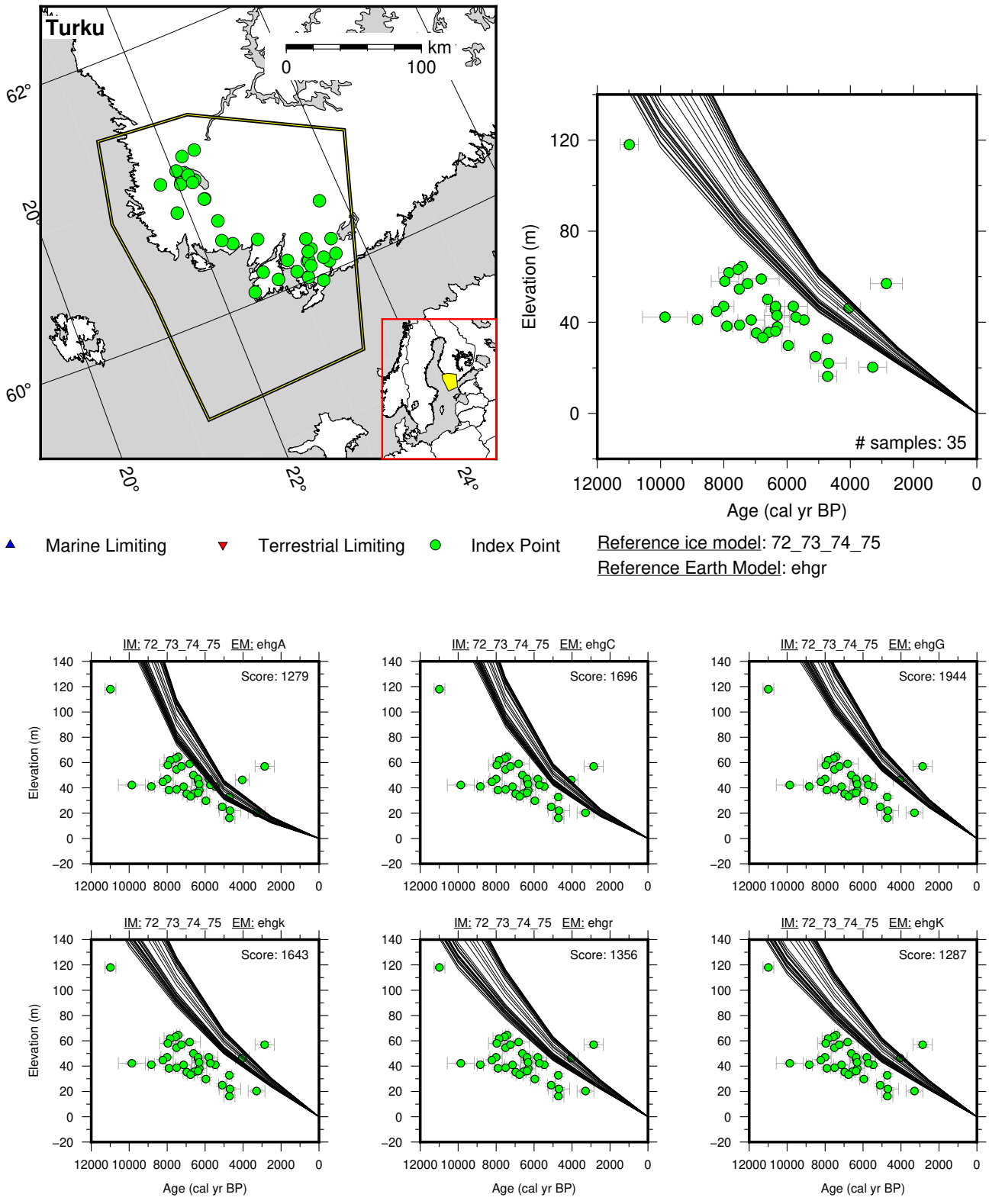


Figure 62: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Turku.

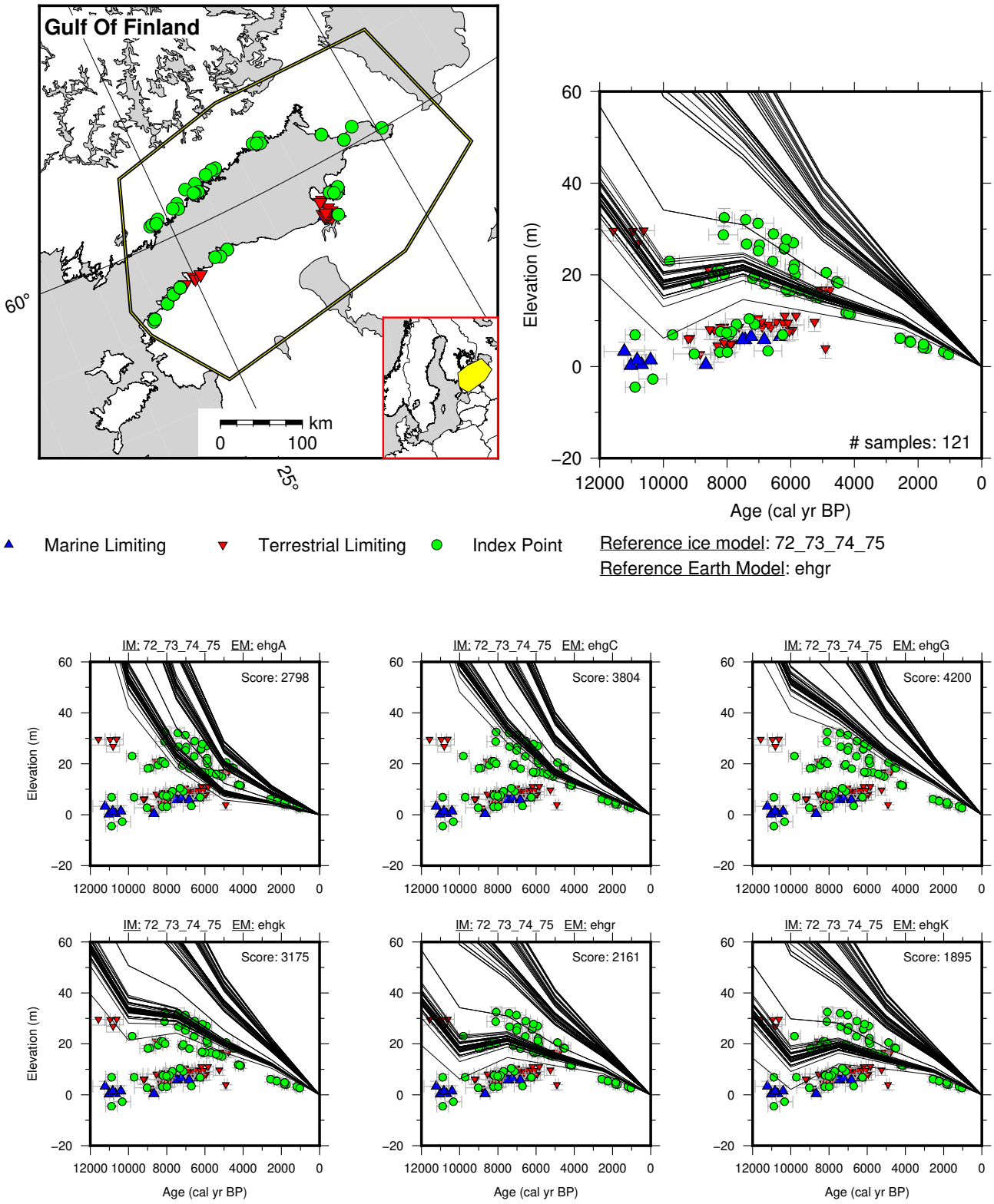


Figure 63: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Gulf Of Finland.

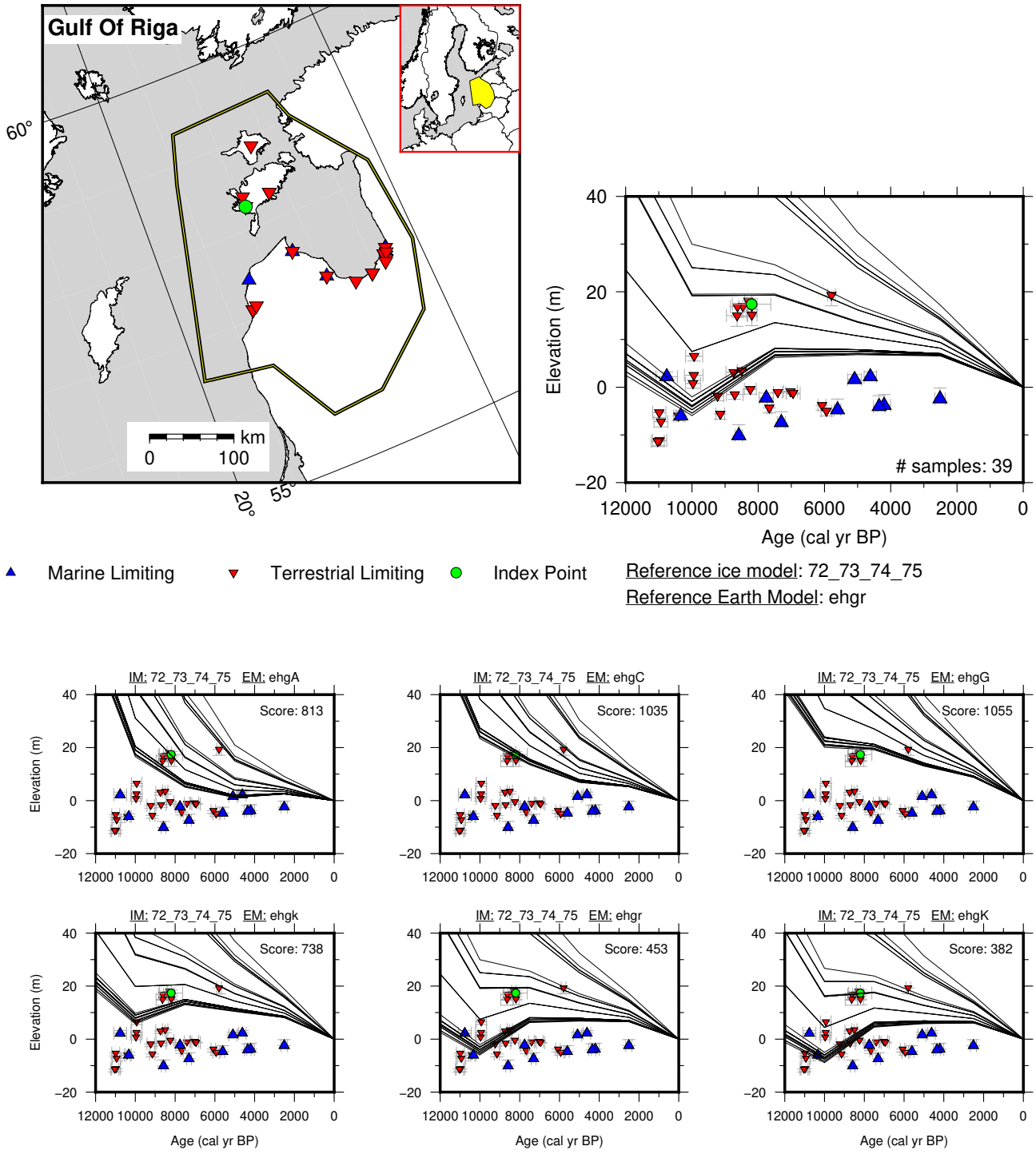
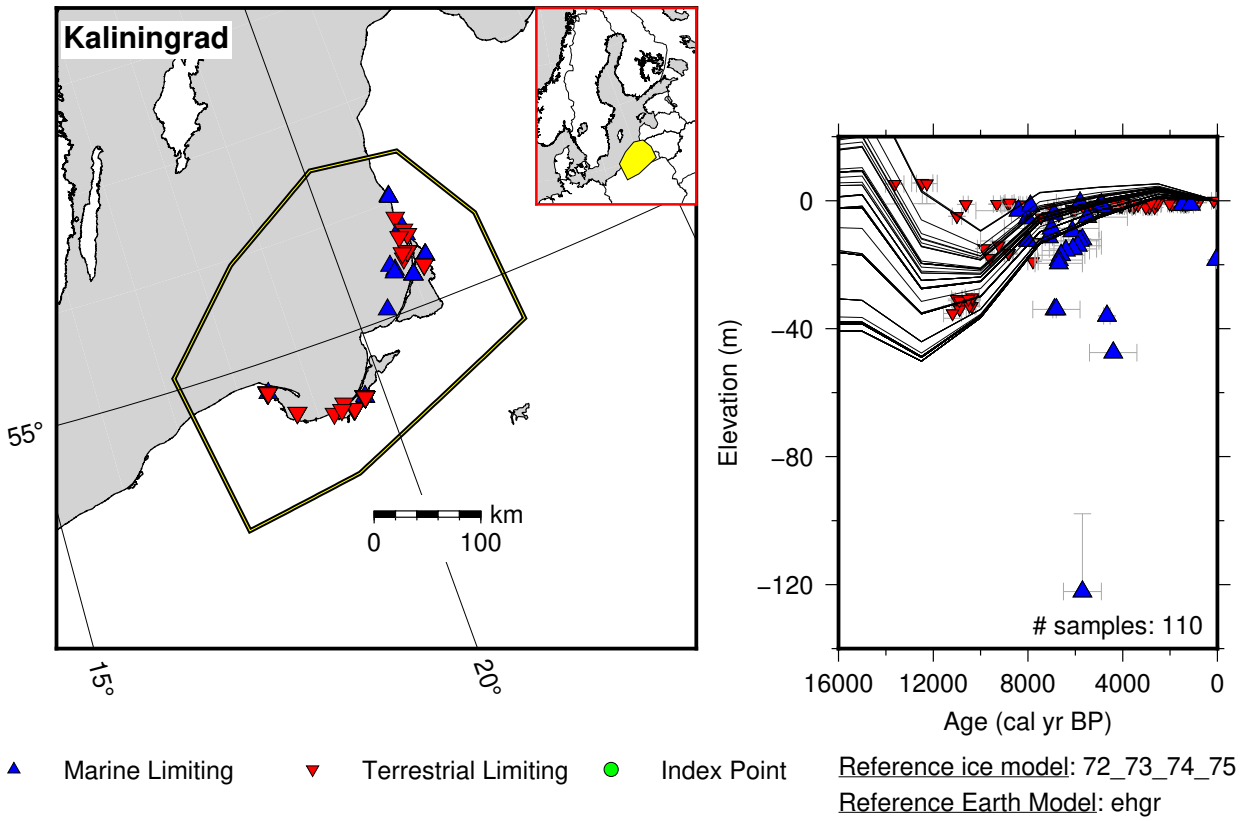


Figure 64: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Gulf Of Riga.



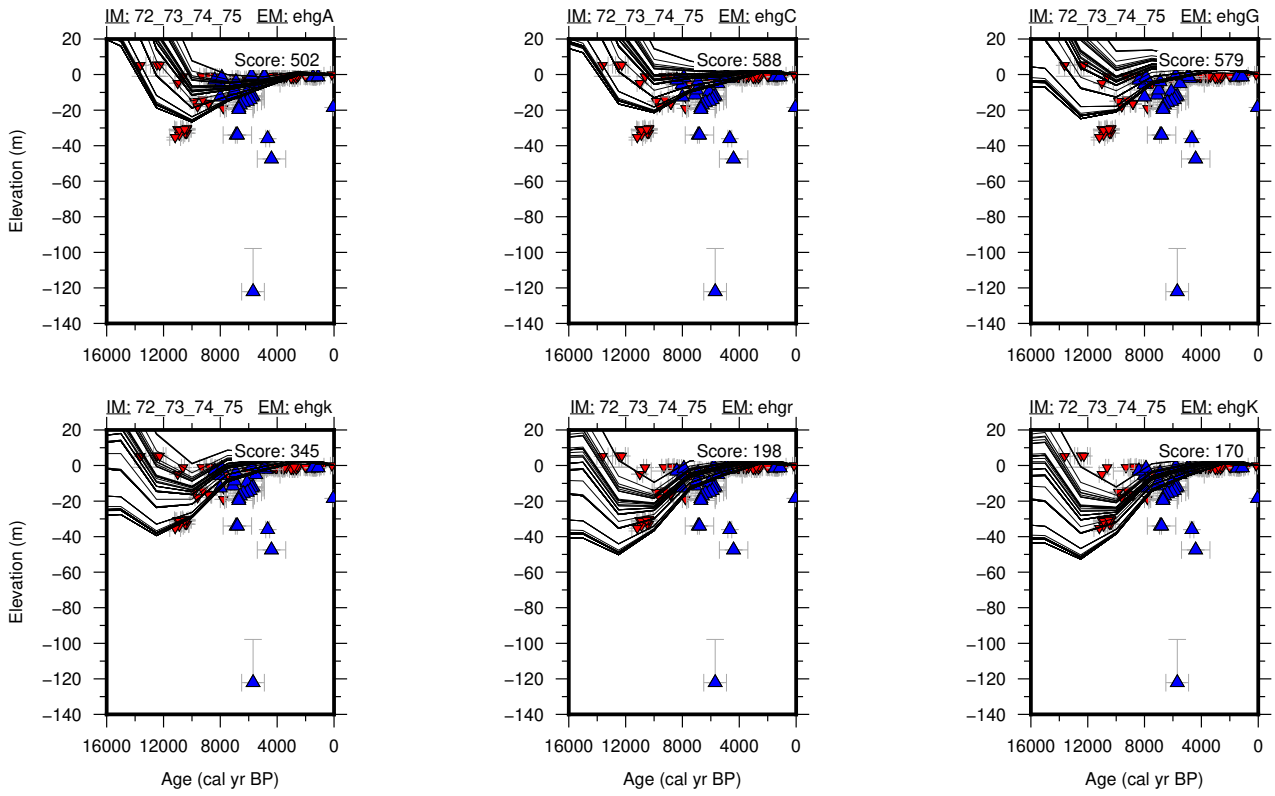


Figure 65: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Kaliningrad.

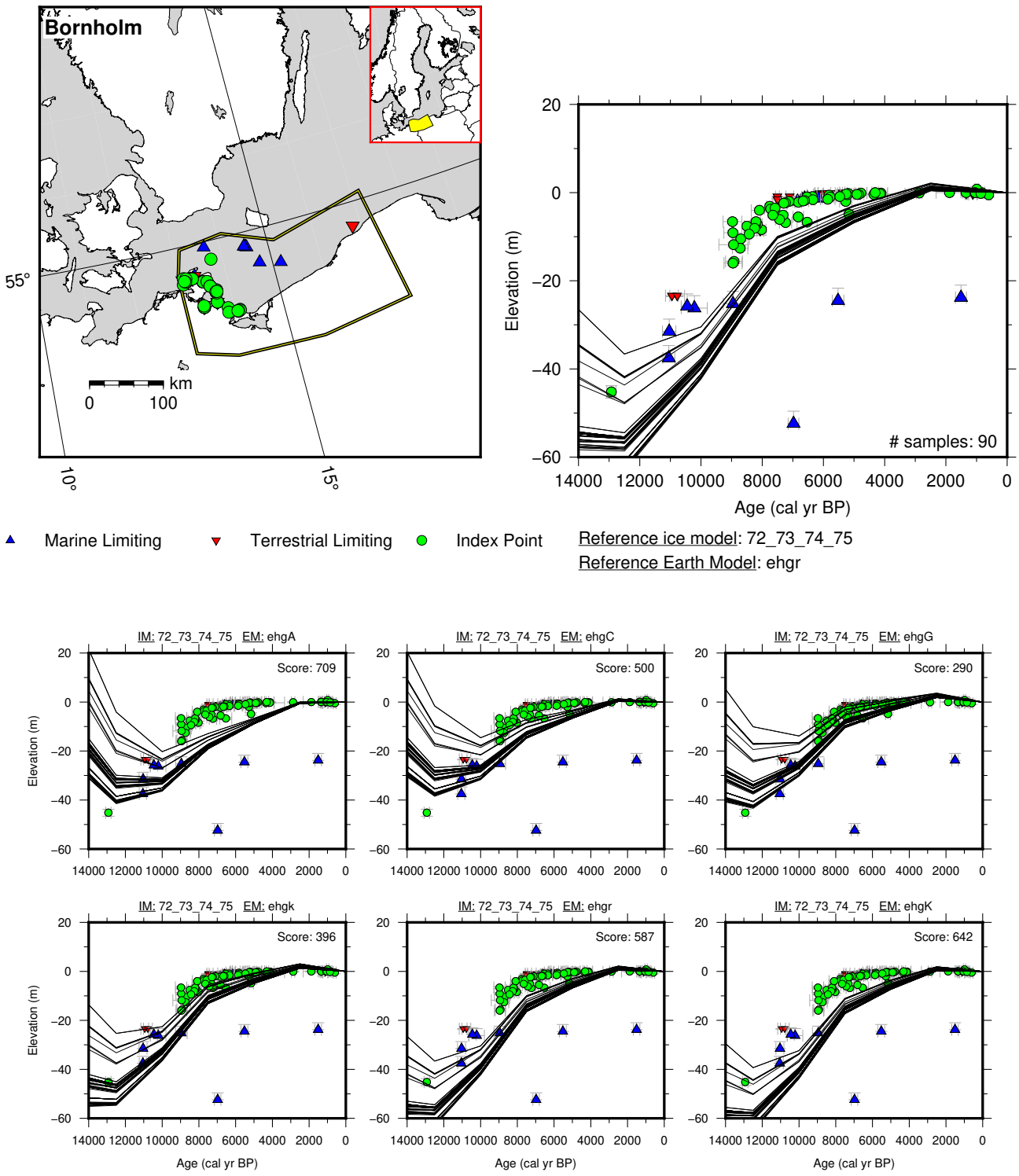


Figure 66: Paleo-sea level and comparison of six models for subregion Baltic Sea, location Bornholm.

9.2 Danish straits - Kattegat - Skagerrak

References for the data used in each location.

Mecklenburg:

Kiel:

Great Belt:

Copenhagen:

Kattegat:

Northern Jylland:

Limfjord:

Halland:

Halden: Sørensen (1999)

Ski: Gulliksen et al. (1975); Sørensen (1979)

Kragerod Porsgrunn: Henningsmoen (1979); Stabell (1980)

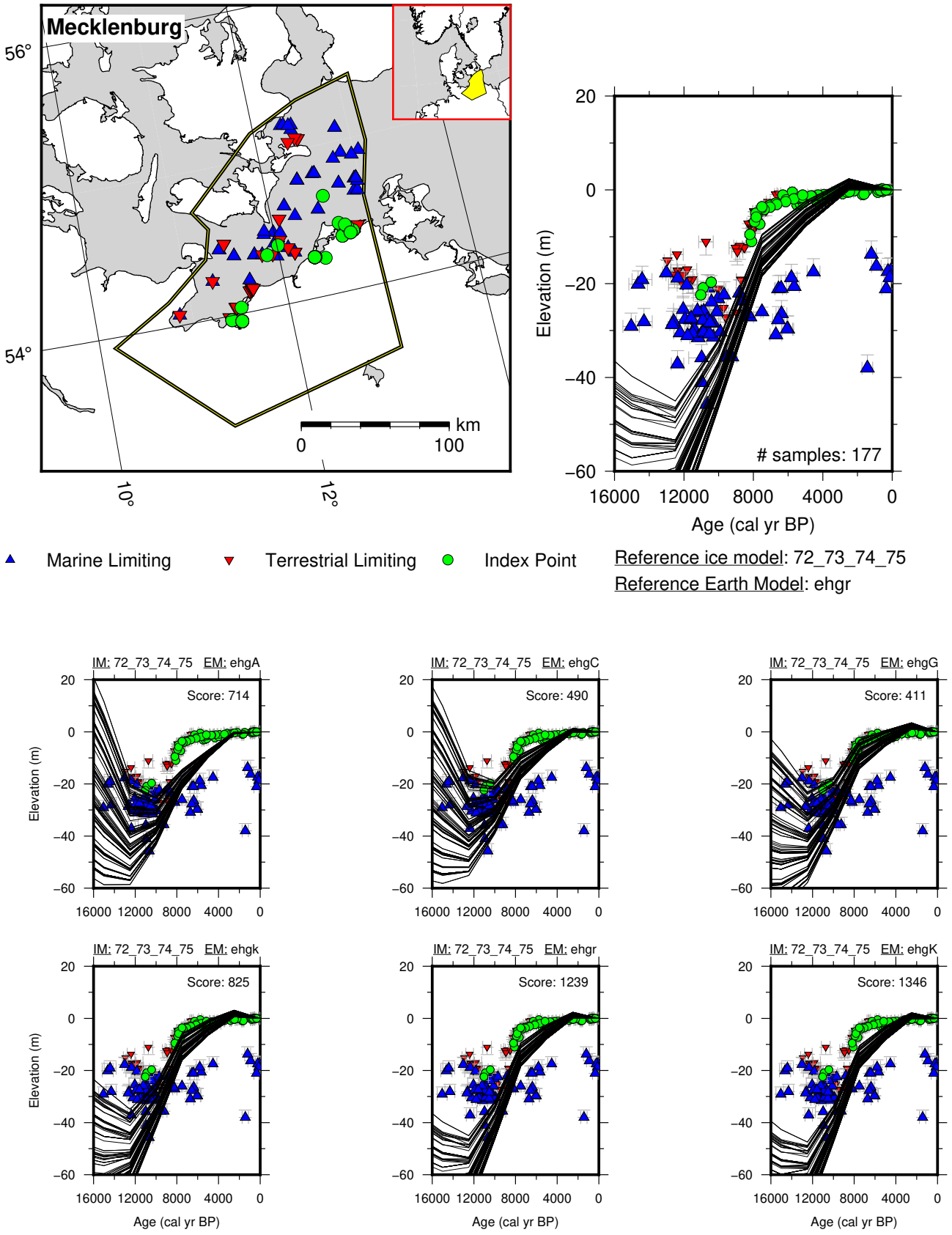


Figure 67: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Mecklenburg.

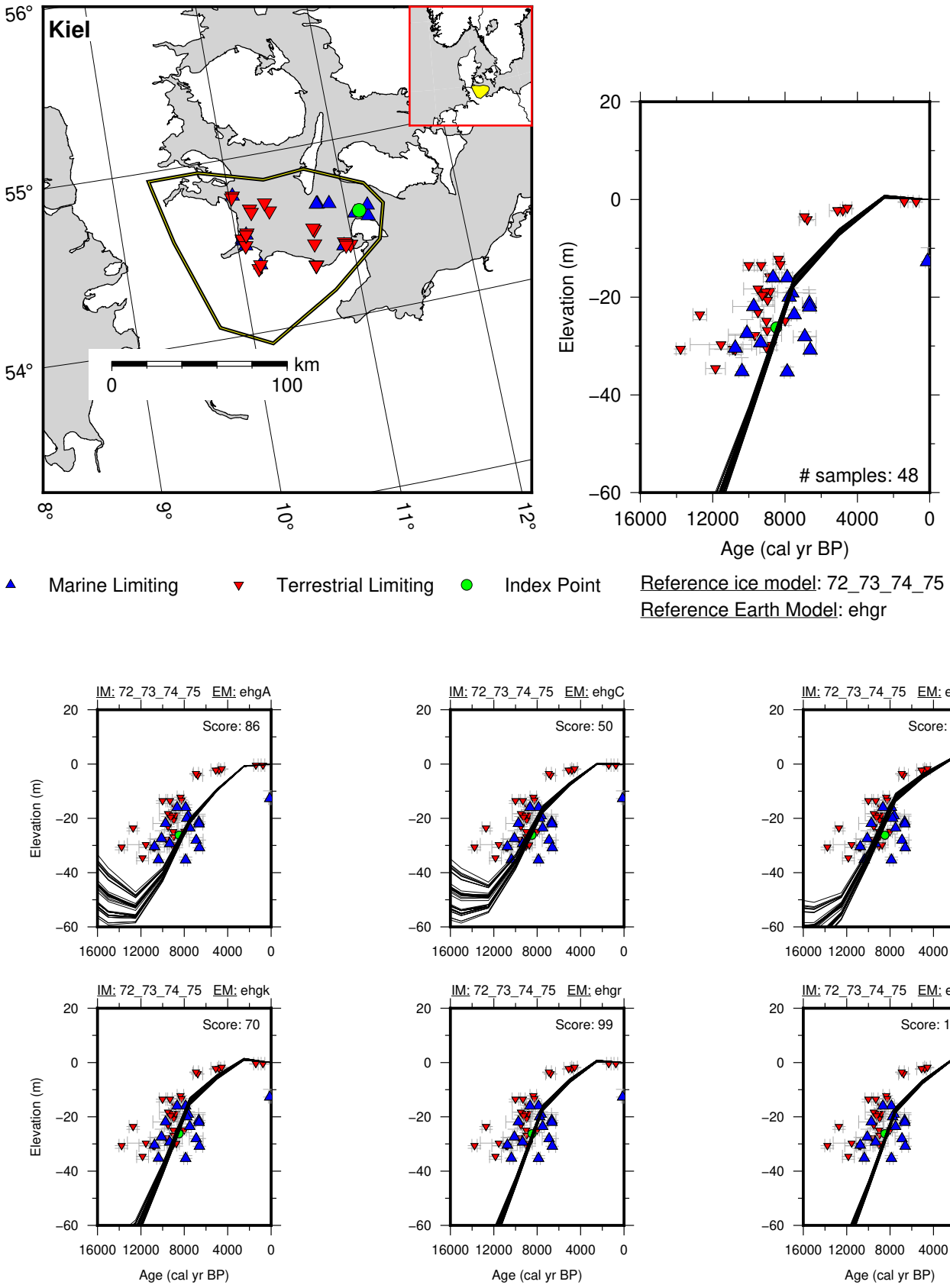


Figure 68: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Kiel.

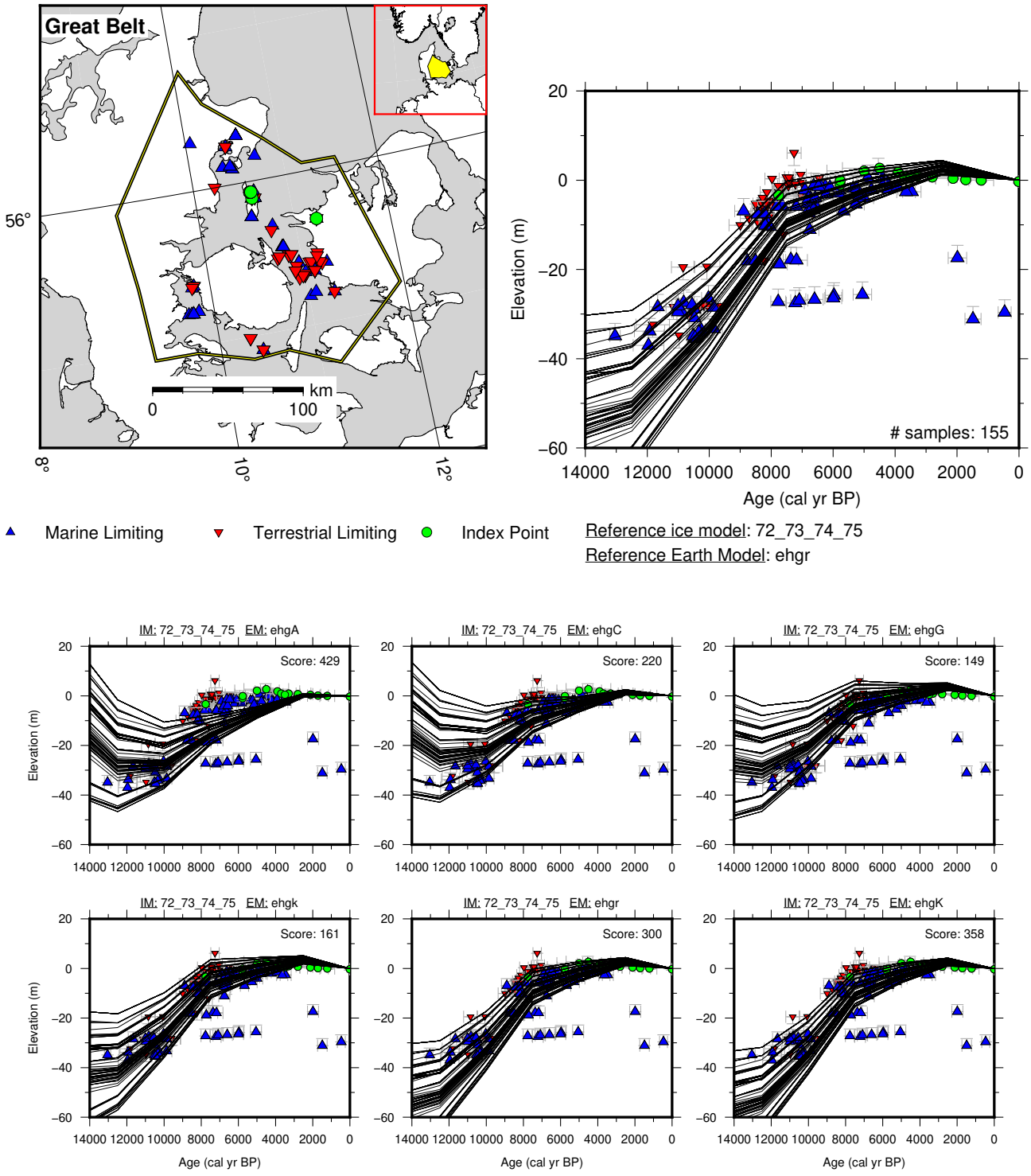


Figure 69: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Great Belt.

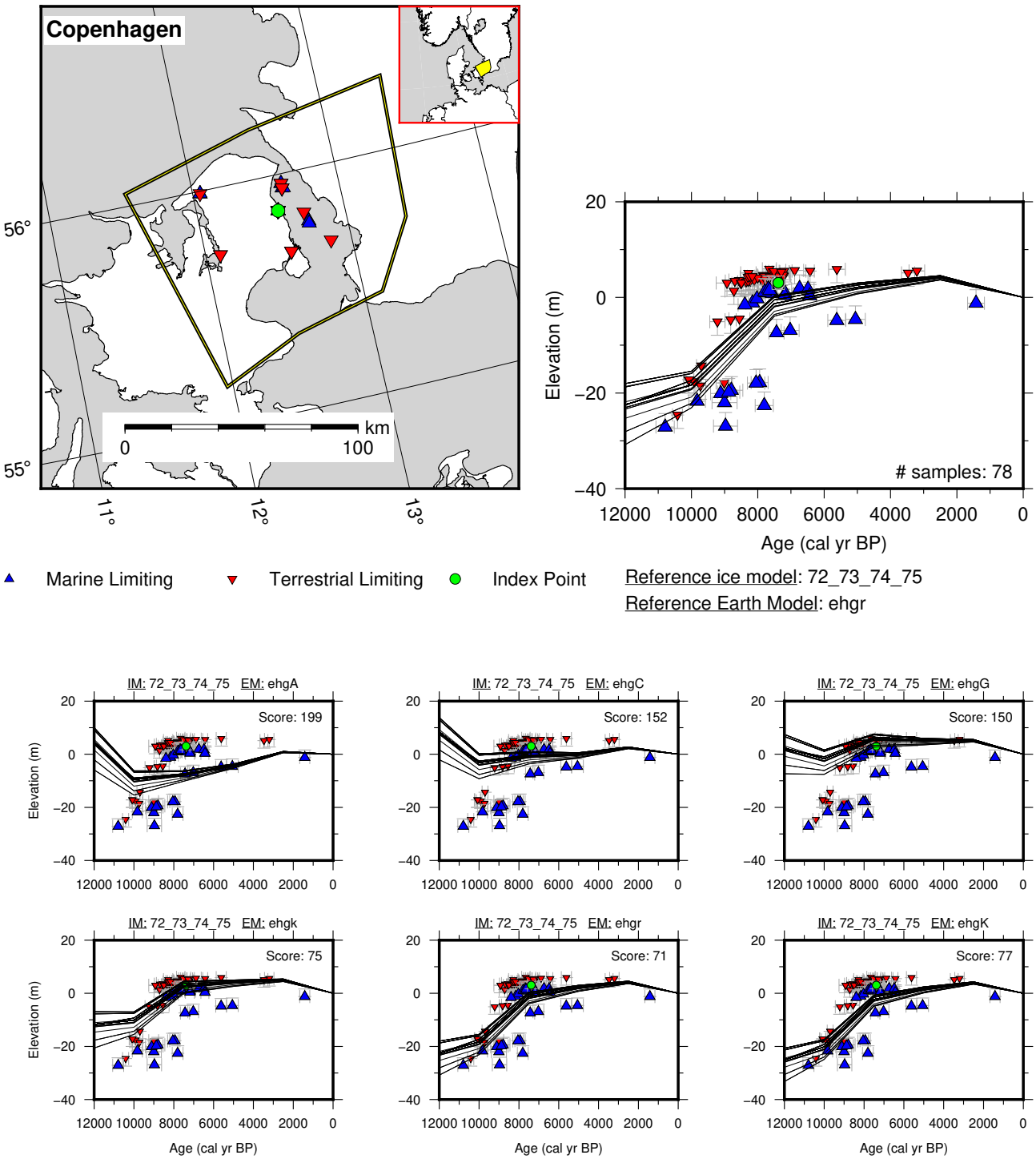


Figure 70: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Copenhagen.

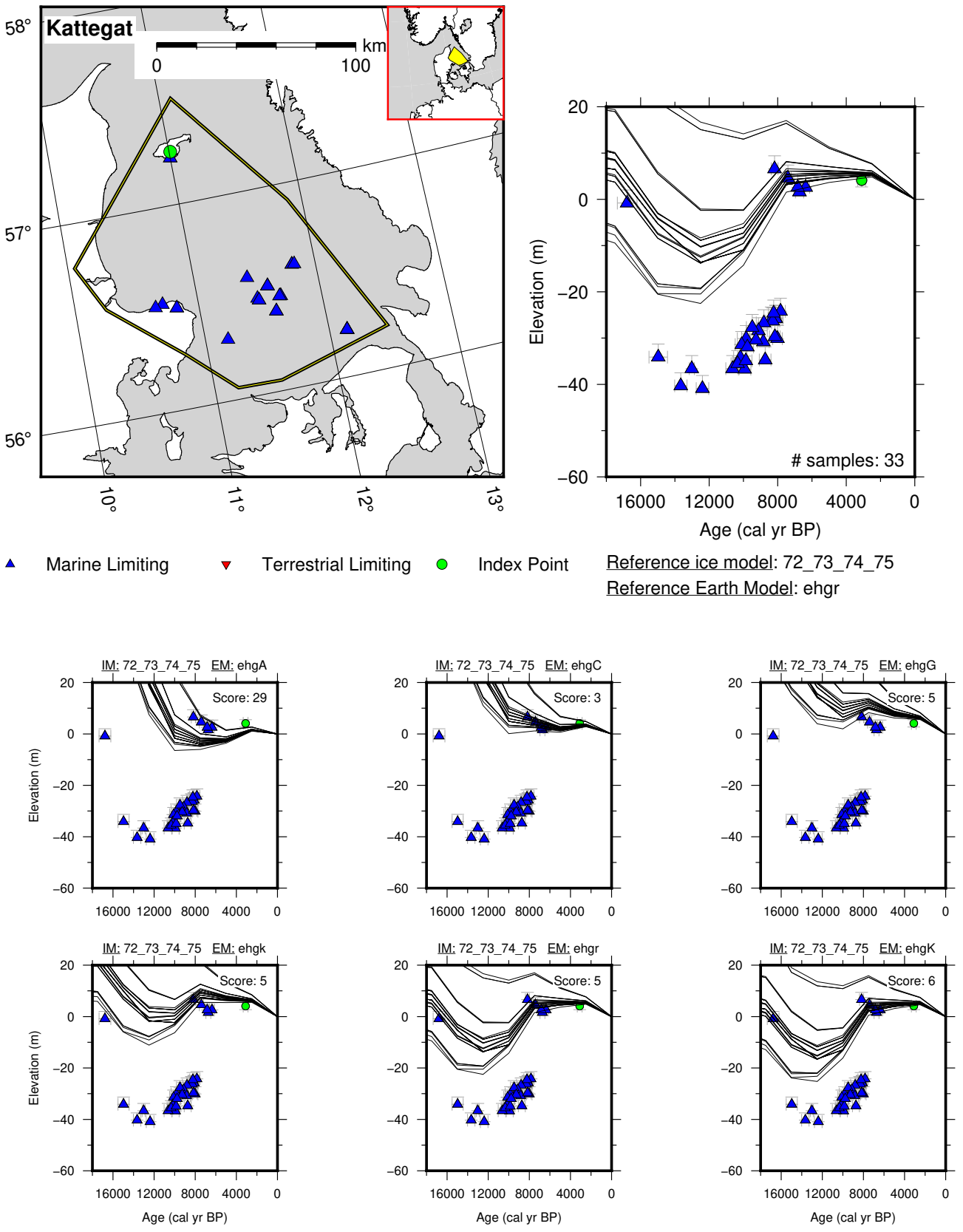
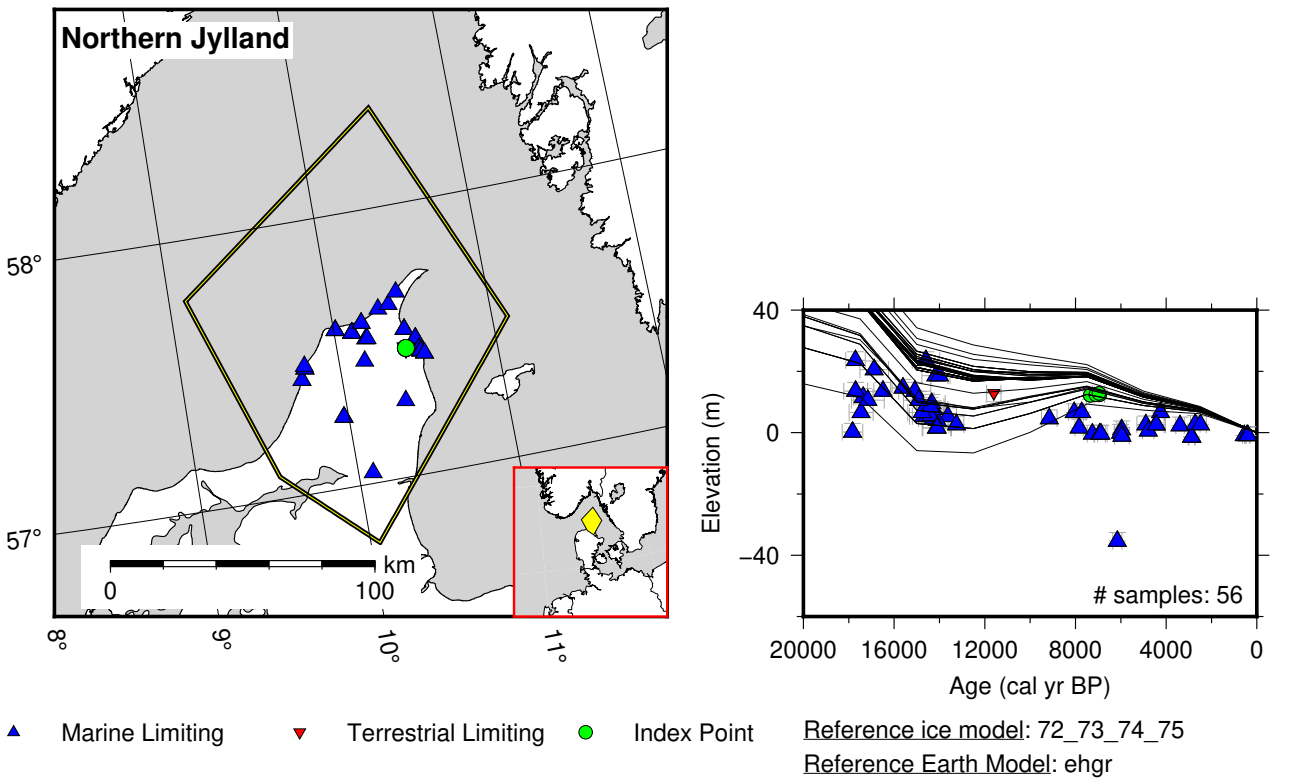


Figure 71: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Kattegat.



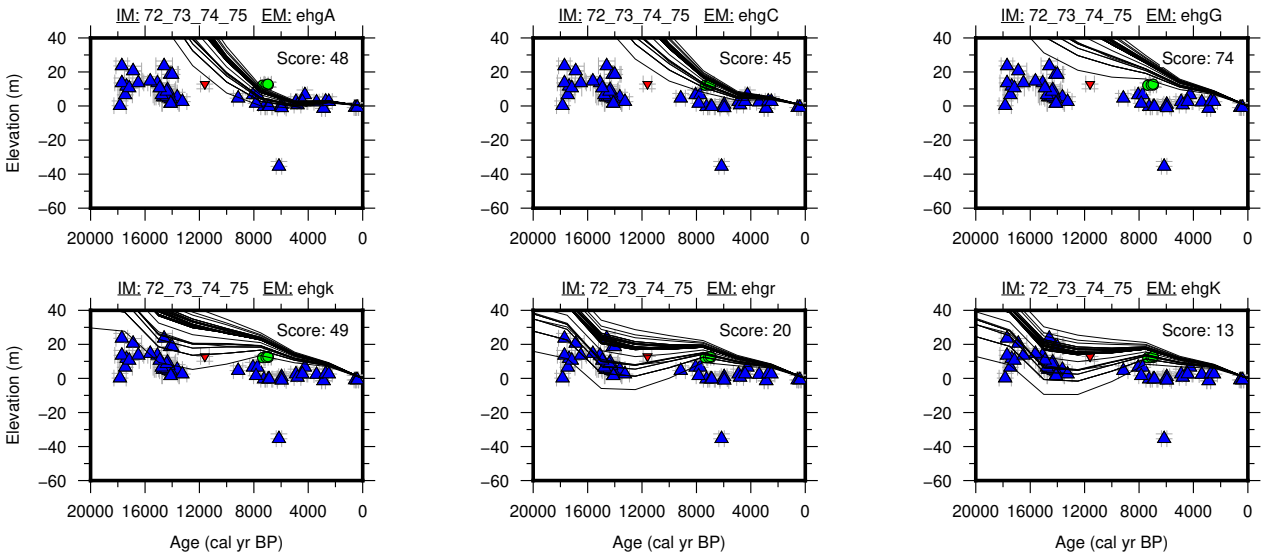


Figure 72: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Northern Jylland.

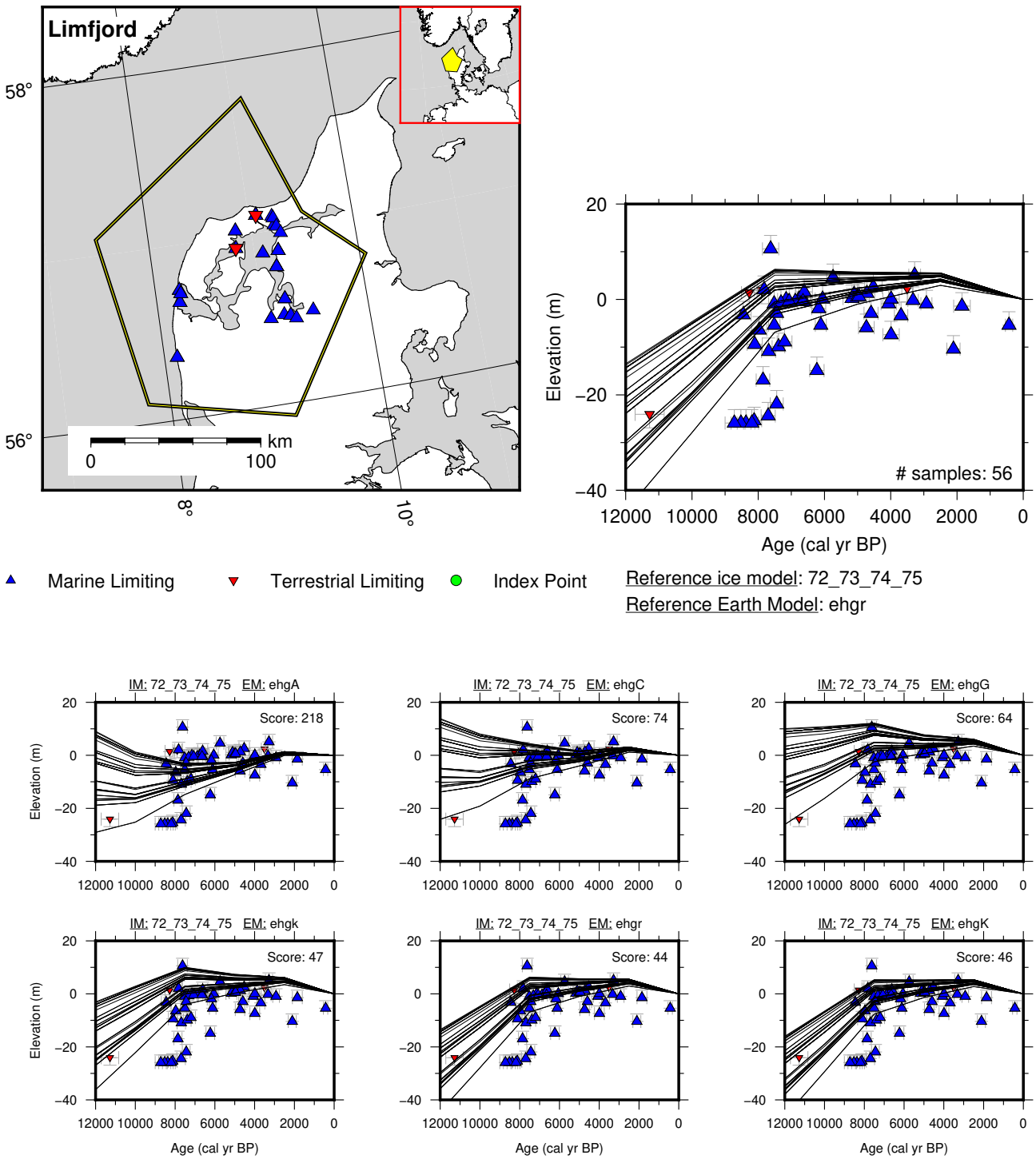
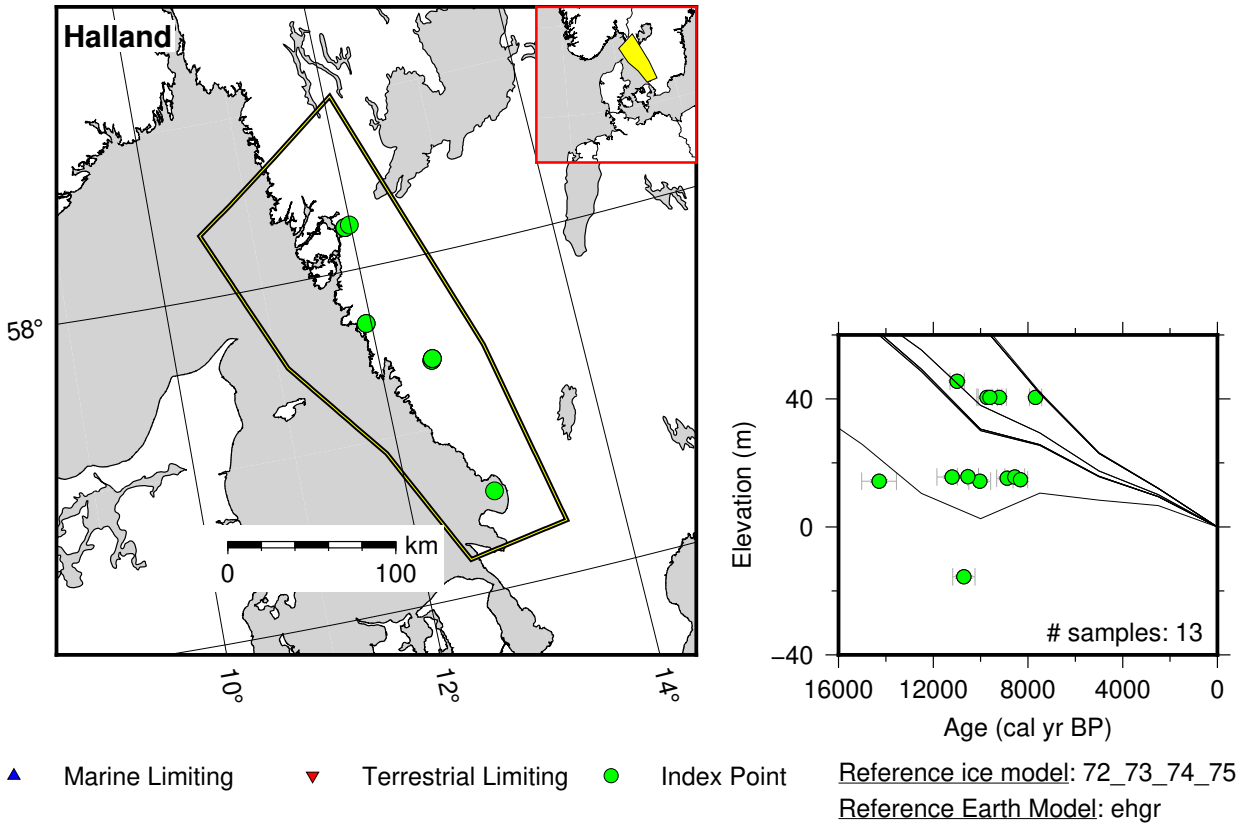


Figure 73: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Limfjord.



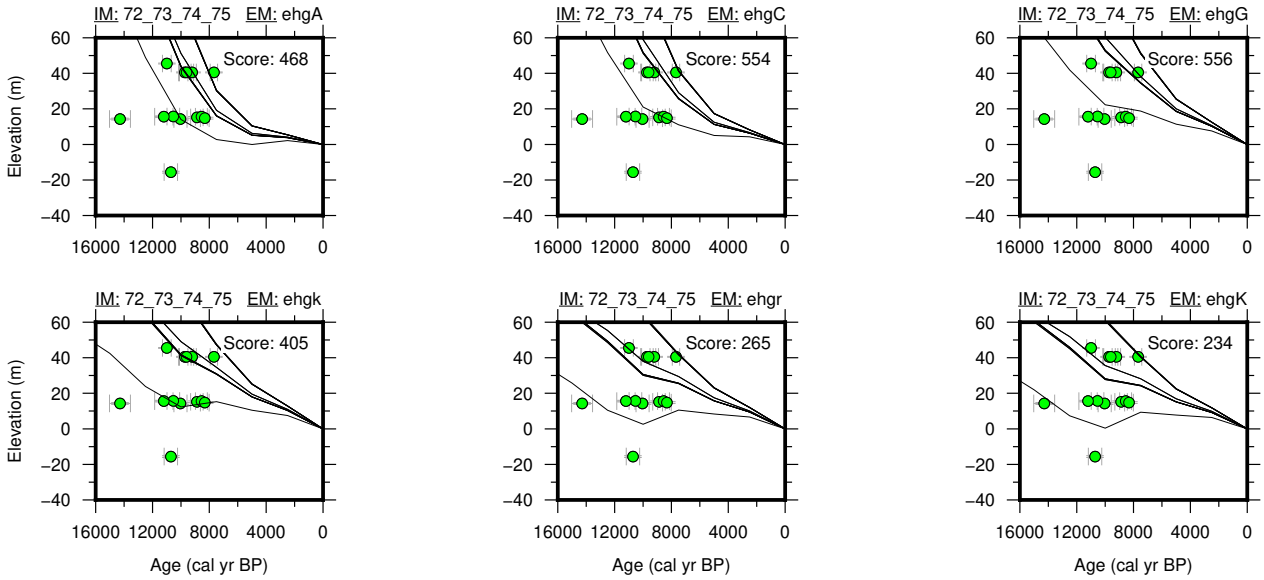


Figure 74: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Halland.

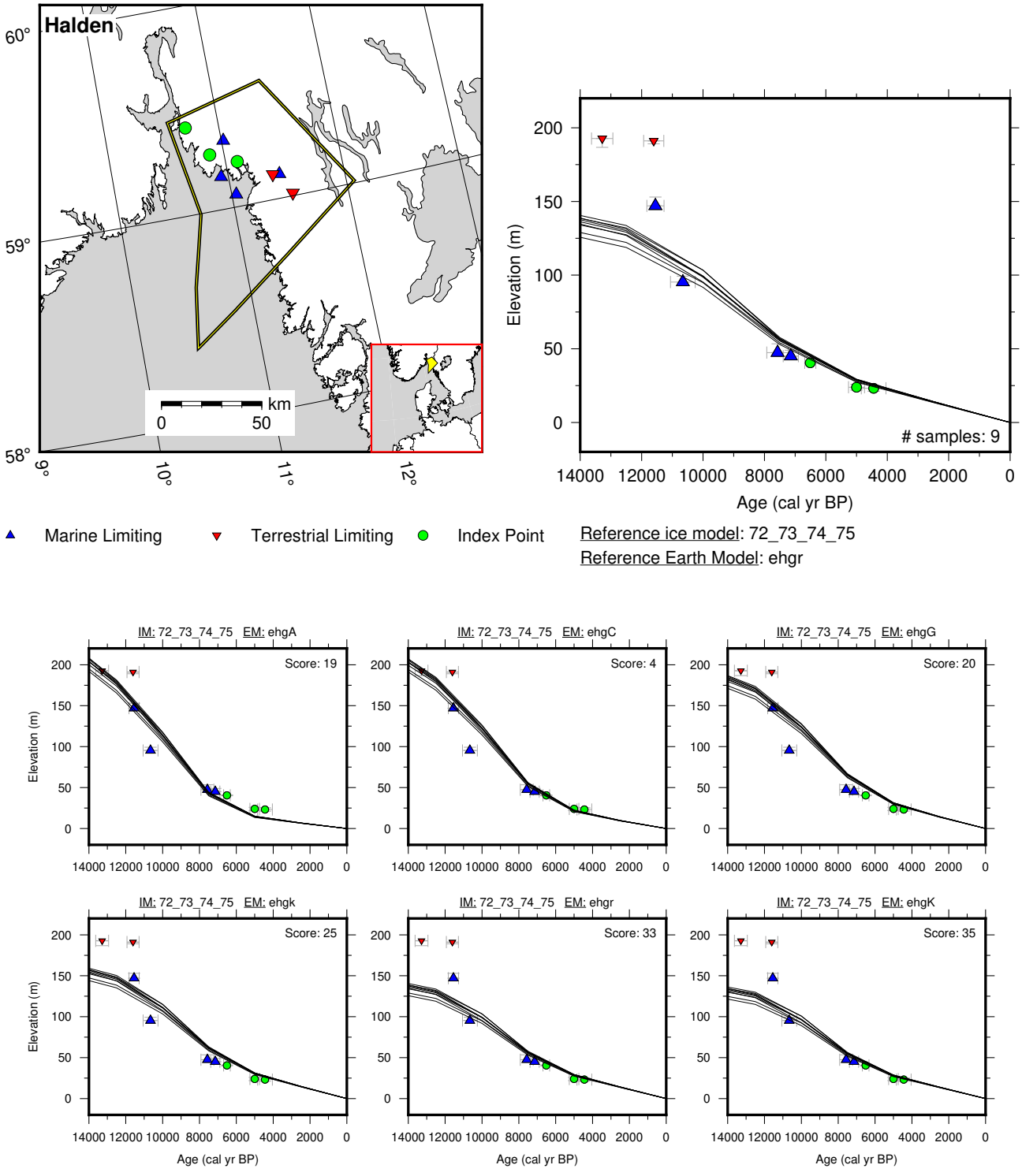


Figure 75: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Halden.

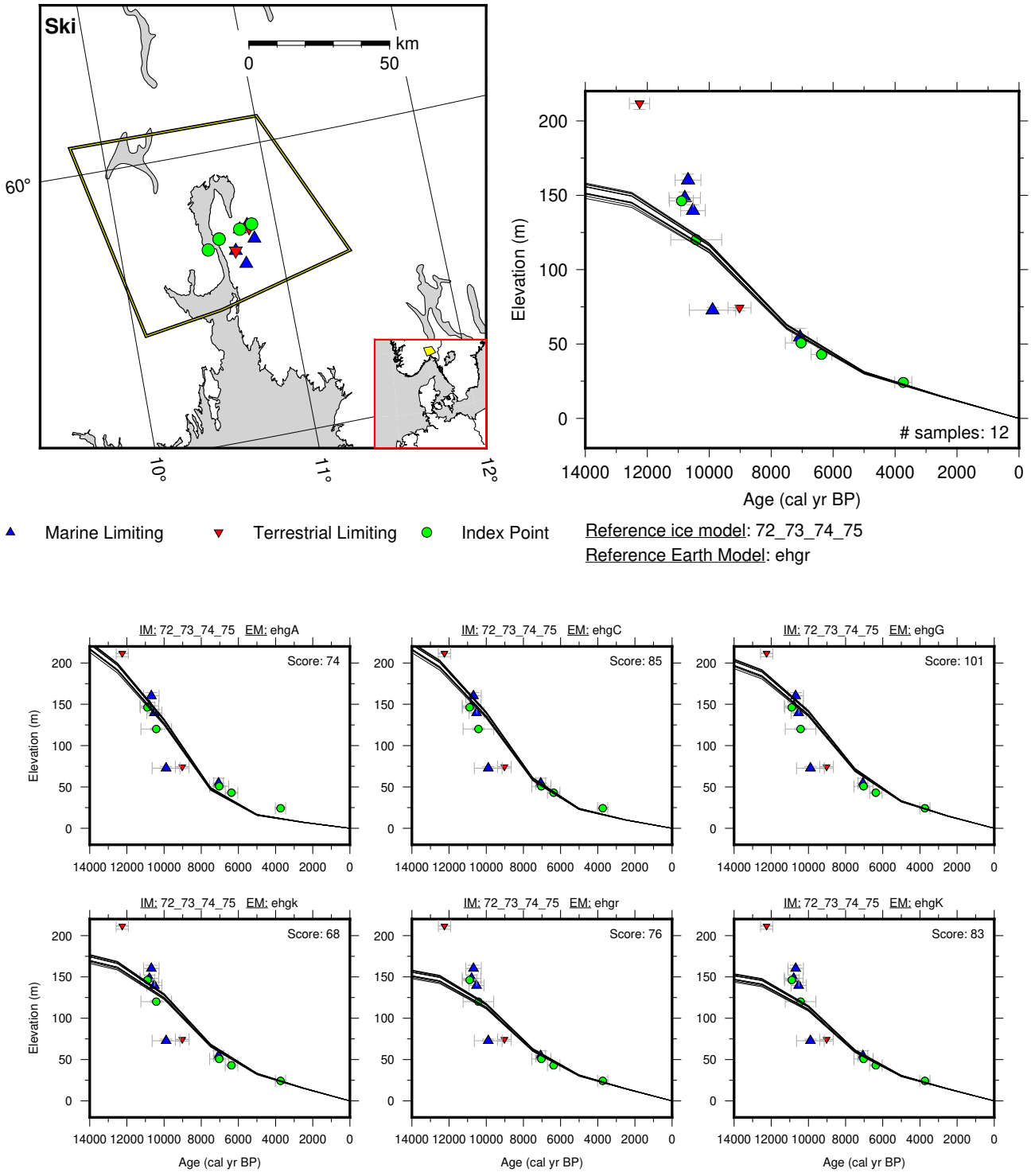


Figure 76: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Ski.

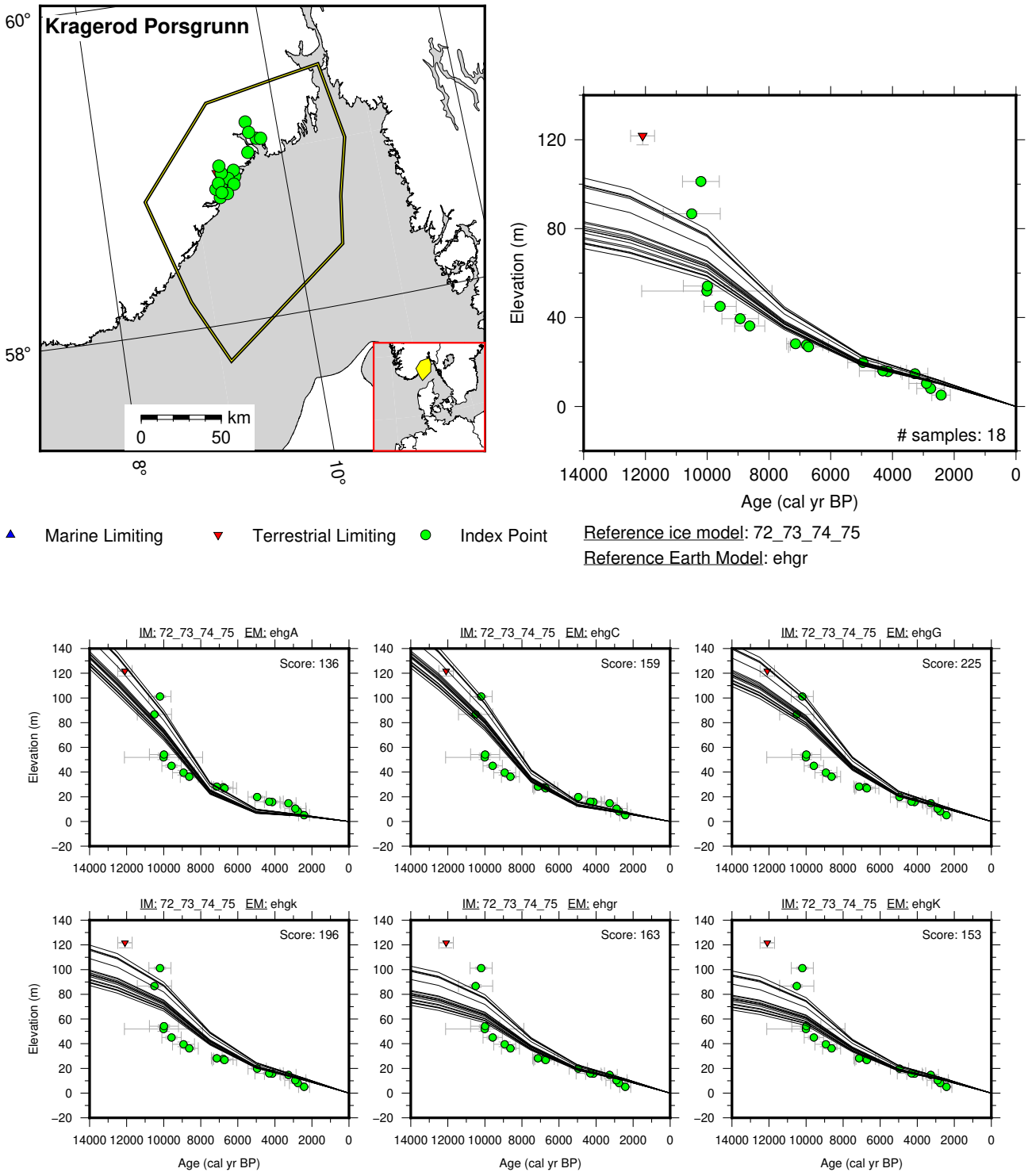


Figure 77: Paleo-sea level and comparison of six models for subregion Danish straits - Kattegat - Skagerrak, location Kragerod Porsgrunn.

9.3 North Sea

References for the data used in each location.

Rotterdam: Berendsen et al. (2007); Hijma and Cohen (2010, 2019); Hijma et al. (2009); Jelgersma (1961); Kiden (1995); Slupik et al. (2013); van de Plassche (1982, 1995); van de Plassche et al. (2010); van Heteren et al. (2002); Vos (1992, 2013); Vos and Cohen (2014); Vos et al. (2010, 2011, 2015)

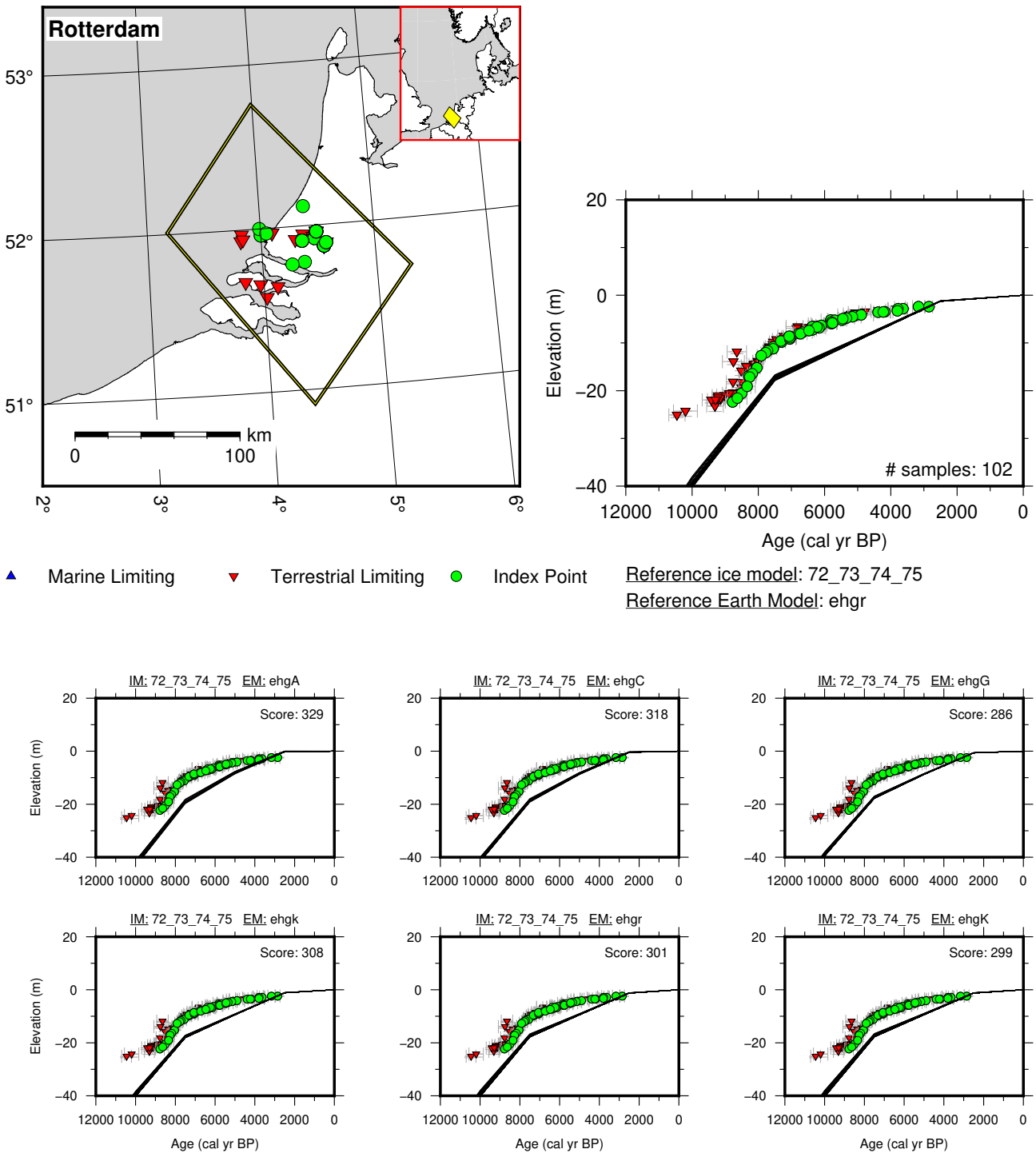


Figure 78: Paleo-sea level and comparison of six models for subregion North Sea, location Rotterdam.

9.4 Western Norway

References for the data used in each location.

Stavanger: Helle (2008); Prøsch-Danielsen (2006); Thomsen (1982)

Sotra: Bondevik et al. (2006); Håkansson (1980); Kaland et al. (1984); Krzywinski and Stabell (1984); Lohne et al. (2007); Stabell and Krzywinski (1978, 1979)

Torvikbygd: Helle (2008); Romundset et al. (2010)

Sula: Bondevik et al. (1997a); Hafsten (1979); Lie et al. (1983); Svendsen and Mangerud (1987)

Bjugn: Bondevik et al. (1997a,b); Kjemperud (1982, 1986)

Frosta: Kjemperud (1981a,b, 1986)

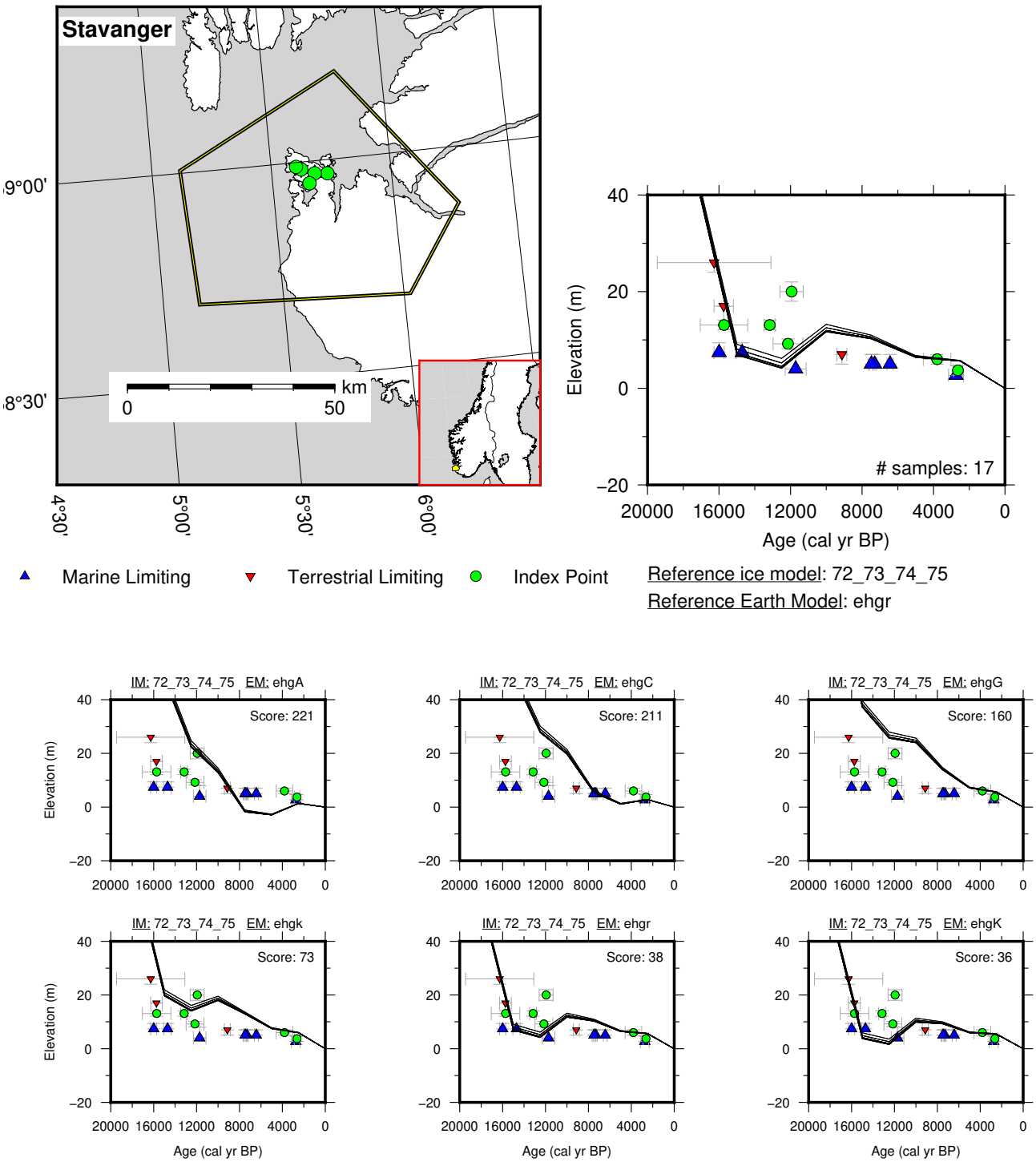


Figure 79: Paleo-sea level and comparison of six models for subregion Western Norway, location Stavanger.

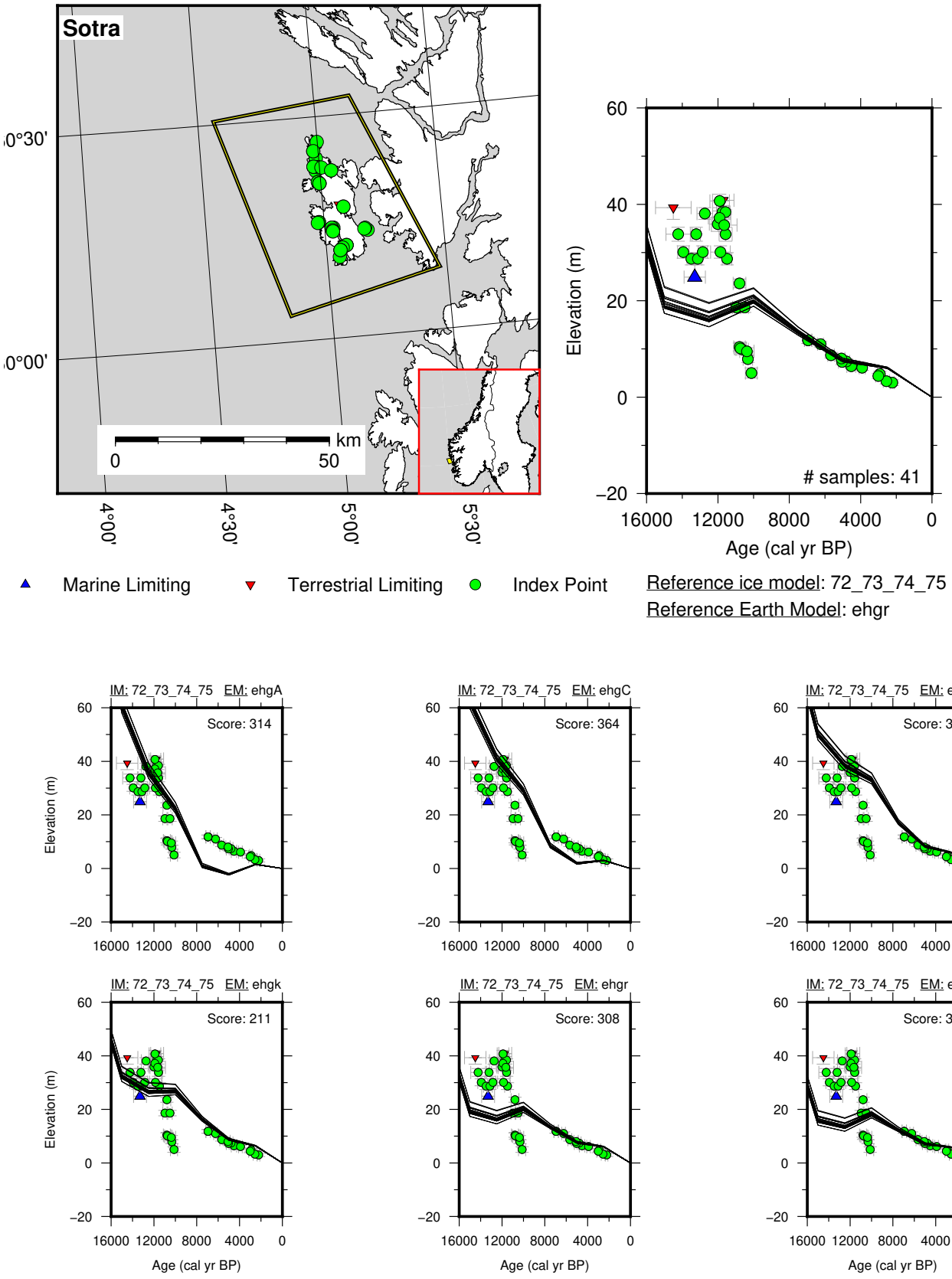


Figure 80: Paleo-sea level and comparison of six models for subregion Western Norway, location Sotra.

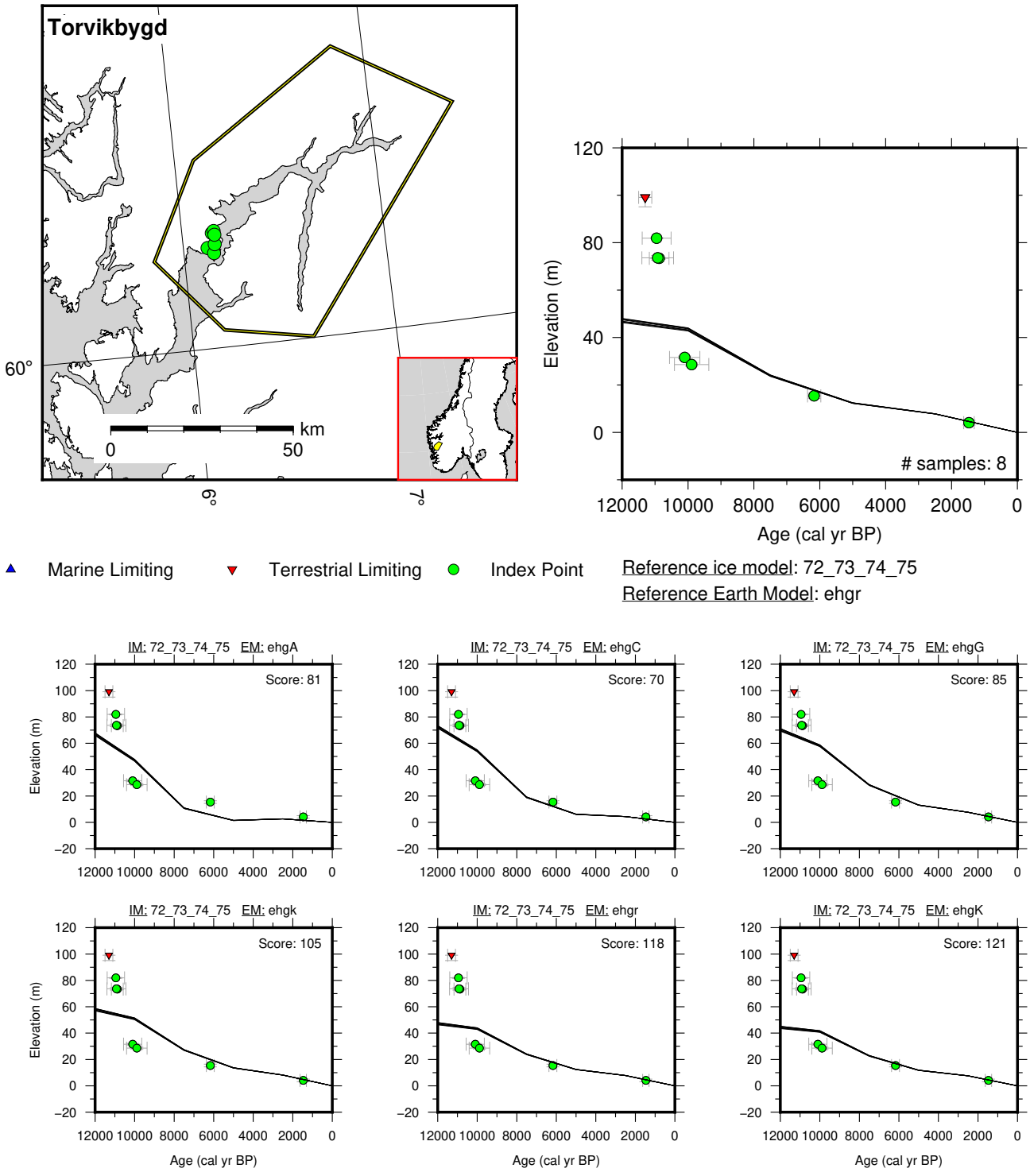
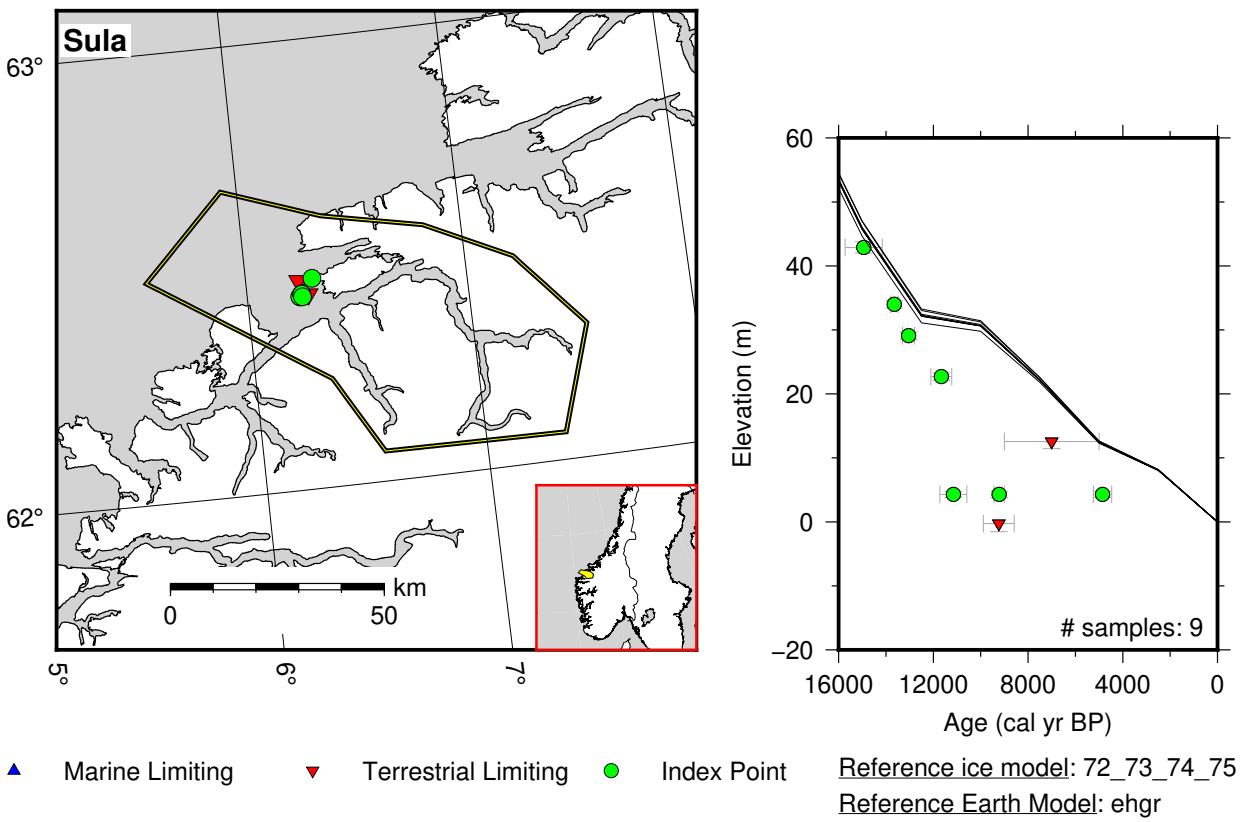


Figure 81: Paleo-sea level and comparison of six models for subregion Western Norway, location Torvikbygd.



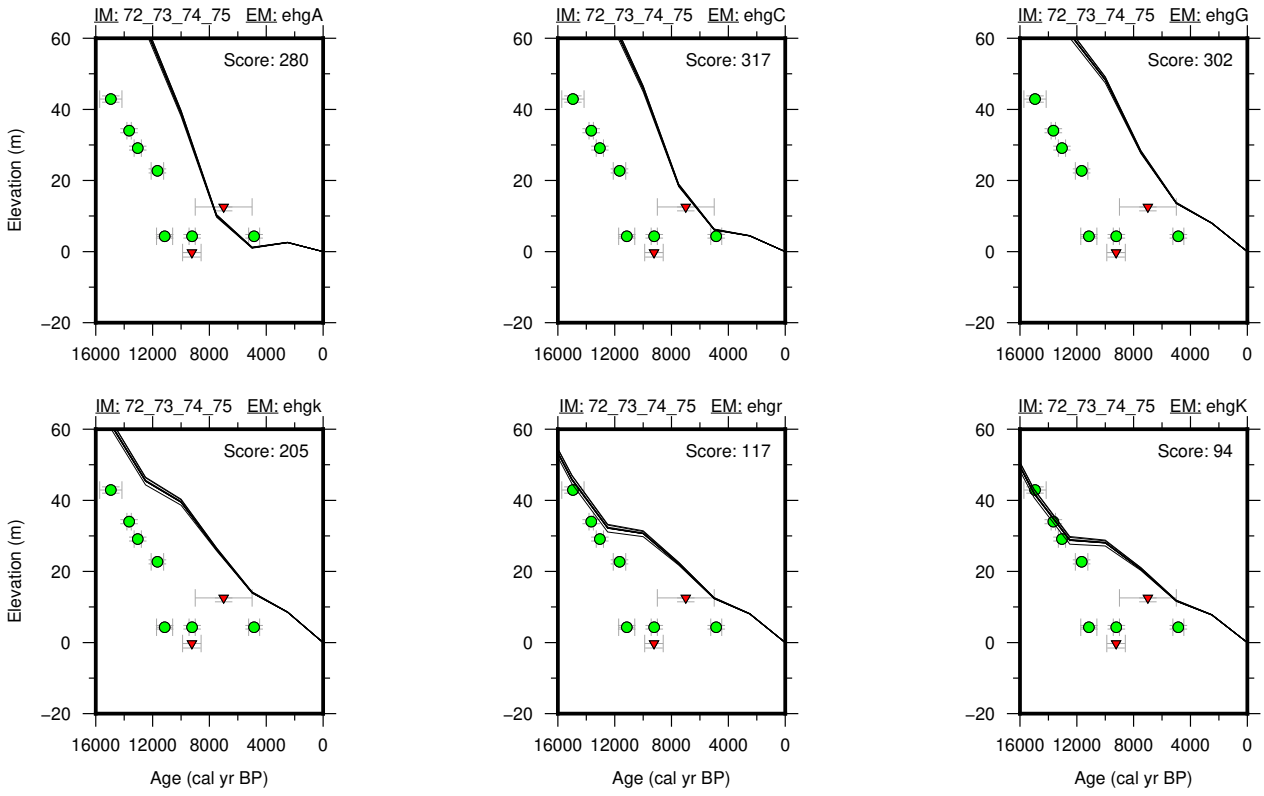
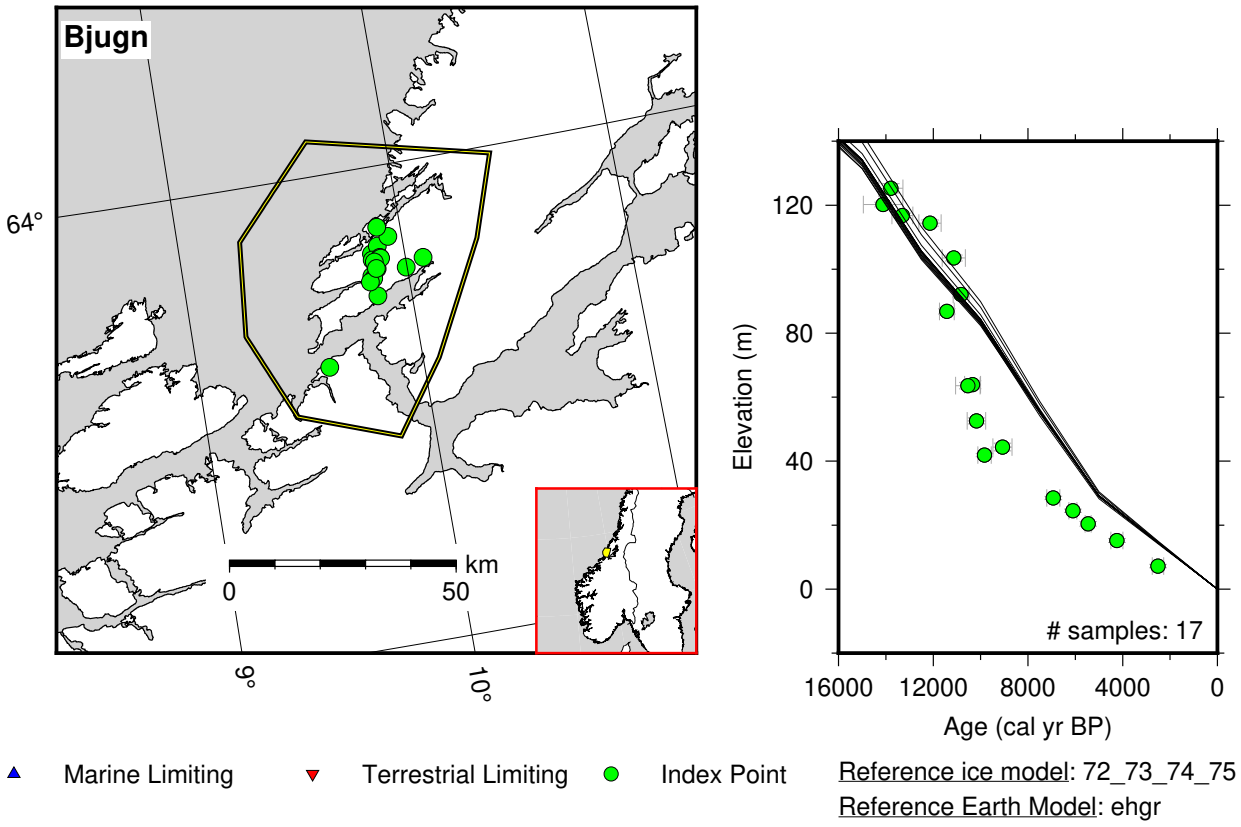


Figure 82: Paleo-sea level and comparison of six models for subregion Western Norway, location Sula.



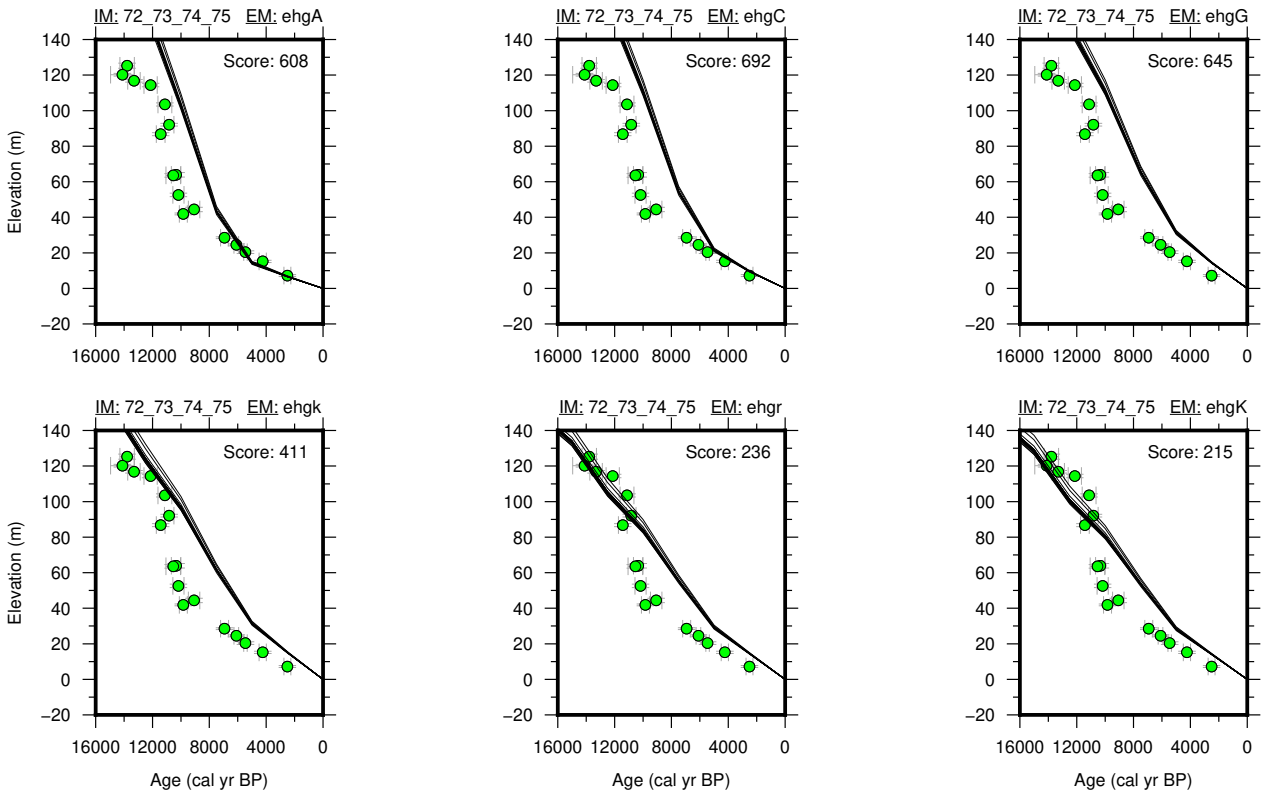
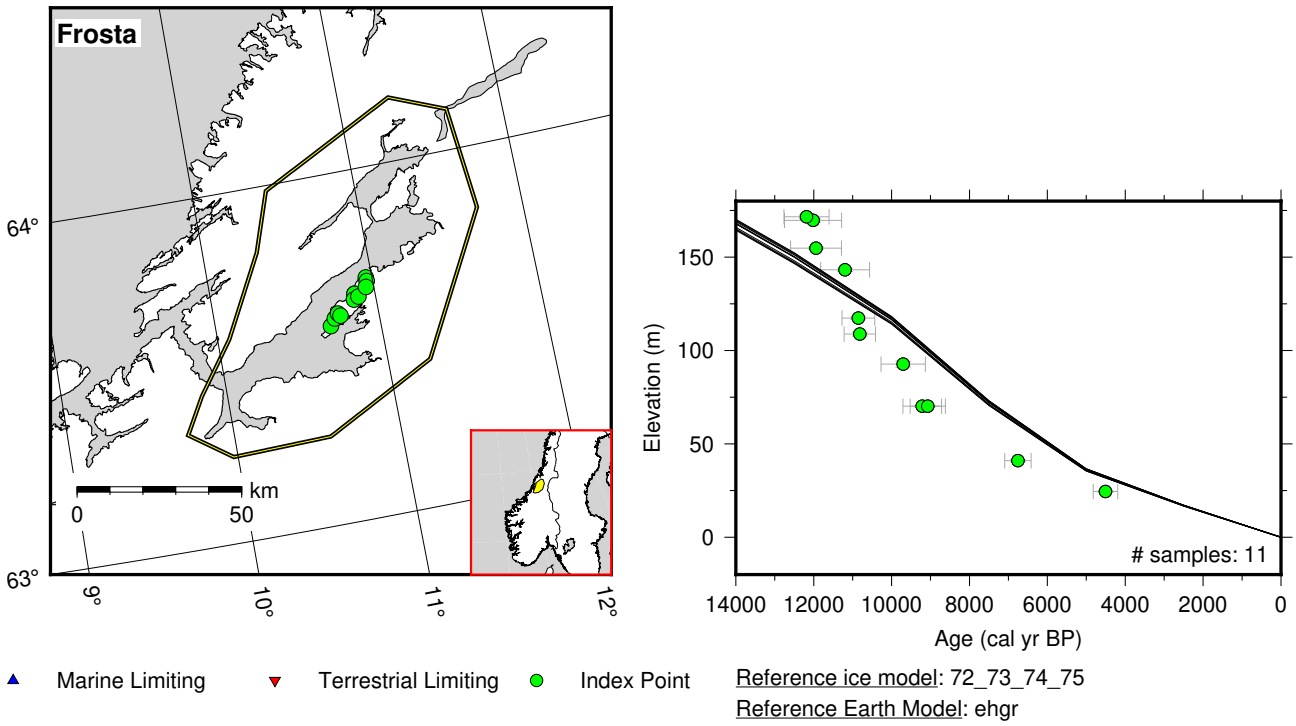


Figure 83: Paleo-sea level and comparison of six models for subregion Western Norway, location Bjugn.



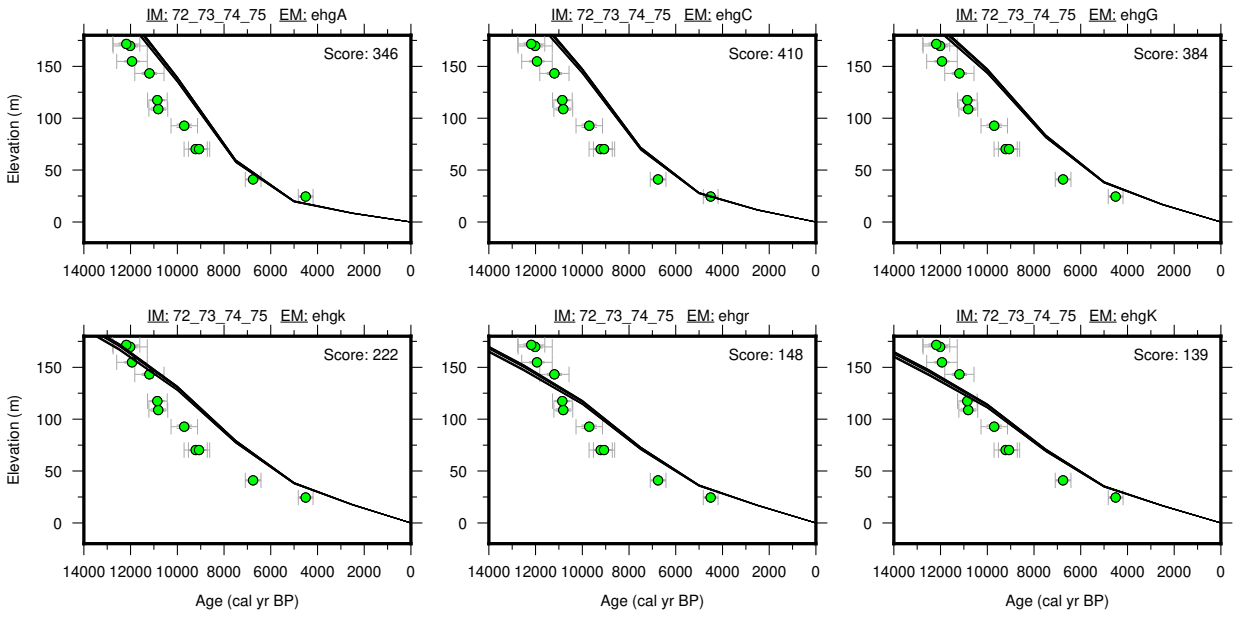


Figure 84: Paleo-sea level and comparison of six models for subregion Western Norway, location Frosta.

10 French Polynesia

10.1 French Polynesia

References for the data used in each location.

Mururoa: Camoin et al. (2001); Hibbert et al. (2016)

Tahiti: Bard et al. (1996, 2010); Deschamps et al. (2012); Hibbert et al. (2016)

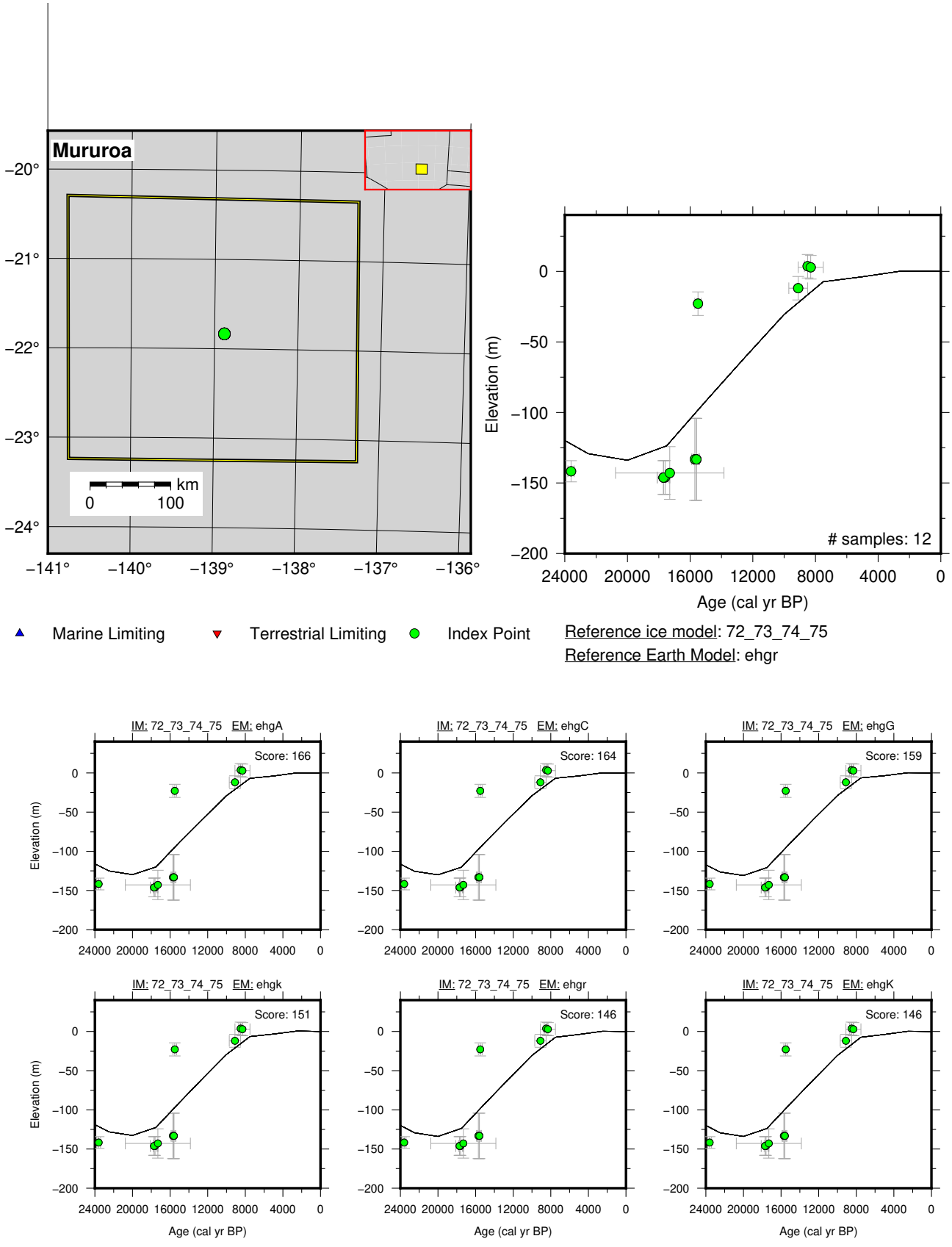


Figure 85: Paleo-sea level and comparison of six models for subregion French Polynesia, location Mururoa.

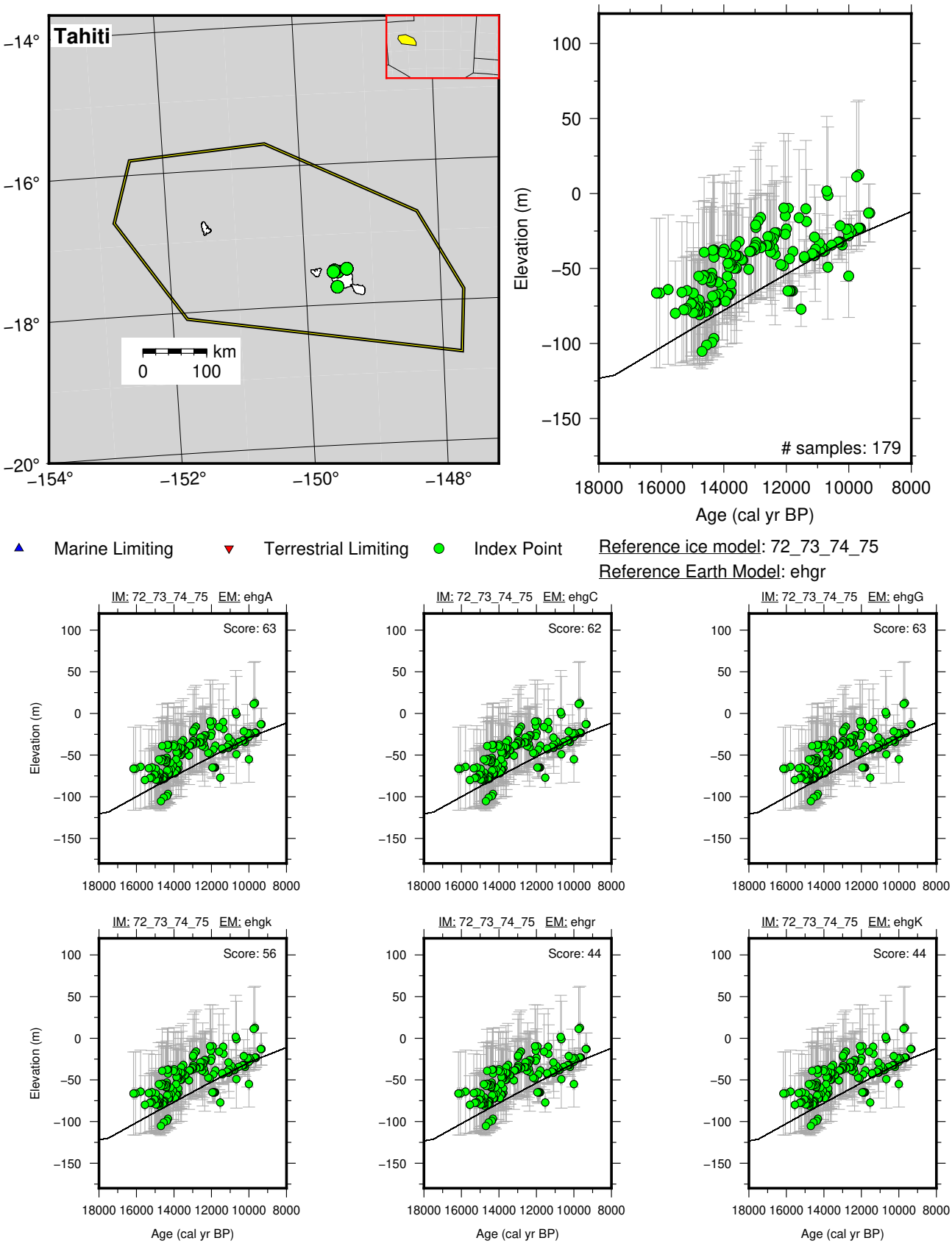


Figure 86: Paleo-sea level and comparison of six models for subregion French Polynesia, location Tahiti.

11 Melanesia

11.1 Melansia

References for the data used in each location.

Vanuatu: Cabioch et al. (2003); Cutler et al. (2004); Hibbert et al. (2016)

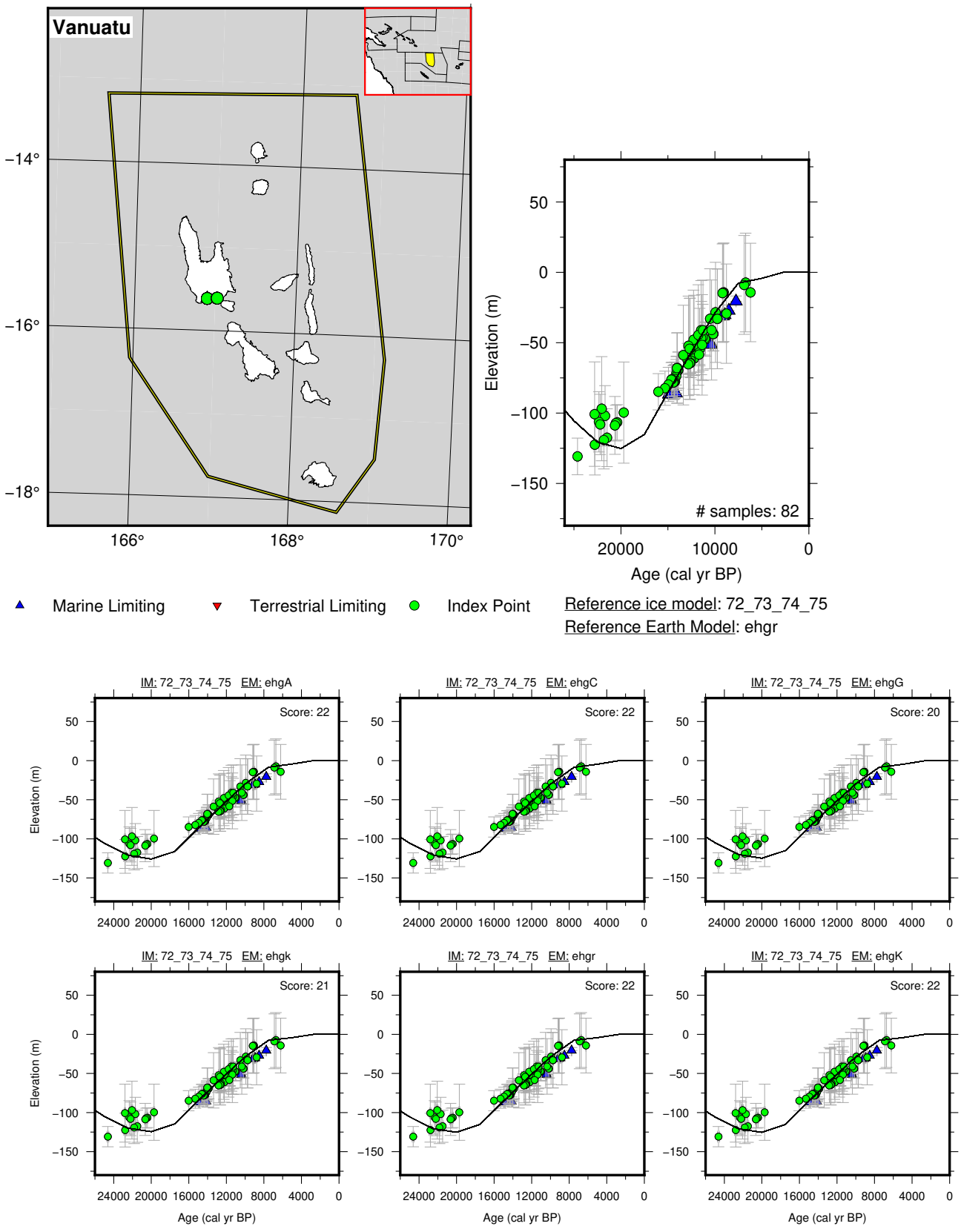


Figure 87: Paleo-sea level and comparison of six models for subregion Melansia, location Vanuatu.

12 MIS 3 - MIS 4

12.1 Eastern United States (MIS3 - MIS4)

References for the data used in each location.

US Mid Atlantic: Best (2010); Cronin et al. (1981); Culver et al. (2011); Mallinson et al. (2008); Mixon et al. (1982); Moore (2009); Parham et al. (2013); Scott (2006)

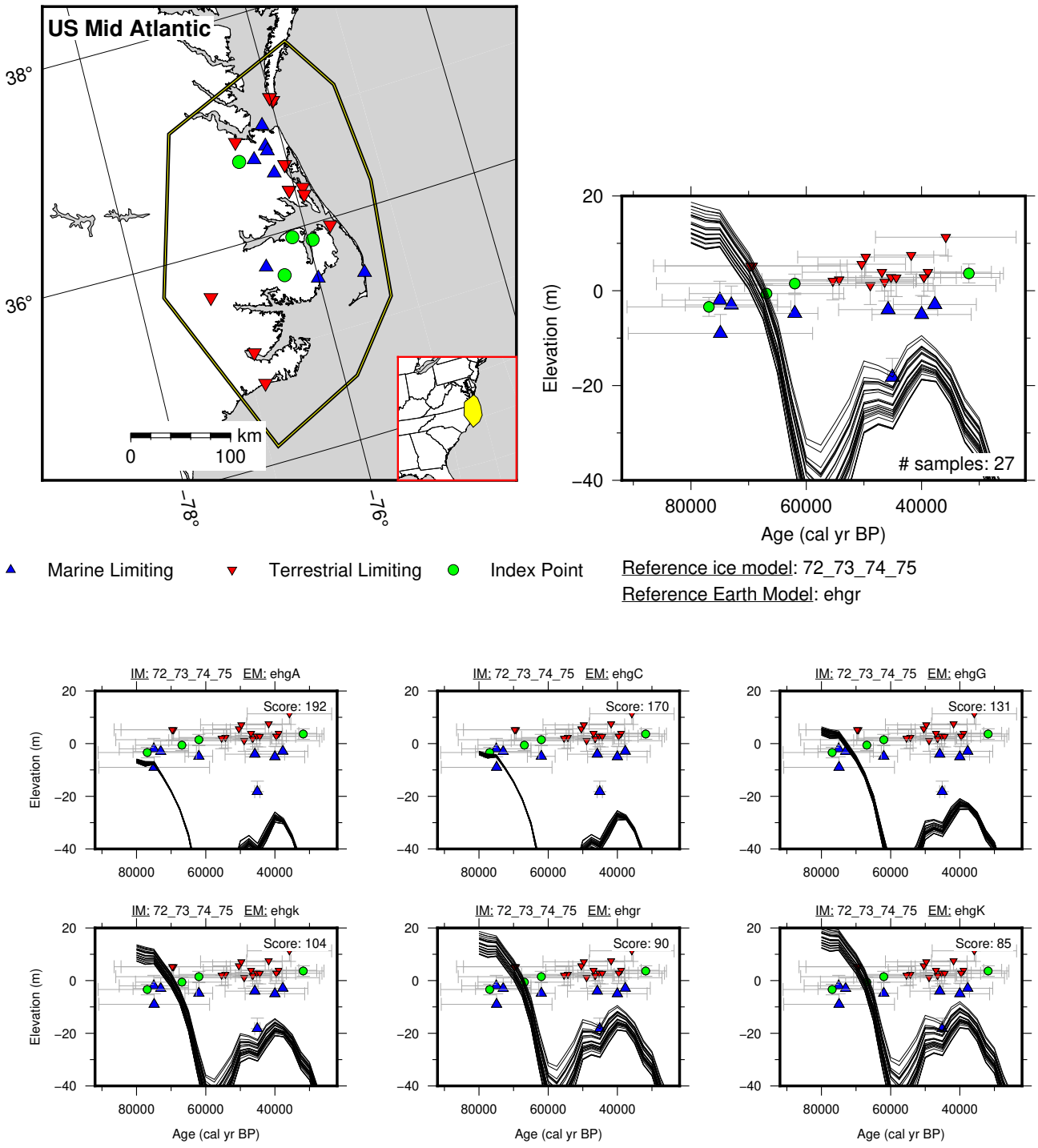


Figure 88: Paleo-sea level and comparison of six models for subregion Eastern United States (MIS3 - MIS4), location US Mid Atlantic.

12.2 French Polynesia (MIS3 - MIS4)

References for the data used in each location.

Mururoa: Camoin et al. (2001); Hibbert et al. (2016)

Tahiti: Hibbert et al. (2016); Thomas et al. (2009)

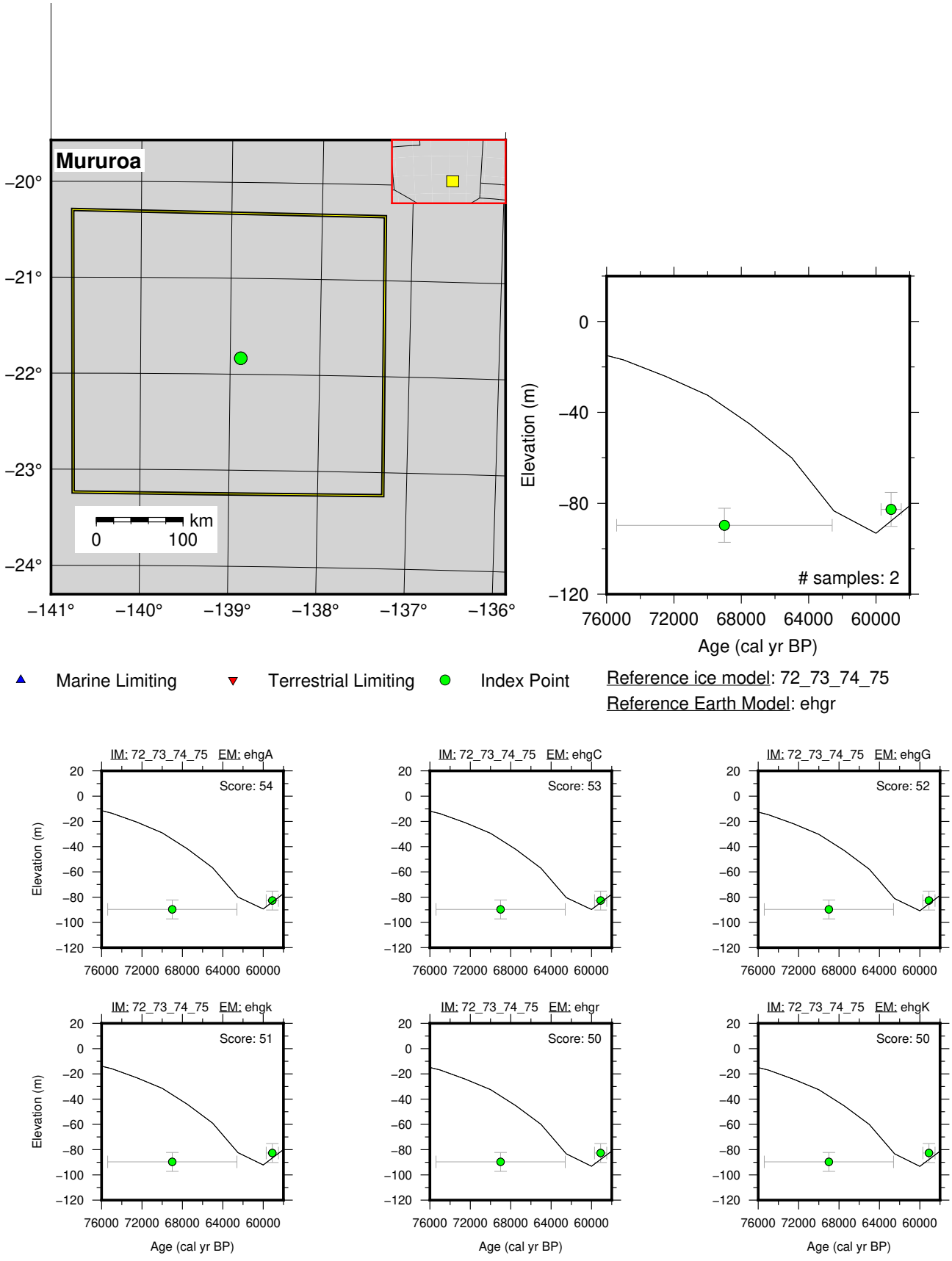


Figure 89: Paleo-sea level and comparison of six models for subregion French Polynesia (MIS3 - MIS4), location Mururoa.

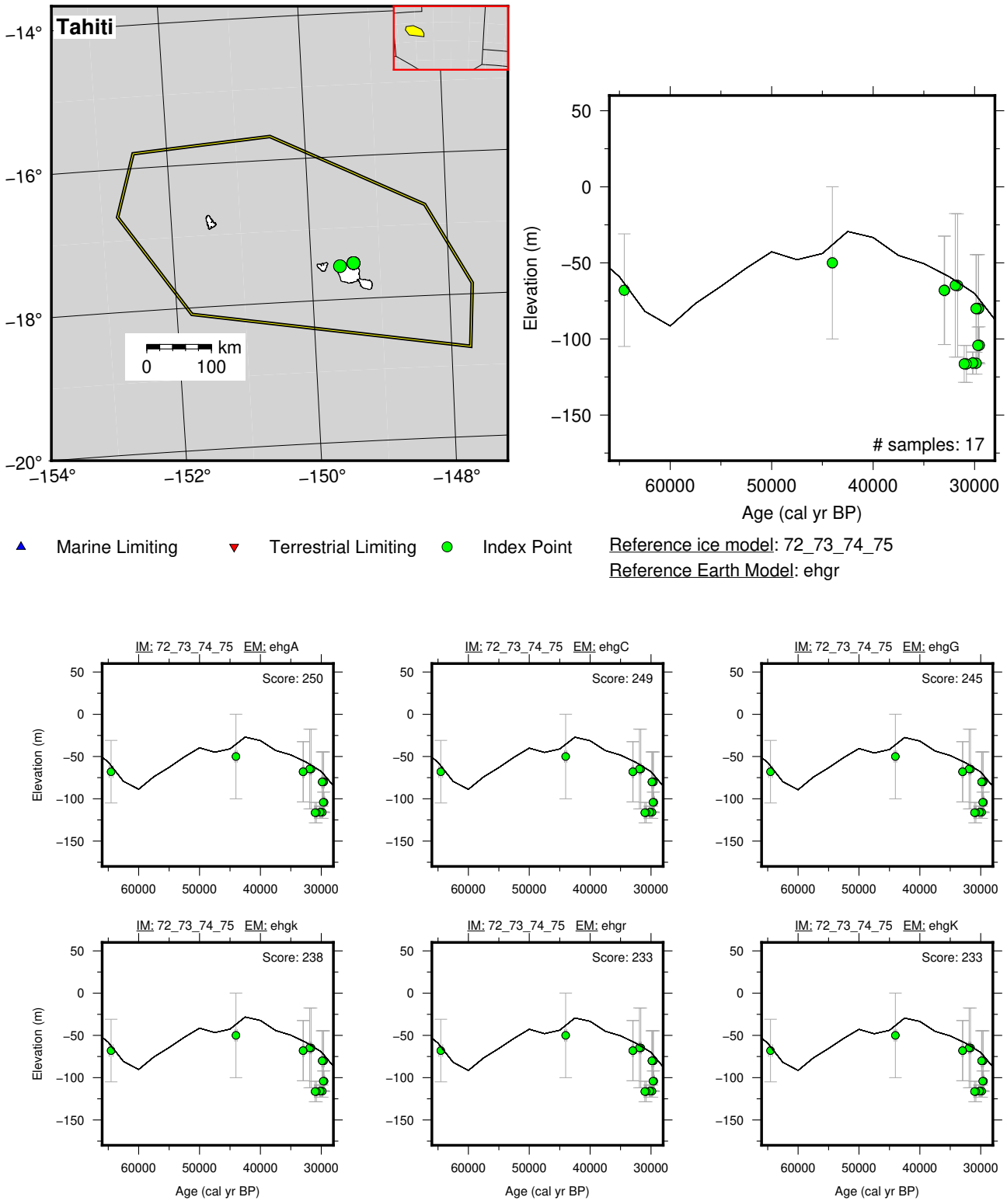


Figure 90: Paleo-sea level and comparison of six models for subregion French Polynesia (MIS3 - MIS4), location Tahiti.

12.3 Melanesia (MIS3 - MIS4)

References for the data used in each location.

Vanuatu: Cabioch and Ayliffe (2001)

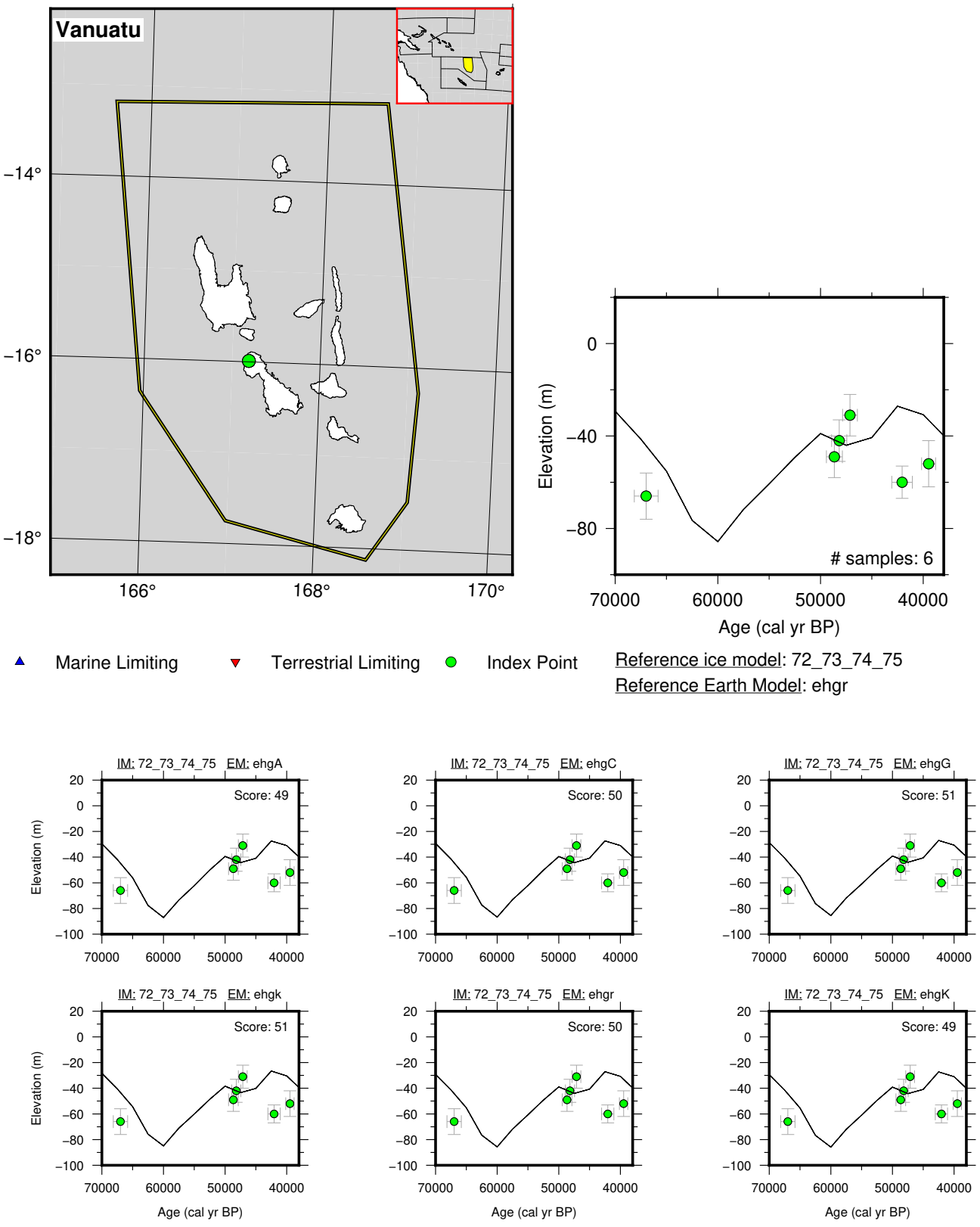


Figure 91: Paleo-sea level and comparison of six models for subregion Melanesia (MIS3 - MIS4), location Vanuatu.

12.4 Northeastern Australia (MIS3 - MIS4)

References for the data used in each location.

Cairns: Yokoyama et al. (2018)

Mackay: Yokoyama et al. (2018)

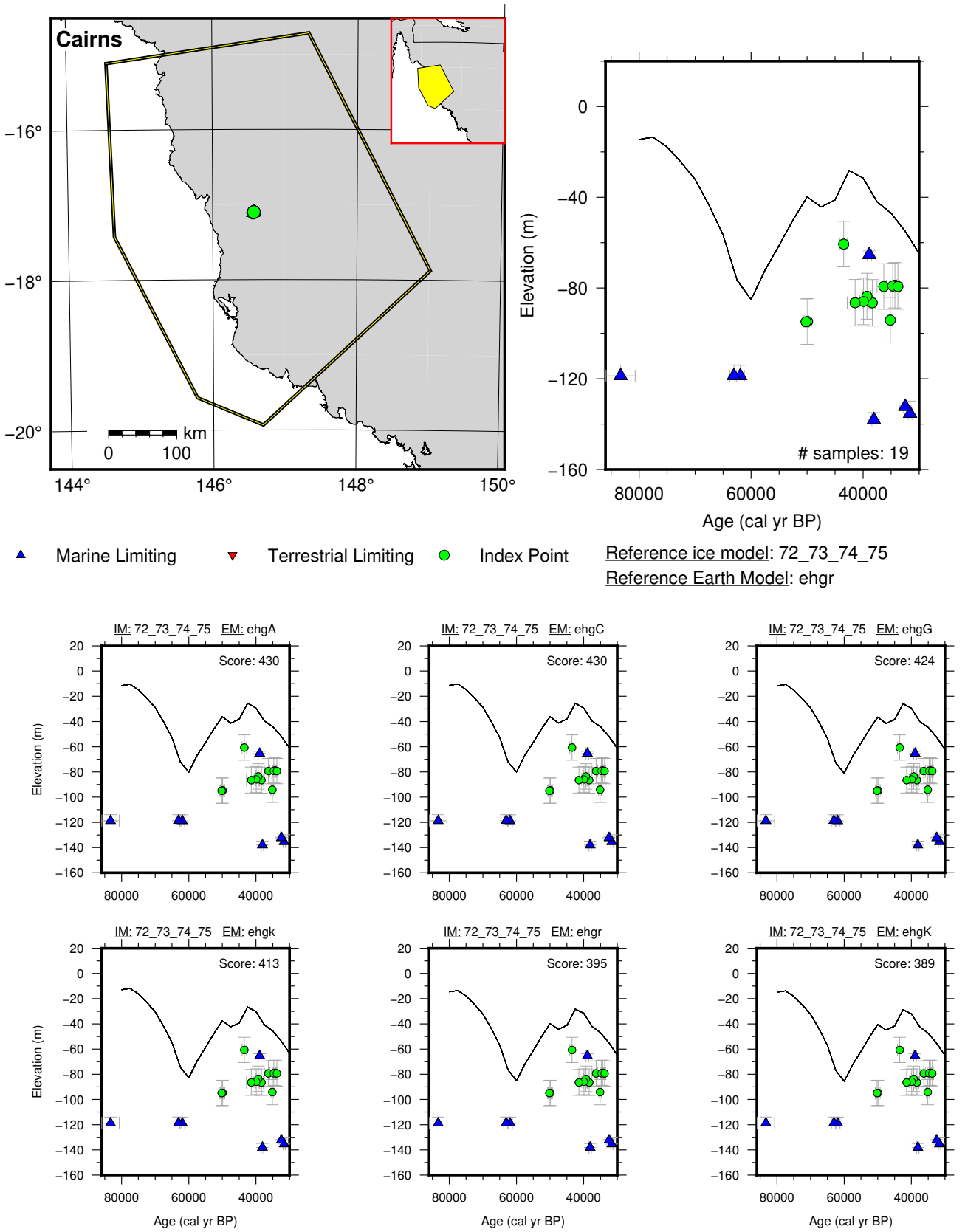


Figure 92: Paleo-sea level and comparison of six models for subregion Northeastern Australia (MIS3 - MIS4), location Cairns.

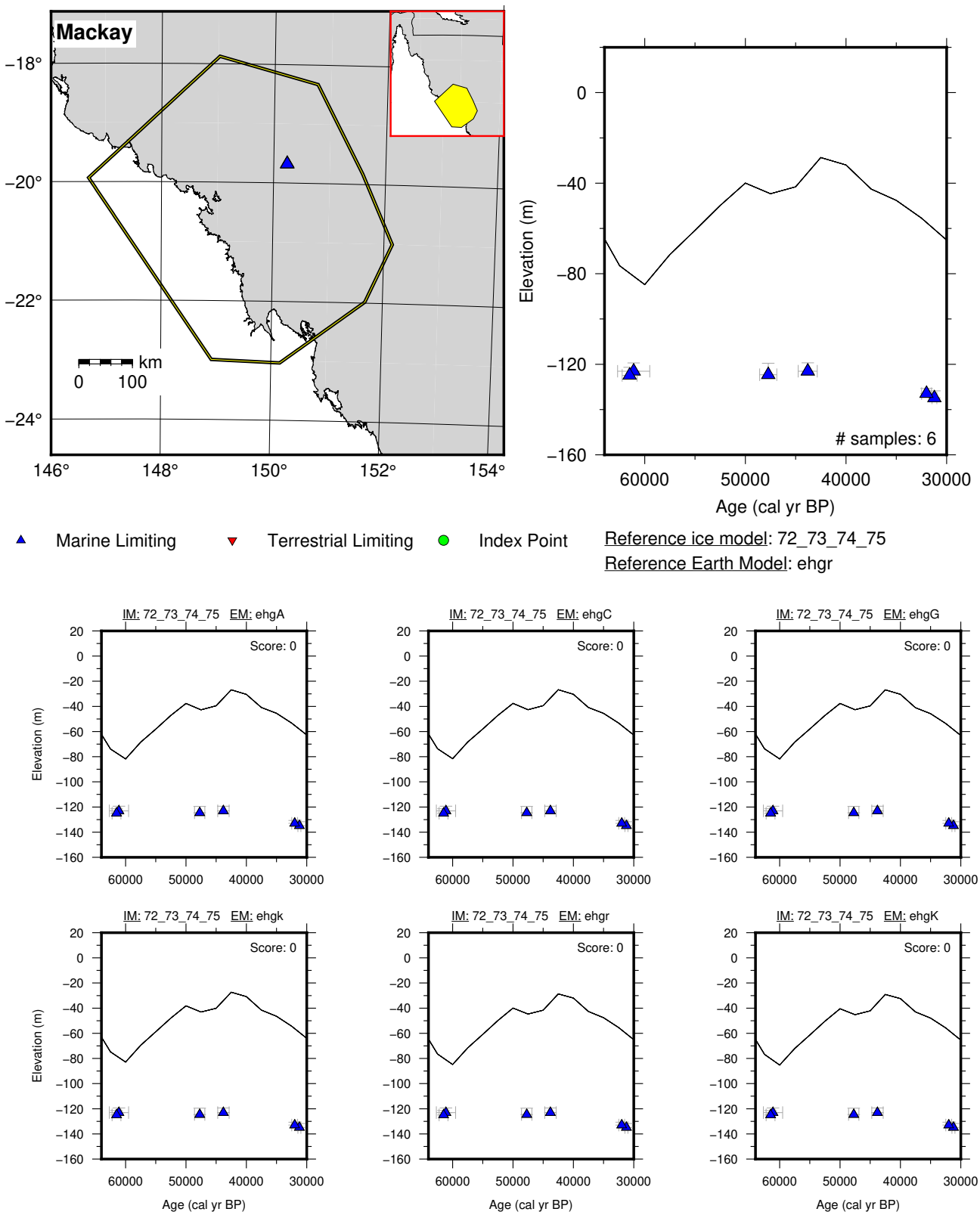


Figure 93: Paleo-sea level and comparison of six models for subregion Northeastern Australia (MIS3 - MIS4), location Mackay.

12.5 Papua New Guinea (MIS3 - MIS4)

References for the data used in each location.

Huon Peninsula: Chappell et al. (1996); Cutler et al. (2003); Hibbert et al. (2016); Yokoyama et al. (2001)

Huon Peninsula de Gelder: Chappell (2002); Chappell et al. (1996); de Gelder et al. (2021)

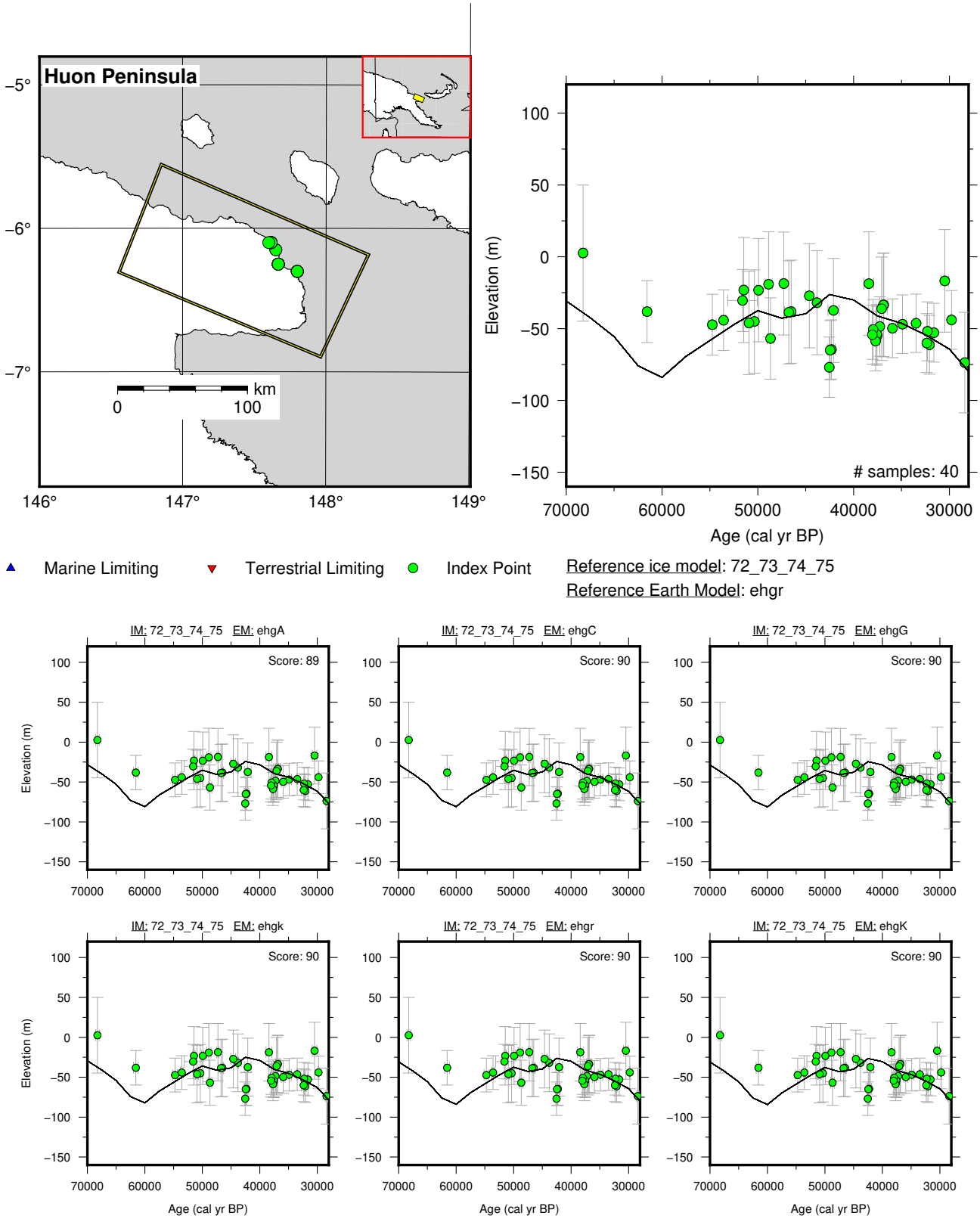


Figure 94: Paleo-sea level and comparison of six models for subregion Papua New Guinea (MIS3 - MIS4), location Huon Peninsula.

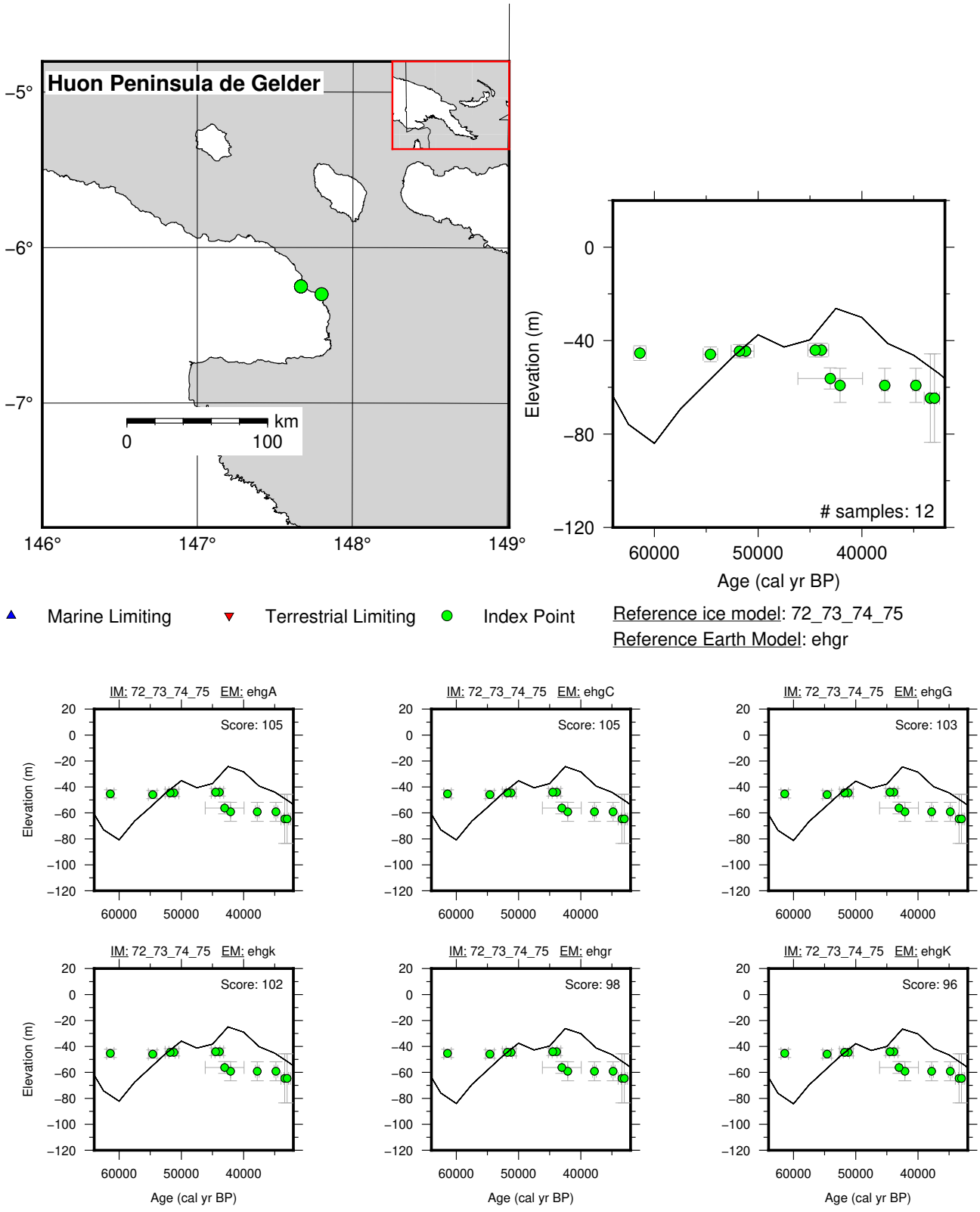


Figure 95: Paleo-sea level and comparison of six models for subregion Papua New Guinea (MIS3 - MIS4), location Huon Peninsula de Gelder.

12.6 Sea of Japan - East Sea (MIS3 - MIS4)

References for the data used in each location.

Tsushima-Korea Strait: Park et al. (2000)

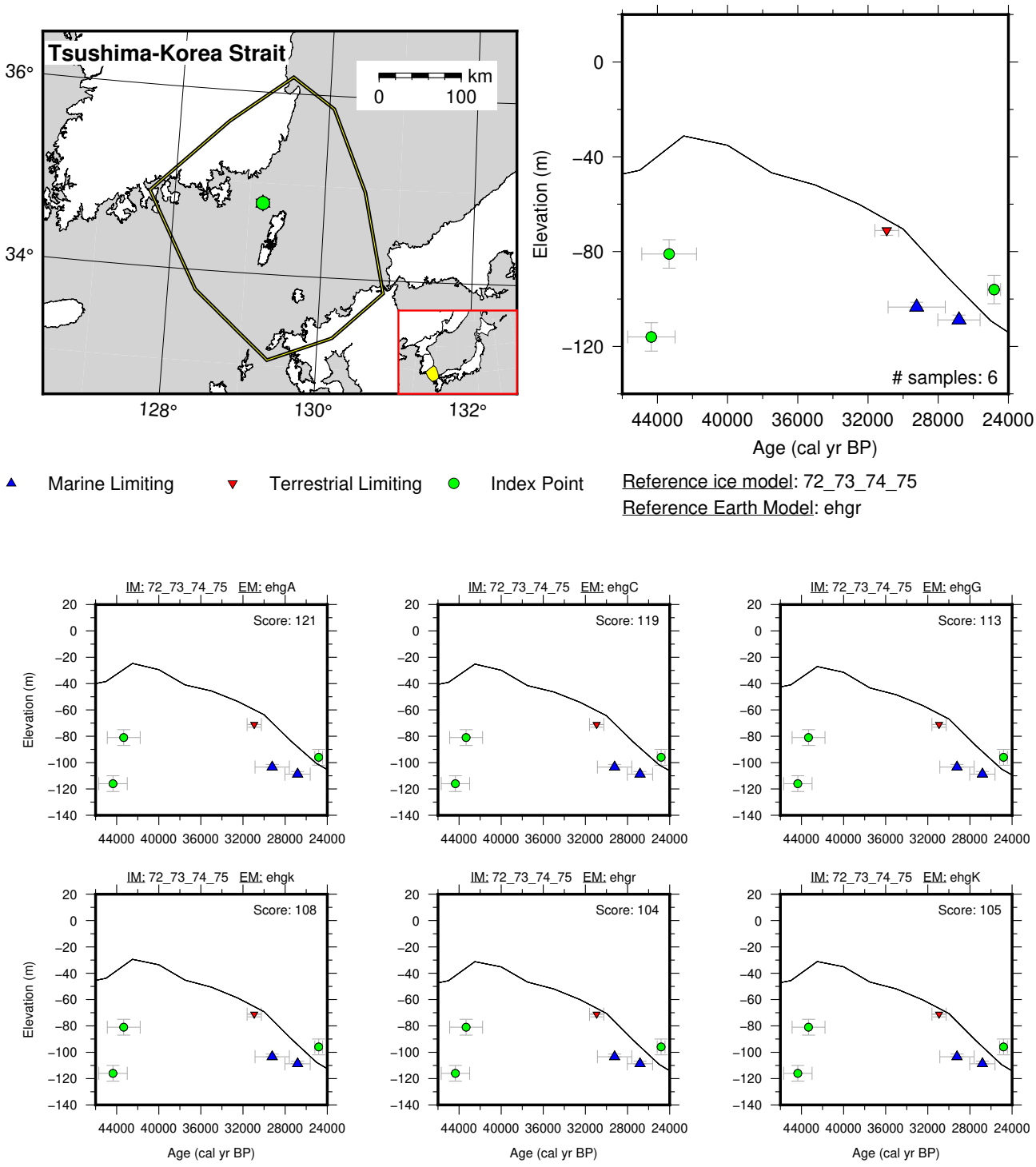


Figure 96: Paleo-sea level and comparison of six models for subregion Sea of Japan - East Sea (MIS3 - MIS4), location Tsushima-Korea Strait.

12.7 Sundaland (MIS3 - MIS4)

References for the data used in each location.

Sunda Shelf: Hanebuth et al. (2003); Steinke et al. (2003)

Vietnam Shelf: Schimanski and Stattegger (2005)

Strait Of Malacca: Geyh et al. (1979)

Mekong Delta: Ta et al. (2002)

Chao Phraya: Tanabe et al. (2003)

Berhala Strait: Geyh et al. (1979)

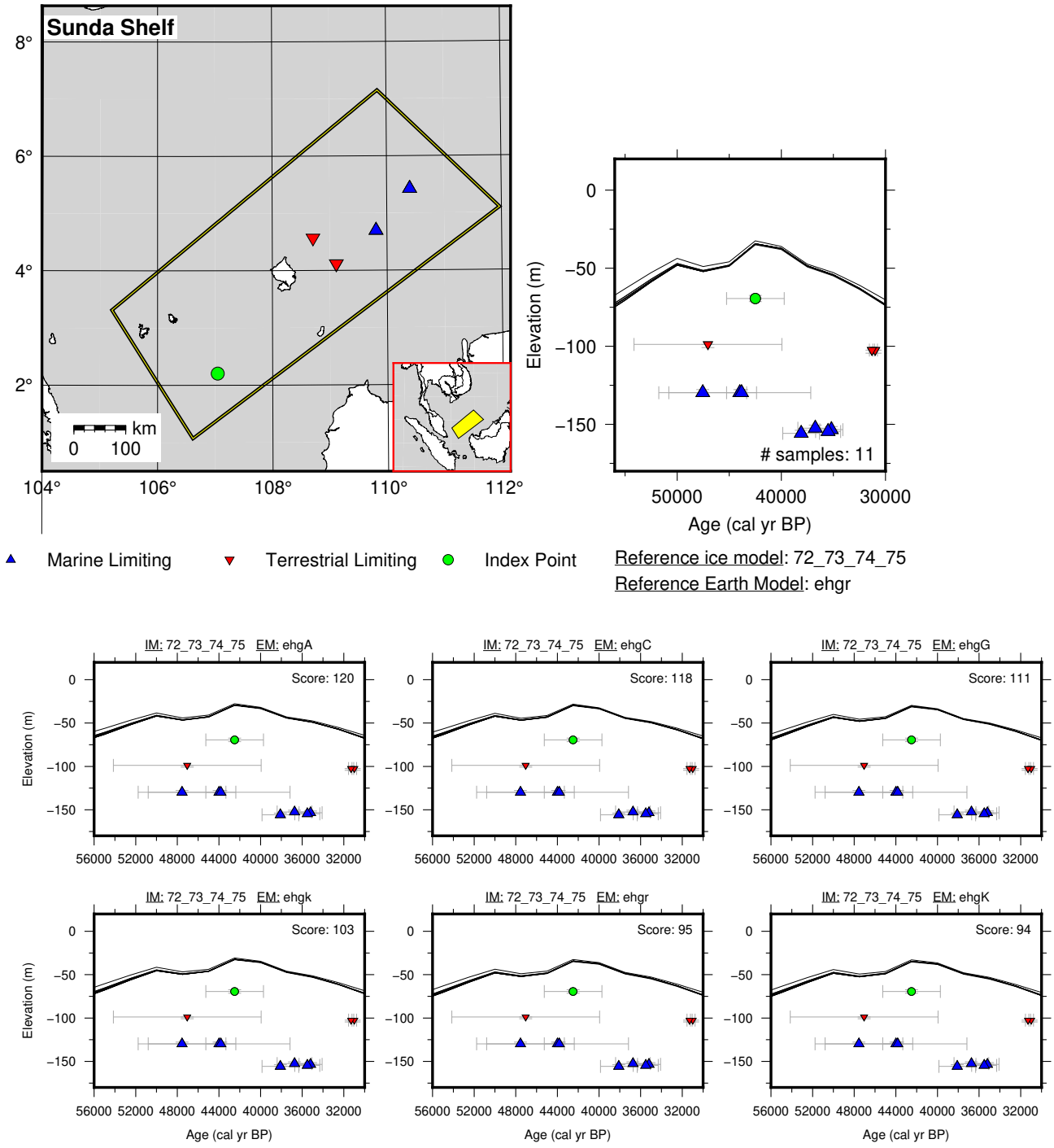


Figure 97: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Sunda Shelf.

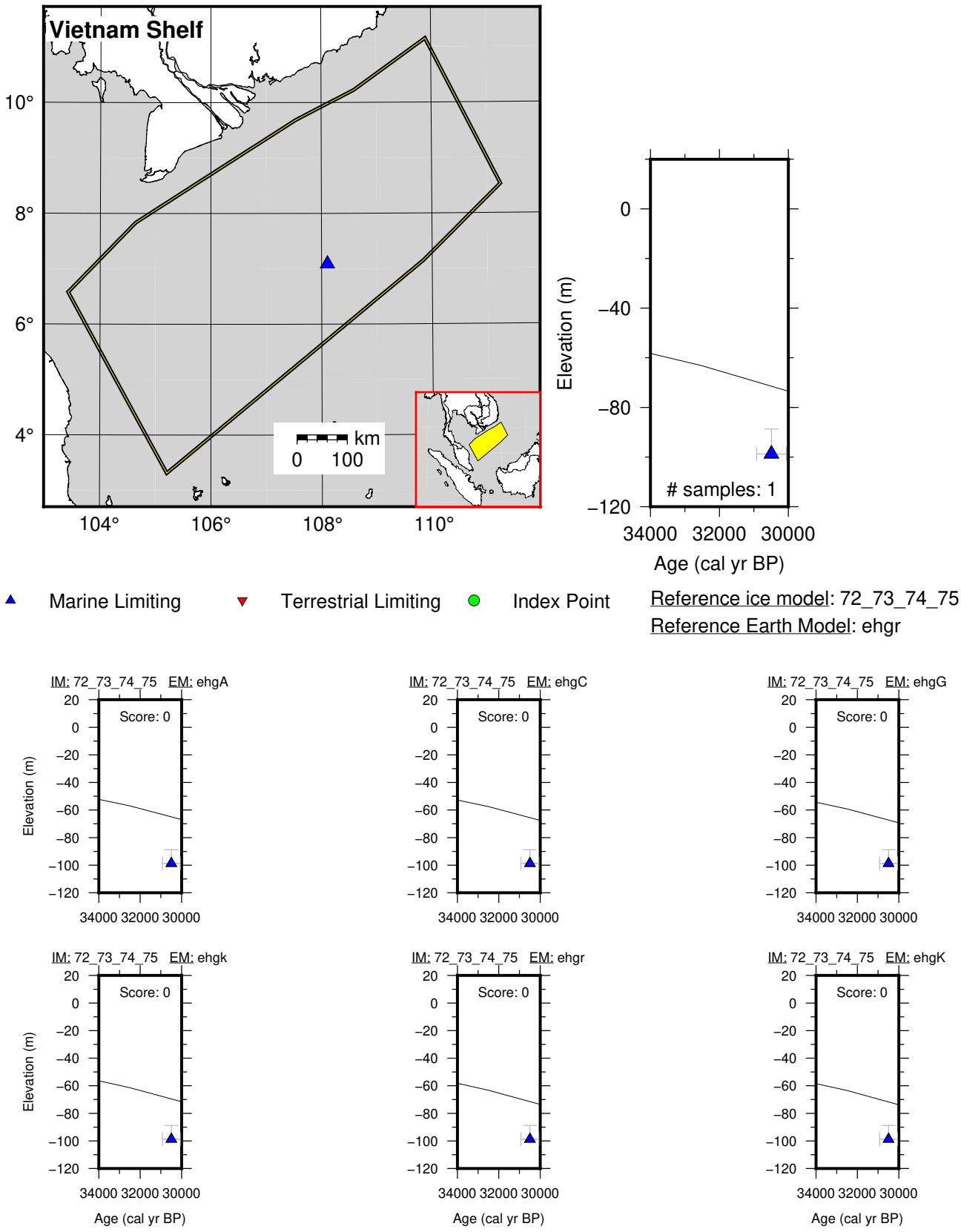


Figure 98: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Vietnam Shelf.

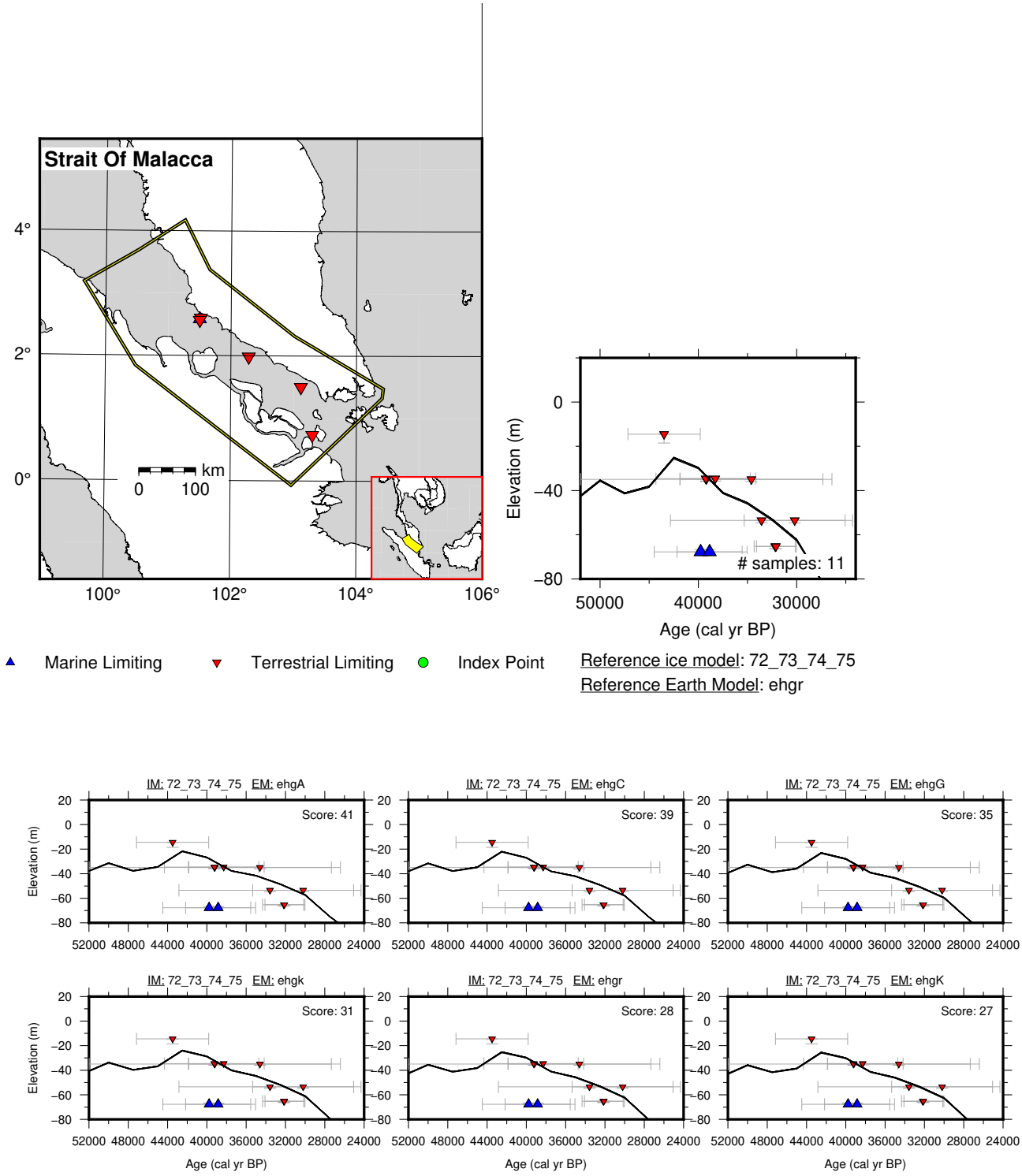
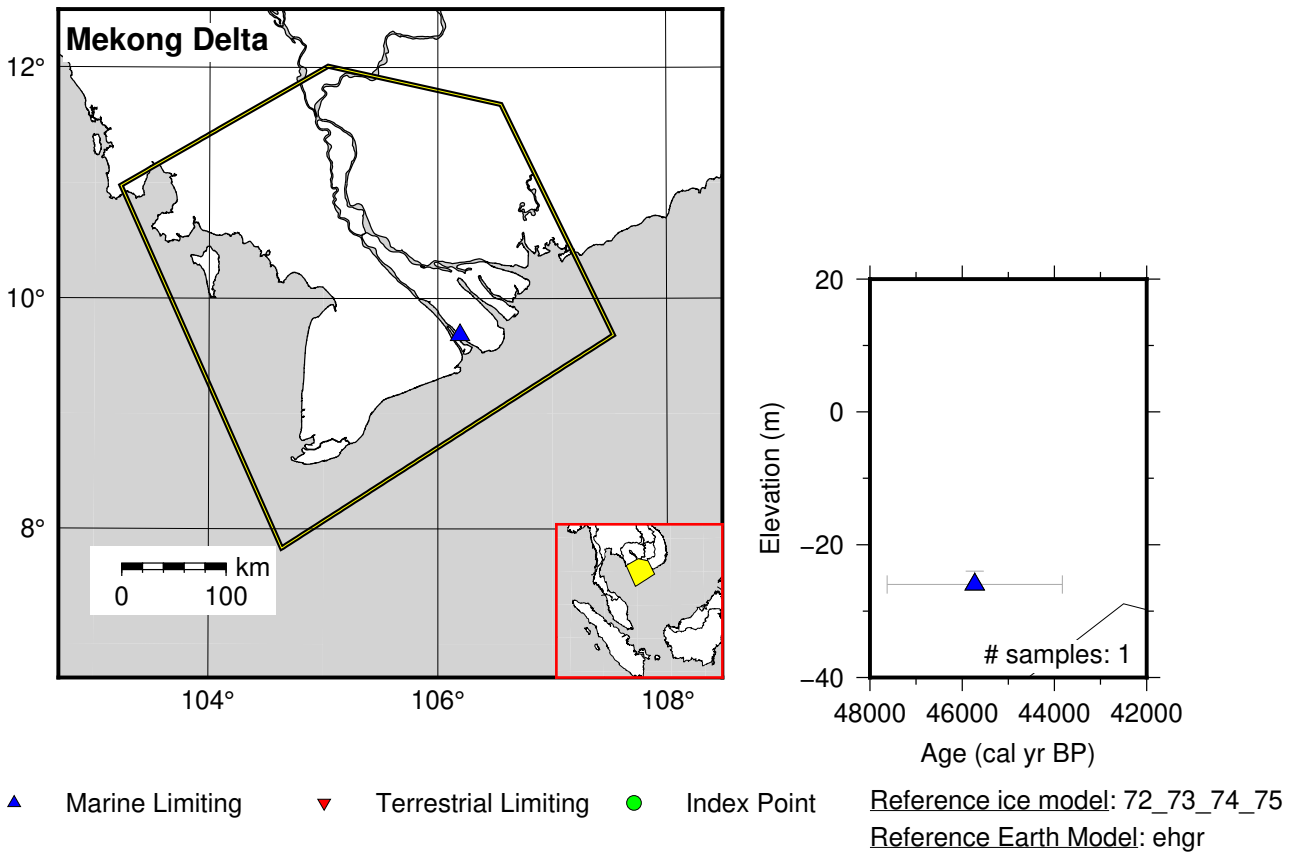


Figure 99: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Strait Of Malacca.



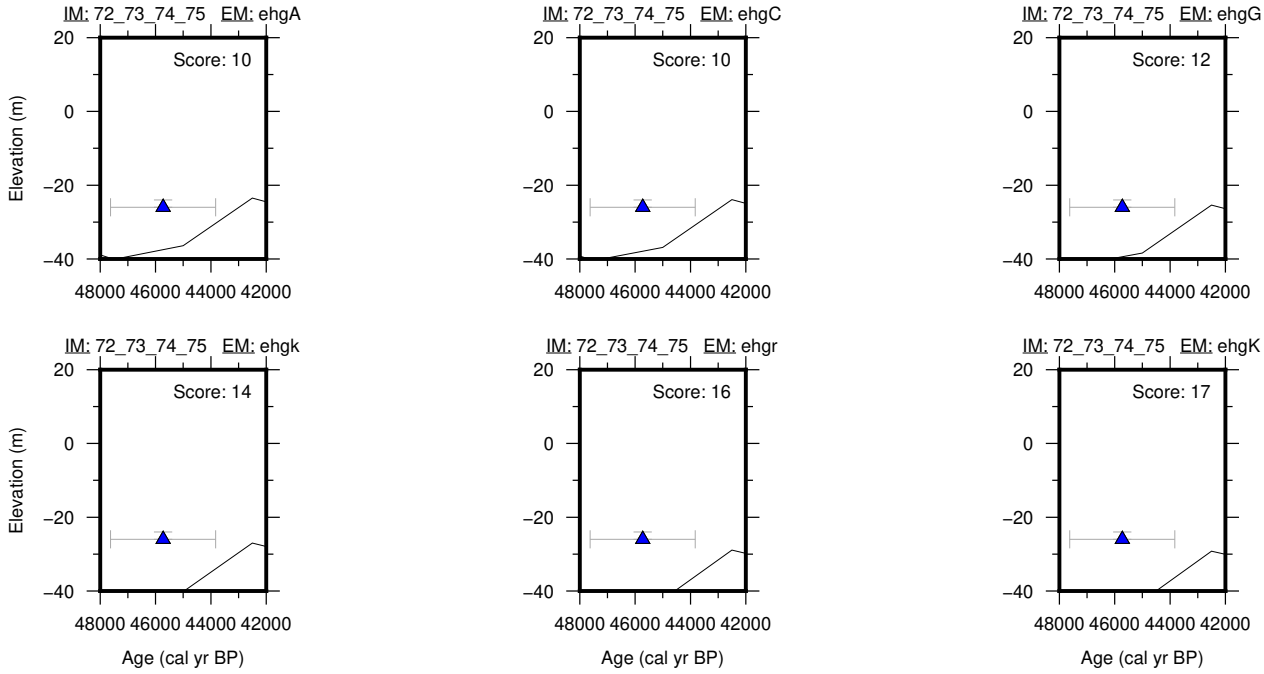


Figure 100: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Mekong Delta.

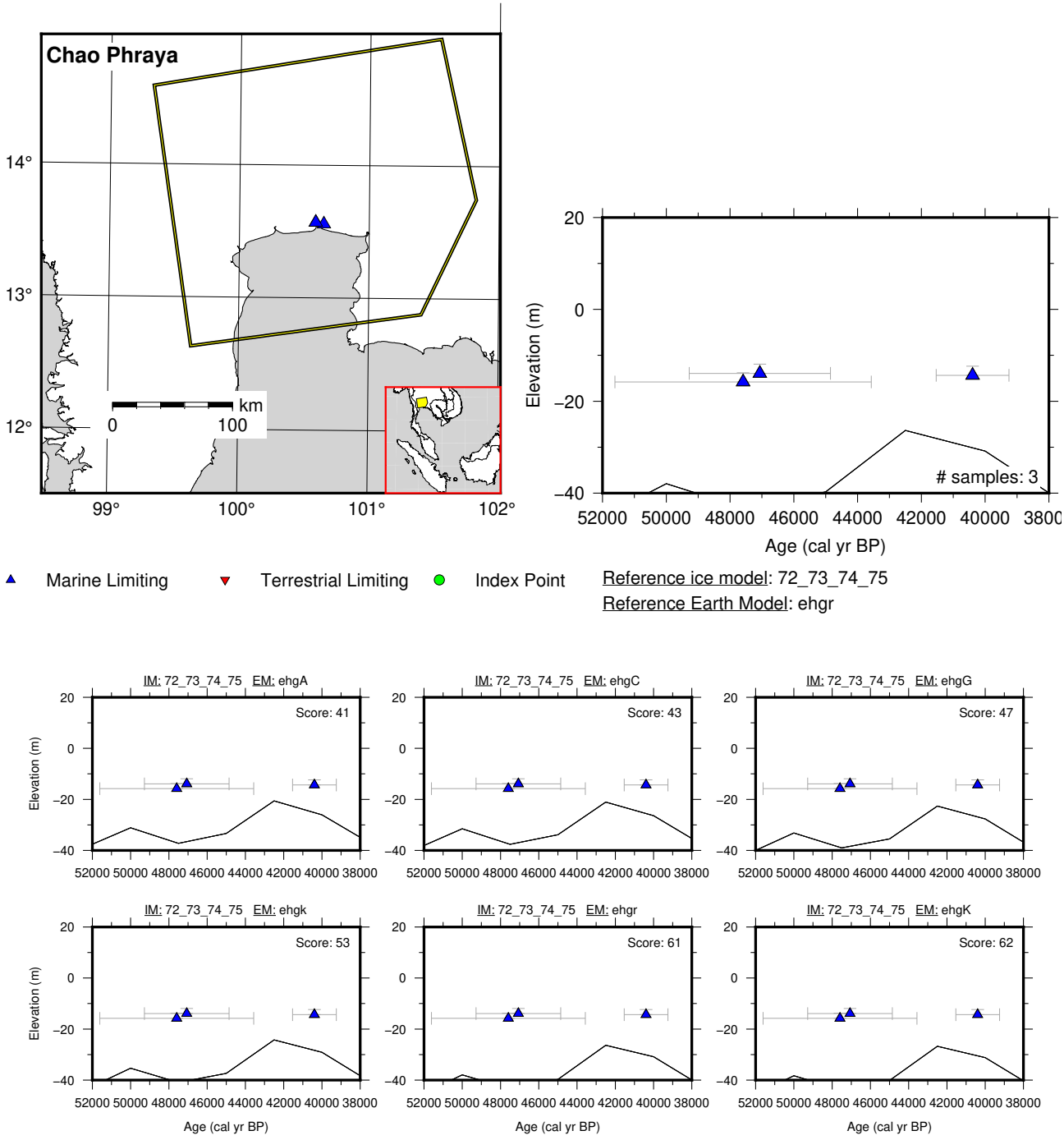


Figure 101: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Chao Phraya.

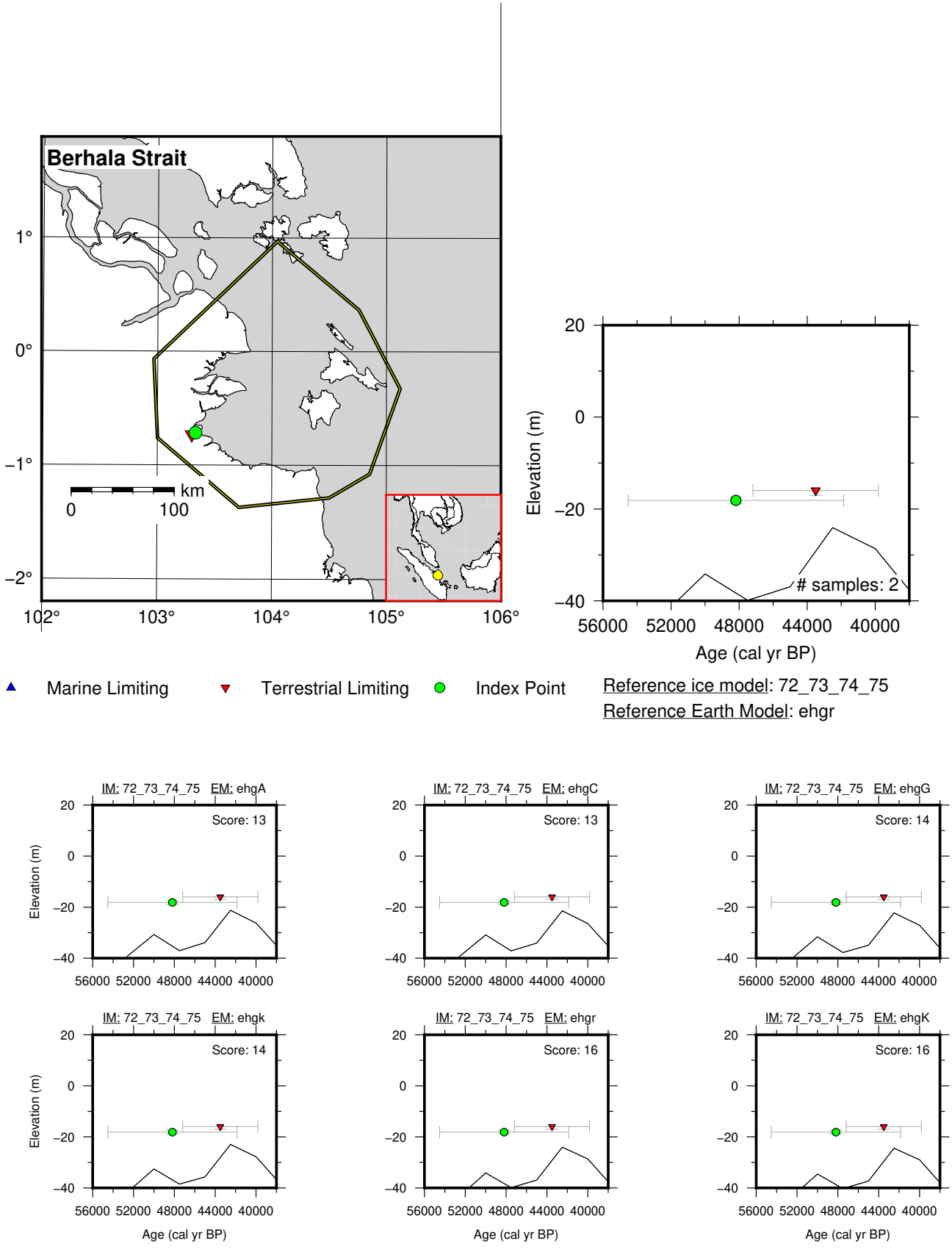


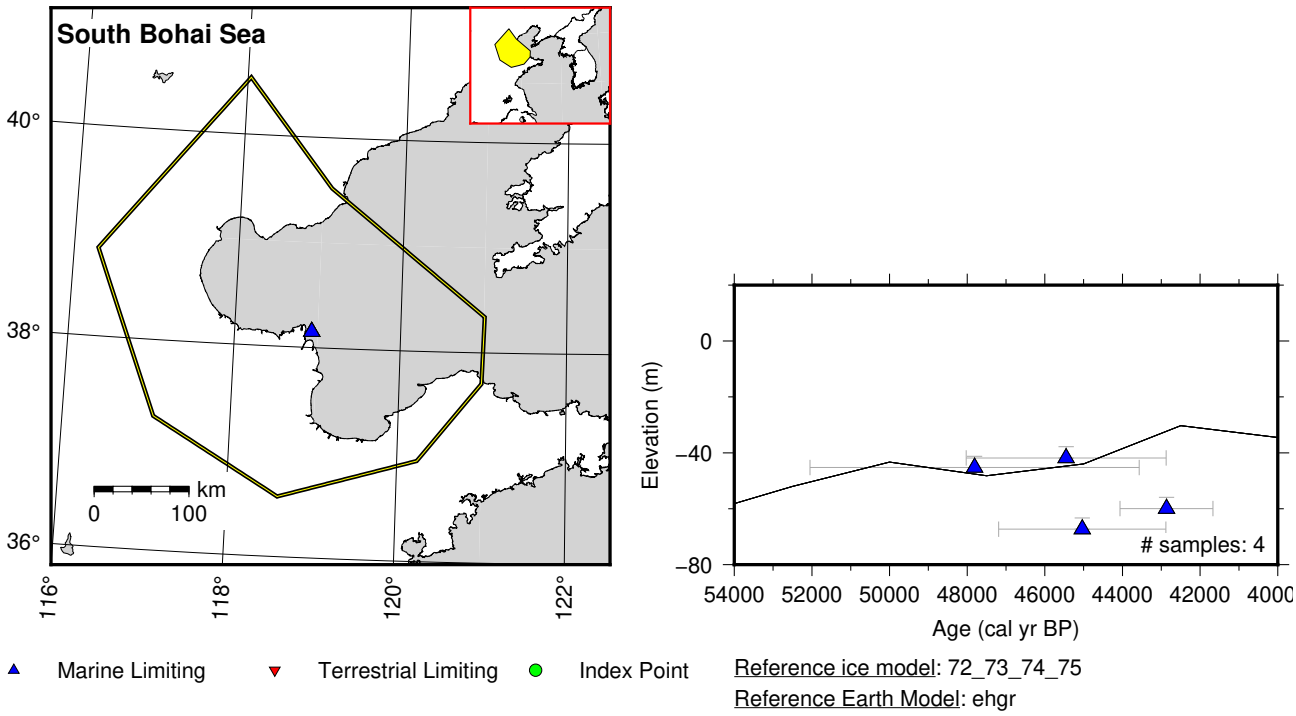
Figure 102: Paleo-sea level and comparison of six models for subregion Sundaland (MIS3 - MIS4), location Berhala Strait.

12.8 Yellow Sea (MIS3 - MIS4)

References for the data used in each location.

South Bohai Sea: Liu et al. (2009); Pico et al. (2016)

Yellow Sea: Liu et al. (2010); Pico et al. (2016); Wang et al. (2014)



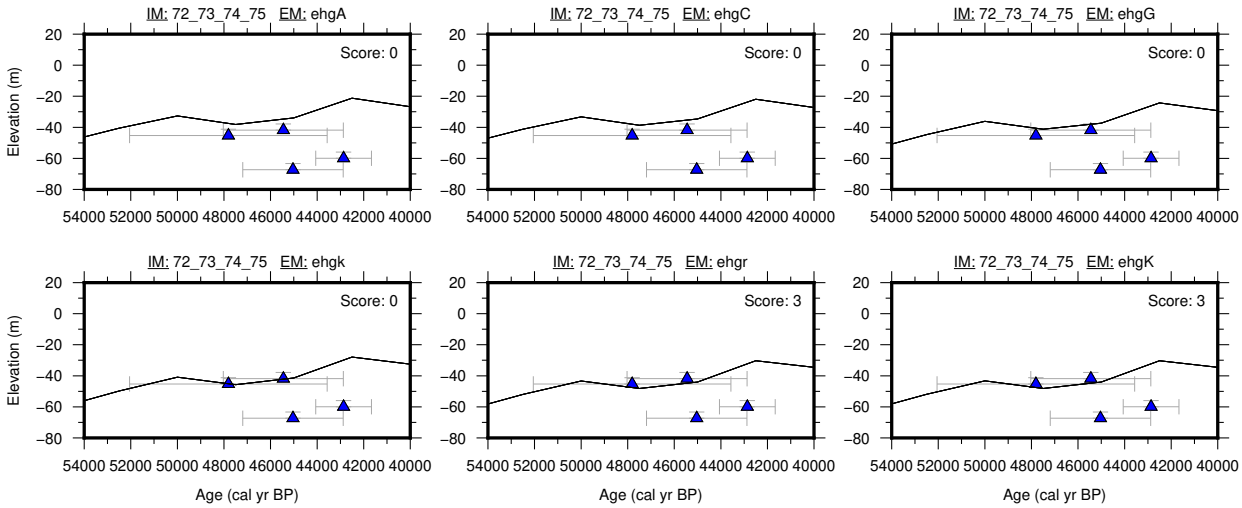


Figure 103: Paleo-sea level and comparison of six models for subregion Yellow Sea (MIS3 - MIS4), location South Bohai Sea.

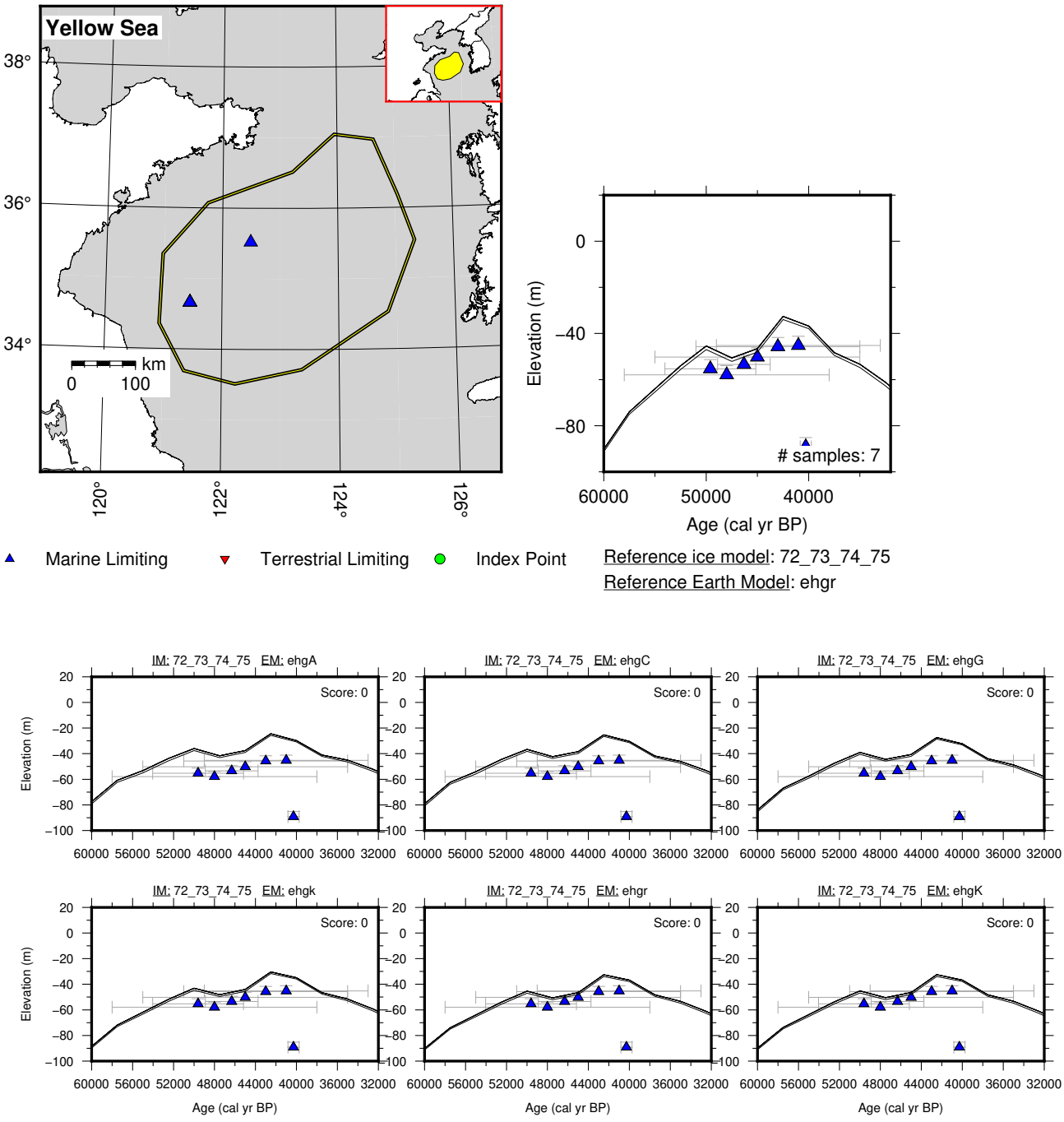


Figure 104: Paleo-sea level and comparison of six models for subregion Yellow Sea (MIS3 - MIS4), location Yellow Sea.

13 North America

13.1 Eastern United States

References for the data used in each location.

Outer Delaware: Belknap (1975); Fletcher et al. (1993); Nikitina et al. (2000); Ramsey and Baxter (1996)

Inner Delaware: Belknap (1975); Kraft (1976); Leorri et al. (2006); Marx (1981); Nikitina et al. (2000); Ramsey and Baxter (1996); Rogers and Pizzuto (1994)

Inner Chesapeake: Cinquemani et al. (1982); Colman et al. (2002)

Eastern Shore: Engelhart et al. (2009); Finkelstein and Ferland (1987); Newman and Rusnak (1965); van de Plassche (1990)

Northern North Carolina: Emery et al. (1967); Horton et al. (2009); Kemp (2009); Mallinson et al. (2005); Sears (1973); Stanton (2008)

Southern North Carolina: Cinquemani et al. (1982); Culver et al. (2007); Field et al. (1979); Horton et al. (2009); Kemp (2009); Spaur and Snyder (1999)

Northern South Carolina: Cinquemani et al. (1982); Gayes et al. (1992)

Southern South Carolina: Cinquemani et al. (1982)

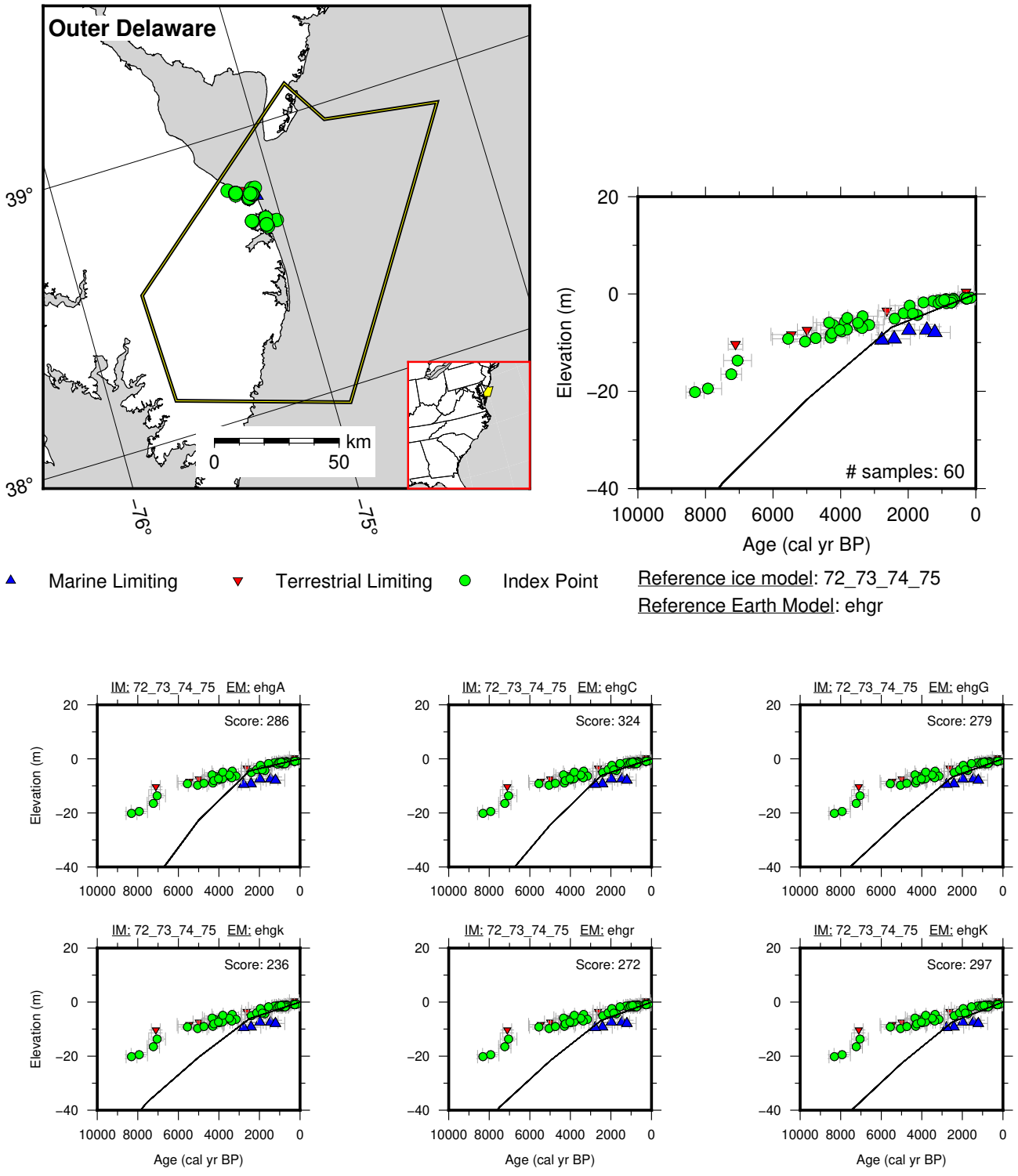


Figure 105: Paleo-sea level and comparison of six models for subregion Eastern United States, location Outer Delaware.

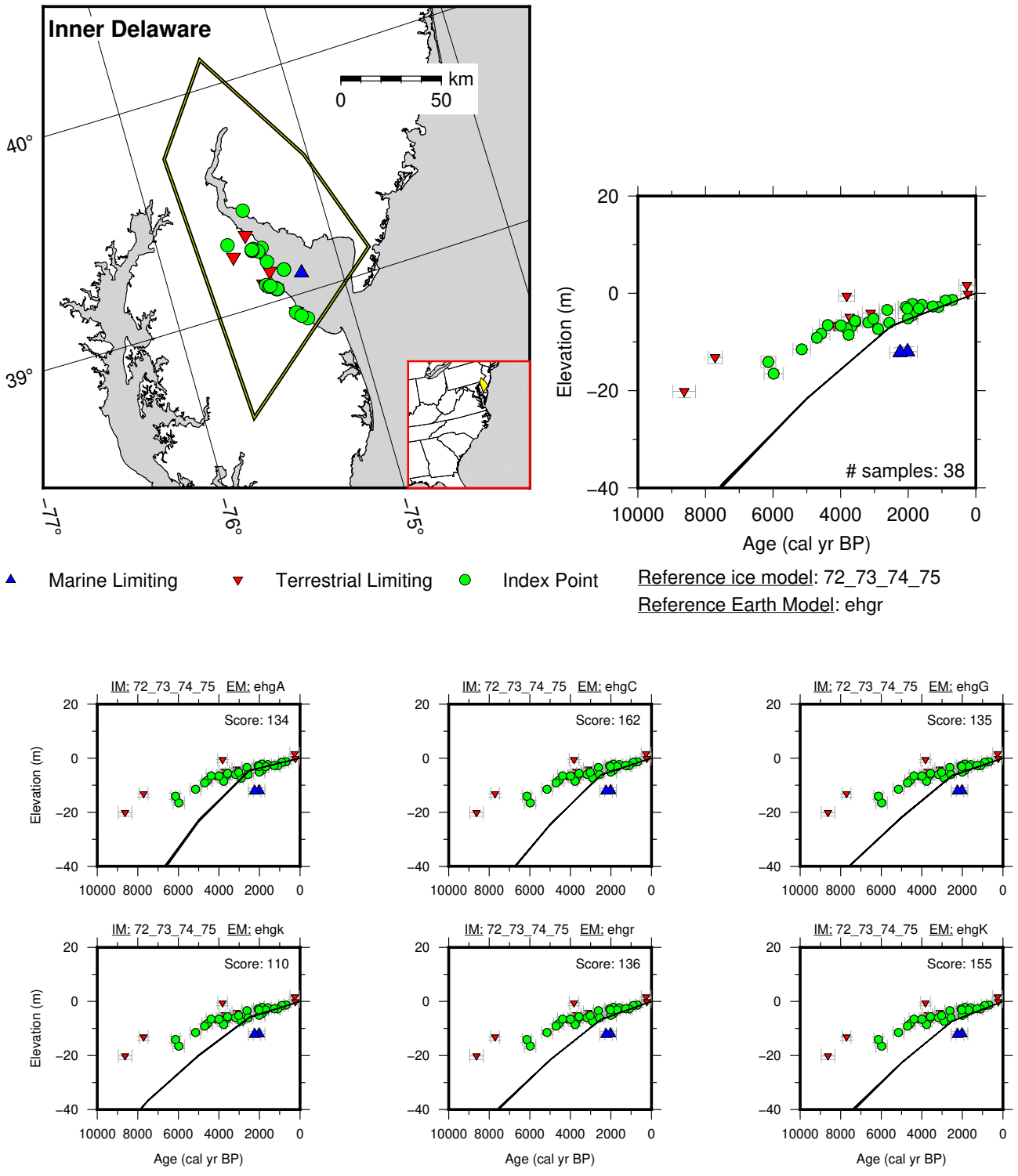


Figure 106: Paleo-sea level and comparison of six models for subregion Eastern United States, location Inner Delaware.

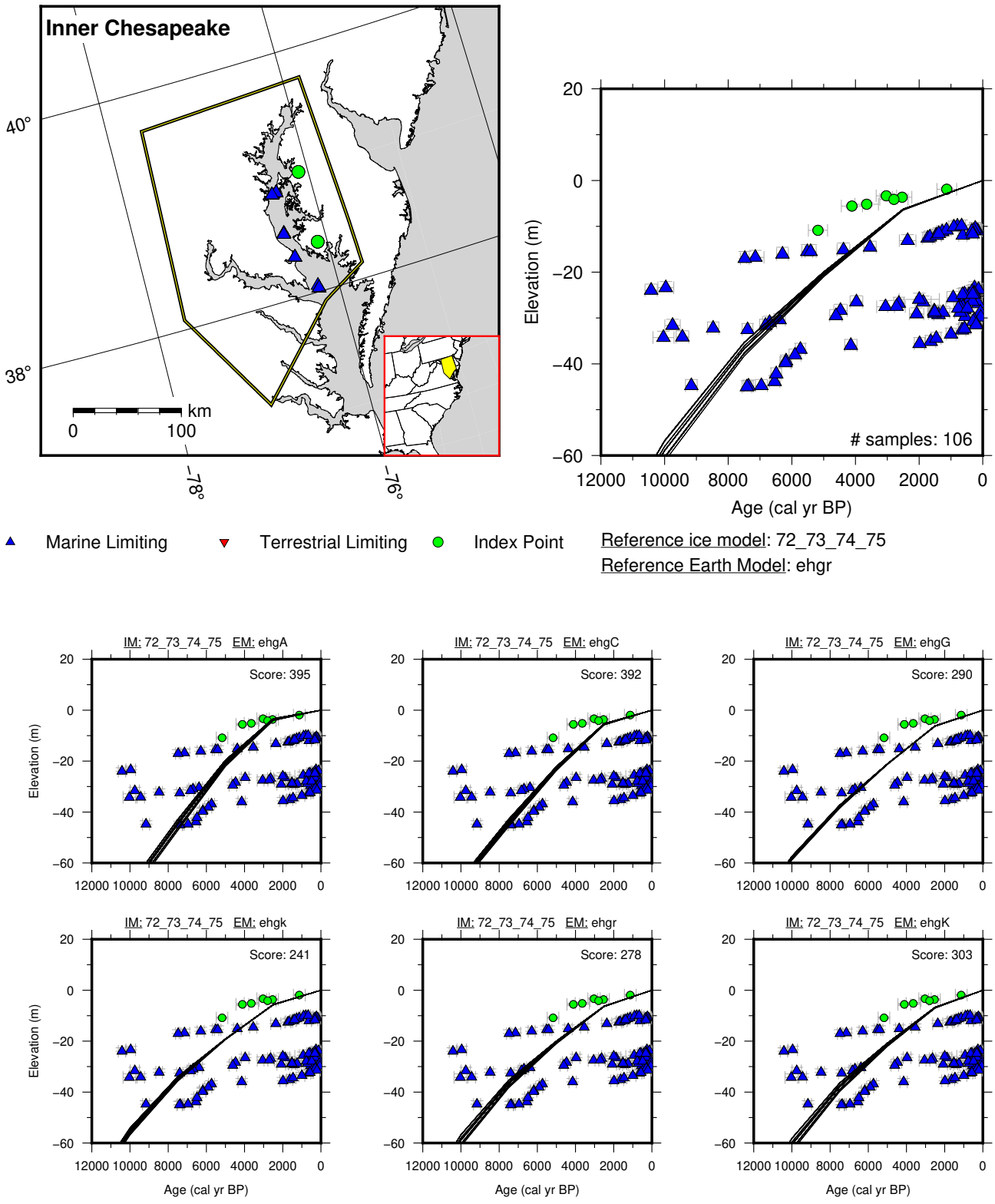
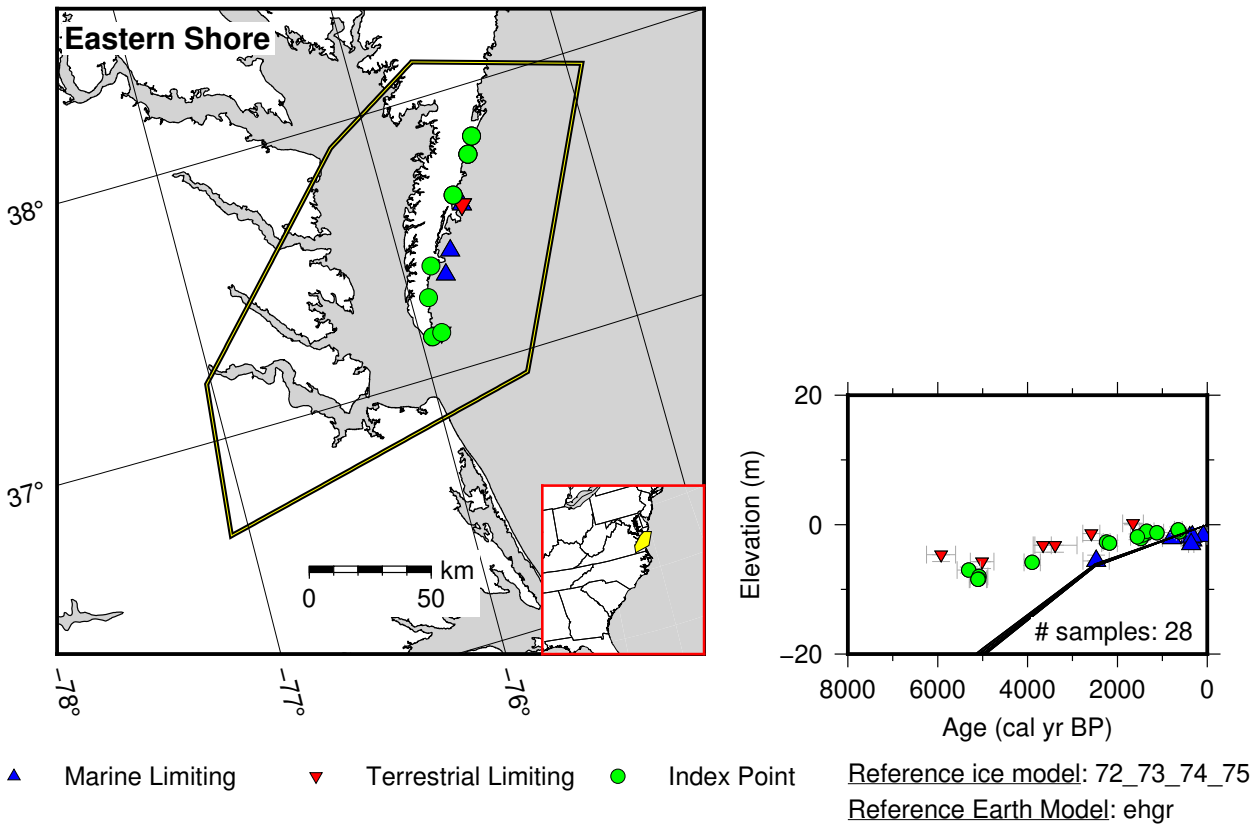


Figure 107: Paleo-sea level and comparison of six models for subregion Eastern United States, location Inner Chesapeake.



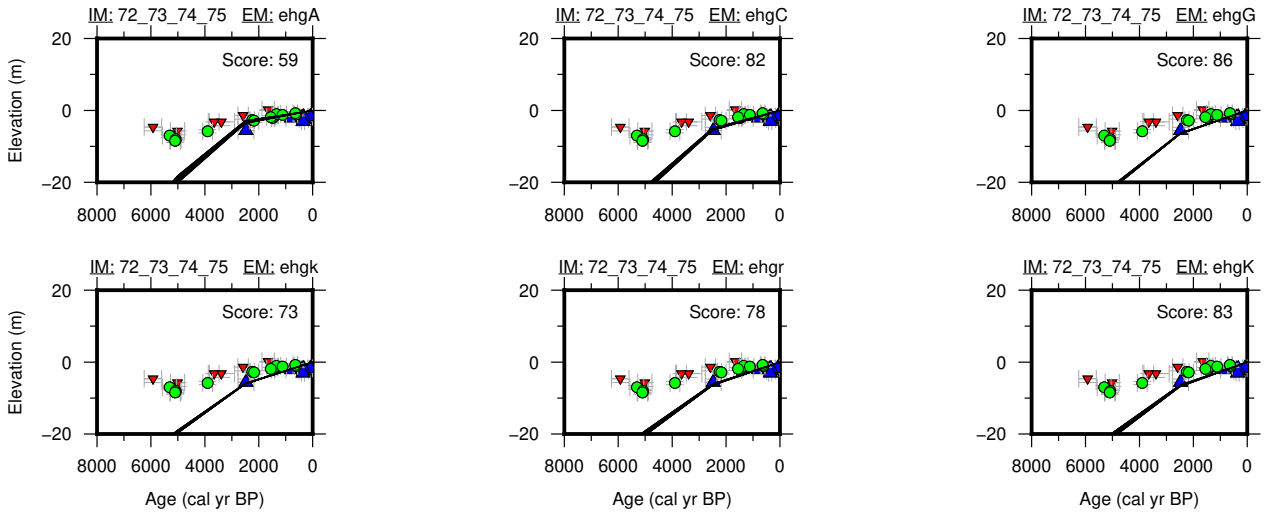


Figure 108: Paleo-sea level and comparison of six models for subregion Eastern United States, location Eastern Shore.

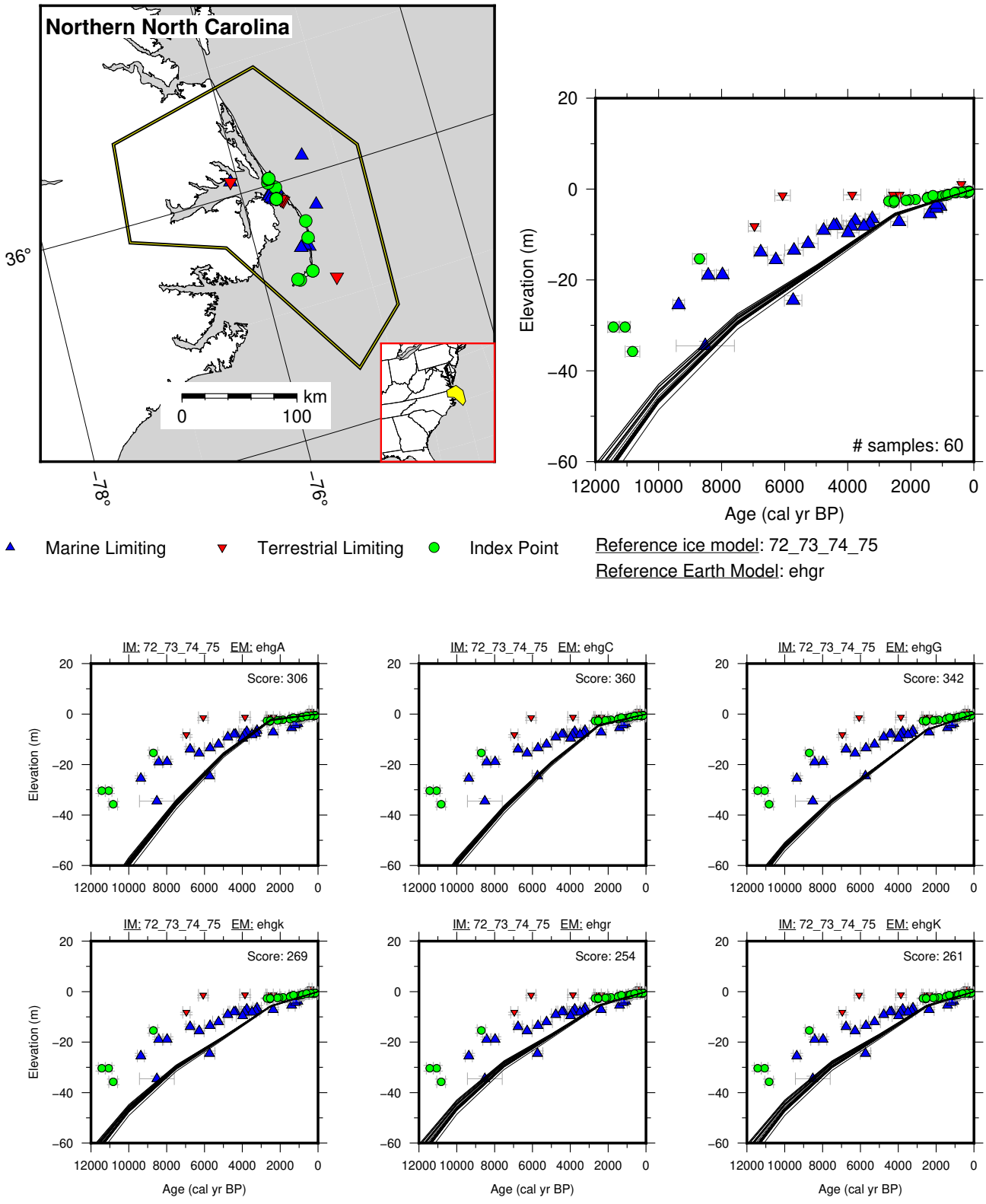


Figure 109: Paleo-sea level and comparison of six models for subregion Eastern United States, location Northern North Carolina.

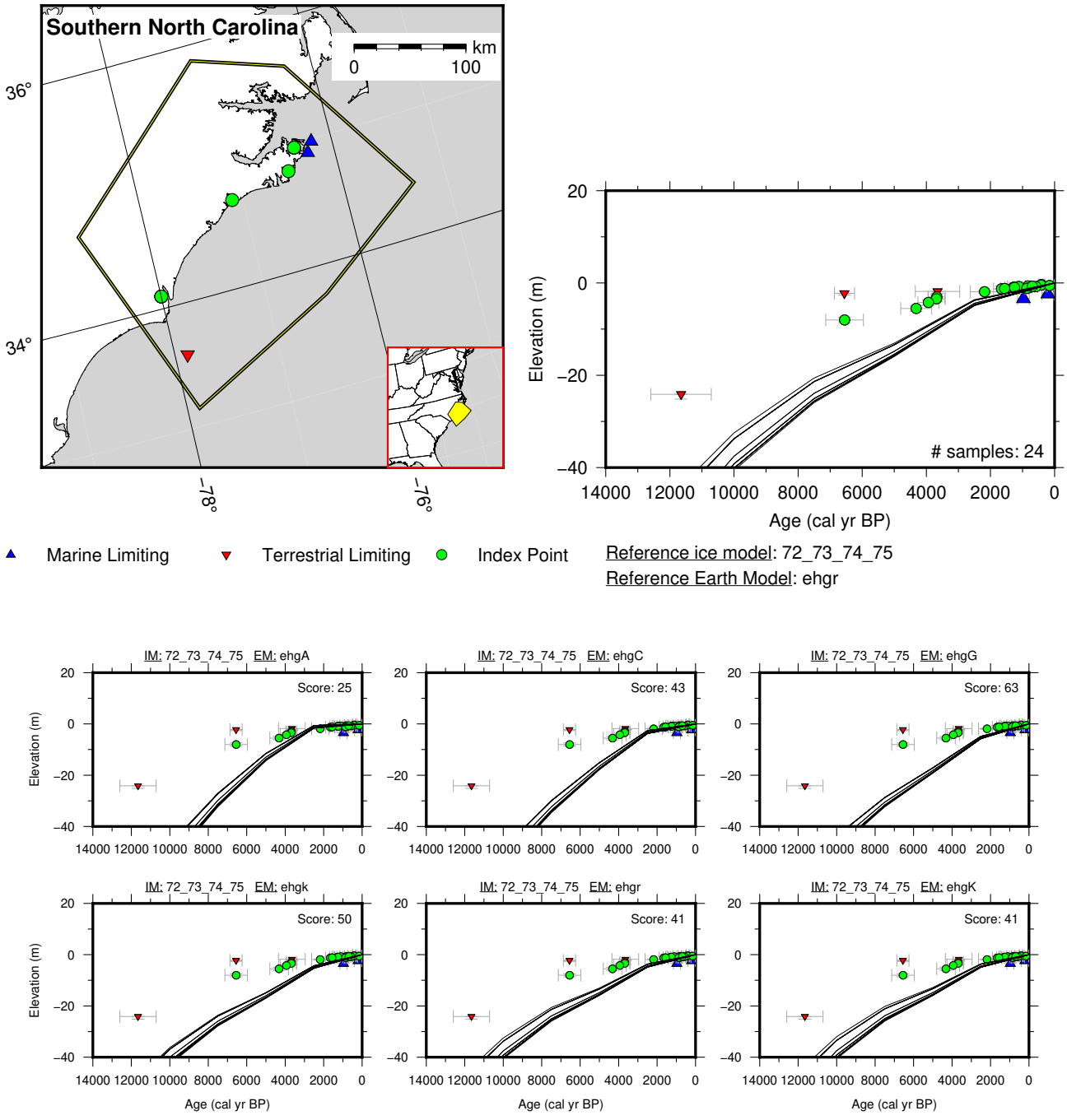


Figure 110: Paleo-sea level and comparison of six models for subregion Eastern United States, location Southern North Carolina.

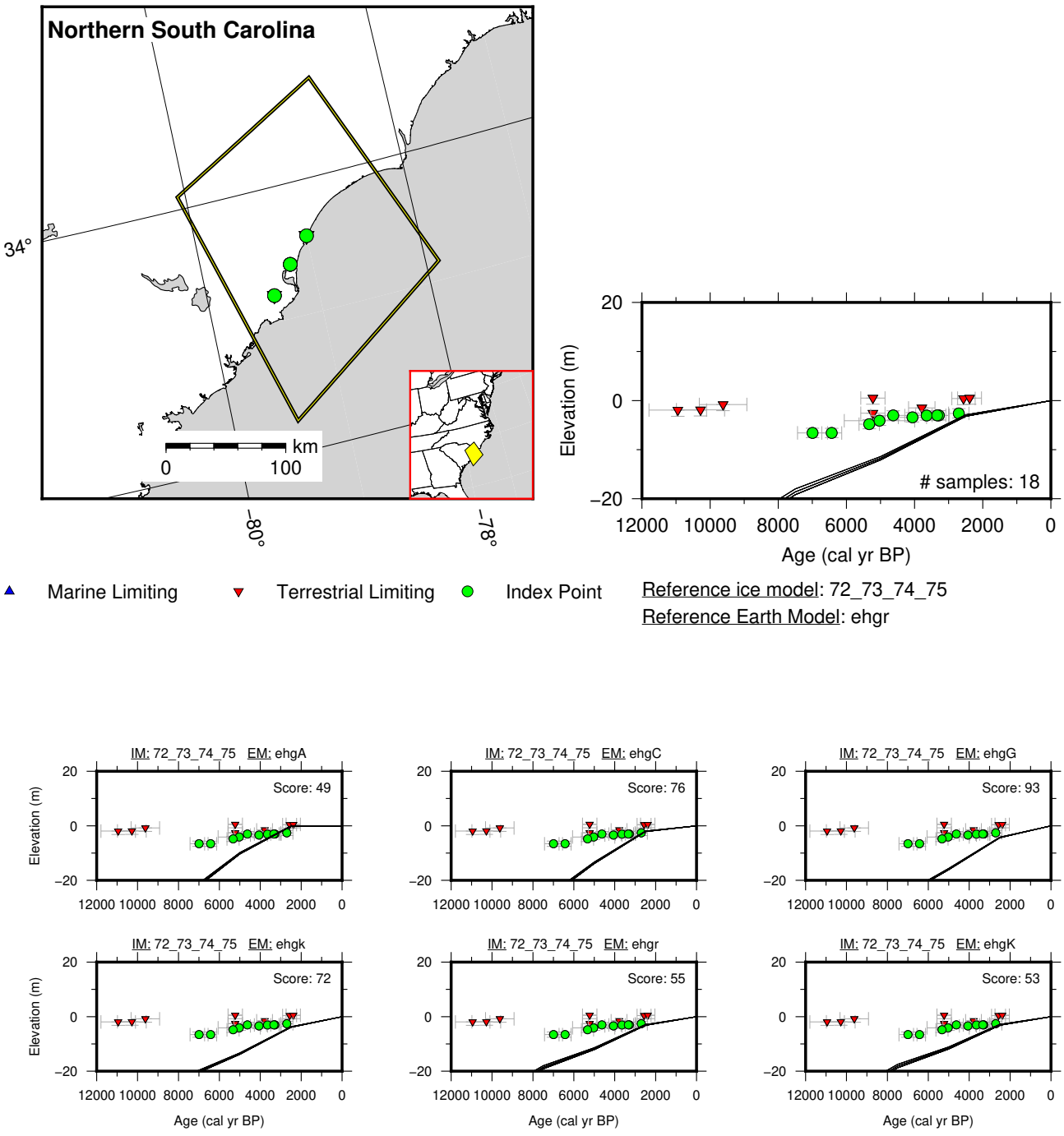
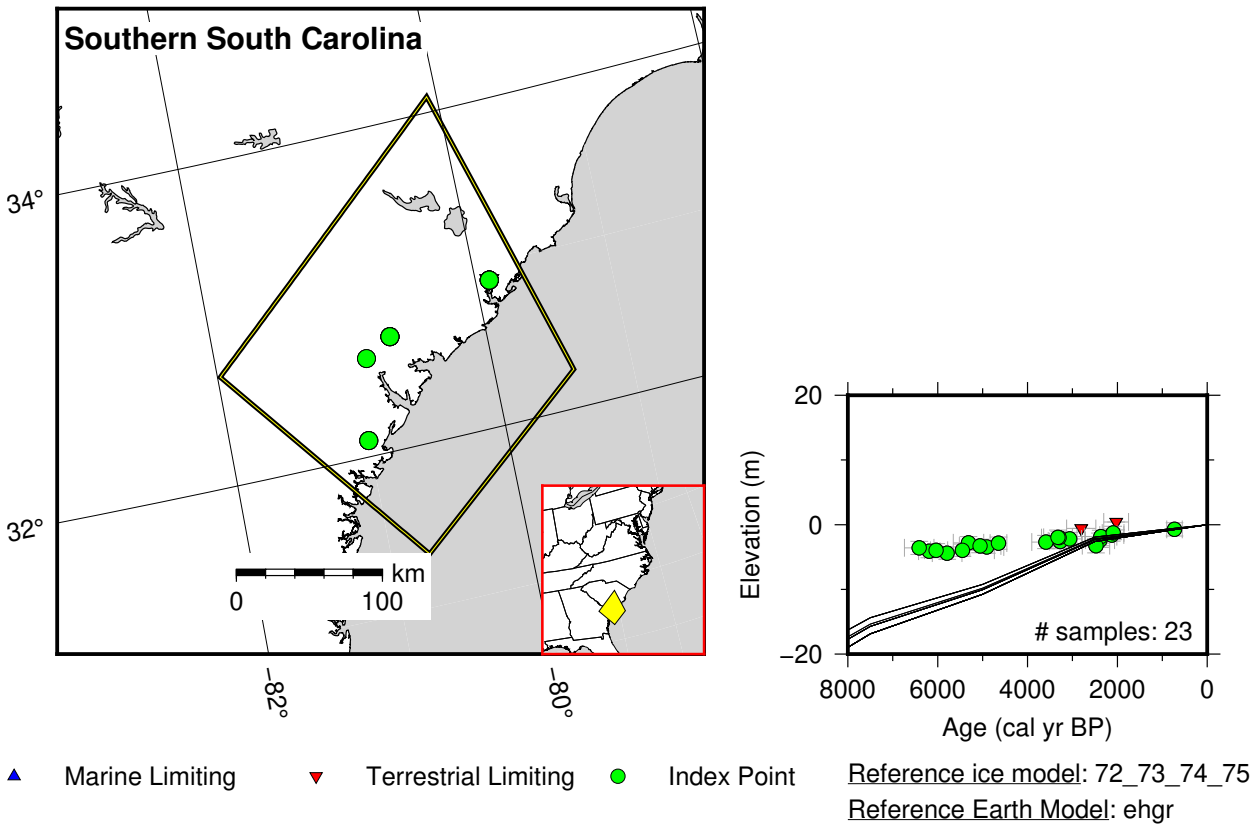


Figure 111: Paleo-sea level and comparison of six models for subregion Eastern United States, location Northern South Carolina.



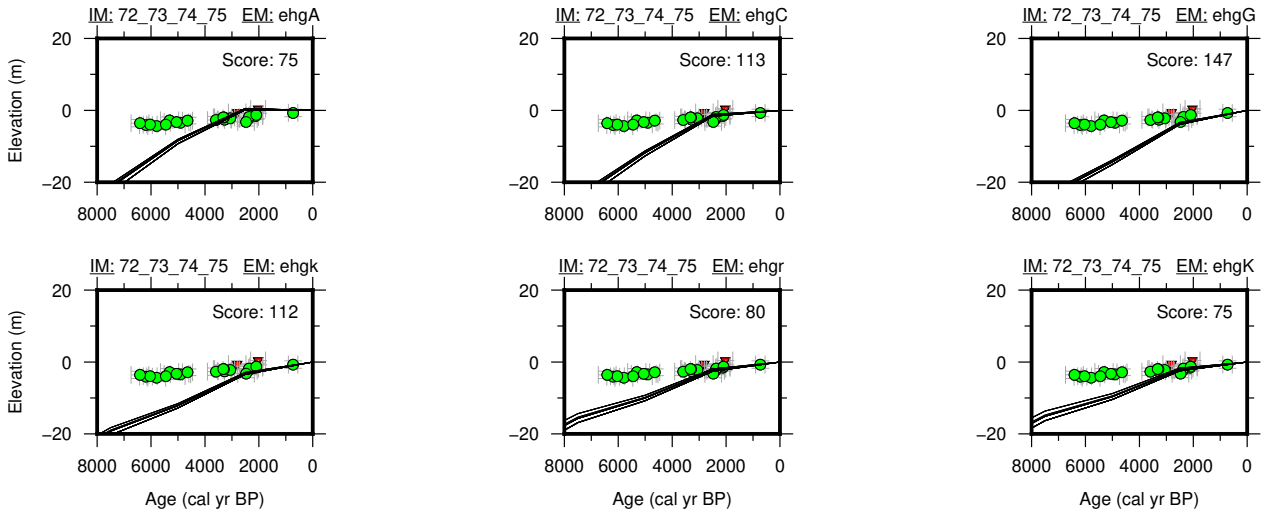


Figure 112: Paleo-sea level and comparison of six models for subregion Eastern United States, location Southern South Carolina.

13.2 Gulf of St Lawrence

References for the data used in each location.

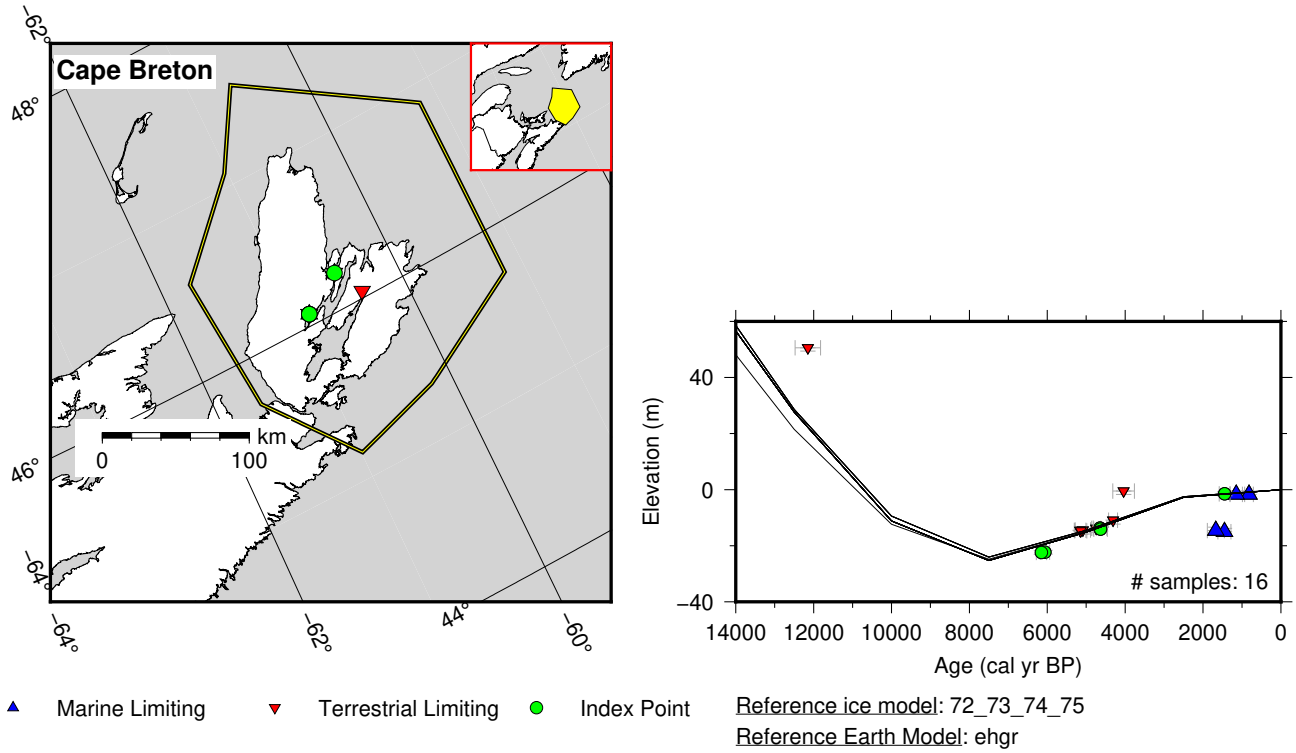
Cape Breton: Blake and Lowdon (1976); Miller and Livingstone (1993); Shaw et al. (2009)

Magdalen Islands: Barnett et al. (2017); Dredge et al. (1992); Rémillard et al. (2016, 2017)

Prince Edward Island: Kranck (1972); McCallum and Wittenberg (1965); McNeely and Brennan (2005); Ogden and Hart (1976); Scott et al. (1981, 1987); Stea and Mott (1989); Walton et al. (1961)

Chaleur Bay: McNeely and Brennan (2005); Rampton et al. (1984)

Anticosti Island: Dubois et al. (1988); Lavoie and Filion (2001); Painchaud et al. (1984)



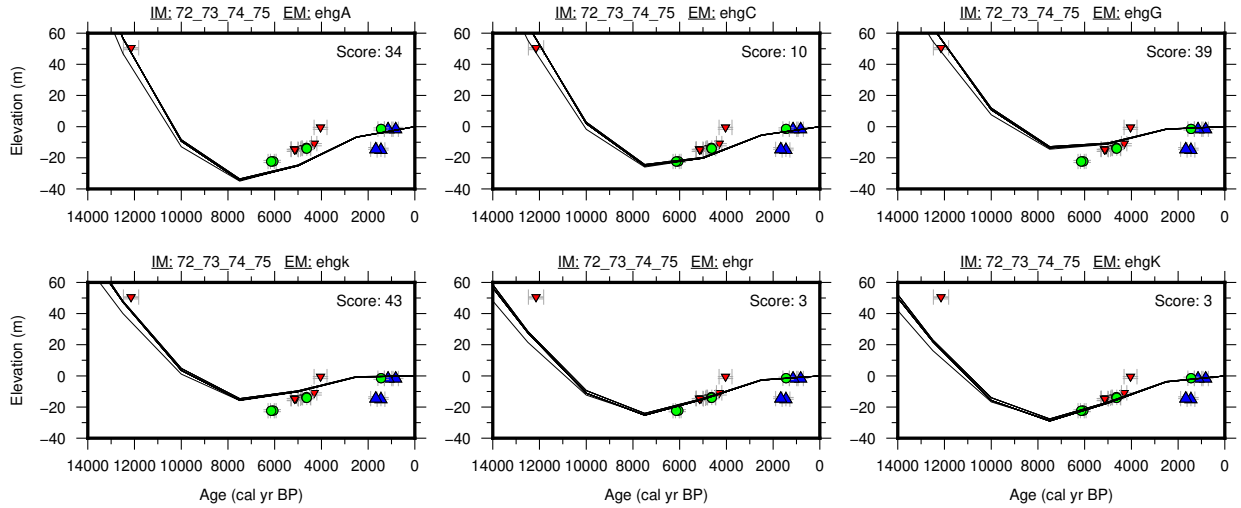


Figure 113: Paleo-sea level and comparison of six models for subregion Gulf of St Lawrence, location Cape Breton.

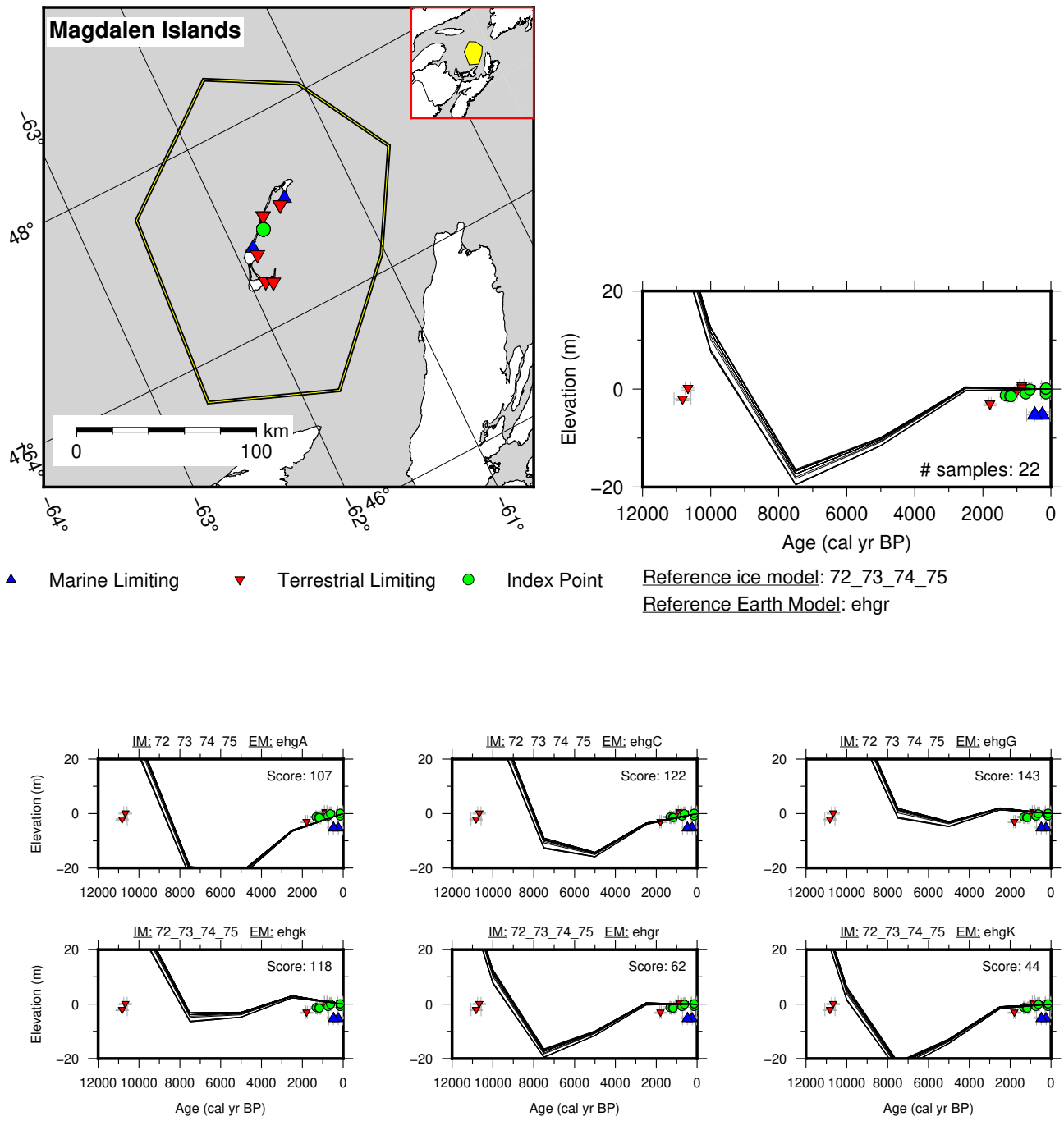


Figure 114: Paleo-sea level and comparison of six models for subregion Gulf of St Lawrence, location Magdalen Islands.

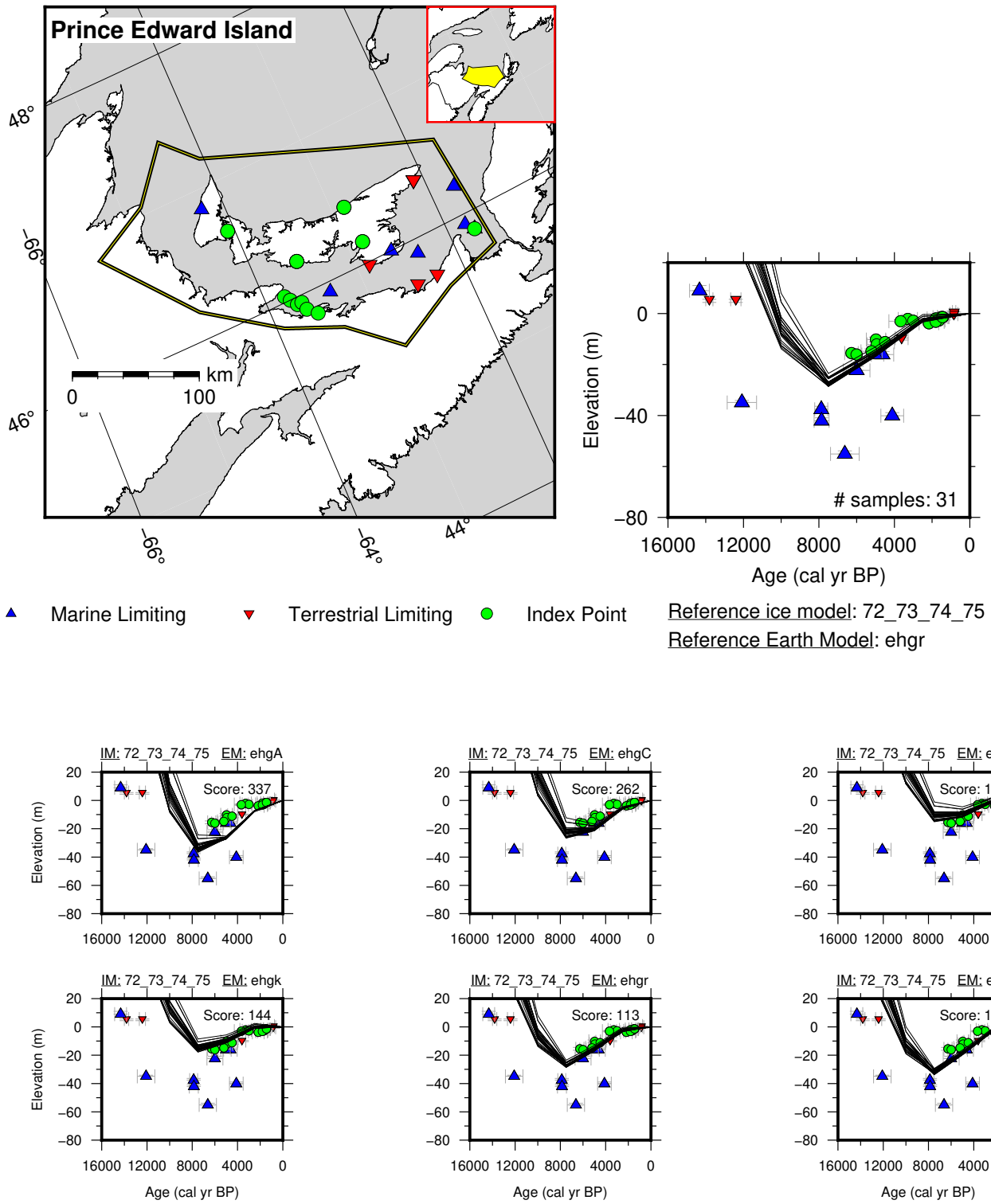


Figure 115: Paleo-sea level and comparison of six models for subregion Gulf of St Lawrence, location Prince Edward Island.

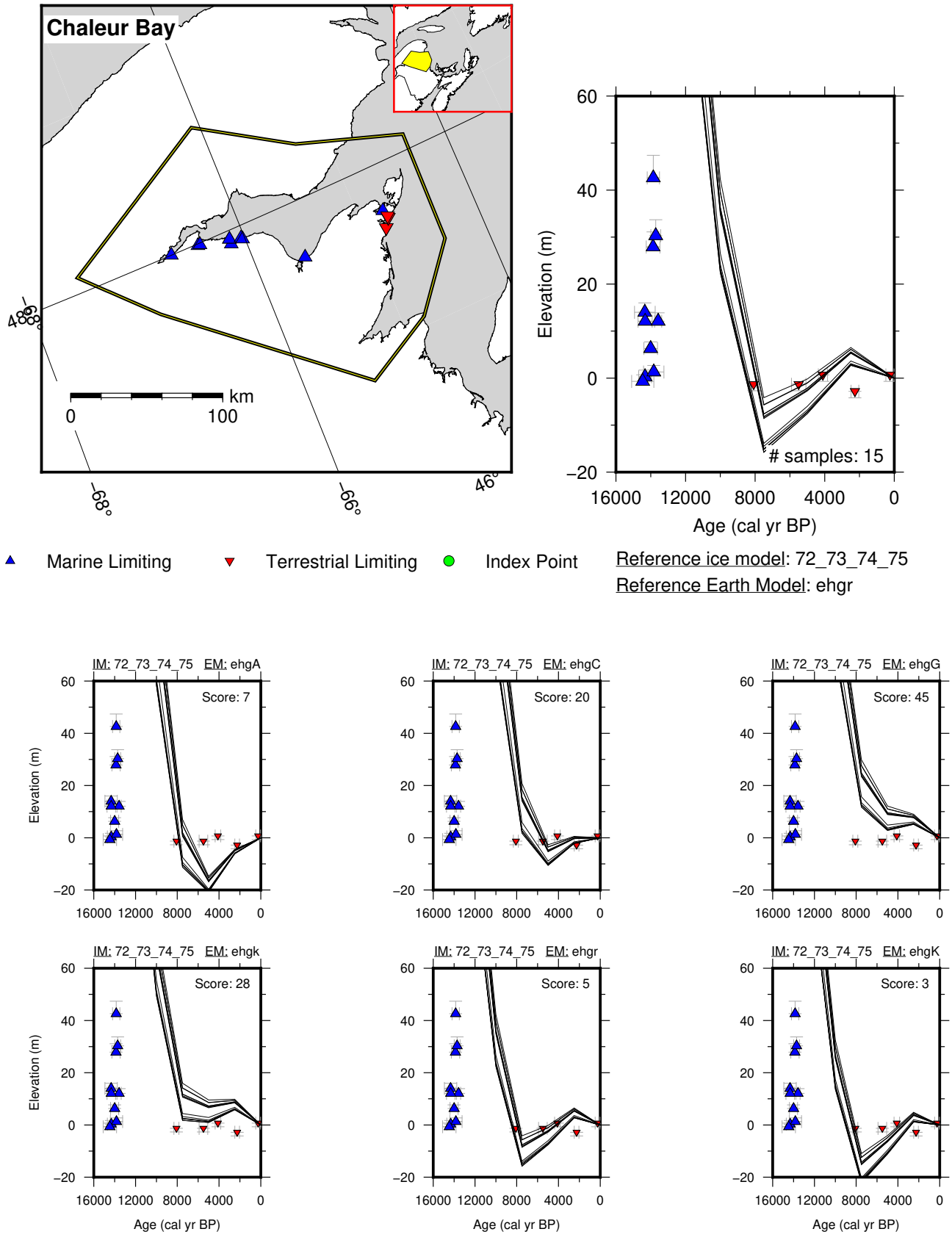


Figure 116: Paleo-sea level and comparison of six models for subregion Gulf of St Lawrence, location Chaleur Bay.

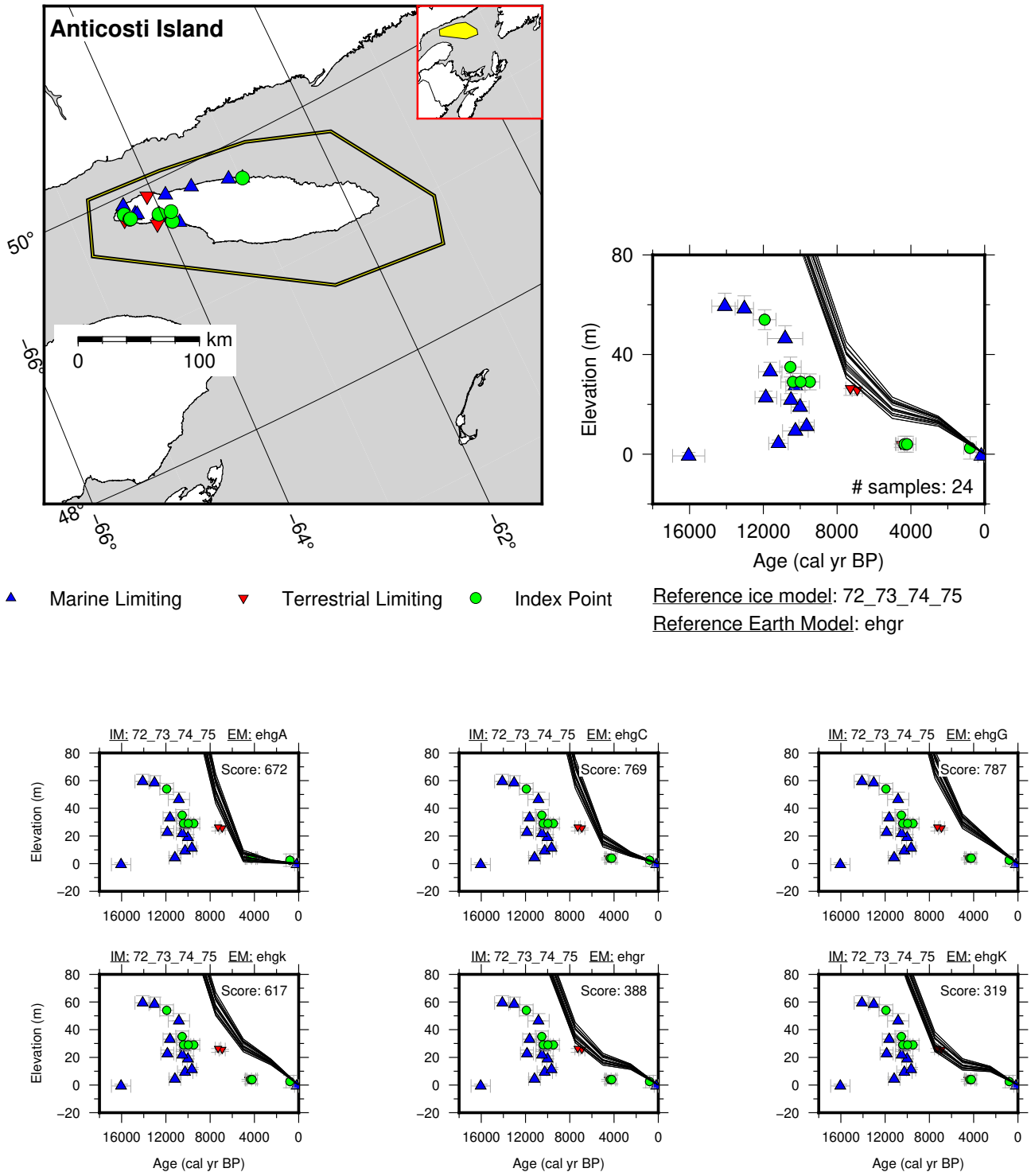


Figure 117: Paleo-sea level and comparison of six models for subregion Gulf of St Lawrence, location Anticosti Island.

13.3 Hudson Bay

References for the data used in each location.

Kivalliq: Aylsworth et al. (1981); Blake (1983, 1986, 1988); Dyck and Fyles (1962); Dyck et al. (1966); Lowdon and Blake (1970); Lowdon and Blake (1979); McNeely and Atkinson (1995); Morrison (1989); Ridler (1974); Rutherford et al. (1973, 1979); Simon et al. (2014); Walton et al. (1961)

Churchill: Anderson and Hodgetts (2007); Andrews and Falconer (1969); Blake (1982, 1988); Dyck and Fyles (1964); Hodgetts (2007); Kuhry (2008); Lowdon and Blake (1973); Lowdon et al. (1971); Meyer (1970); Morlan et al. (2000); Nash (1972); Wagner (1967)

West James Bay: Bunbury et al. (2012); Dyck et al. (1965); Dyke and Peltier (2000a); Glaser et al. (2004); McAndrews et al. (1982); McNeely and Brennan (2005); Vogel and Waterbolk (1972); Webber et al. (1970)

East James Bay: Beaulieu-Audy et al. (2009); Farrand (1962); Hardy (1976); Pendea et al. (2010)

Umiujaq: Allard and Seguin (1985); Allard and Tremblay (1983a,b); Cayer (2003); Filion et al. (1991); Gajewski and Garralla (1992); Hillaire-Marcel (1976); Lajeunesse and Allard (2003); Lamarre et al. (2012); Lavoie et al. (2012); Lowdon and Blake (1980); Lowdon et al. (1967); McNeely (2006); Plumet (1974); Saulnier-Talbot and Pienitz (2001); Walcott and Craig (1975)

Inukjuak: Andrews and Falconer (1969); Andrews and Short (1983); Buckley and Willis (1970); Harington (2003); Lauriol and Gray (1997); Lemieux et al. (2011); Lowdon and Blake (1968); Saint-Laurent and Filion (1992); Wagner (1967)

Ivujivik: Daigneault (2008); Harington (2003); Martindale et al. (2020); Matthews (1966, 1967); McNeely and Brennan (2005); Wagner (1967)

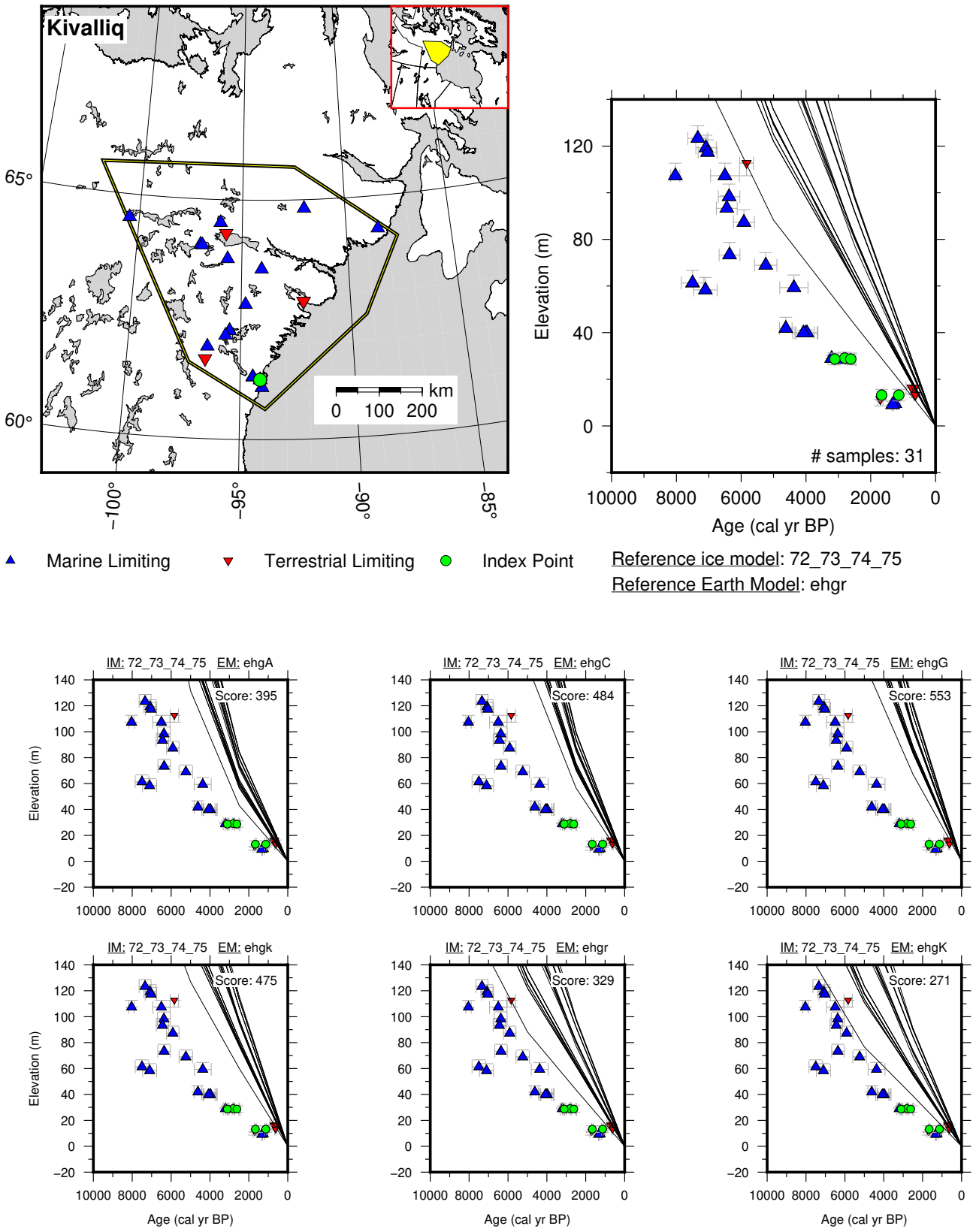


Figure 118: Paleo-sea level and comparison of six models for subregion Hudson Bay, location Kivalliq.

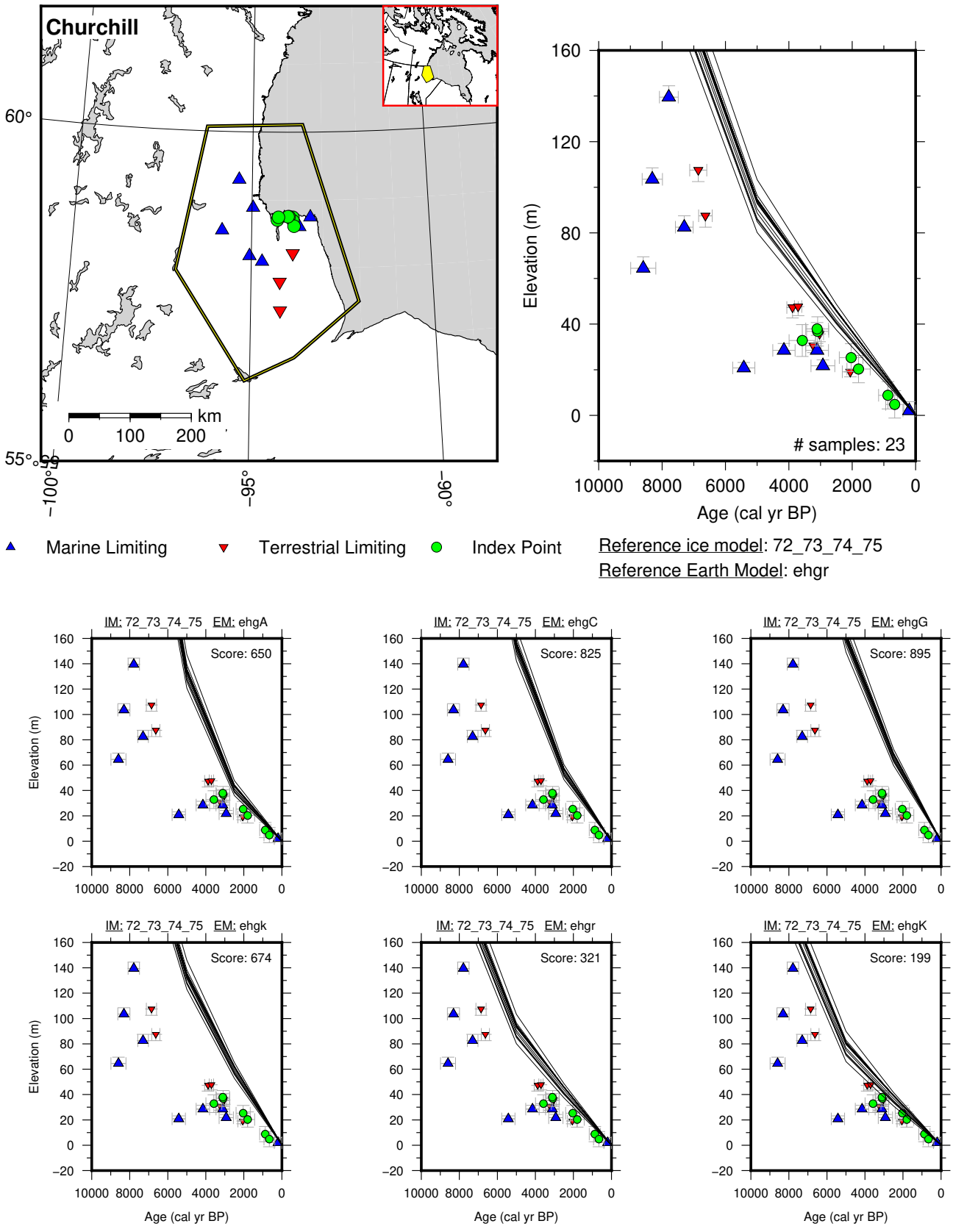


Figure 119: Paleo-sea level and comparison of six models for subregion Hudson Bay, location Churchill.

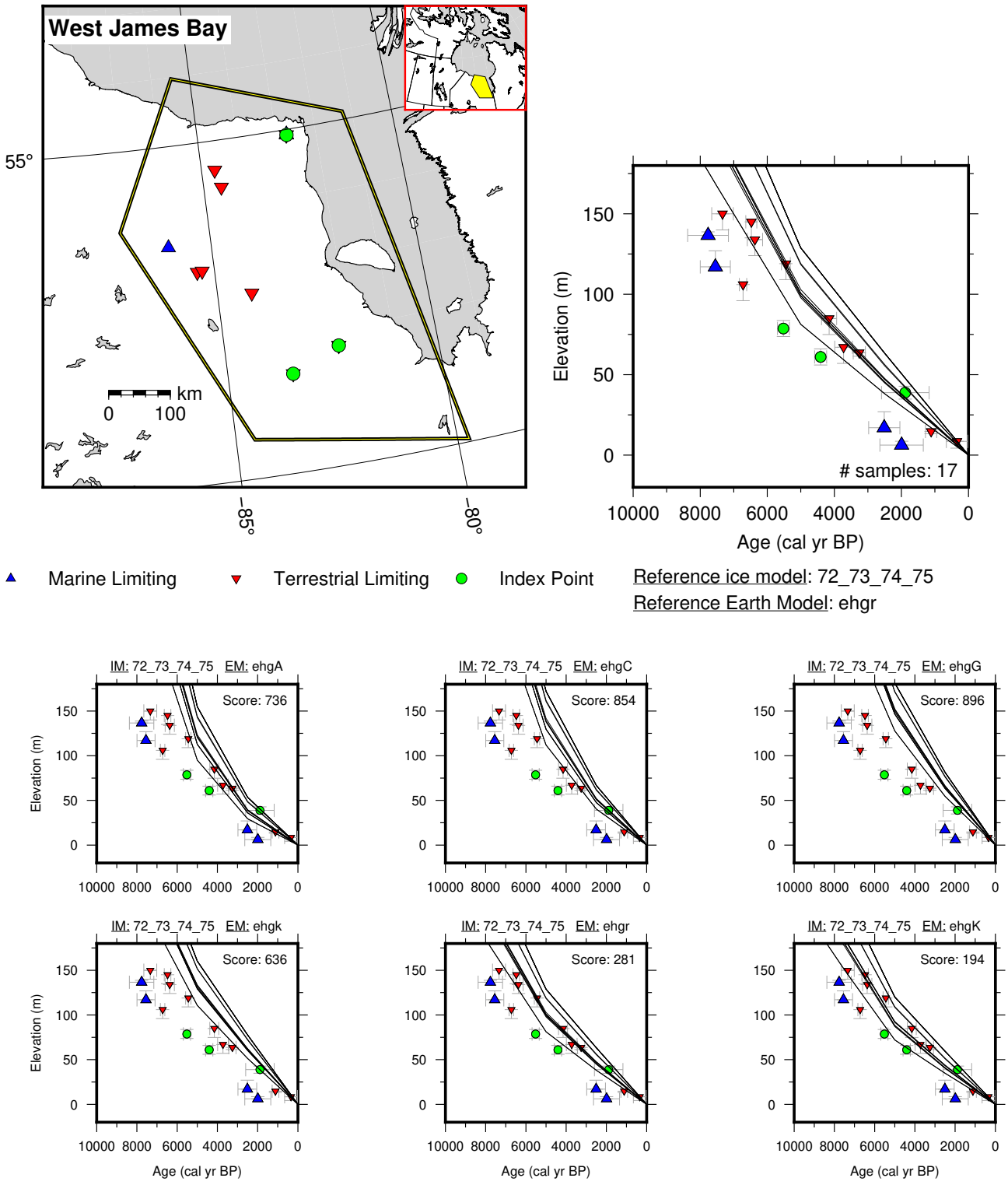


Figure 120: Paleo-sea level and comparison of six models for subregion Hudson Bay, location West James Bay.

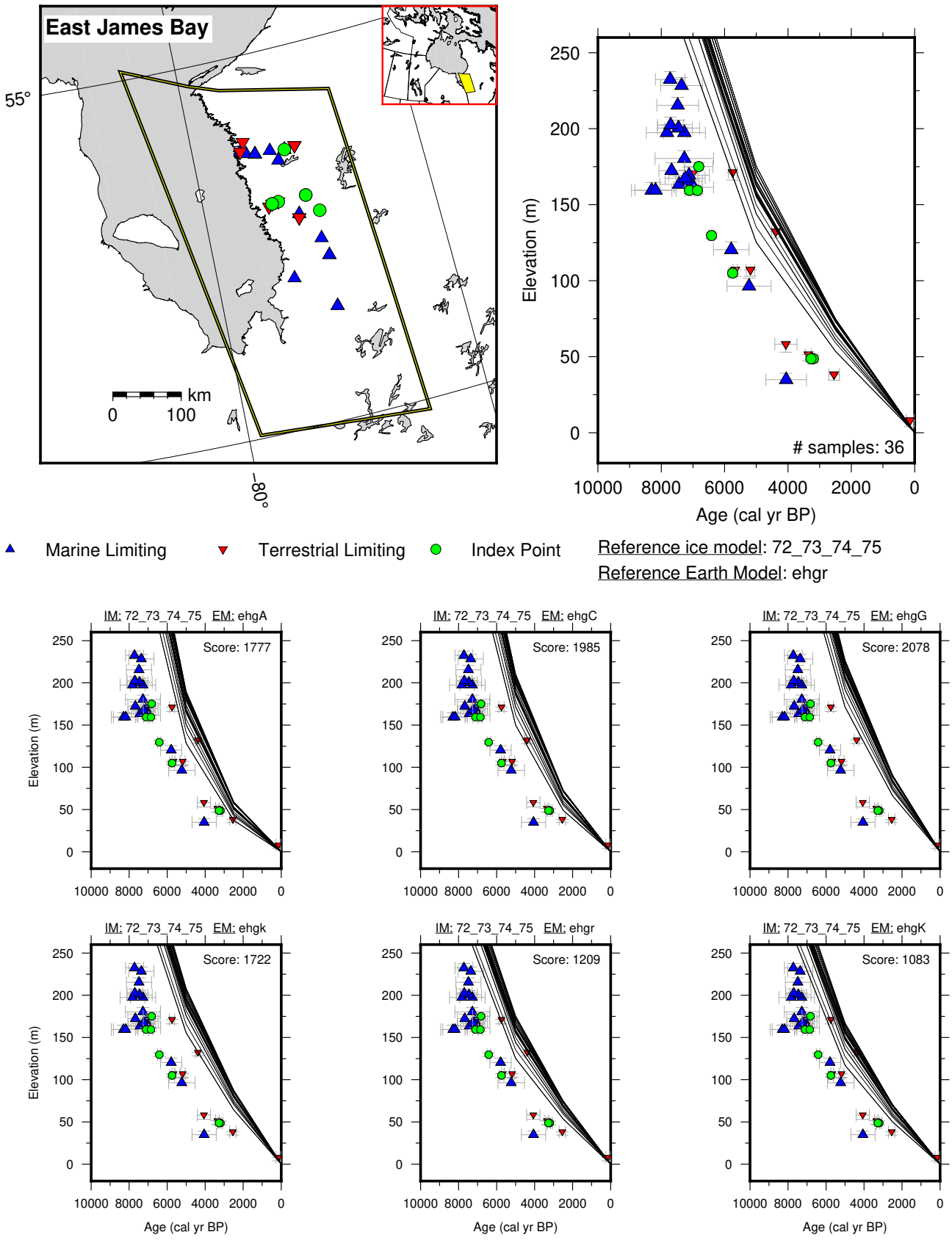


Figure 121: Paleo-sea level and comparison of six models for subregion Hudson Bay, location East James Bay.

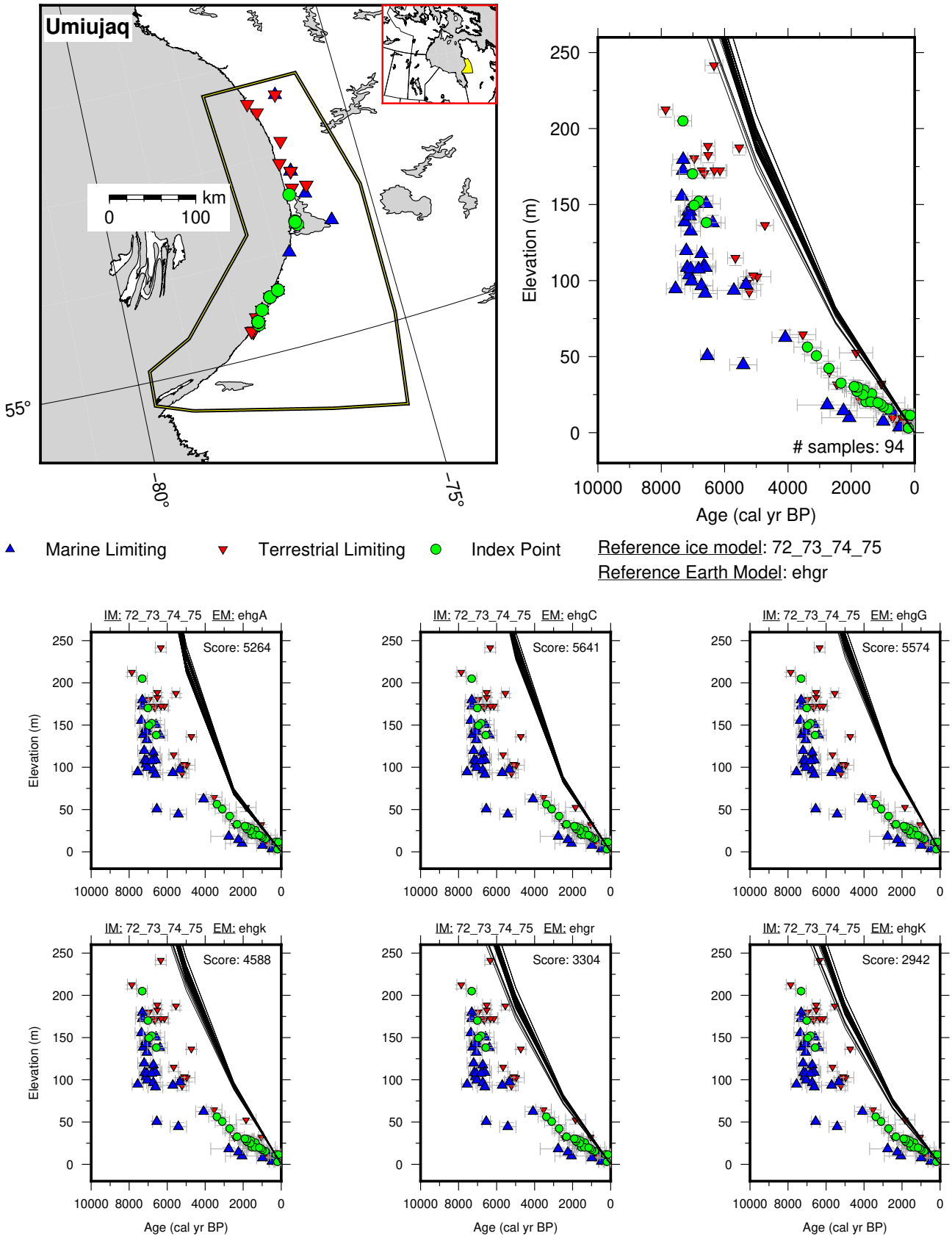


Figure 122: Paleo-sea level and comparison of six models for subregion Hudson Bay, location Umiujaq.

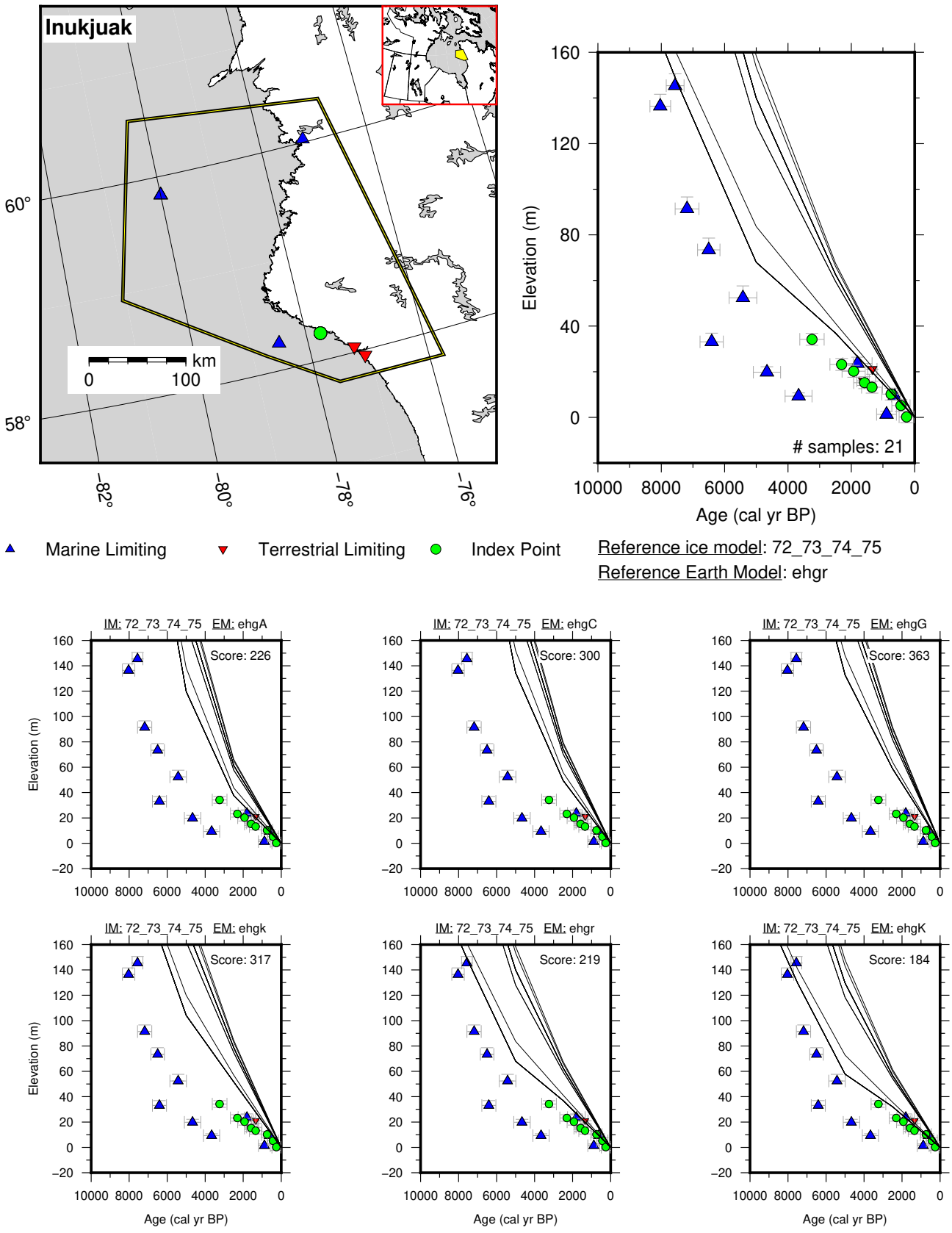


Figure 123: Paleo-sea level and comparison of six models for subregion Hudson Bay, location Inukjuak.

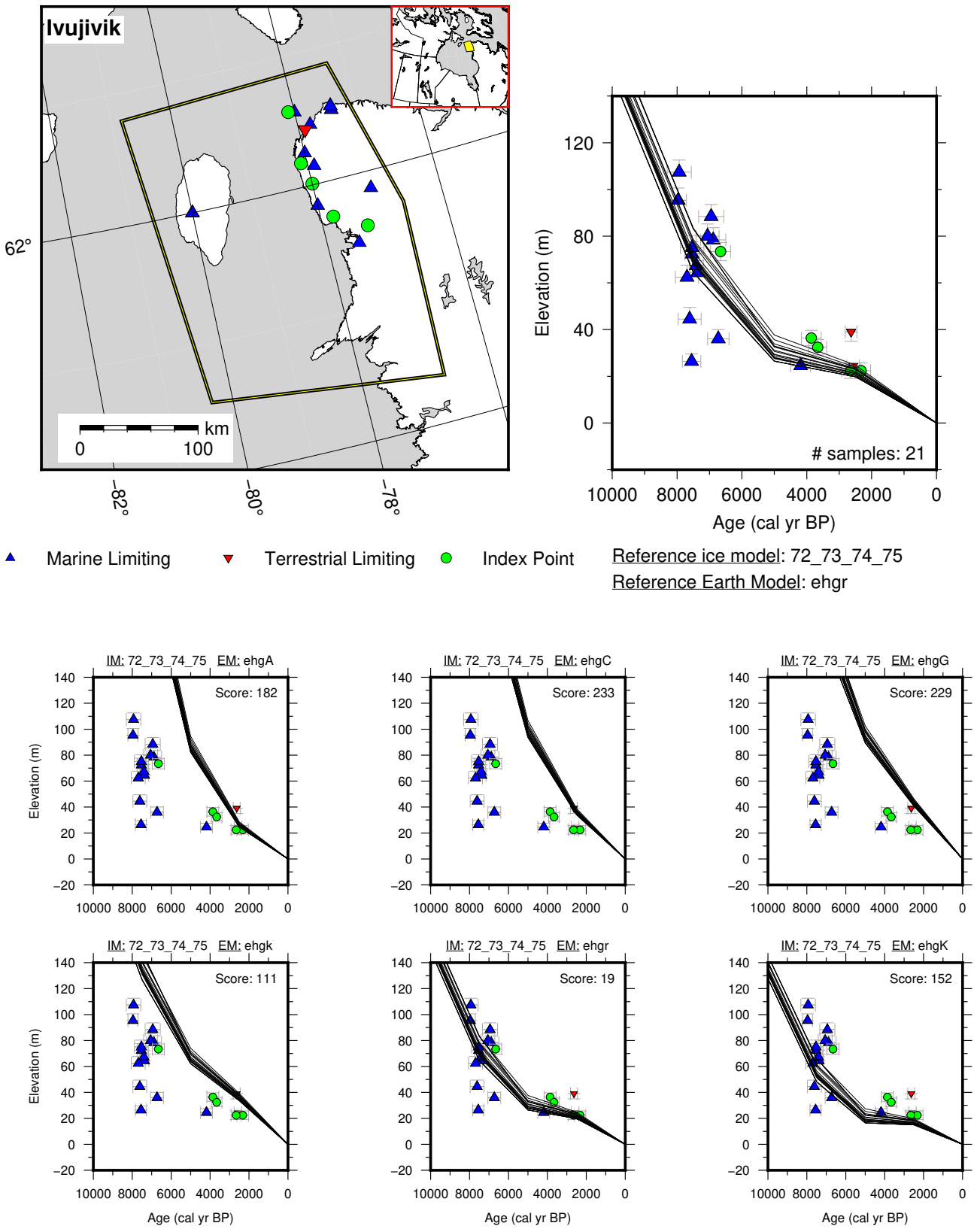


Figure 124: Paleo-sea level and comparison of six models for subregion Hudson Bay, location Ivujivik.

13.4 Hudson Strait

References for the data used in each location.

Sugluk: Bartley and Matthews (1969); Daigneault (2008); Gray et al. (1993); Gray (2001); Gray and Lauriol (1985); Kasper and Allard (2001); Lauriol and Gray (1997); Lowdon and Blake (1968); Matthews (1966); McNeely and Brennan (2005); McNeely and McCuaig (1991); Ricard (1989); Simon et al. (2016)

Kangiqsujuaq: Gray et al. (1993); Gray (2001); Lauriol and Gray (1987); McNeely (2002, 2005); McNeely and Atkinson (1995); Vacchi et al. (2018)

Western Ungava Bay: Gray et al. (1980); Lauriol and Gray (1987); Lauriol et al. (1979); Løken (1978); Simon et al. (2016)

Southern Ungava Bay: Gray et al. (1993); Gray (2001); Pienitz et al. (1991); Simon et al. (2016)

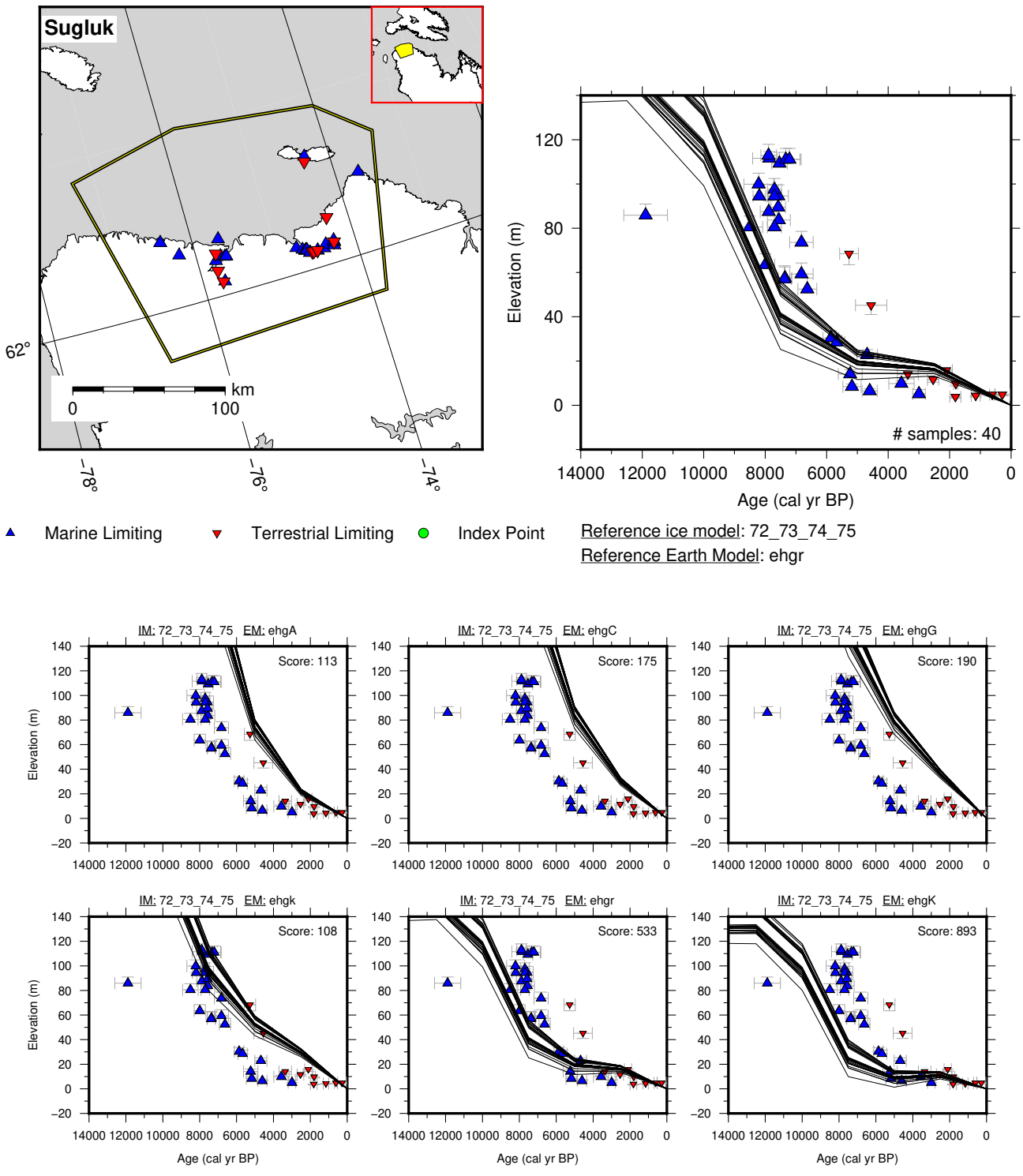


Figure 125: Paleo-sea level and comparison of six models for subregion Hudson Strait, location Sugluk.

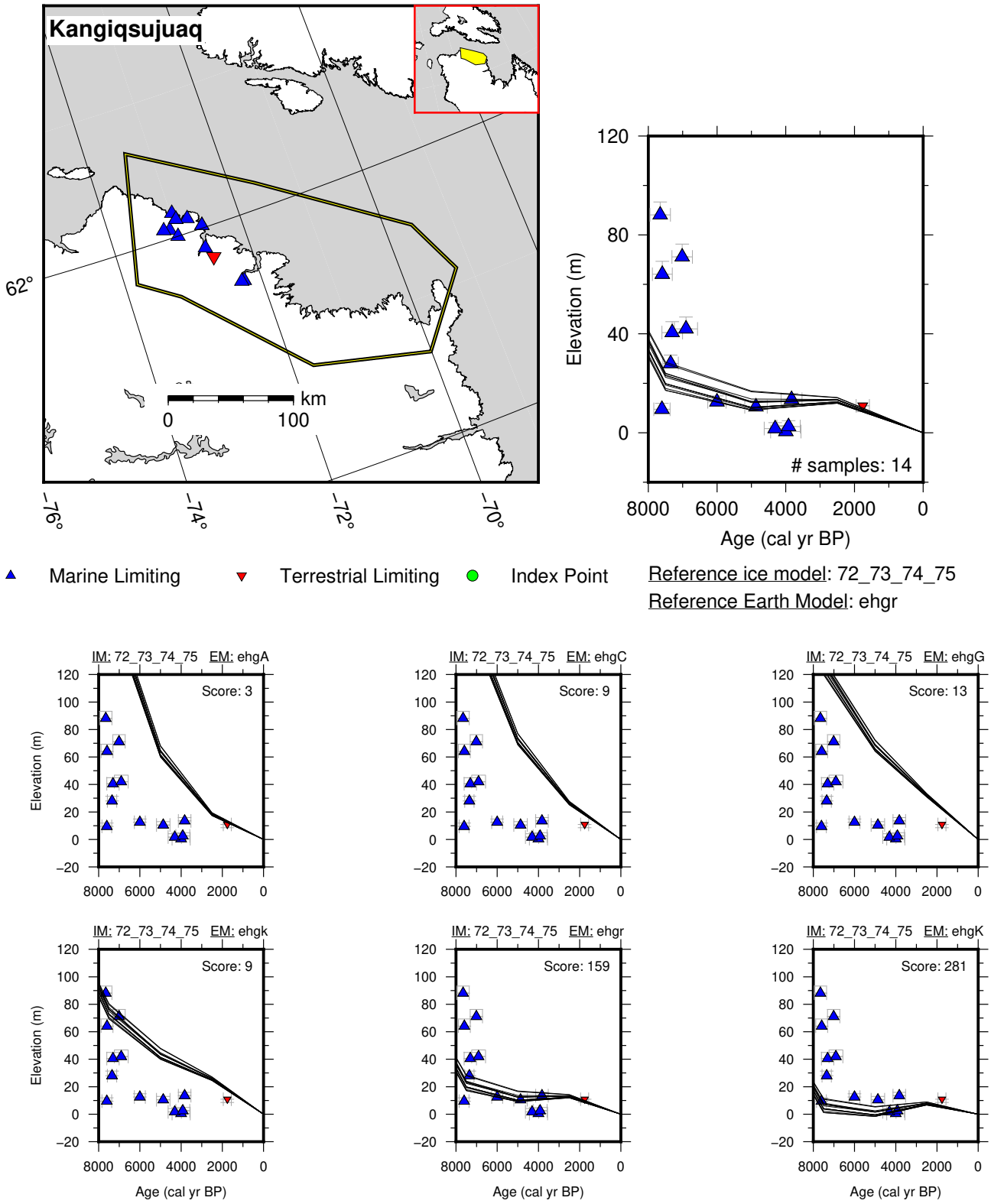


Figure 126: Paleo-sea level and comparison of six models for subregion Hudson Strait, location Kangiqsujuaq.

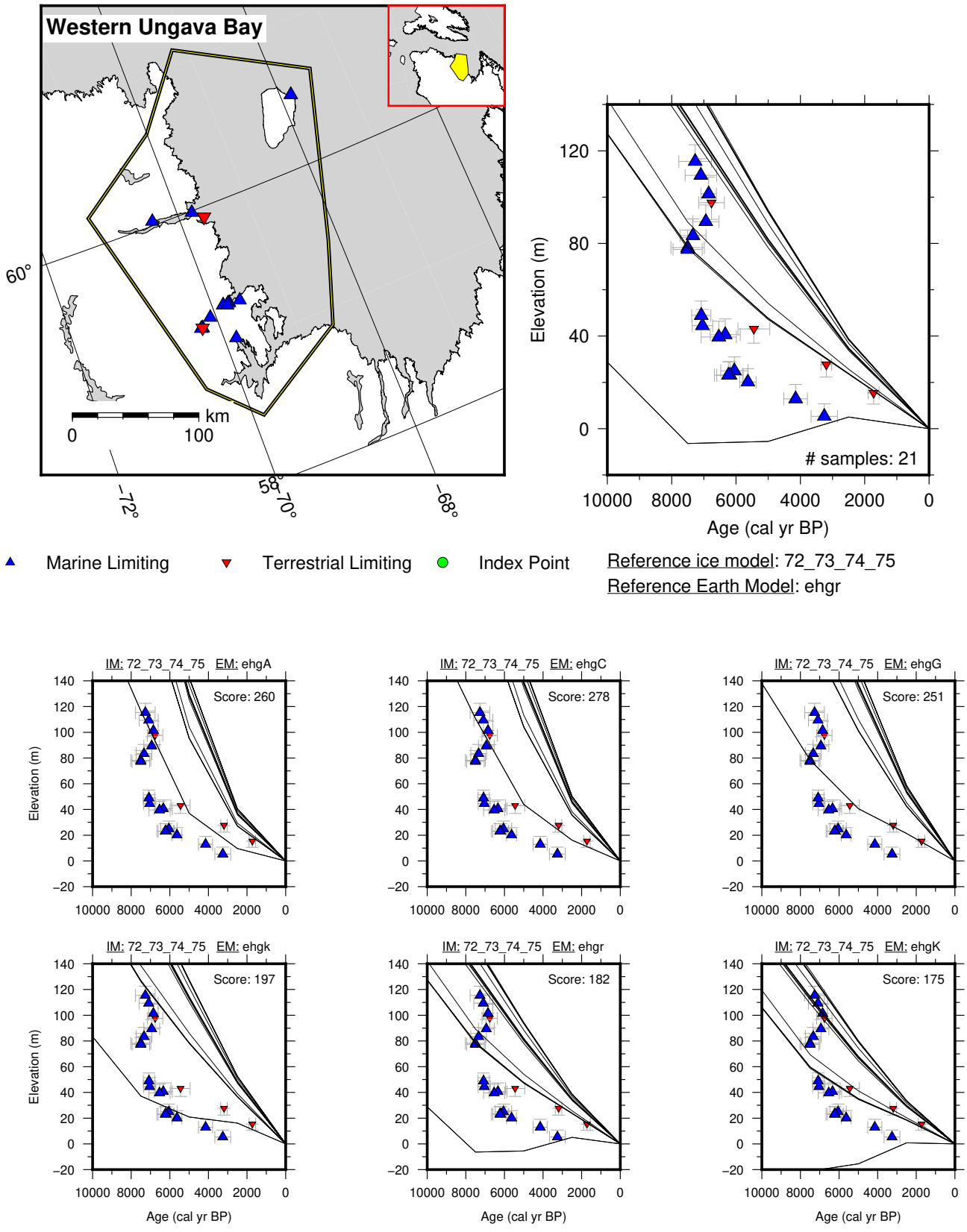


Figure 127: Paleo-sea level and comparison of six models for subregion Hudson Strait, location Western Ungava Bay.

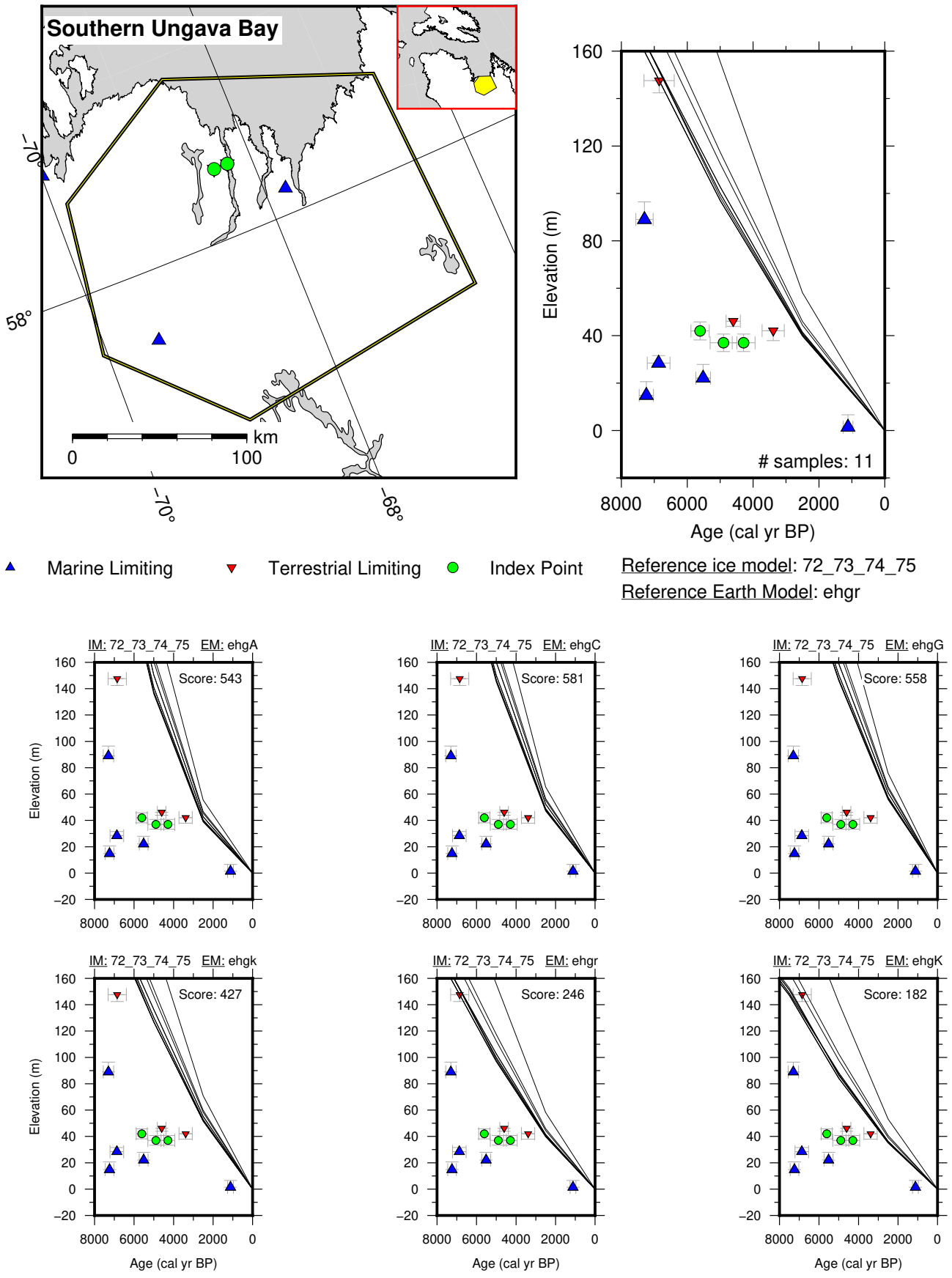


Figure 128: Paleo-sea level and comparison of six models for subregion Hudson Strait, location Southern Ungava Bay.

13.5 Labrador

References for the data used in each location.

Torngat: Dyke et al. (2003); Evans and Rogerson (1988); Lowdon and Blake (1975); Martindale et al. (2020); McNeely and Brennan (2005); Savoie and Gangloff (1980); Vacchi et al. (2018)

Nain: Clark and Fitzhugh (1990); Martindale et al. (2020)

Hamilton Inlet: Fitzhugh (1972, 1975); Lowdon and Blake (1975); Martindale et al. (2020); McNeely and Brennan (2005)

Lake Melville: Awadallah and Batterson (1990); Batterson (1996); Jordan (1975); King (1985); Liverman (1997); Lowdon and Blake (1975); Martindale et al. (2020); McNeely and Brennan (2005)

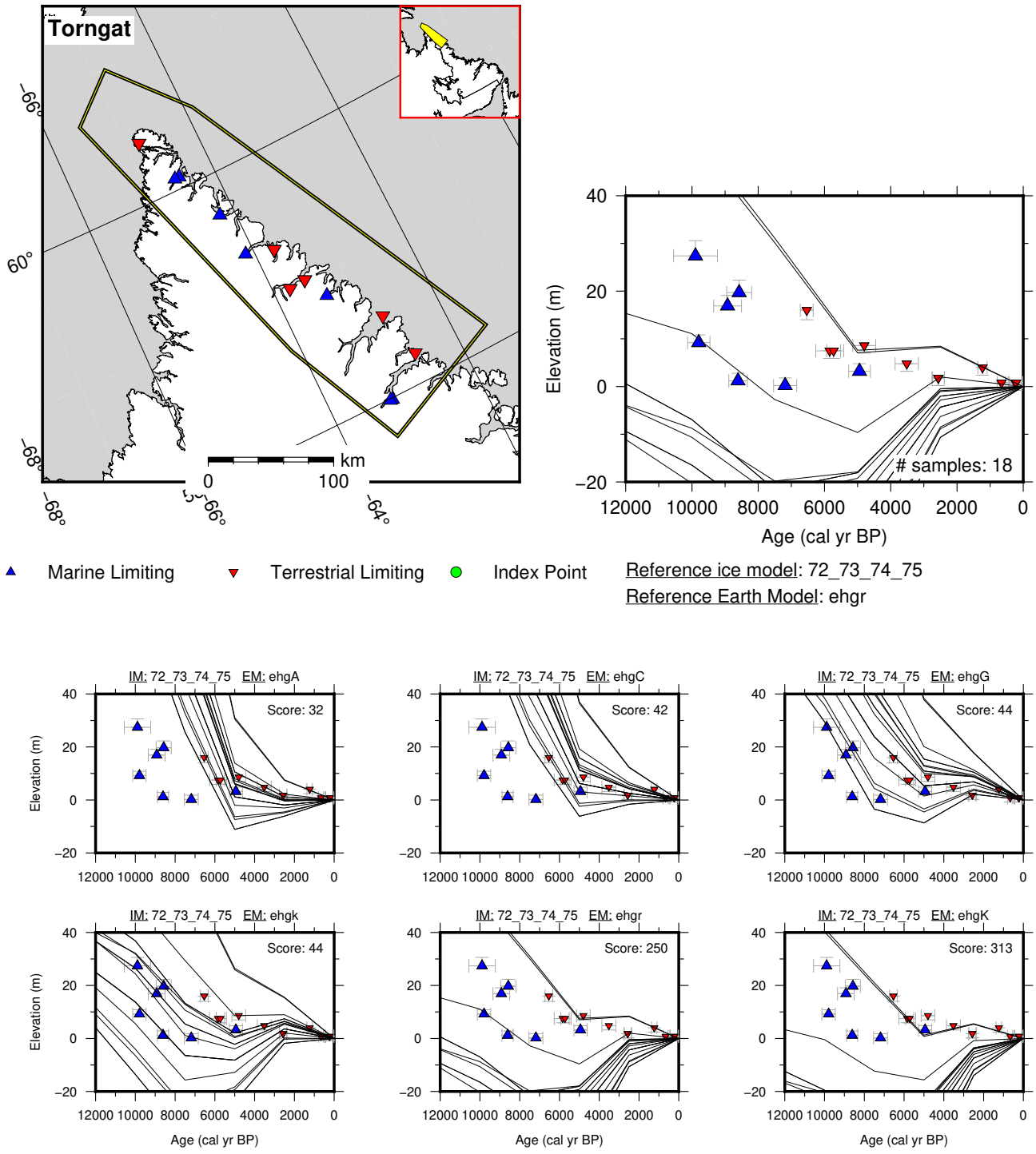


Figure 129: Paleo-sea level and comparison of six models for subregion Labrador, location Torngat.

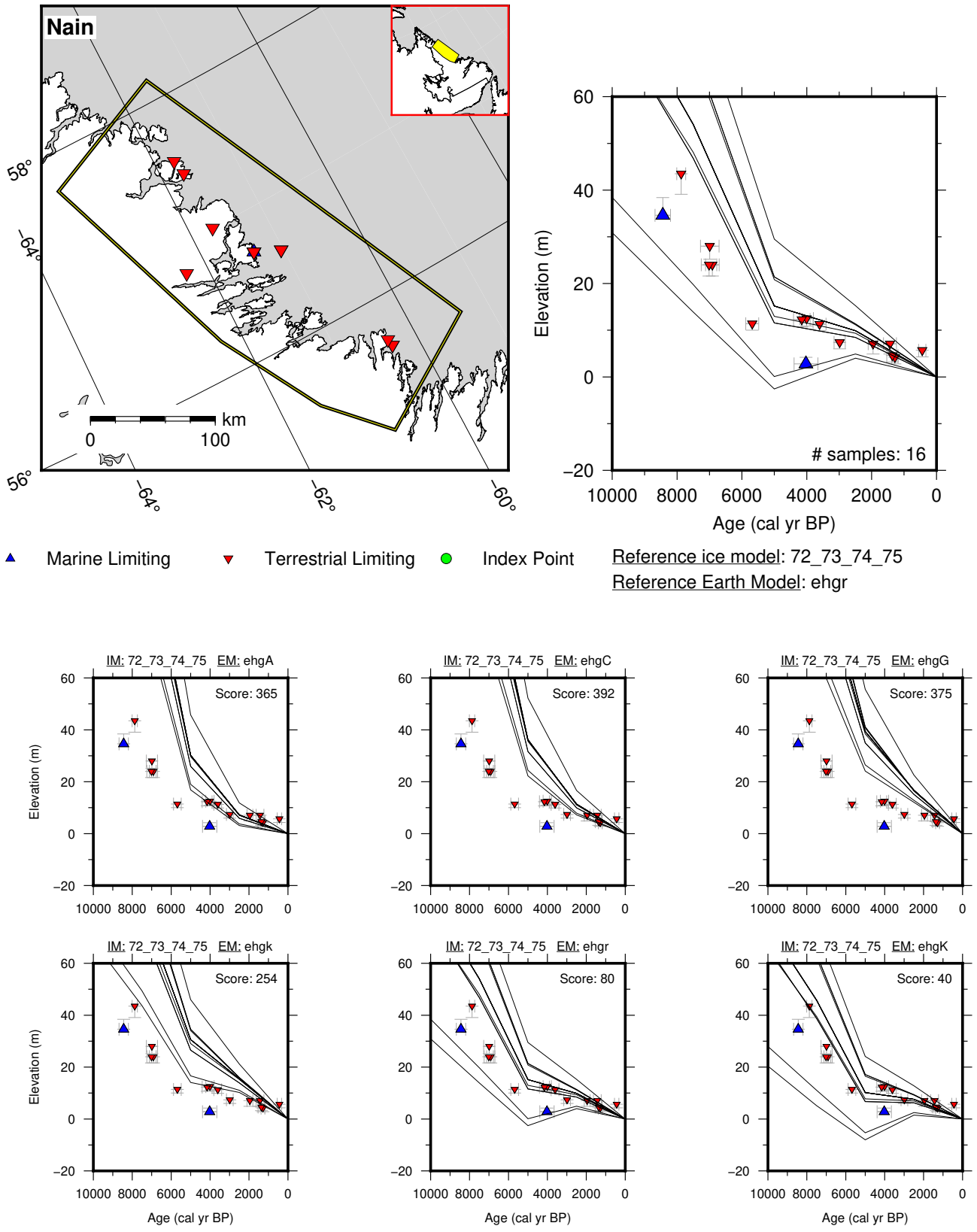


Figure 130: Paleo-sea level and comparison of six models for subregion Labrador, location Nain.

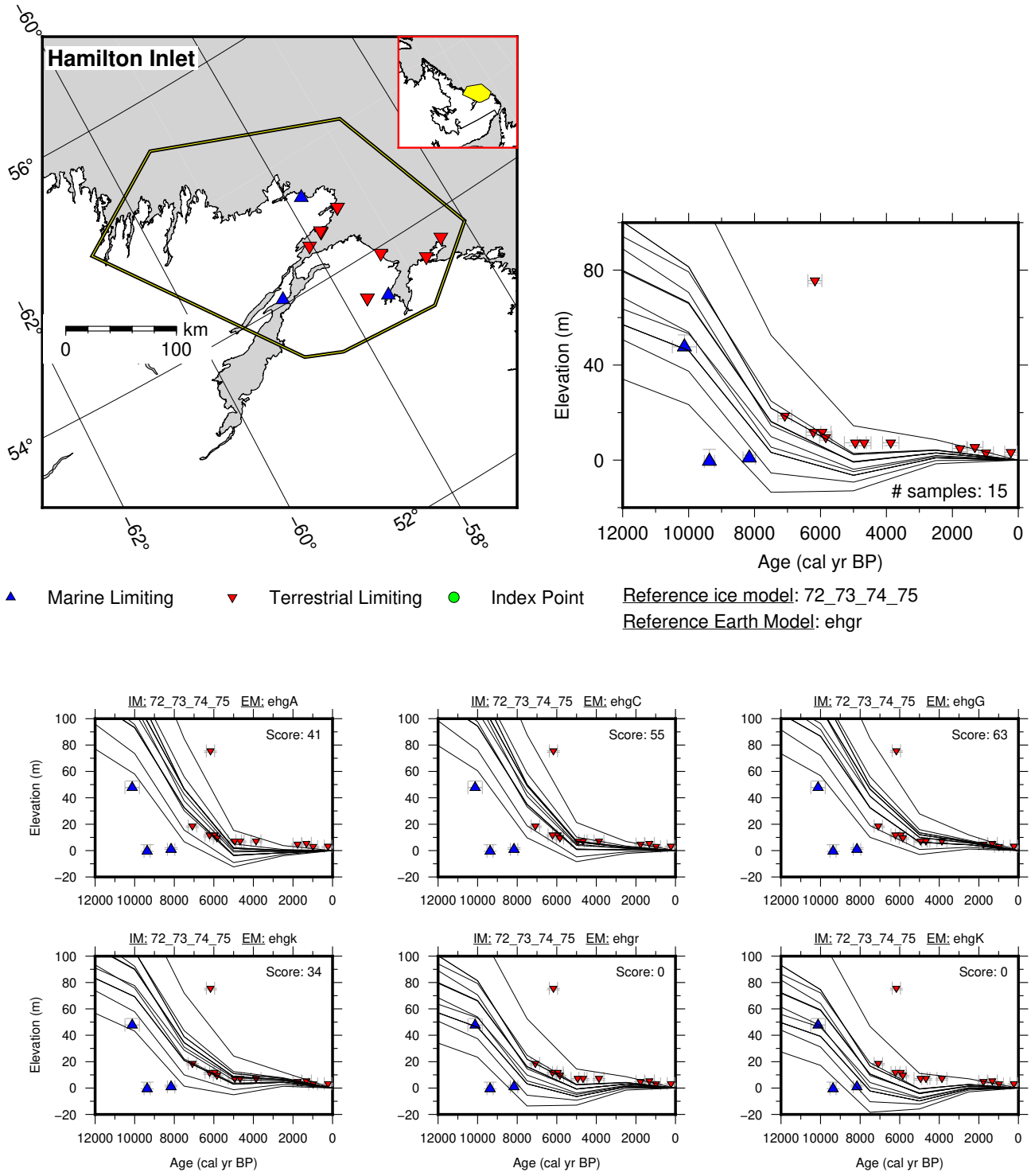


Figure 131: Paleo-sea level and comparison of six models for subregion Labrador, location Hamilton Inlet.

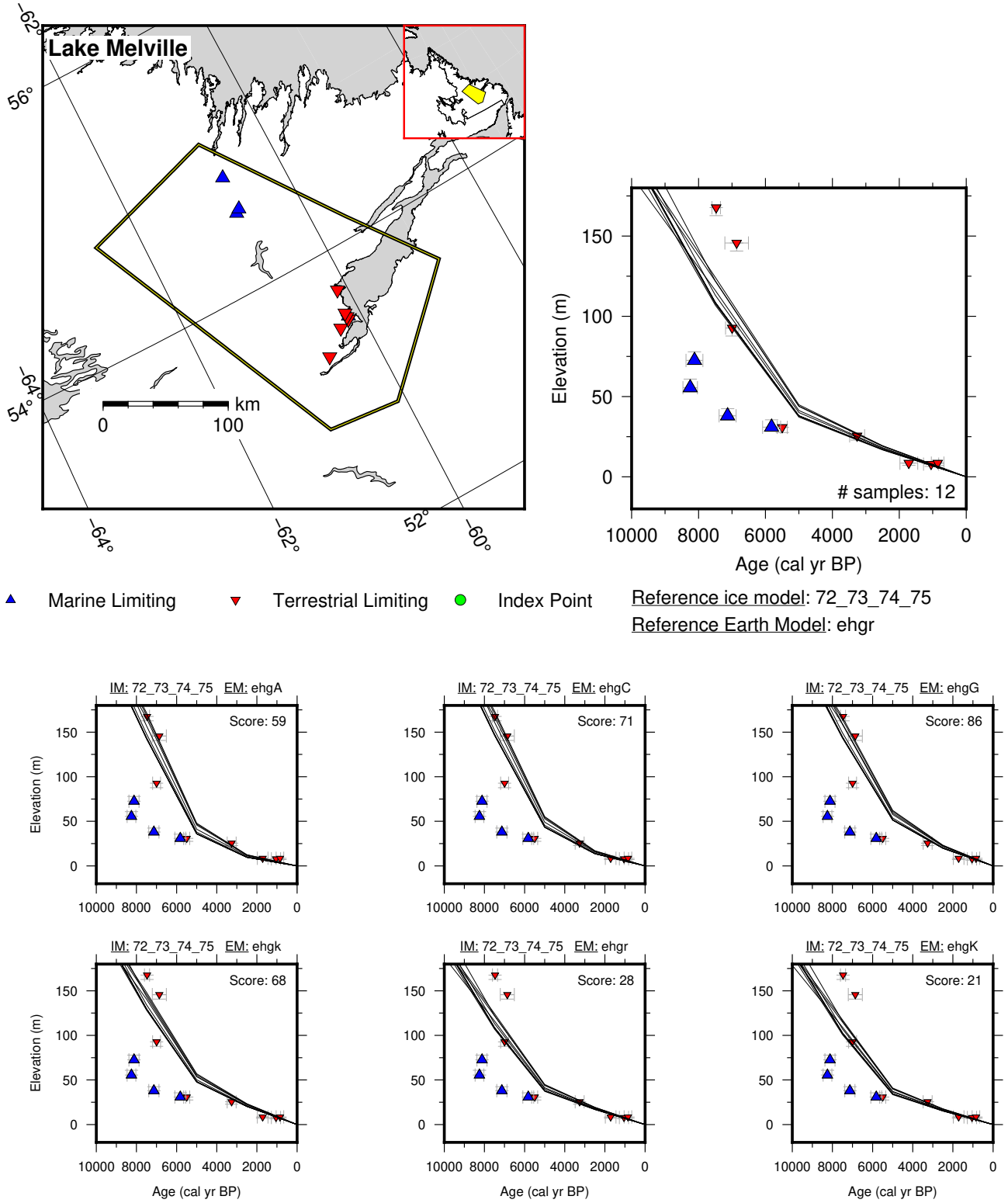


Figure 132: Paleo-sea level and comparison of six models for subregion Labrador, location Lake Melville.

13.6 Maritimes

References for the data used in each location.

Sable Island: Amos and Miller (1990); Scott et al. (1984, 1989); Vacchi et al. (2018)

Halifax: Blake (1988); Edgecombe et al. (1999); Gehrels et al. (2004, 2005); Miller et al. (1982); Scott and Medioli (1982); Scott et al. (1995); Shaw et al. (1993)

Shelburne: Blake (1983); Lowdon and Blake (1970); Scott and Greenberg (1983)

Cumberland: Dalrymple and Zaitlin (1994); Scott and Greenberg (1983); Shaw et al. (2010); Stea and Wightman (1987); Stuckenrath et al. (1966)

Passamaquoddy Bay: Blake (1984); Gehrels et al. (2004); Martindale et al. (2020); McNeely (2005); Miller (1990); Nicks (1991); Rampton et al. (1984); Seaman (2004); Stea and Mott (1998)

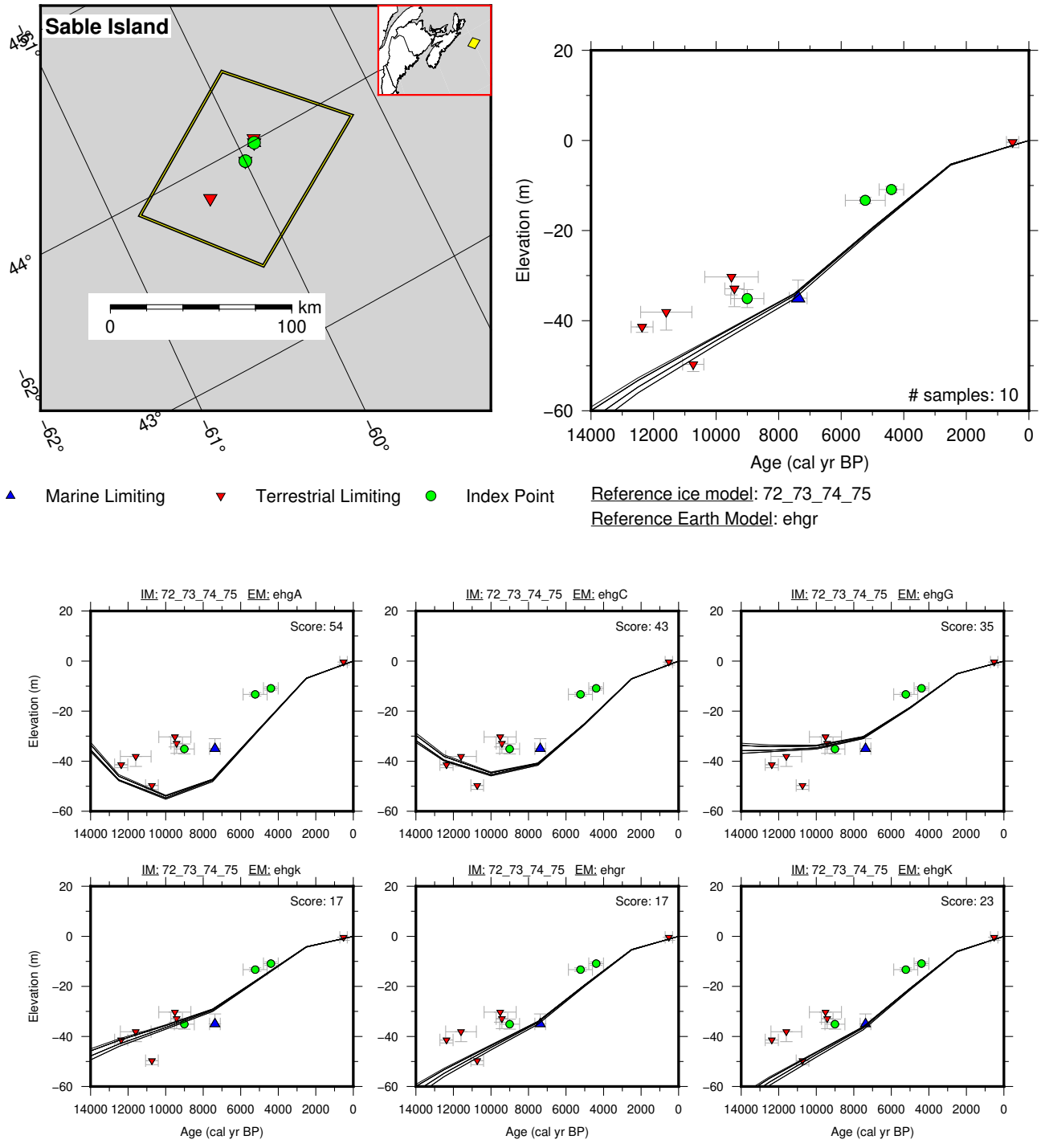


Figure 133: Paleo-sea level and comparison of six models for subregion Maritimes, location Sable Island.

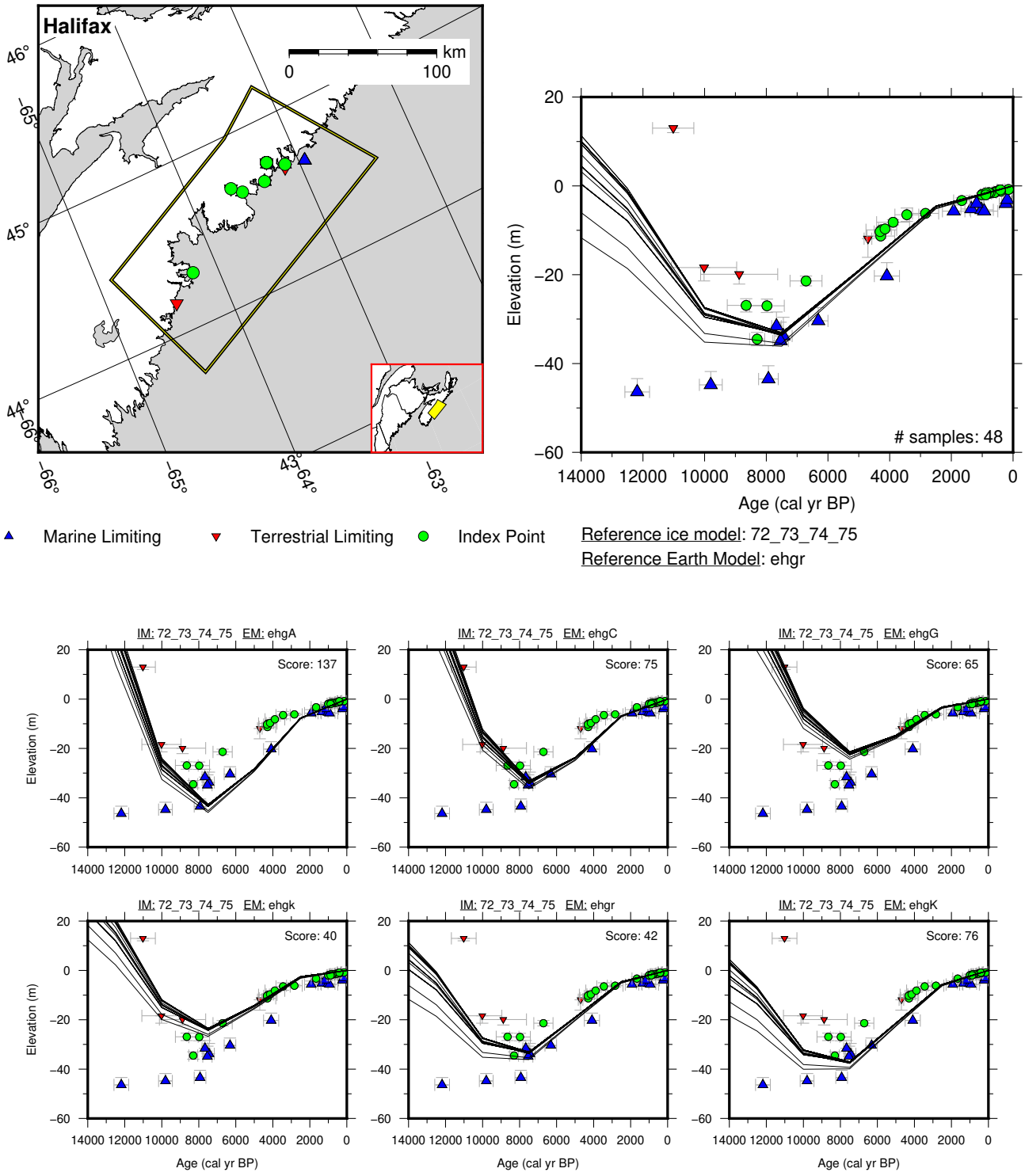


Figure 134: Paleo-sea level and comparison of six models for subregion Maritimes, location Halifax.

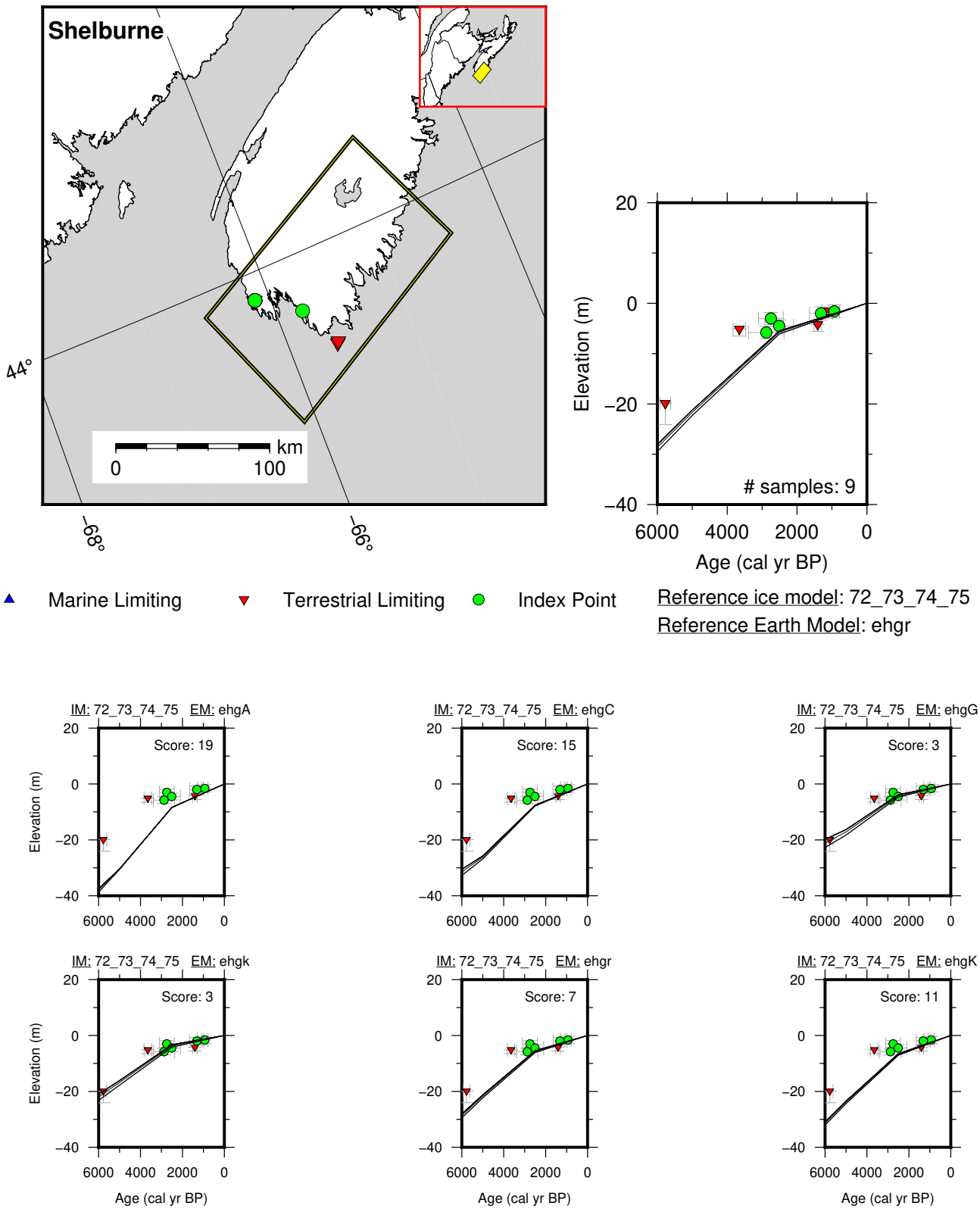


Figure 135: Paleo-sea level and comparison of six models for subregion Maritimes, location Shelburne.

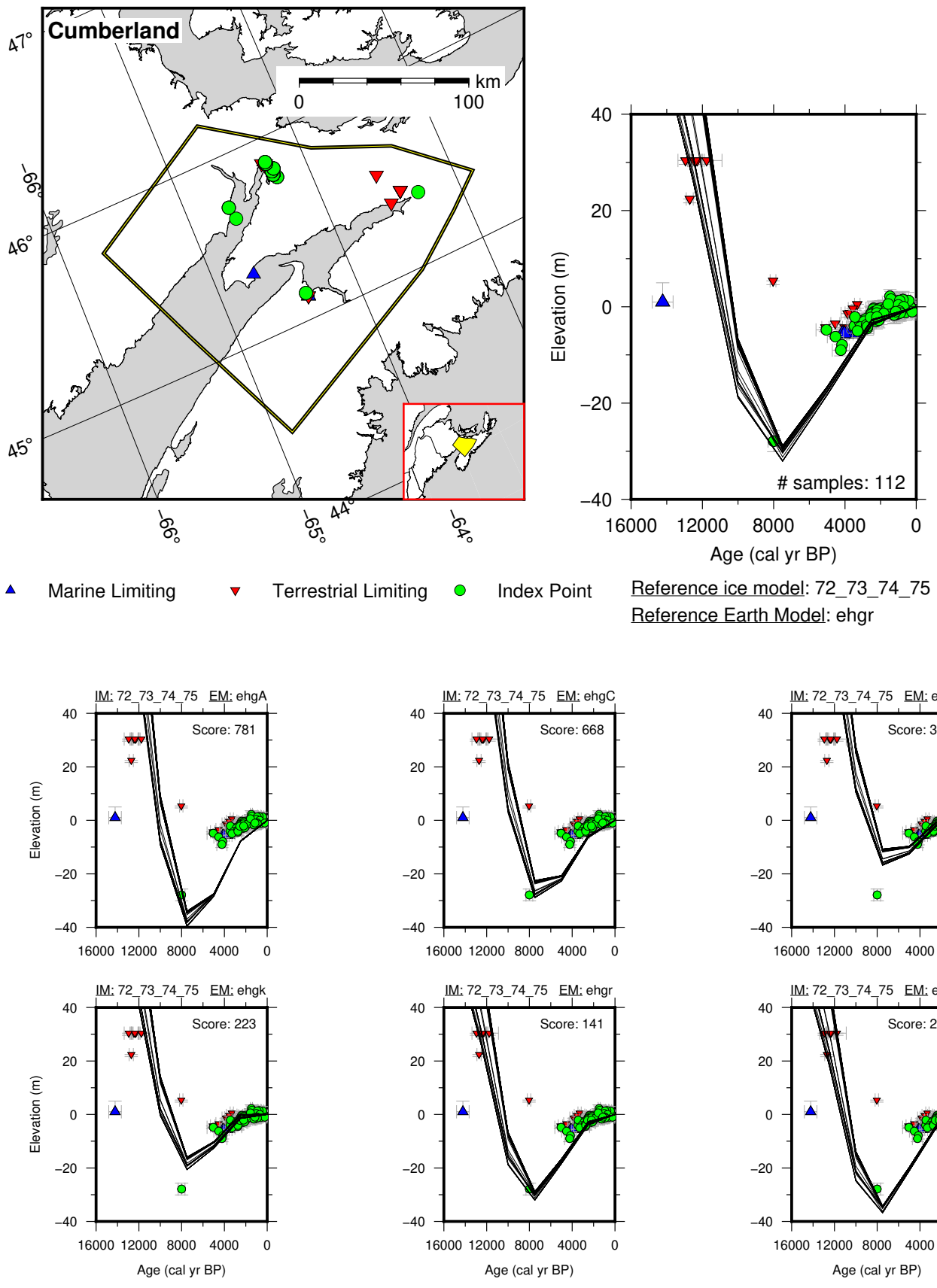


Figure 136: Paleo-sea level and comparison of six models for subregion Maritimes, location Cumberland.

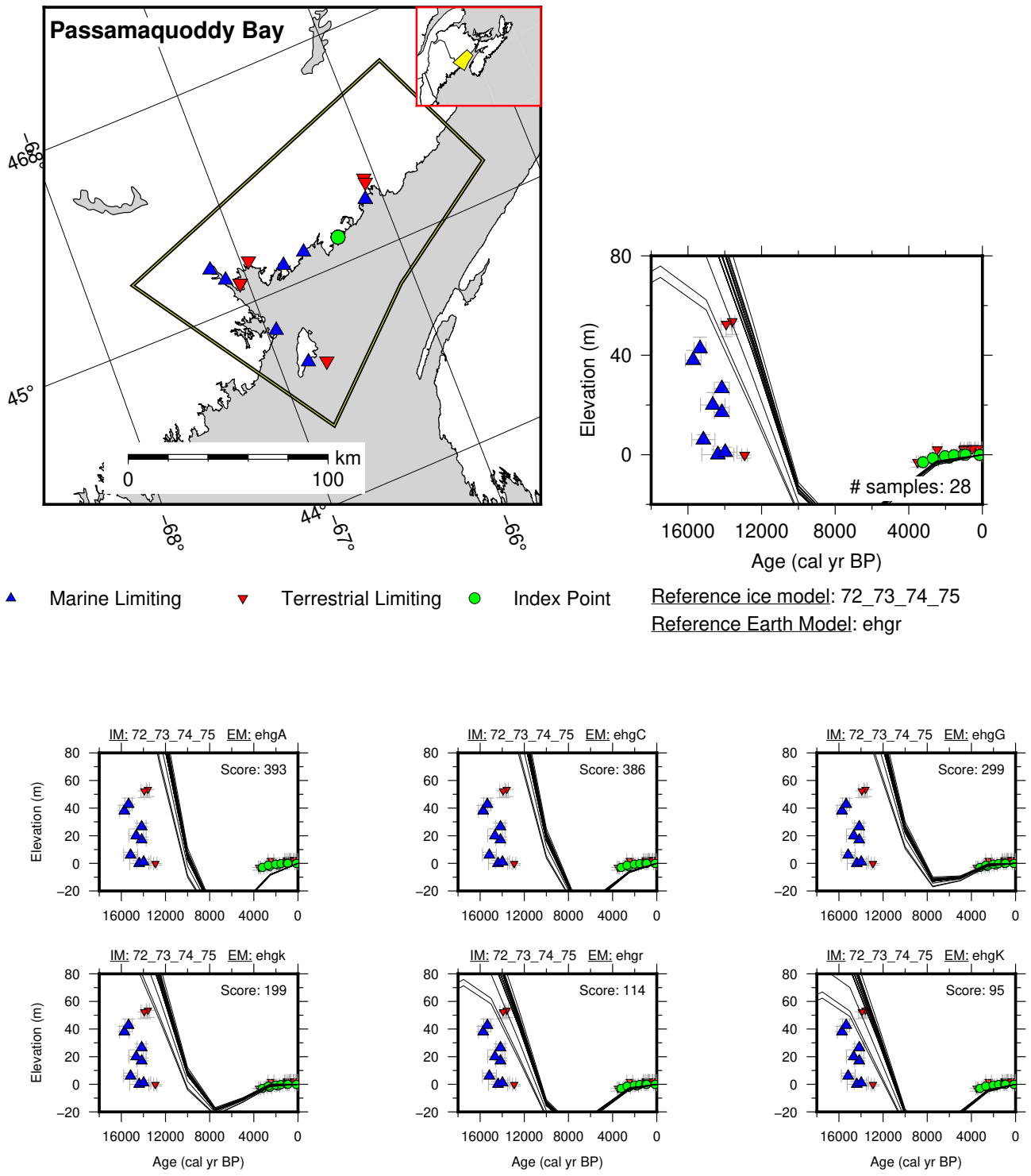


Figure 137: Paleo-sea level and comparison of six models for subregion Maritimes, location Passamaquoddy Bay.

13.7 Newfoundland

References for the data used in each location.

Great Northern Peninsula: Bell et al. (2005); Grant (1992, 1994); Martindale et al. (2020); McNeely and Jorgensen (1993); McNeely and McCuaig (1991); Nydal (1989); Tuck (1971)

Notre Dame Bay: Blake (1983); Daly et al. (2007); Dyck and Fyles (1963); McNeely and Brennan (2005); McNeely and McCuaig (1991); Scott et al. (1991); Shaw and Edwardson (1994)

Avalon Peninsula: Catto et al. (1997); Daly et al. (2007); MacPherson (1996); McNeely (2006); Shaw and Forbes (1995)

Bay Of Islands: Brookes et al. (1985); Brookes and Stevens (1985); Daly et al. (2007); Grant (1994); McNeely and Brennan (2005); McNeely and McCuaig (1991)

Port Aux Basques: Bell et al. (2003); Blake (1988); Brookes et al. (1985); Daly et al. (2007); Dyke et al. (2003); Forbes et al. (1993); Kemp et al. (2017); Lowdon and Blake (1980); Lowdon et al. (1971); McNeely (2002); McNeely and Atkinson (1995); McNeely and Brennan (2005); McNeely and Jorgensen (1992, 1993); McNeely and McCuaig (1991); Shaw and Forbes (1987, 1995); Shaw and Potter (2015)

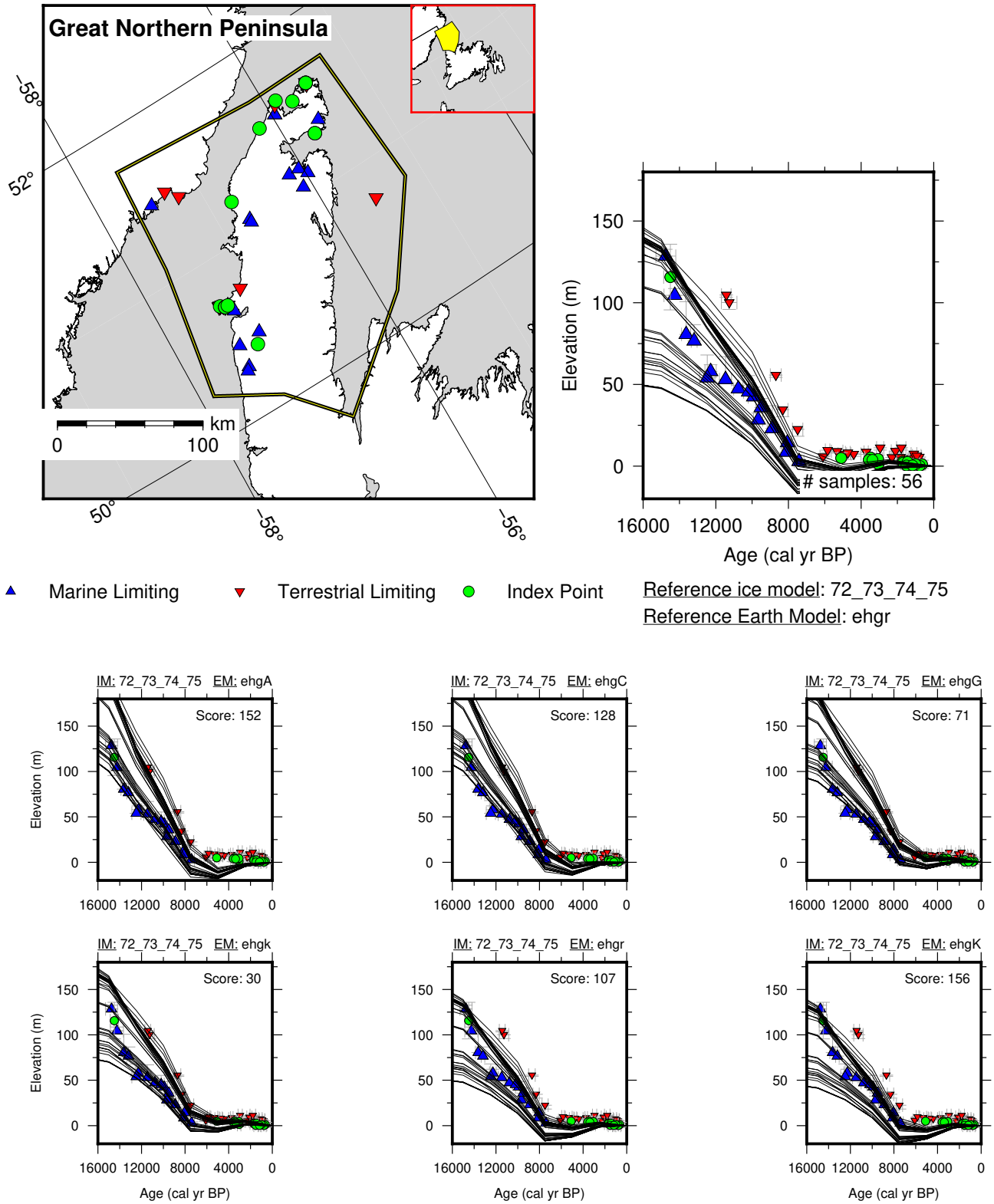


Figure 138: Paleo-sea level and comparison of six models for subregion Newfoundland, location Great Northern Peninsula.

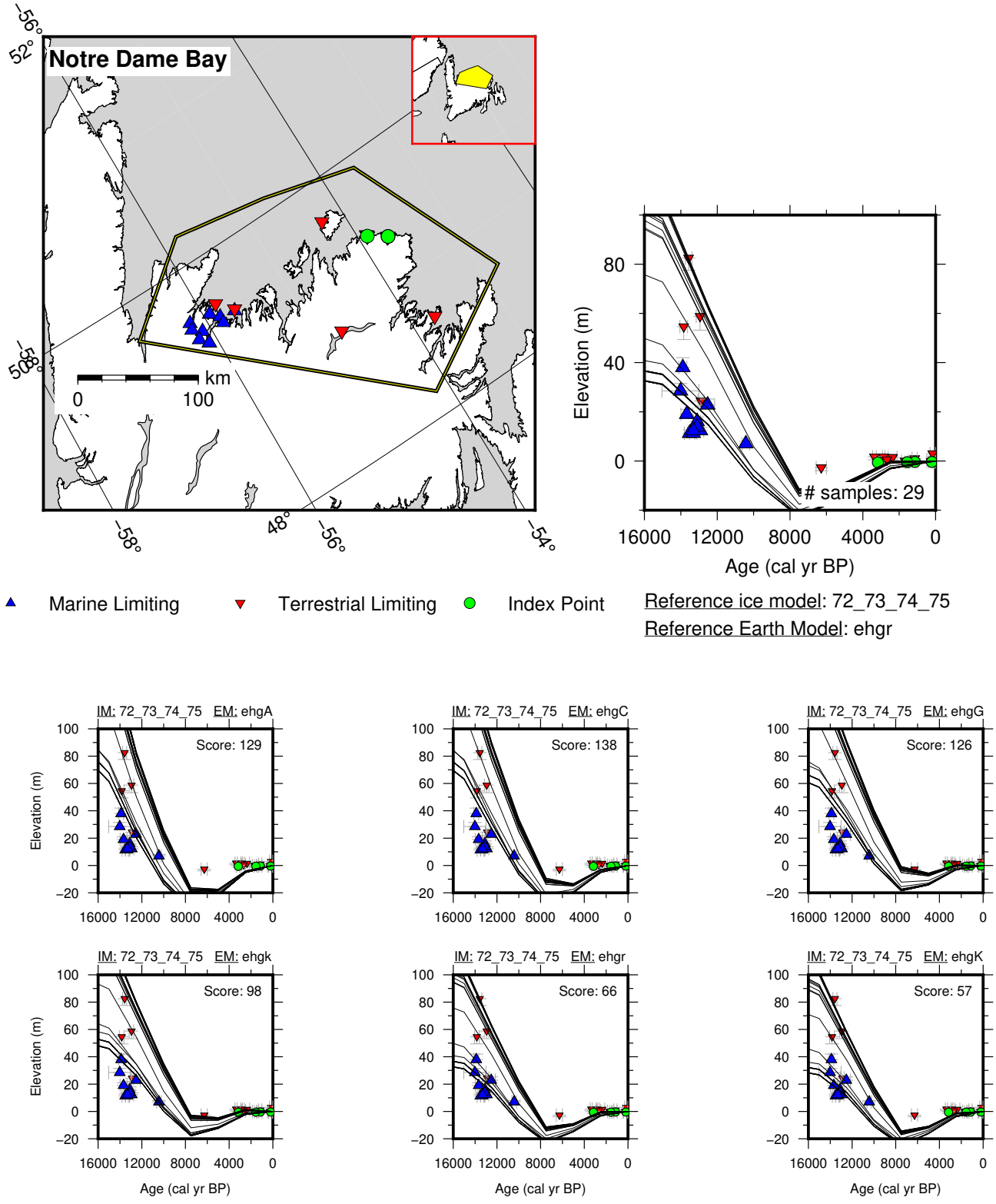


Figure 139: Paleo-sea level and comparison of six models for subregion Newfoundland, location Notre Dame Bay.

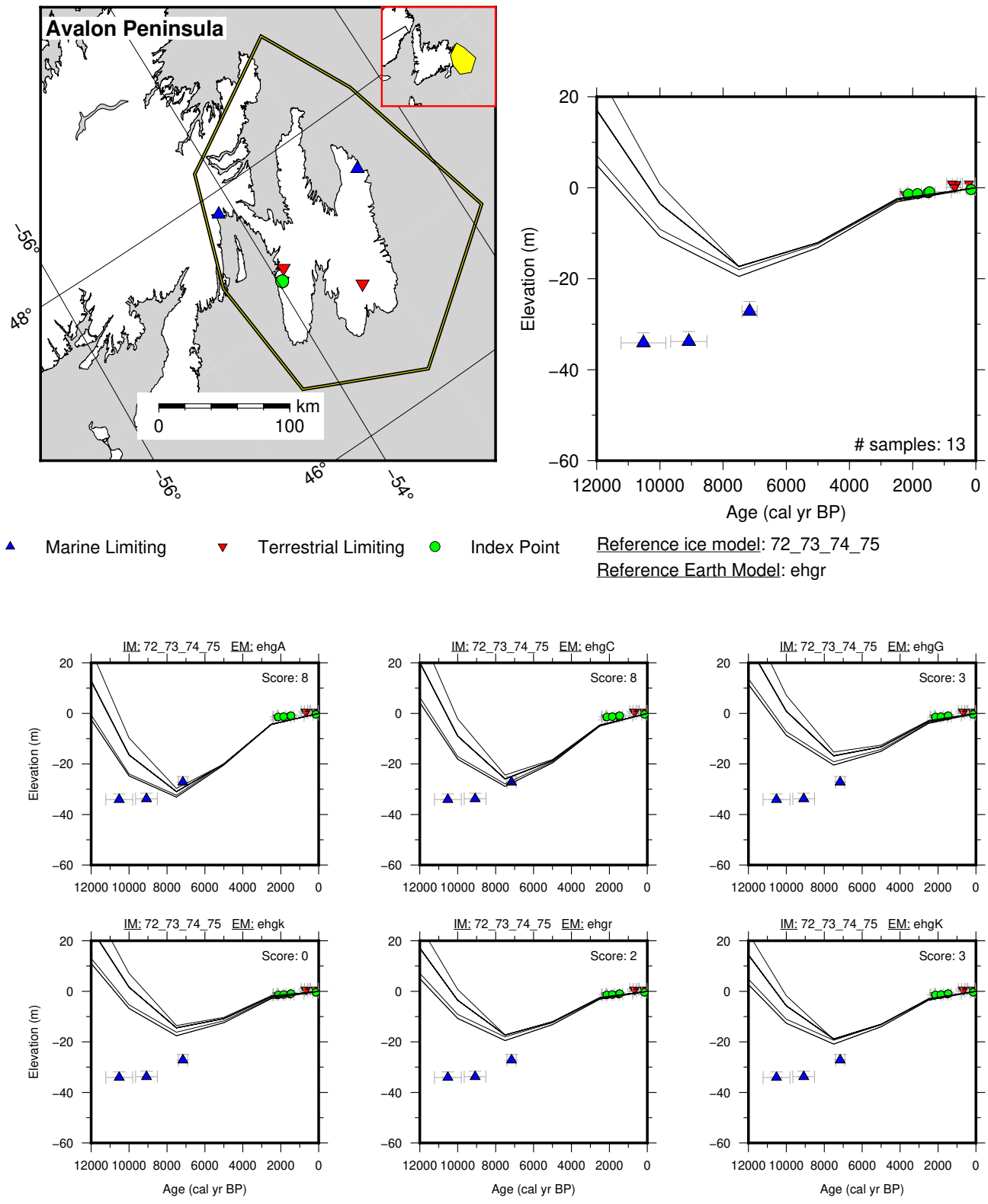


Figure 140: Paleo-sea level and comparison of six models for subregion Newfoundland, location Avalon Peninsula.

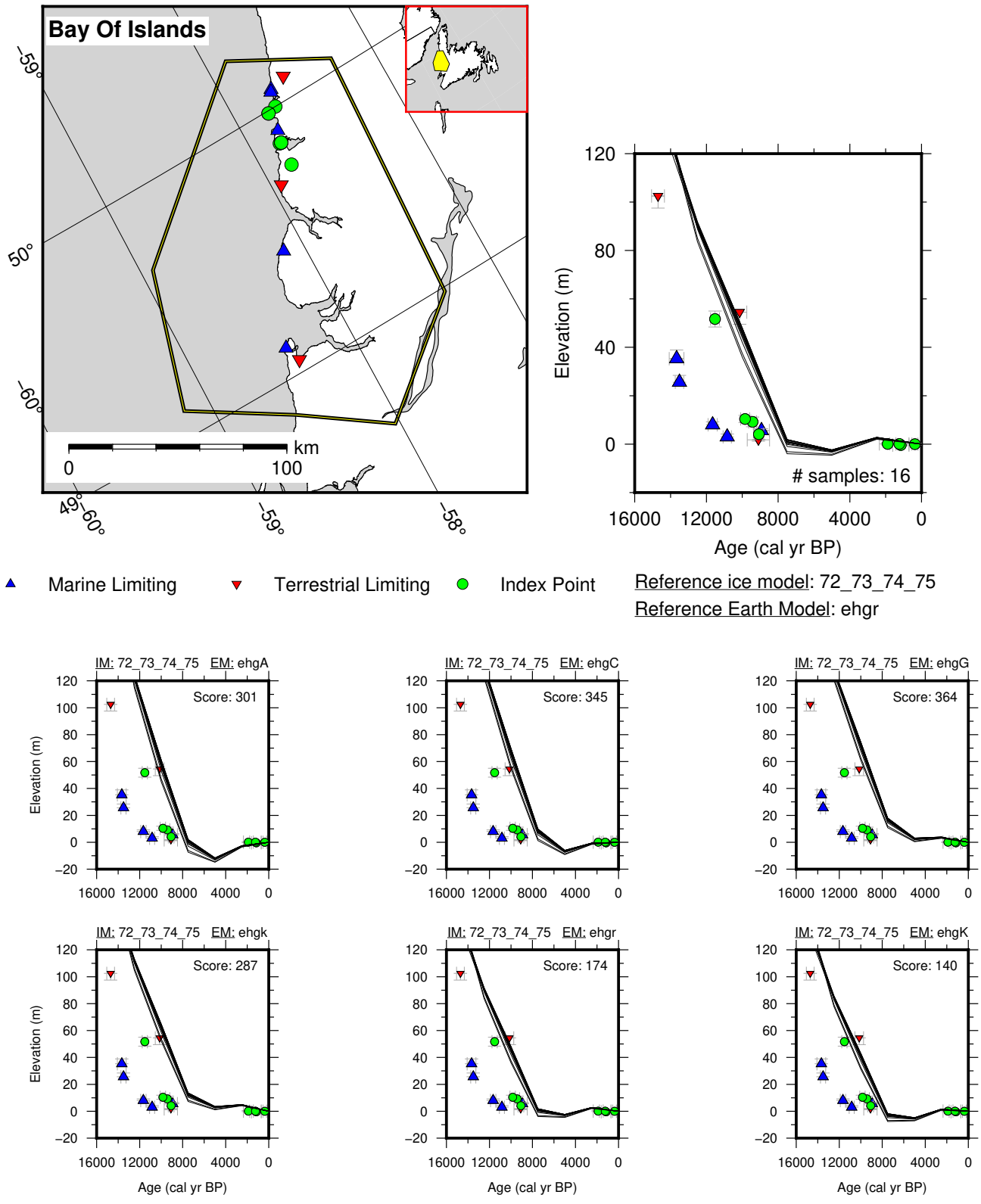


Figure 141: Paleo-sea level and comparison of six models for subregion Newfoundland, location Bay Of Islands.

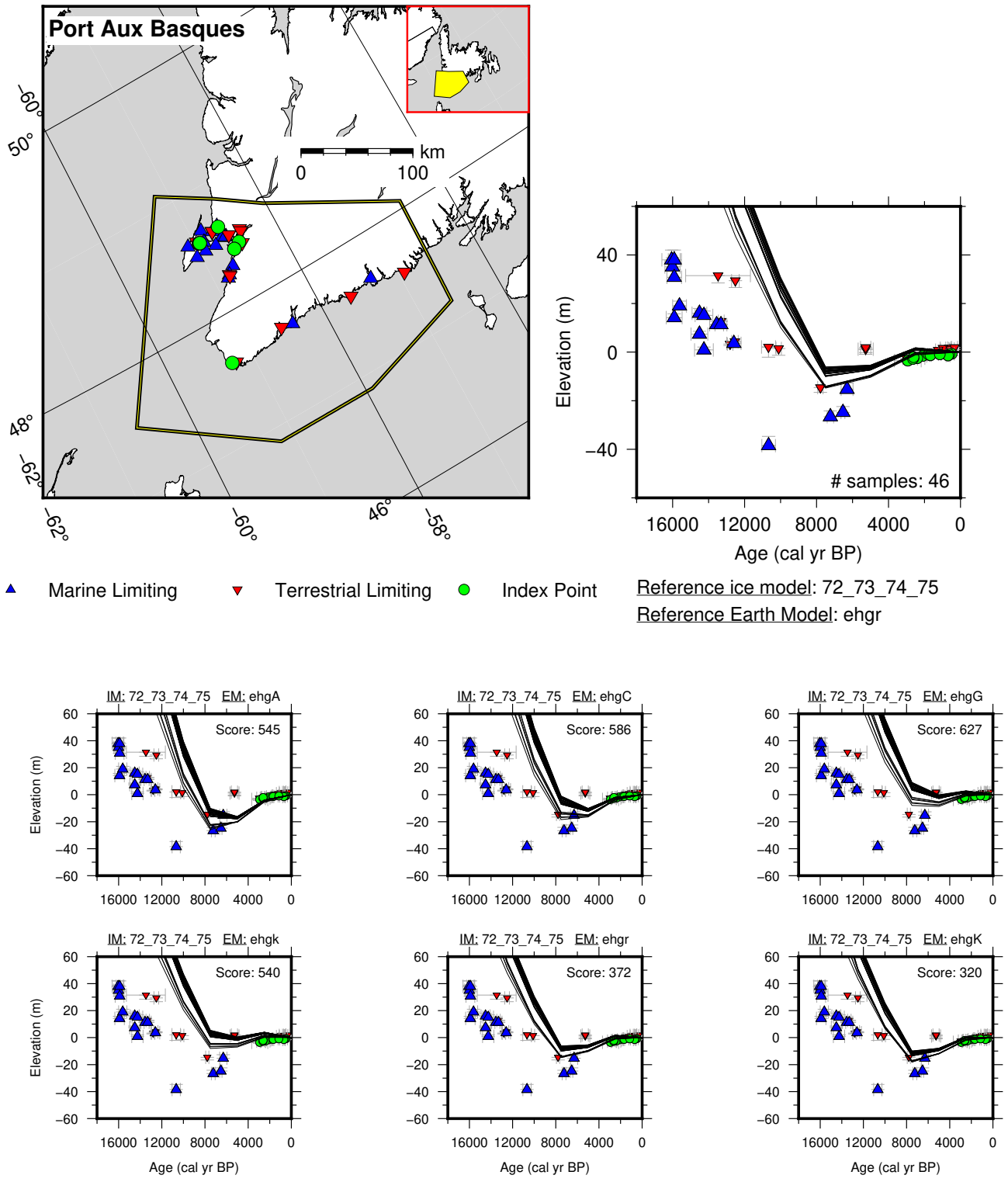


Figure 142: Paleo-sea level and comparison of six models for subregion Newfoundland, location Port Aux Basques.

13.8 Northeastern United States

References for the data used in each location.

Eastern Maine: Belknap et al. (1989); Gehrels (1999); Gehrels and Belknap (1993); Gehrels et al. (1996)

Southern Maine: Barnhardt et al. (1995); Belknap et al. (1989); Bloom (1963); Gehrels et al. (1996, 2002); Kelley et al. (1992, 1995)

Northern Massachusetts: Donnelly (2006); Kaye and Barghoorn (1964); Kirwan et al. (2011); Newman et al. (1980); Oldale et al. (1993); Redfield (1967); Redfield and Rubin (1962)

Southern Massachusetts: Emery et al. (1967); Field et al. (1979); Gutierrez et al. (2003); Oldale and O'Hara (1980); Redfield (1967); Redfield and Rubin (1962); Stuiver et al. (1963)

Connecticut: Bloom (1963); Cinquemani et al. (1982); Donnelly et al. (2004); Nydick et al. (1995); Redfield and Rubin (1962); van de Plassche (1991); van de Plassche et al. (1989, 1998, 2002)

Long Island: Bloom (1963); Cinquemani et al. (1982); Field et al. (1979); Pardi and Newman (1980); Pardi et al. (1984); Redfield (1967); Redfield and Rubin (1962)

New York: Olson and Broecker (1961); Pardi et al. (1984); Slagle et al. (2006)

New Jersey: Cinquemani et al. (1982); Donnelly et al. (2001); Engelhart and Horton (2012); Field et al. (1979); Miller et al. (2009); Pardi et al. (1984); Psuty (1986); Stuiver and Daddario (1963)

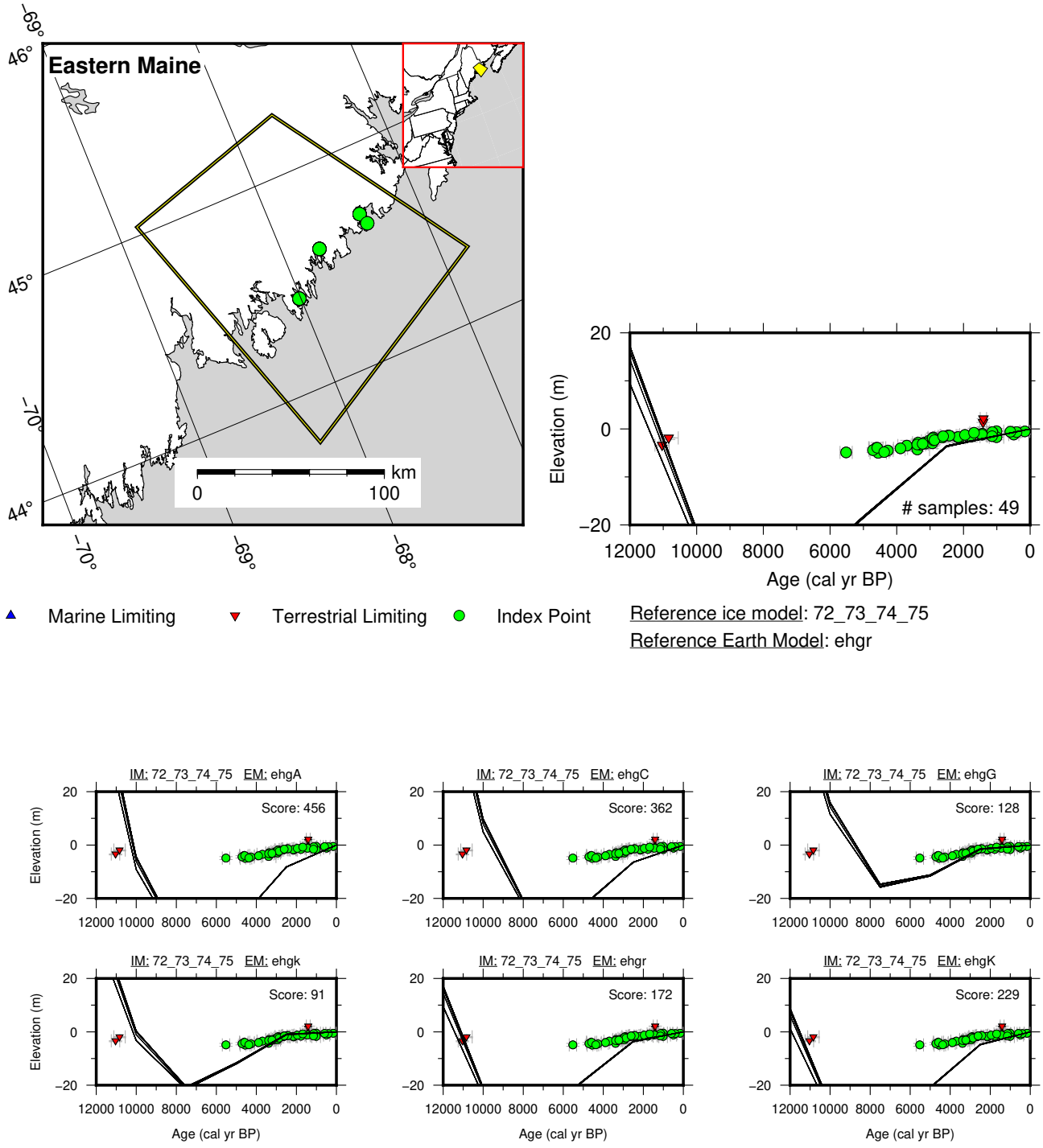


Figure 143: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Eastern Maine.

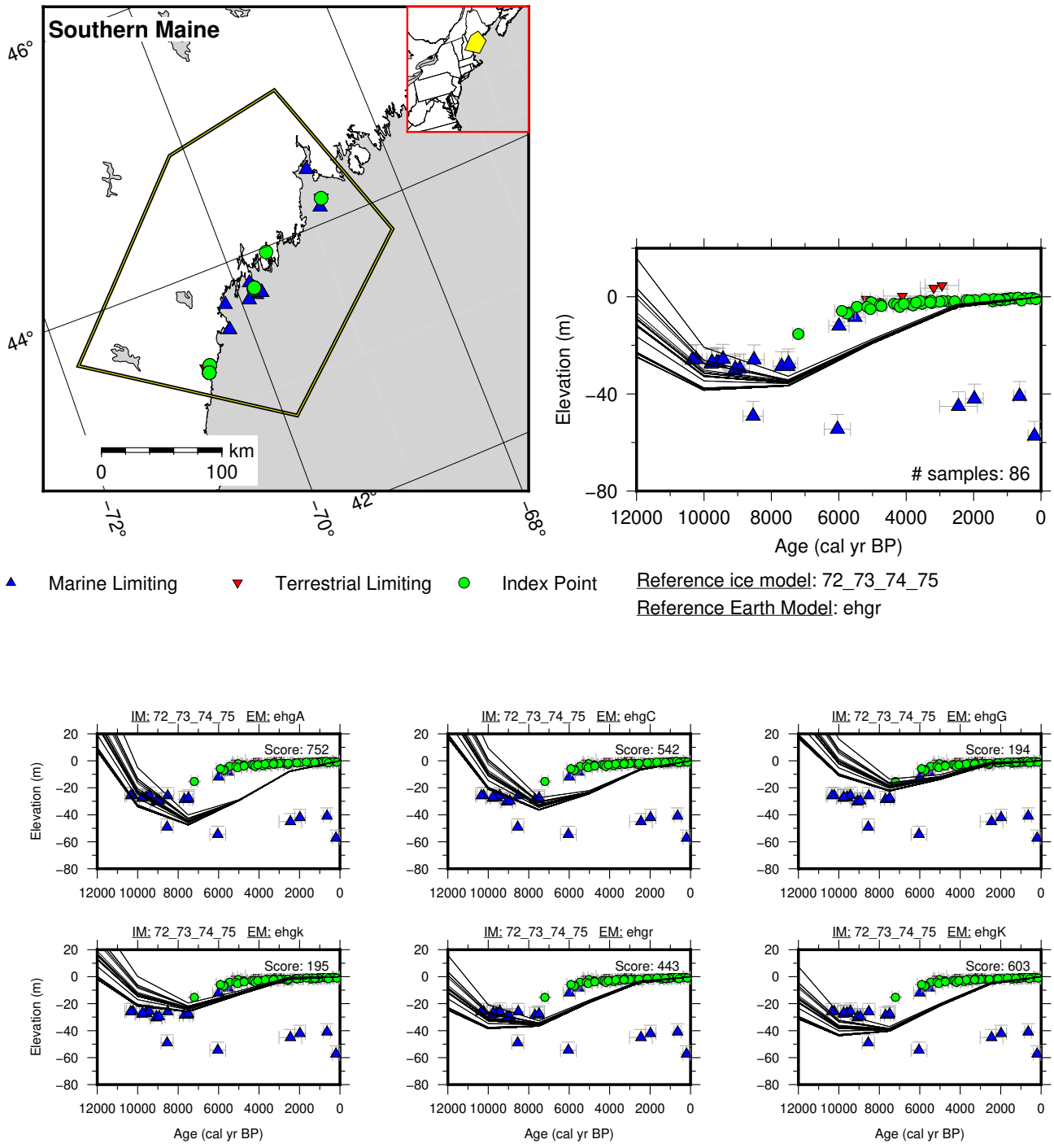
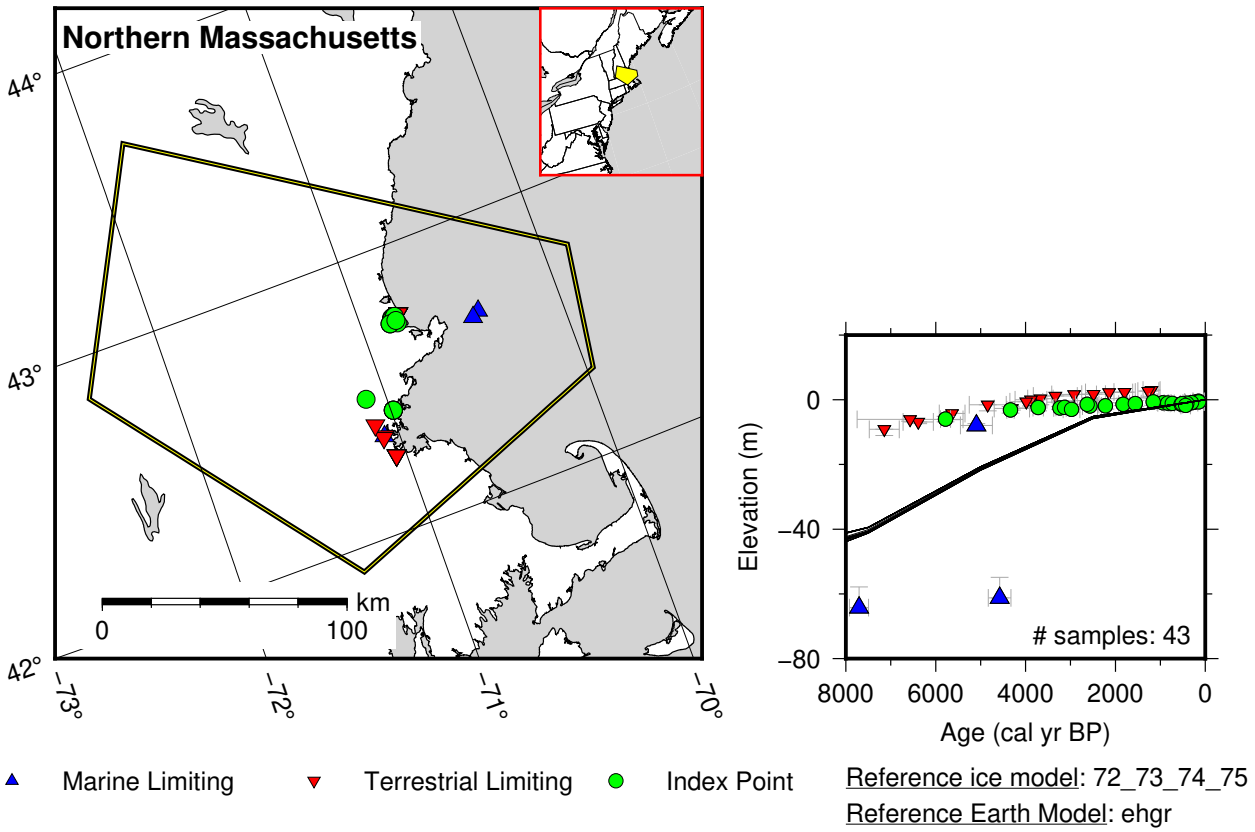


Figure 144: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Southern Maine.



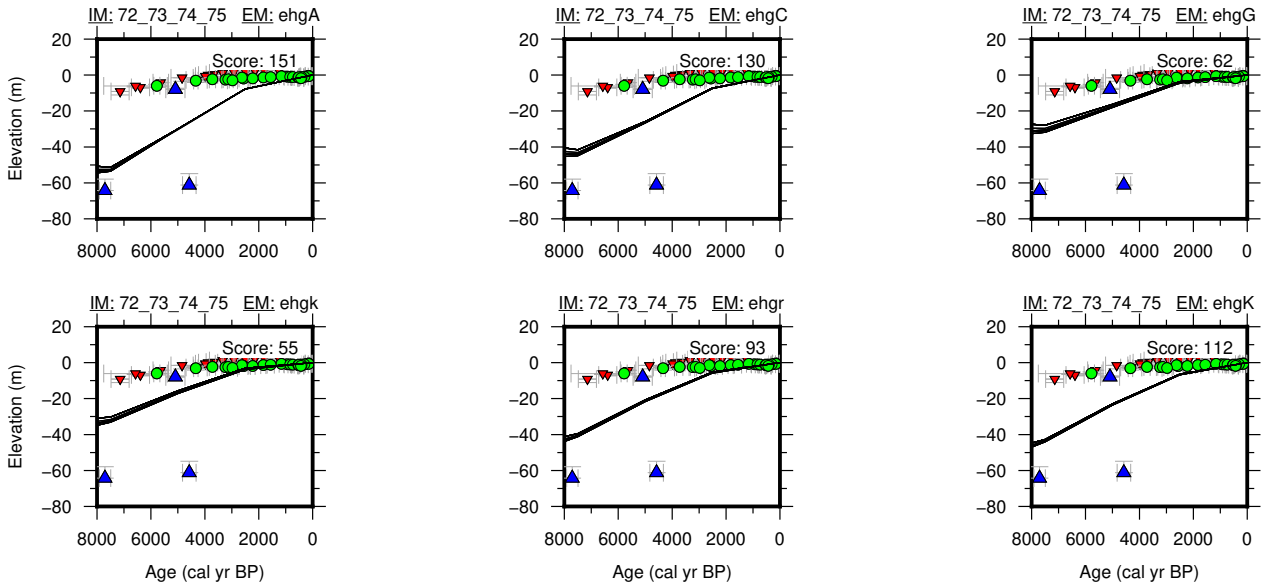


Figure 145: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Northern Massachusetts.

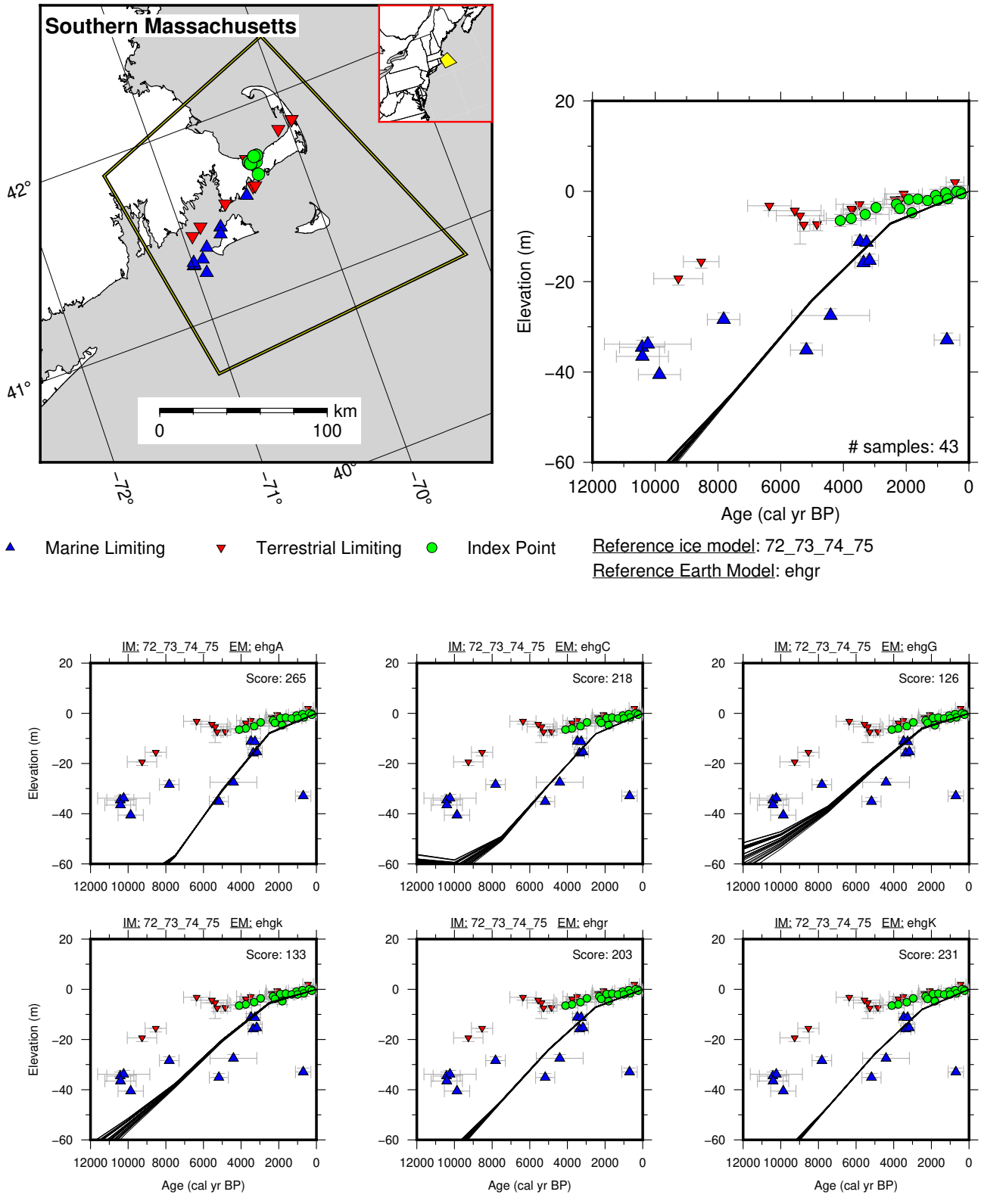
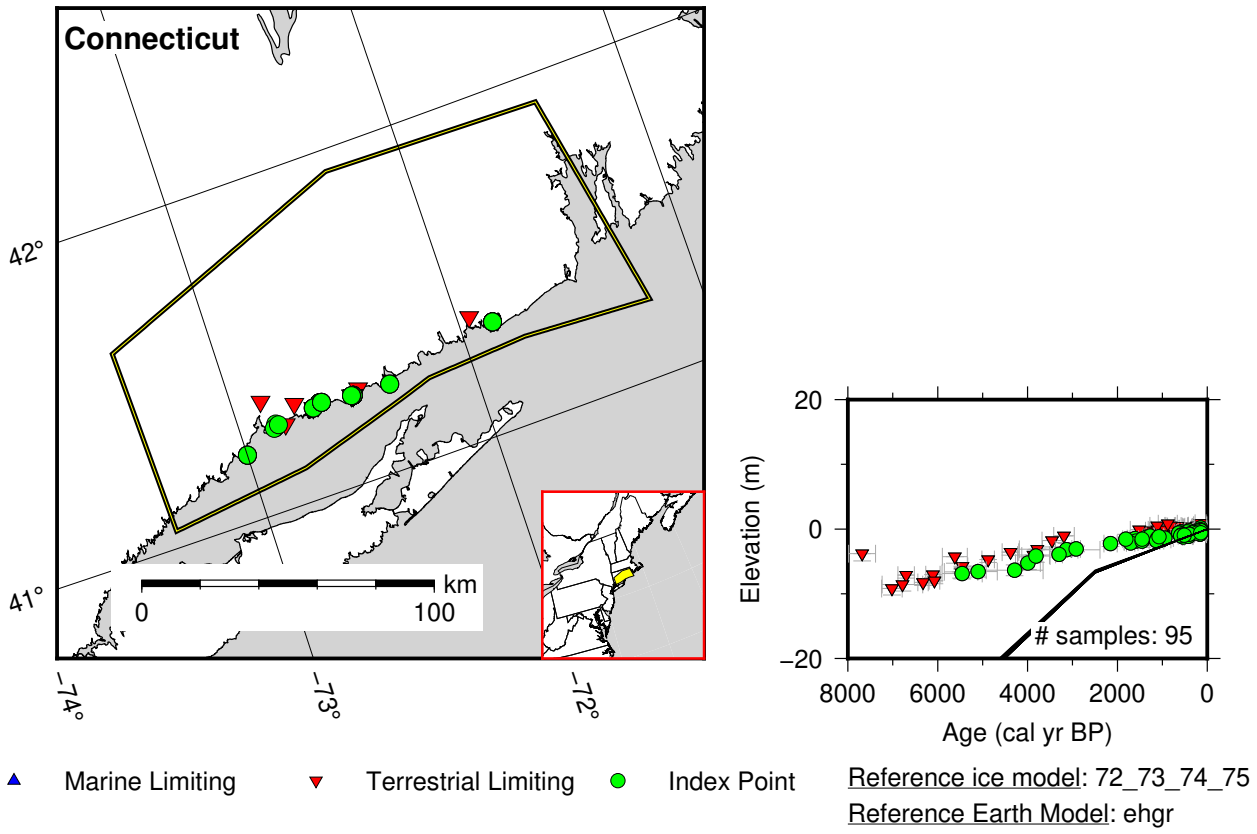


Figure 146: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Southern Massachusetts.



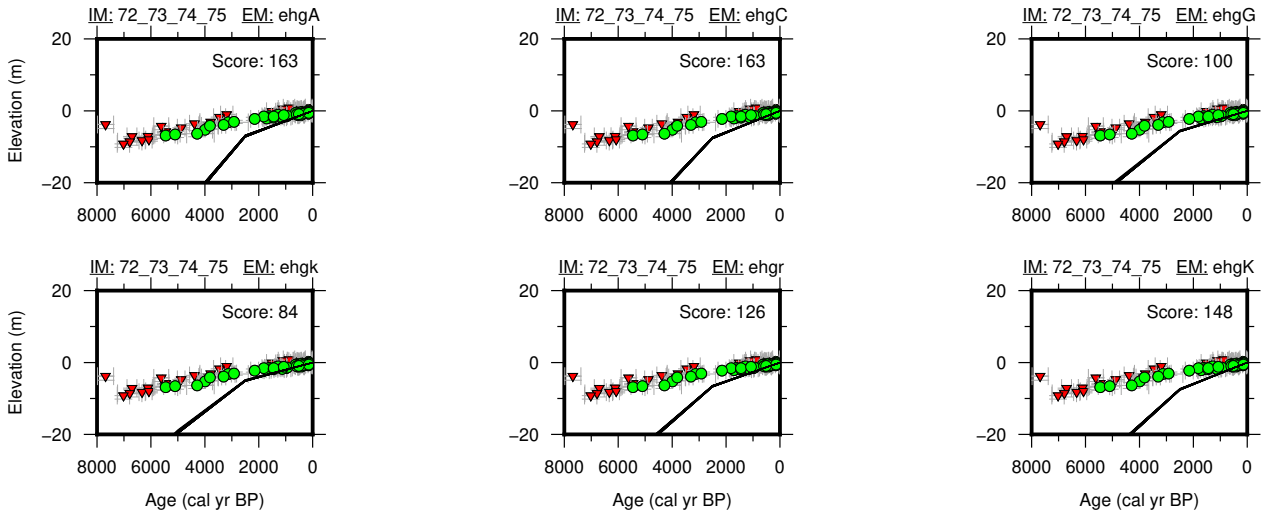


Figure 147: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Connecticut.

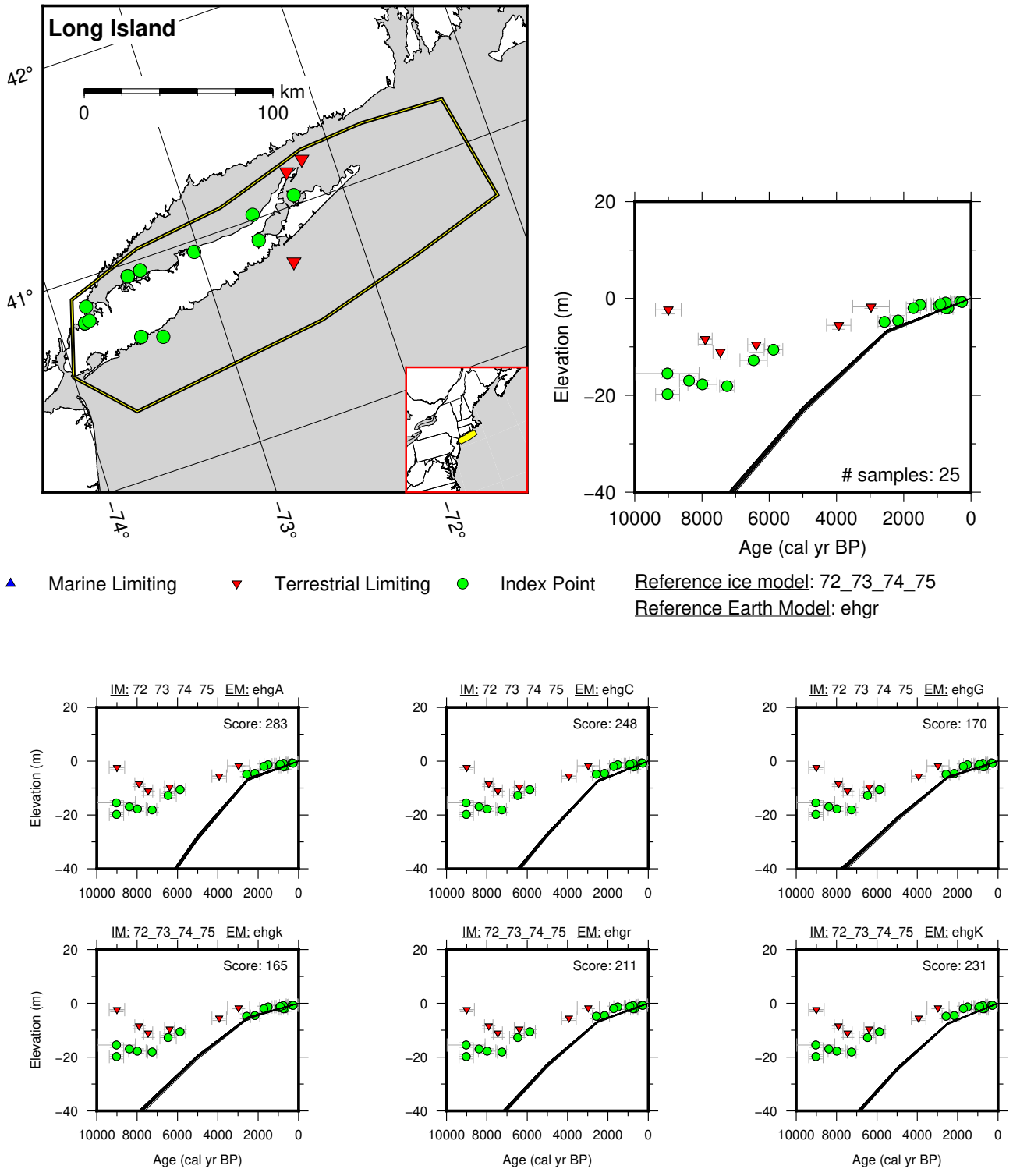


Figure 148: Paleo-sea level and comparison of six models for subregion Northeastern United States, location Long Island.

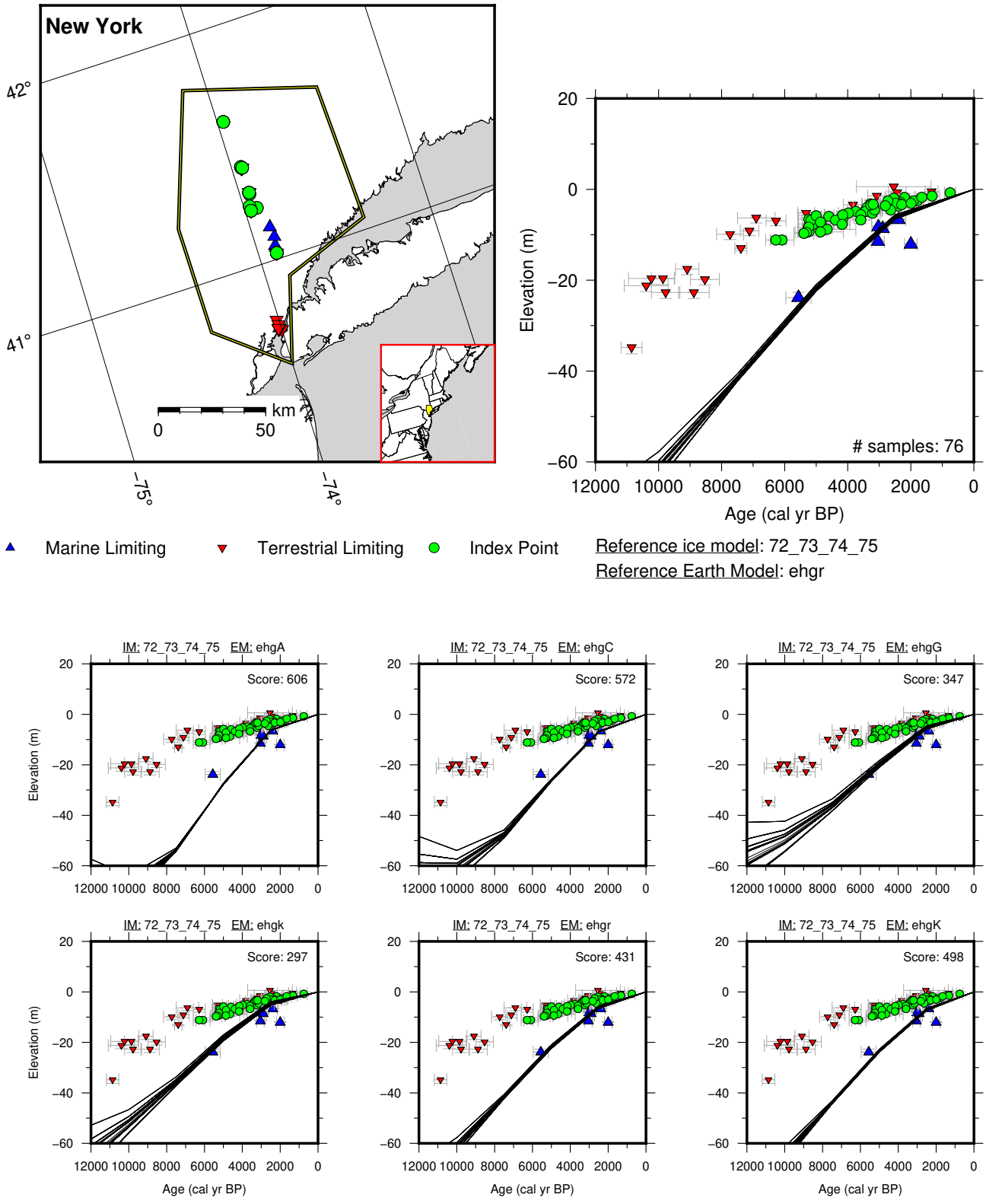


Figure 149: Paleo-sea level and comparison of six models for subregion Northeastern United States, location New York.

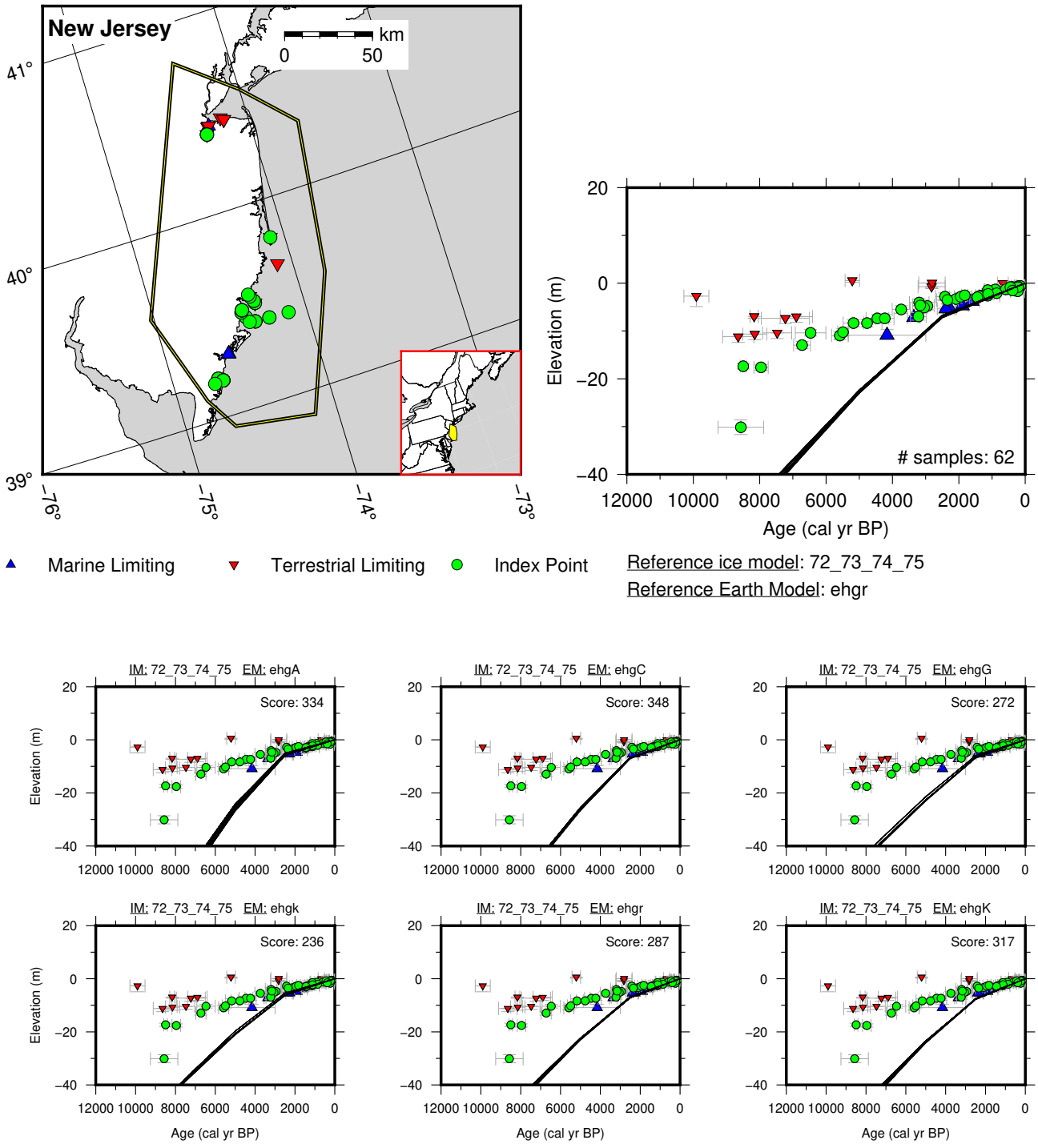


Figure 150: Paleo-sea level and comparison of six models for subregion Northeastern United States, location New Jersey.

13.9 St Laurence Lowlands

References for the data used in each location.

Rimouski: Blake and Lowdon (1976); Dionne (1990, 1999, 2001a, 2005); Dionne and Coll (1995); Dyck and Fyles (1963); Harington (2003); Hétu (1994, 1998); Hétu and Bail (1996); Locat (1977); Vacchi et al. (2018)

Forestville: Dietrich et al. (2017); Dionne (1996, 2001b); Dionne and Occhietti (1996); Dionne et al. (2004); Dubois et al. (1988); Martindale et al. (2020)

Quebec City: Bhiry et al. (2000); Brodeur and Allard (1985); Dionne (1988, 1997, 1998); Filion (1987); Govare and Gangloff (1989); McNeely (2006); McNeely and Brennan (2005); Occhietti et al. (2001); Parent and Occhietti (1988); Samson et al. (1977)

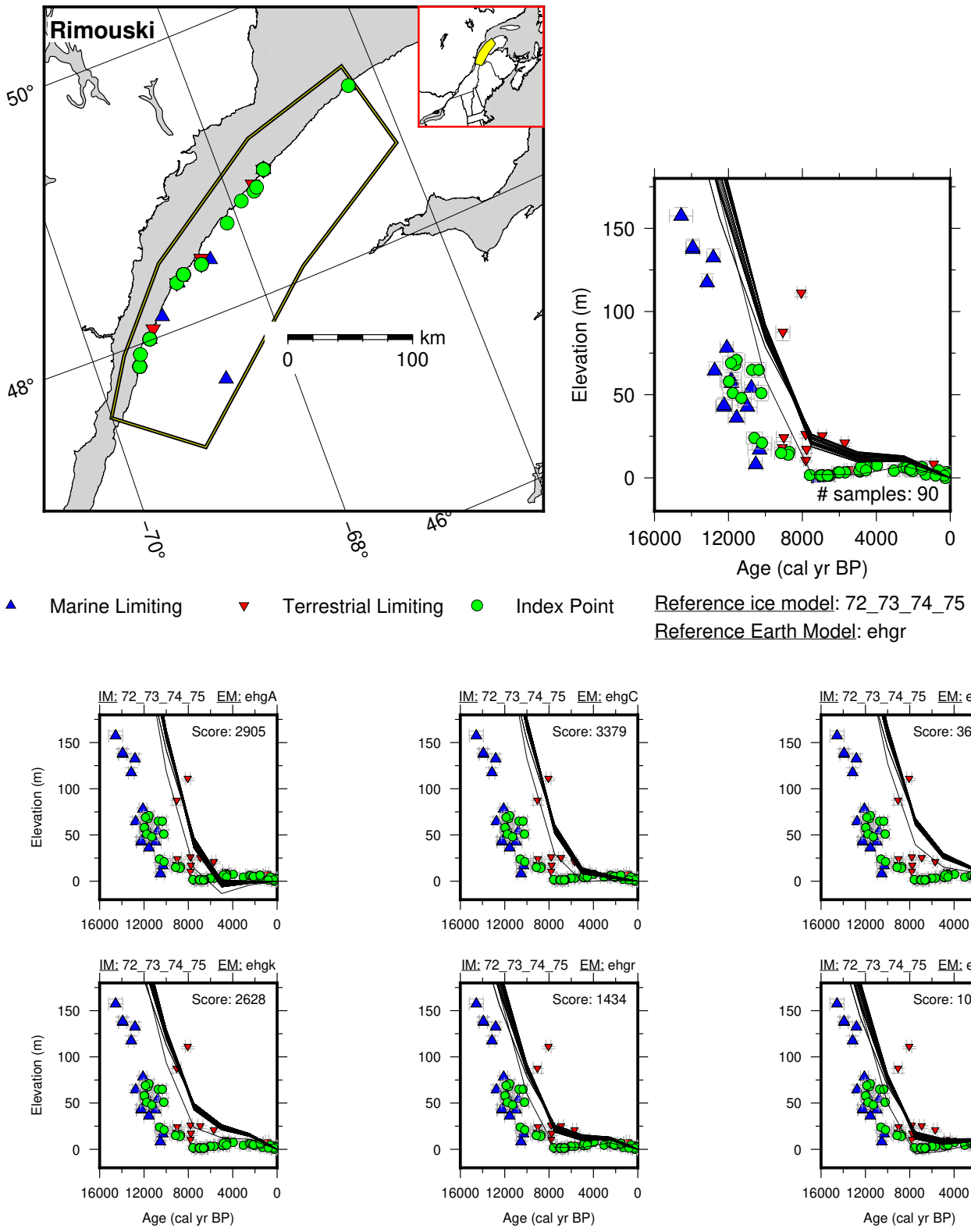


Figure 151: Paleo-sea level and comparison of six models for subregion St Laurence Lowlands, location Rimouski.

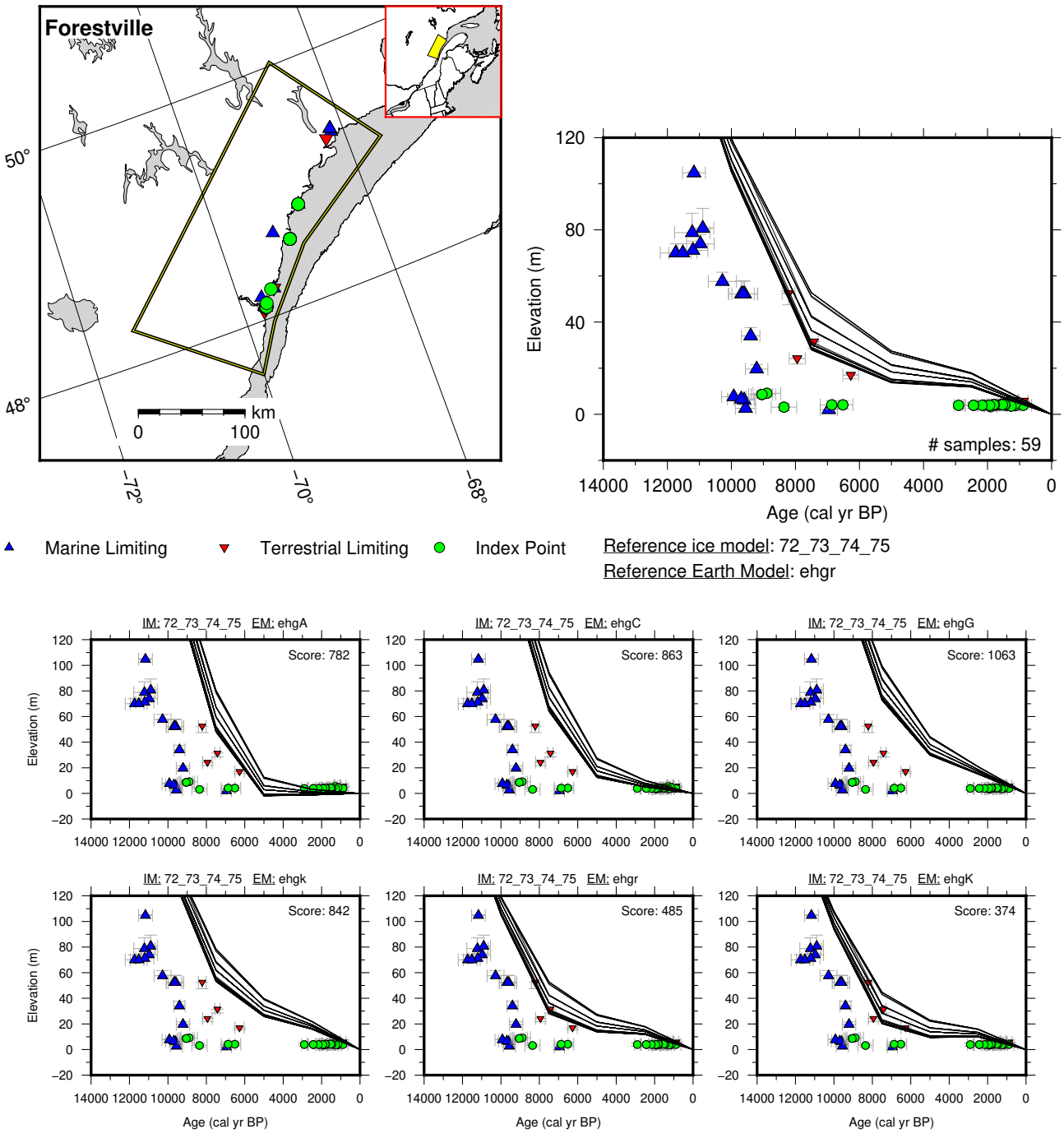


Figure 152: Paleo-sea level and comparison of six models for subregion St Laurence Lowlands, location Forestville.

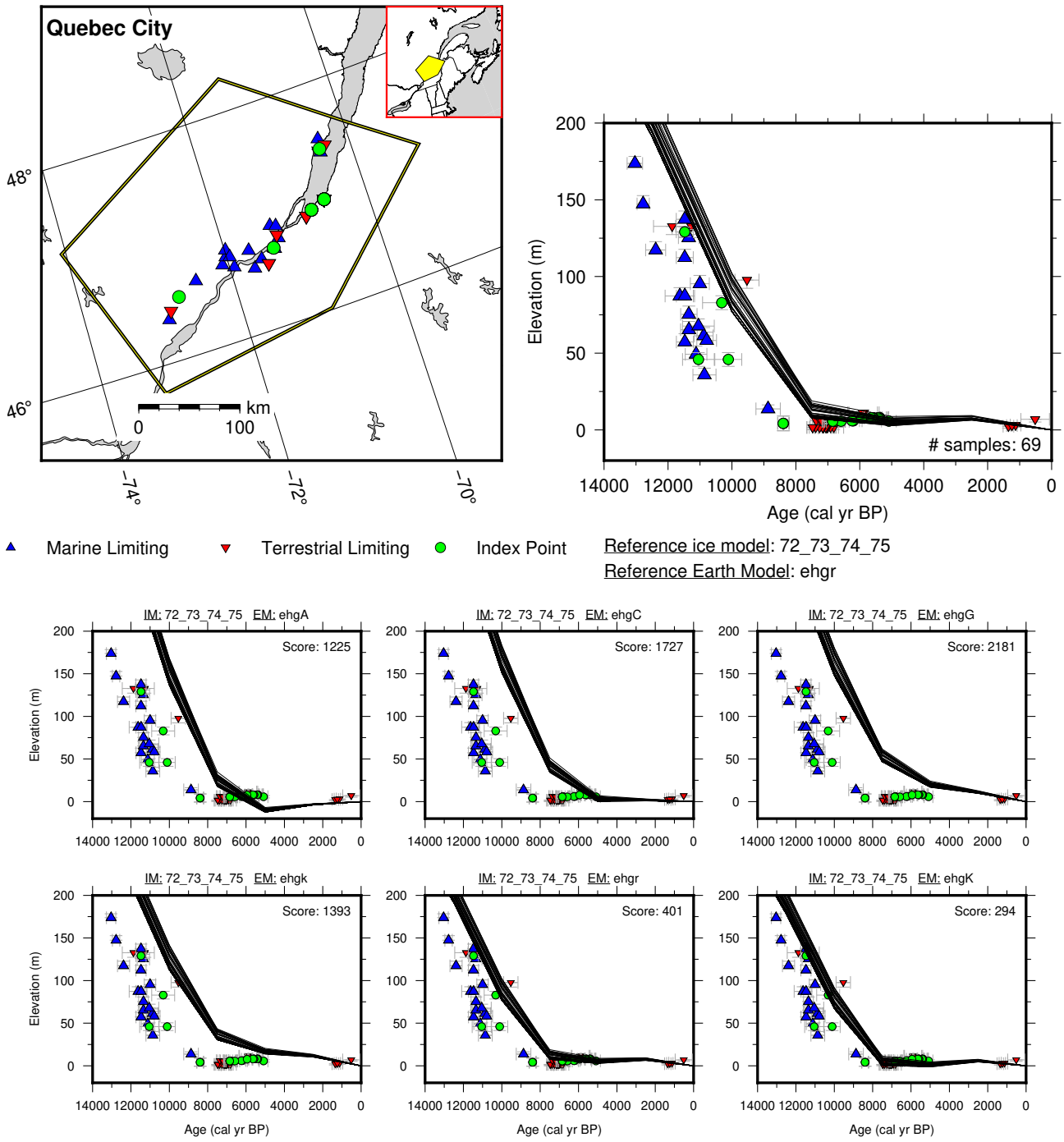


Figure 153: Paleo-sea level and comparison of six models for subregion St Laurence Lowlands, location Quebec City.

14 South Asia

14.1 Bay of Bengal

References for the data used in each location.

Ganges Delta: Wiedicke et al. (1999)

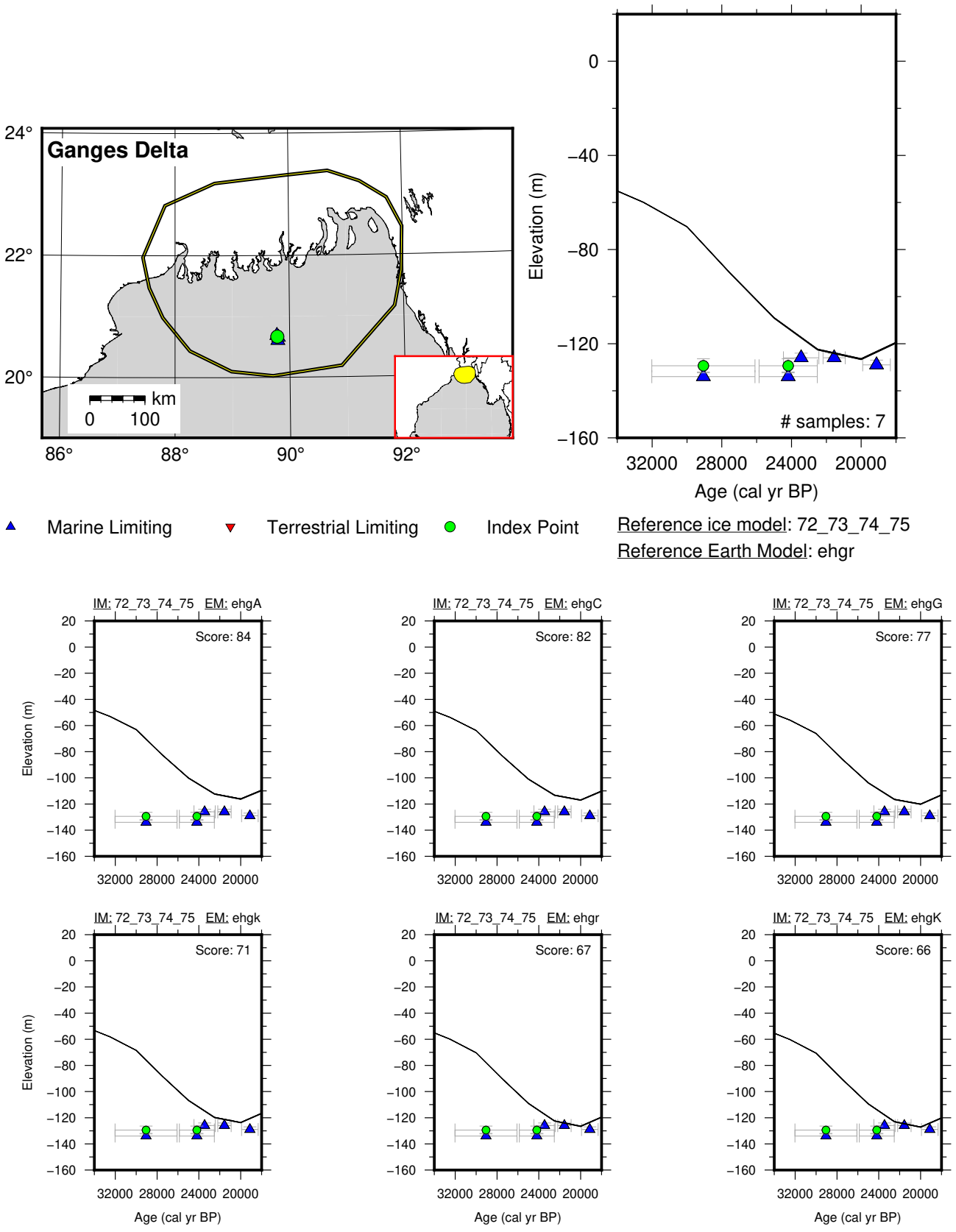


Figure 154: Paleo-sea level and comparison of six models for subregion Bay of Bengal, location Ganges Delta.

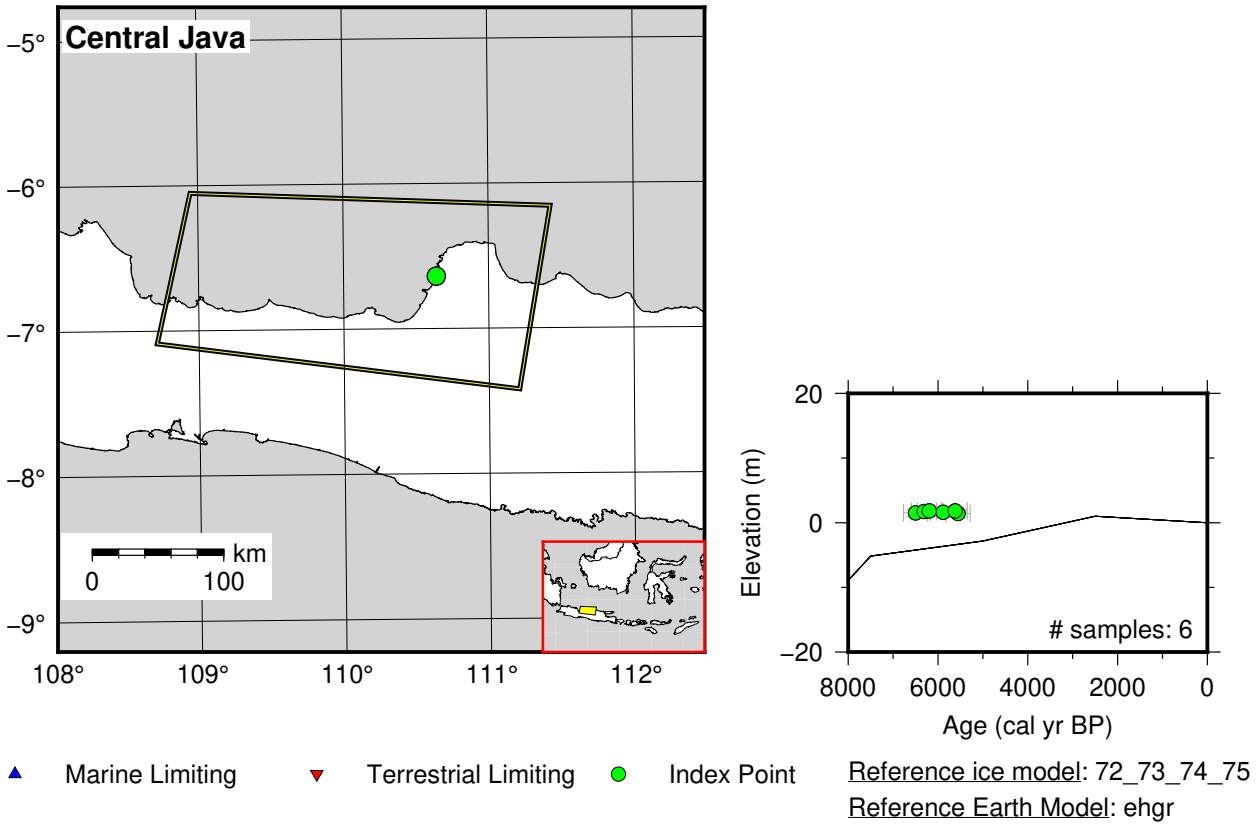
15 Southeast Asia

15.1 Java Sea

References for the data used in each location.

Central Java: Azmy et al. (2010)

South Sulawesi: de Klerk (1982); Mann et al. (2016); Tjia et al. (1972)



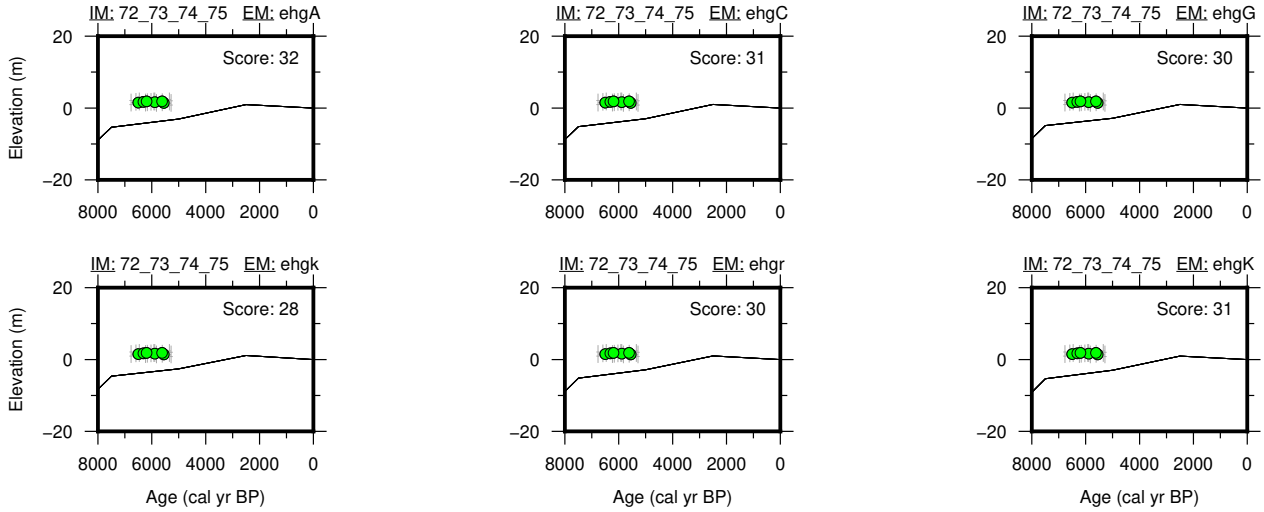
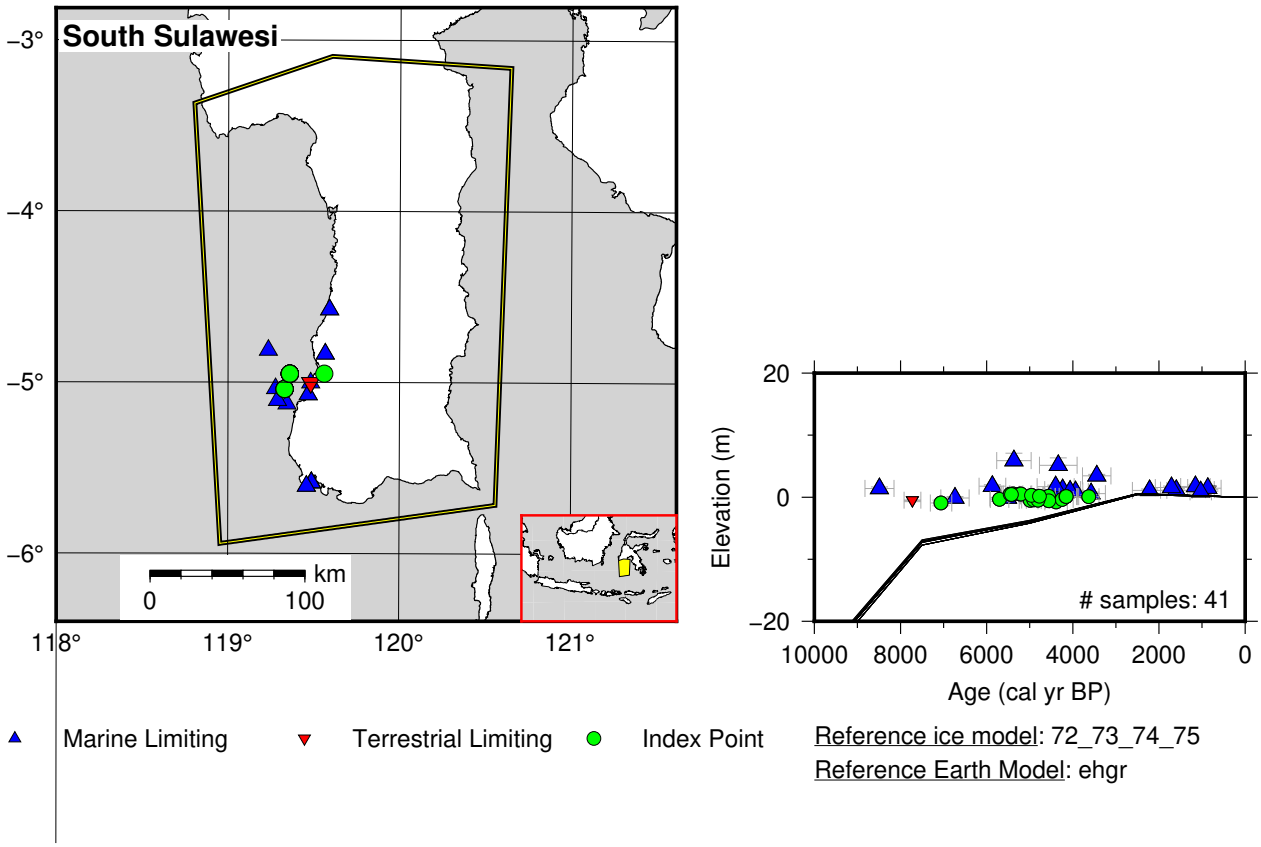


Figure 155: Paleo-sea level and comparison of six models for subregion Java Sea, location Central Java.



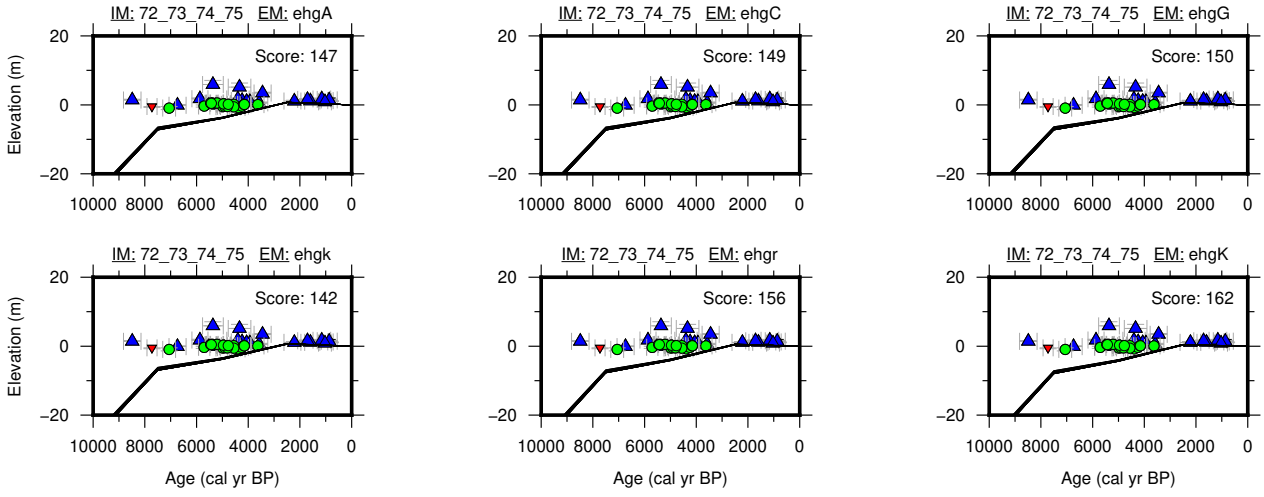


Figure 156: Paleo-sea level and comparison of six models for subregion Java Sea, location South Sulawesi.

15.2 Papua New Guinea

References for the data used in each location.

Huon Peninsula: Chappell and Polach (1991); Cutler et al. (2003); Edwards et al. (1993); Hibbert et al. (2016)

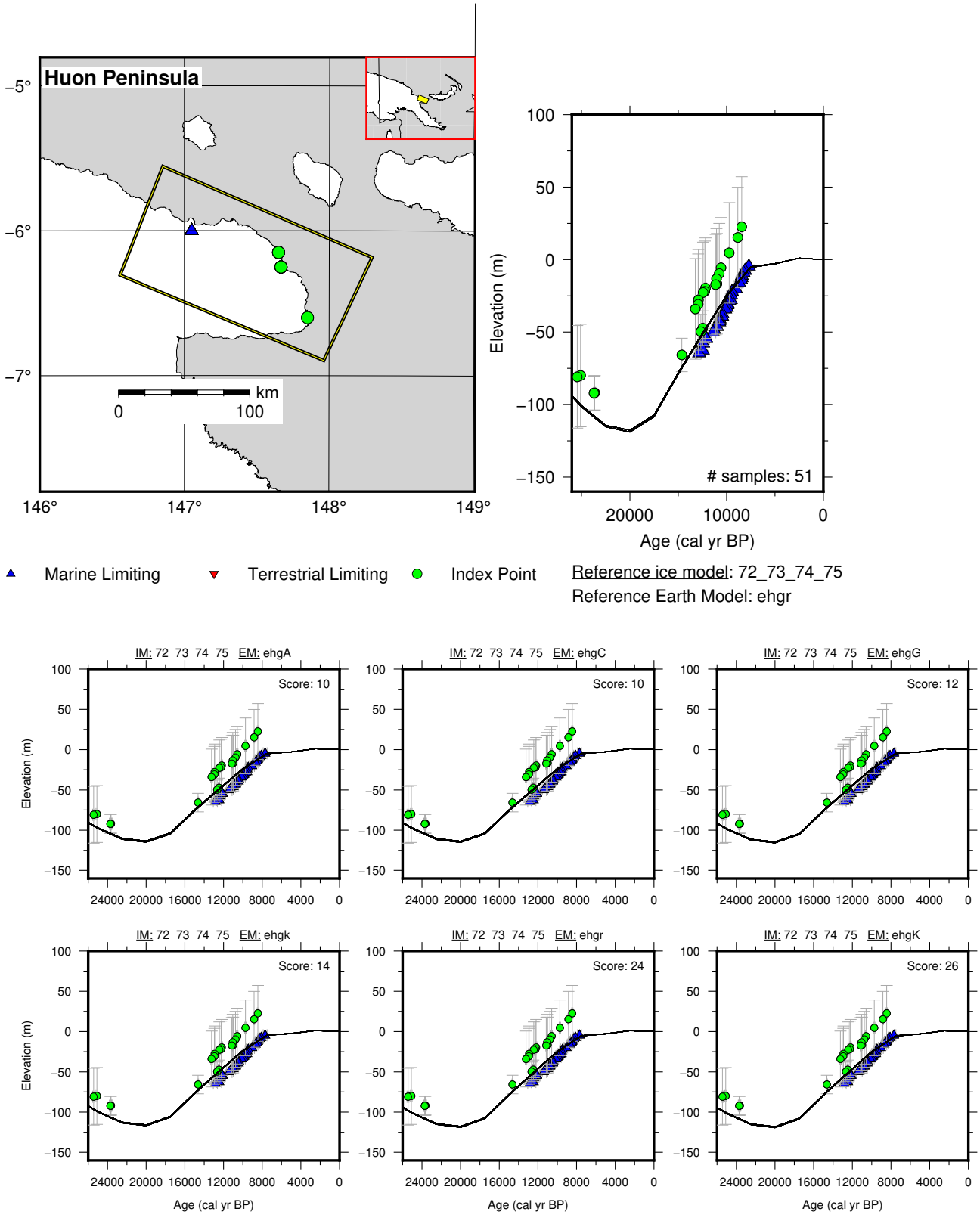


Figure 157: Paleo-sea level and comparison of six models for subregion Papua New Guinea, location Huon Peninsula.

15.3 Sundaland

References for the data used in each location.

Chao Phraya: Horton et al. (2005); Sinsakul (1992); Somboon (1988); Somboon and Thiramongkol (1992)

Mekong Delta: Hanebuth et al. (2012); Stattegger et al. (2013); Tamura et al. (2007, 2009)

Strait Of Malacca: Bird et al. (2007, 2010); Geyh et al. (1979); Hassan (2001); Hesp et al. (1998); Horton et al. (2005); Tjia and Fujii (1992)

Sunda Shelf: Hanebuth et al. (2000, 2003, 2009)

Vietnam Shelf: Hanebuth et al. (2000)

Phuket: Scheffers et al. (2012); Scoffin and Le Tissier (1998)

Thale Noi: Horton et al. (2005)

West Malay Peninsula: Tjia and Fujii (1992); Tjia et al. (1972)

East Malay Peninsula: Parham et al. (2014); Tjia and Fujii (1992)

Southeast Malay Peninsula: Hassan (2001); Horton et al. (2005); Tjia and Fujii (1992); Tjia et al. (1983)

Belitung Island: Meltzner et al. (2017)

Ca Na: Stattegger et al. (2013)

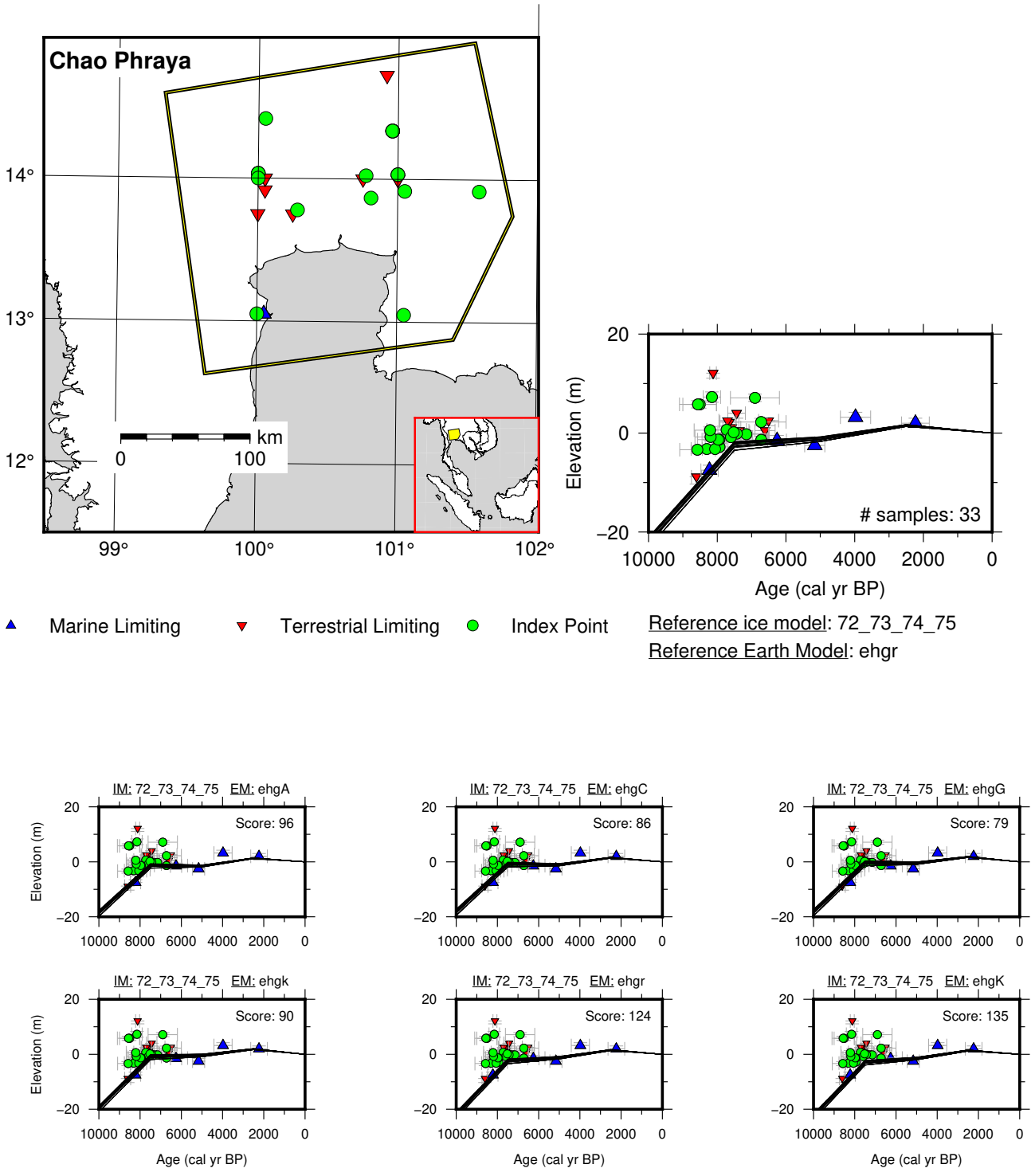


Figure 158: Paleo-sea level and comparison of six models for subregion Sundaland, location Chao Phraya.

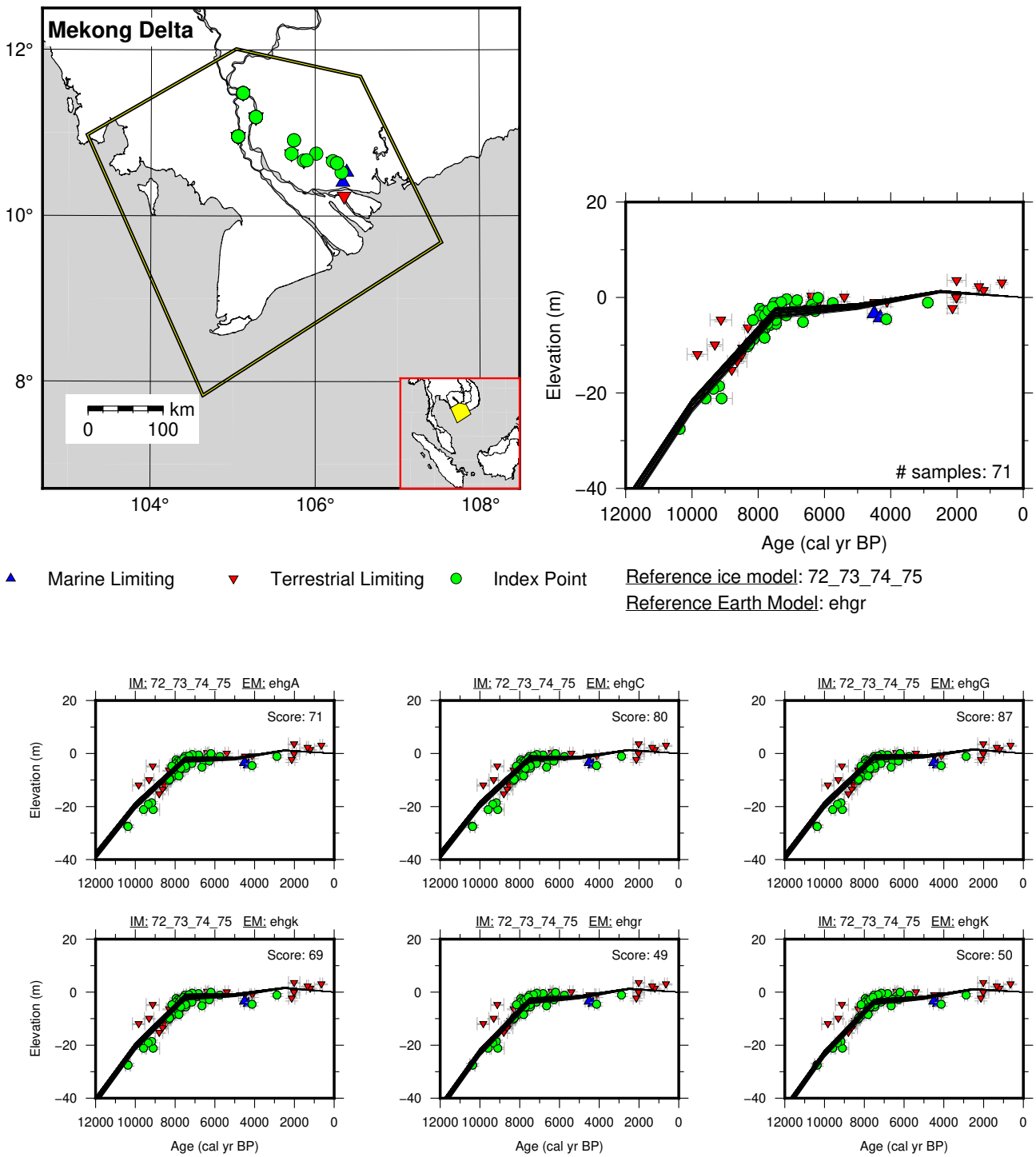


Figure 159: Paleo-sea level and comparison of six models for subregion Sundaland, location Mekong Delta.

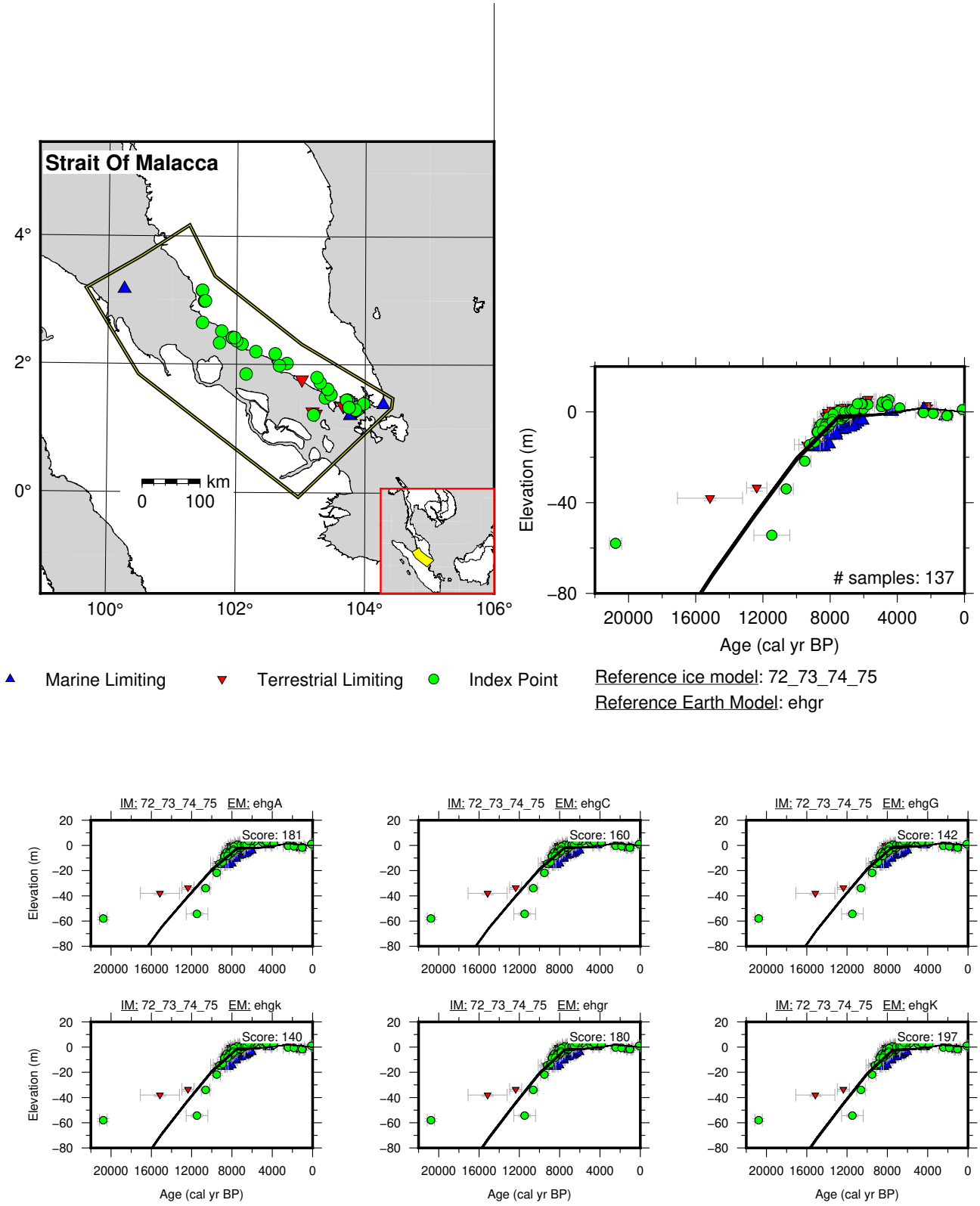


Figure 160: Paleo-sea level and comparison of six models for subregion Sundaland, location Strait Of Malacca.

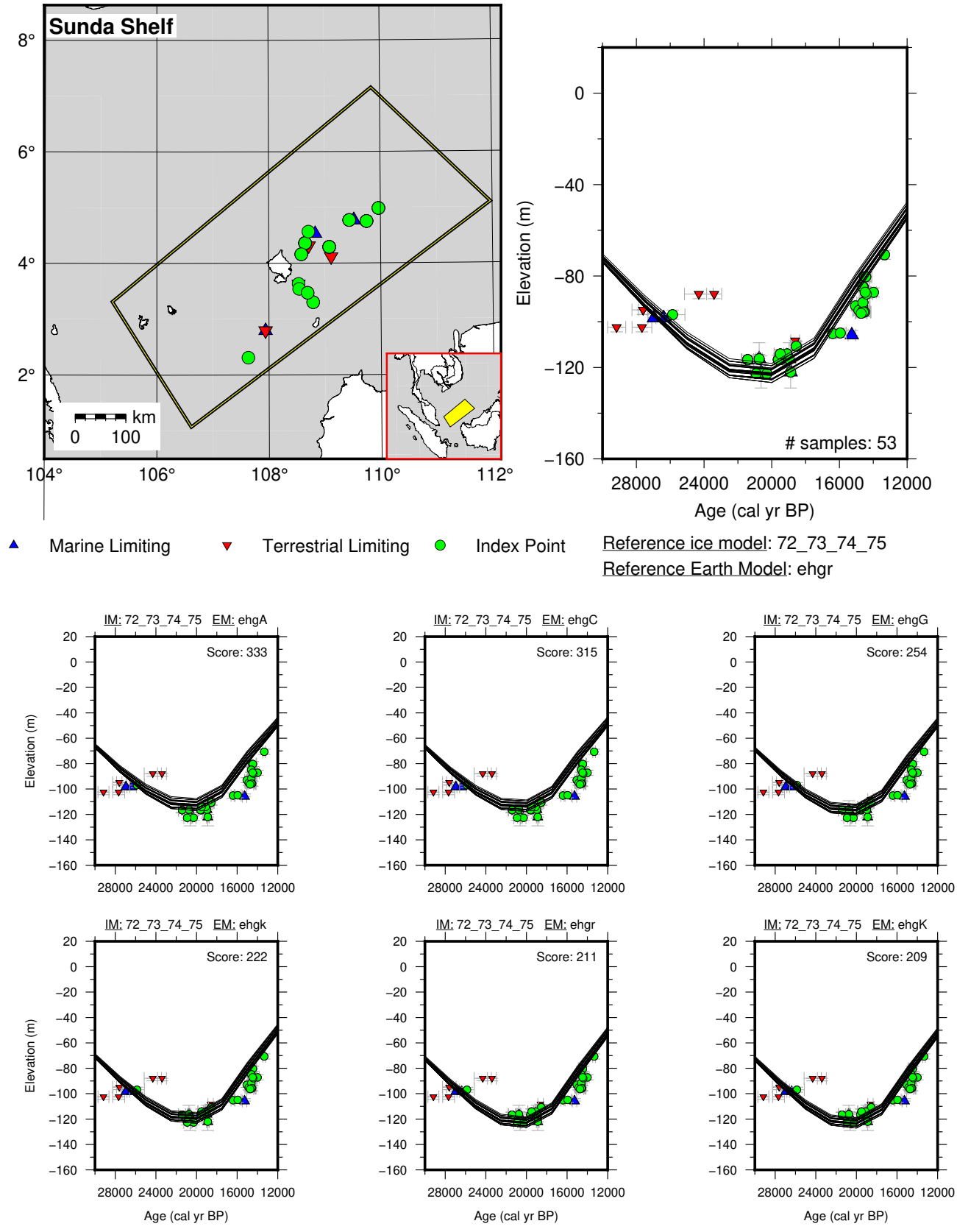


Figure 161: Paleo-sea level and comparison of six models for subregion Sundaland, location Sunda Shelf.

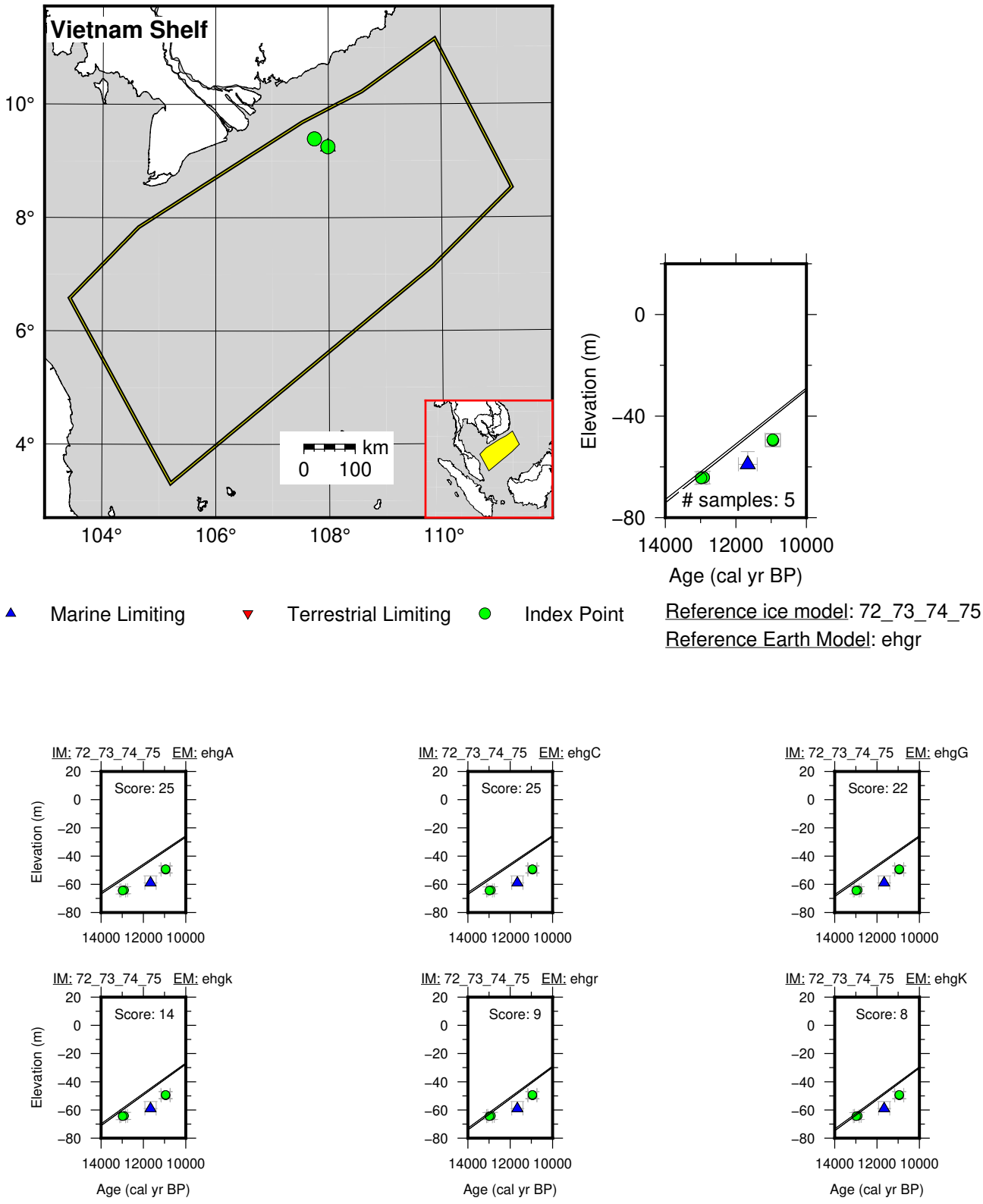
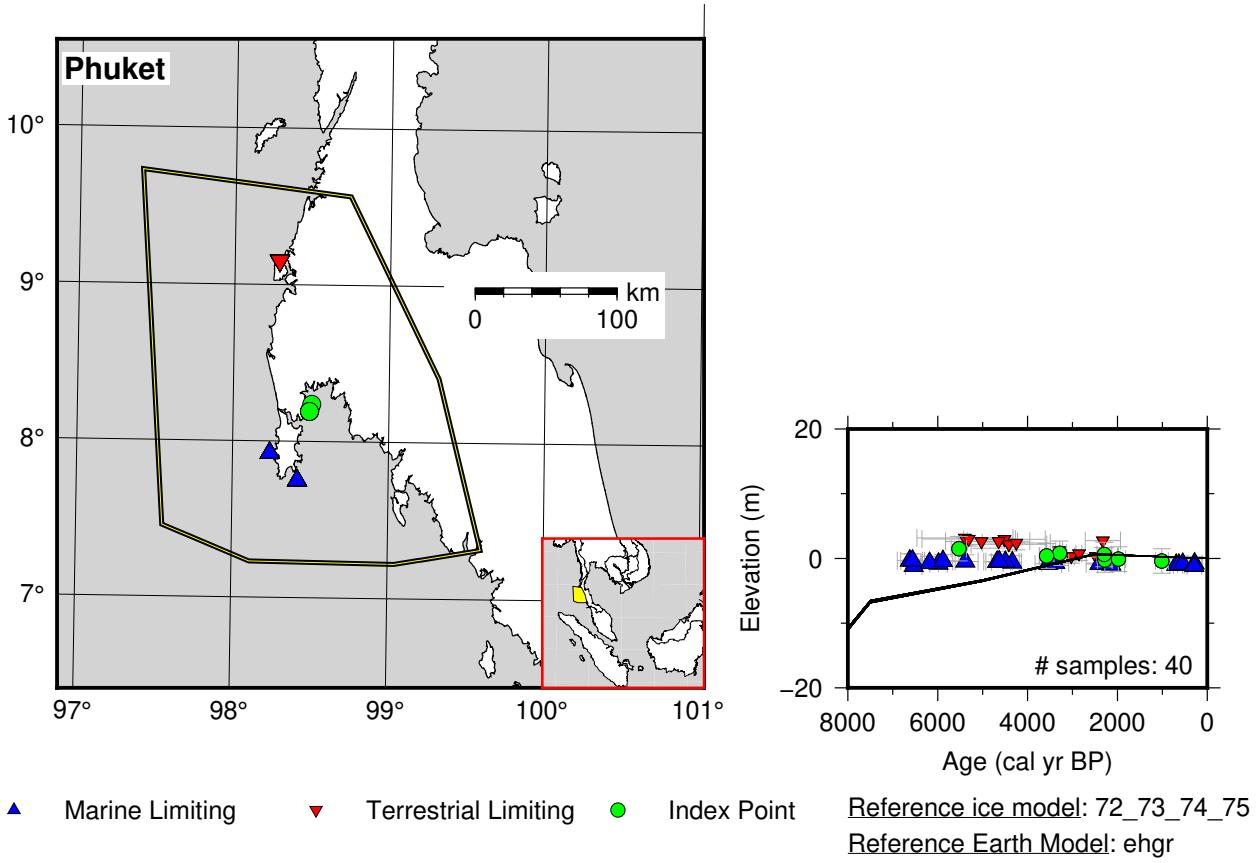


Figure 162: Paleo-sea level and comparison of six models for subregion Sundaland, location Vietnam Shelf.



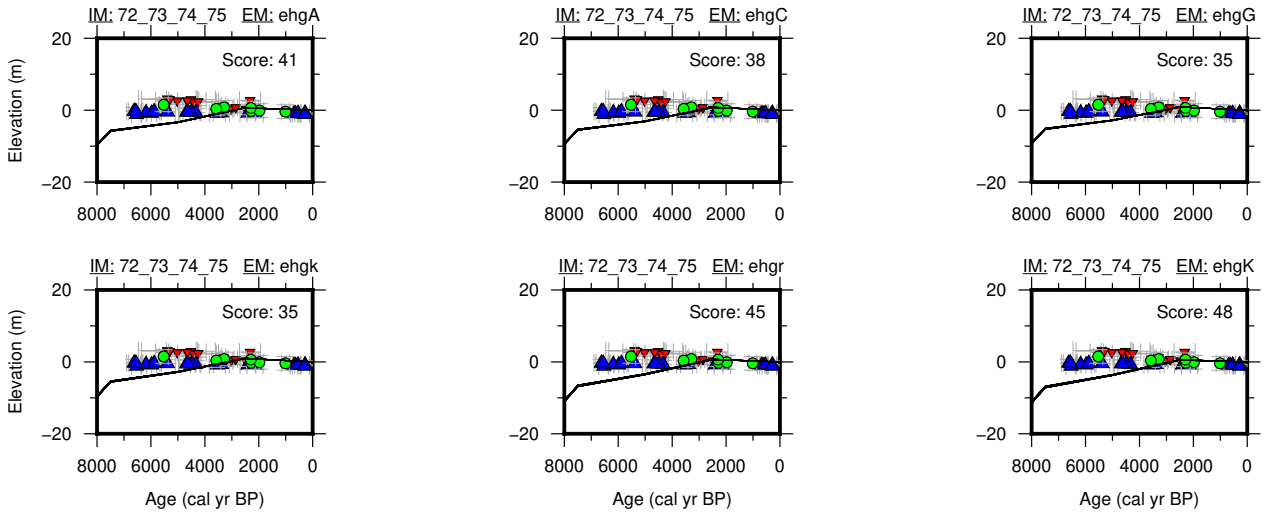
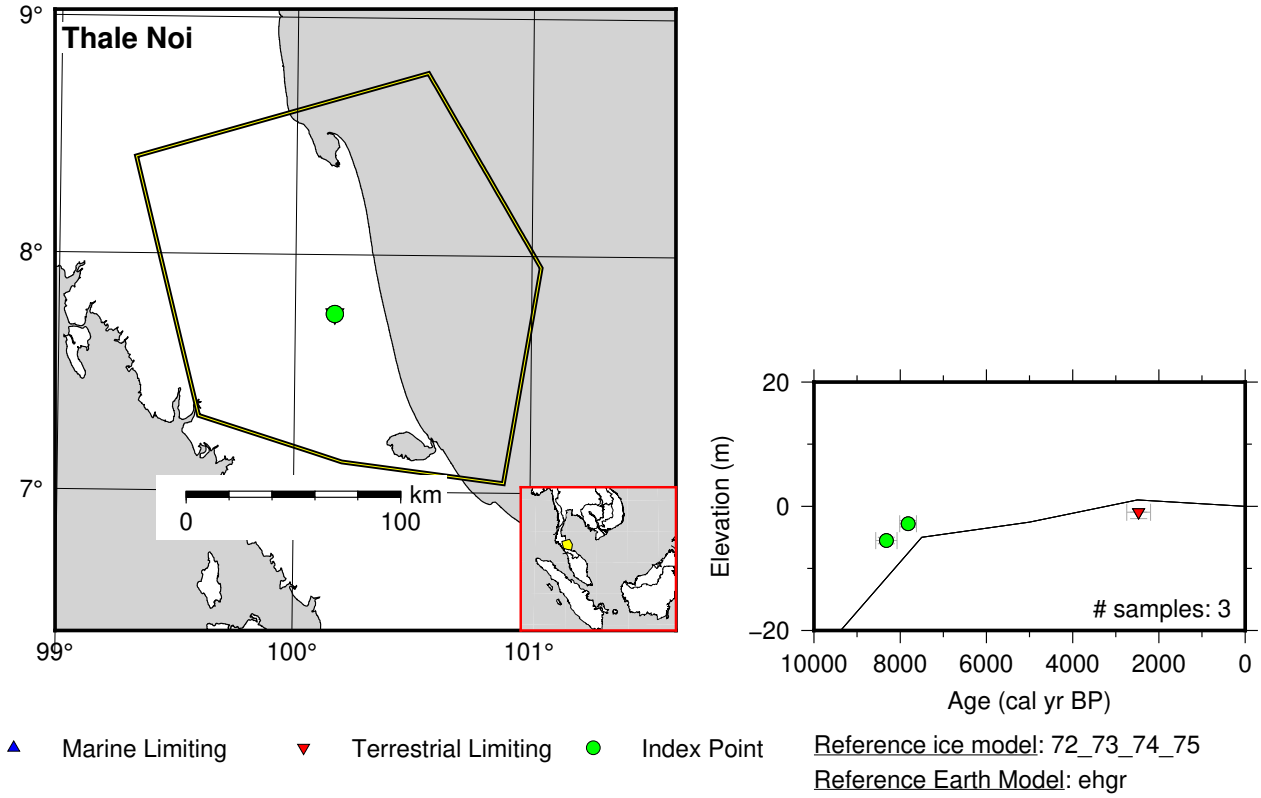


Figure 163: Paleo-sea level and comparison of six models for subregion Sundaland, location Phuket.



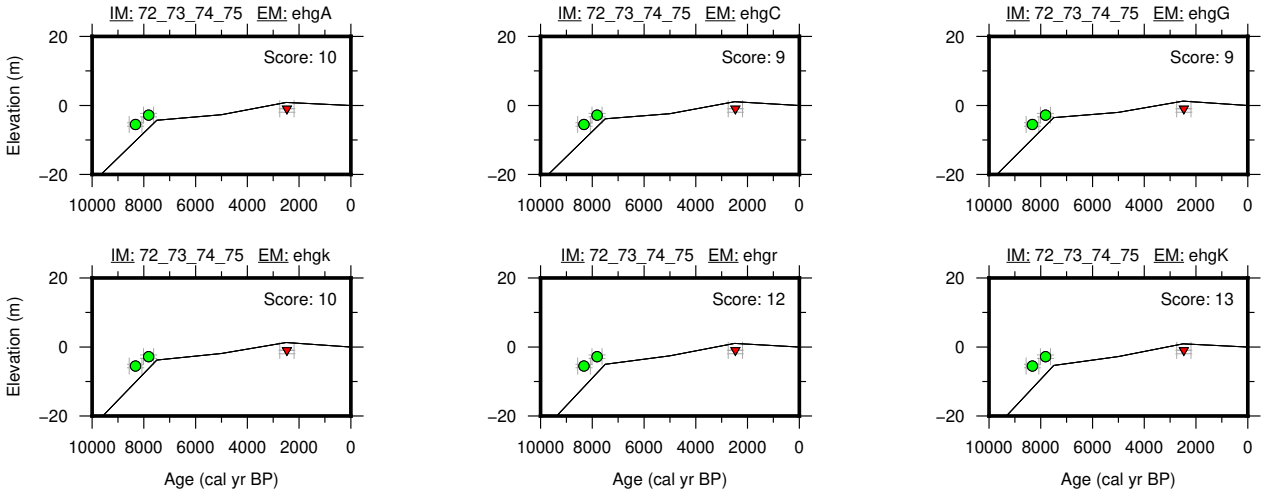


Figure 164: Paleo-sea level and comparison of six models for subregion Sundaland, location Thale Noi.

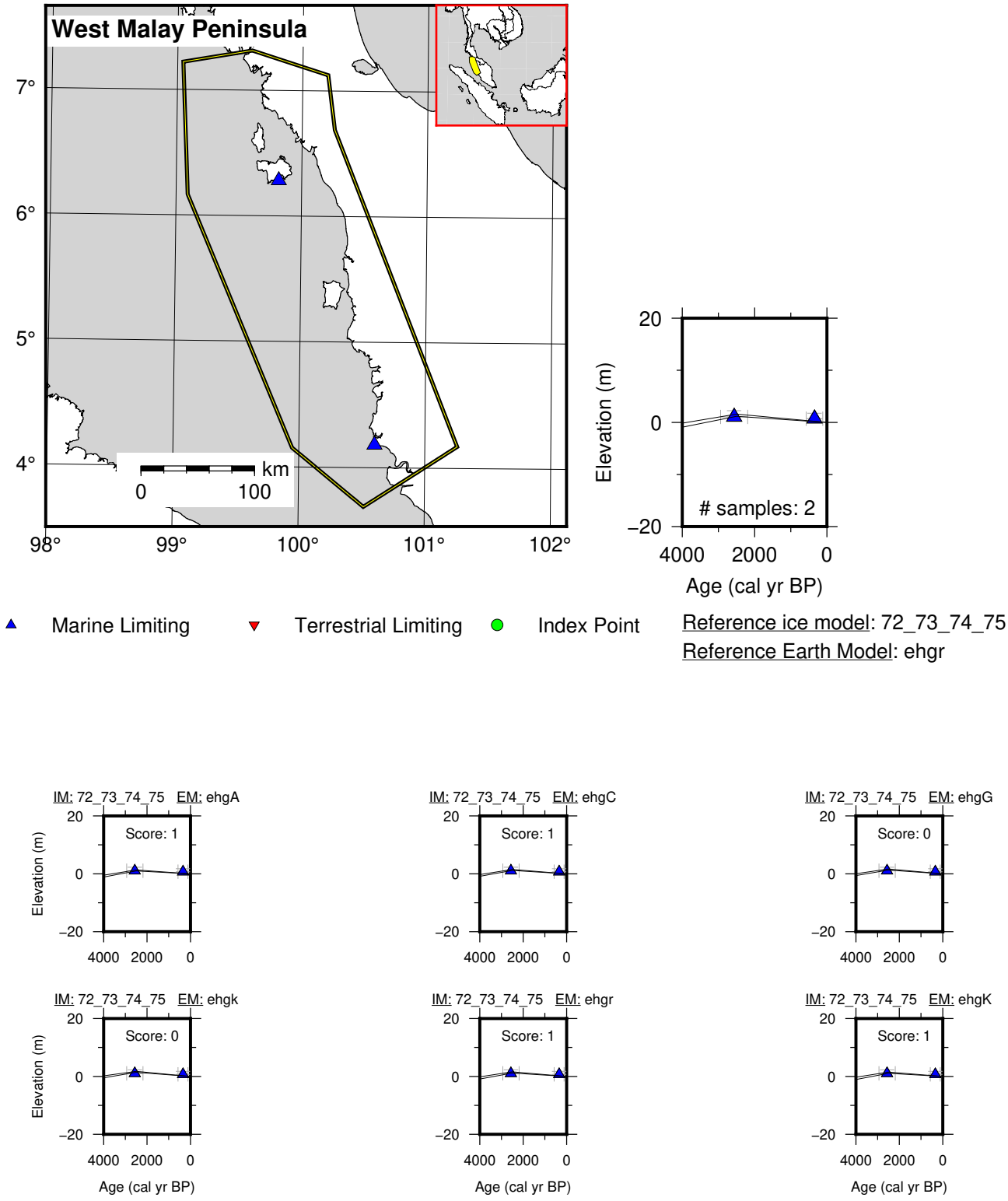
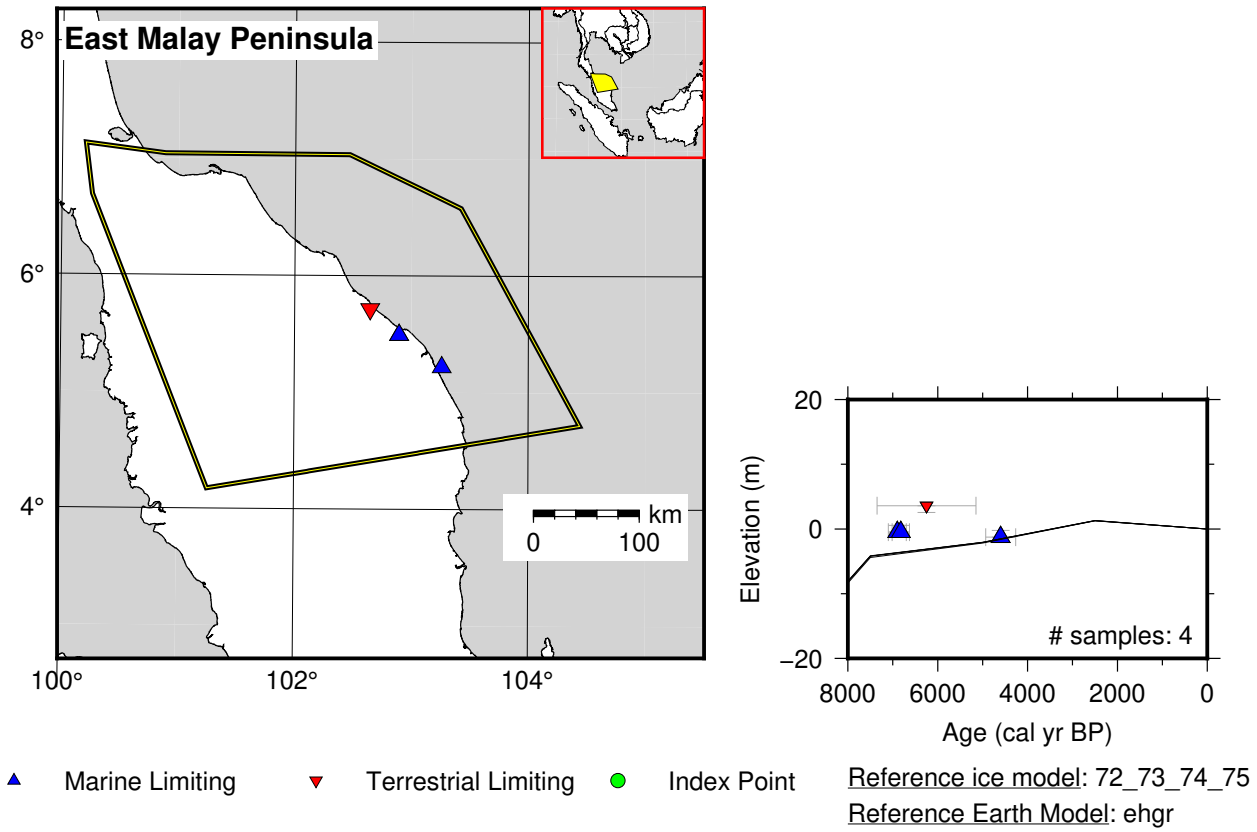


Figure 165: Paleo-sea level and comparison of six models for subregion Sundaland, location West Malay Peninsula.



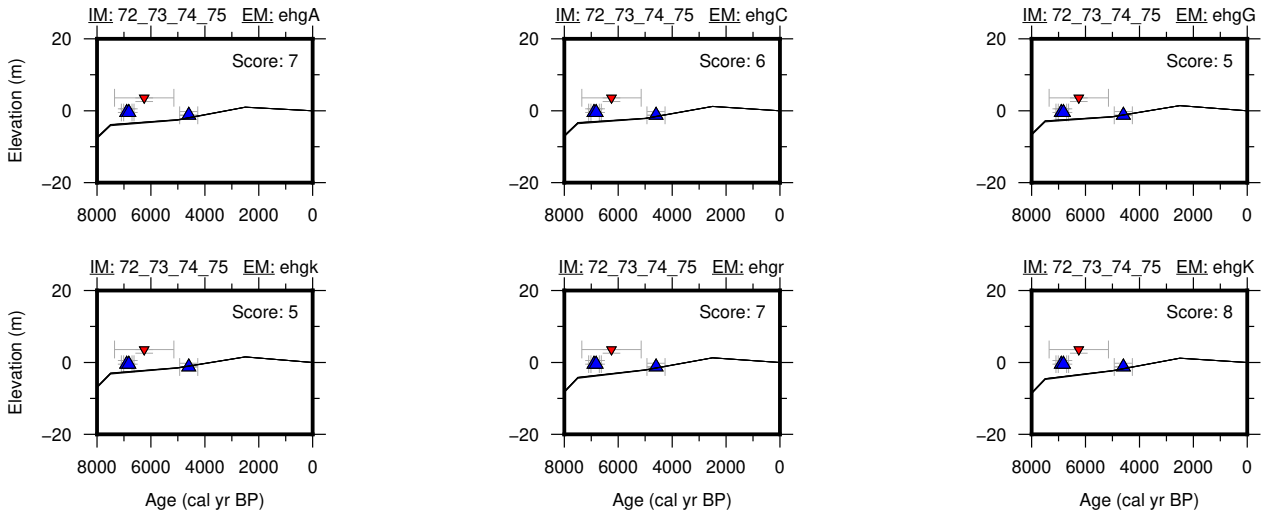
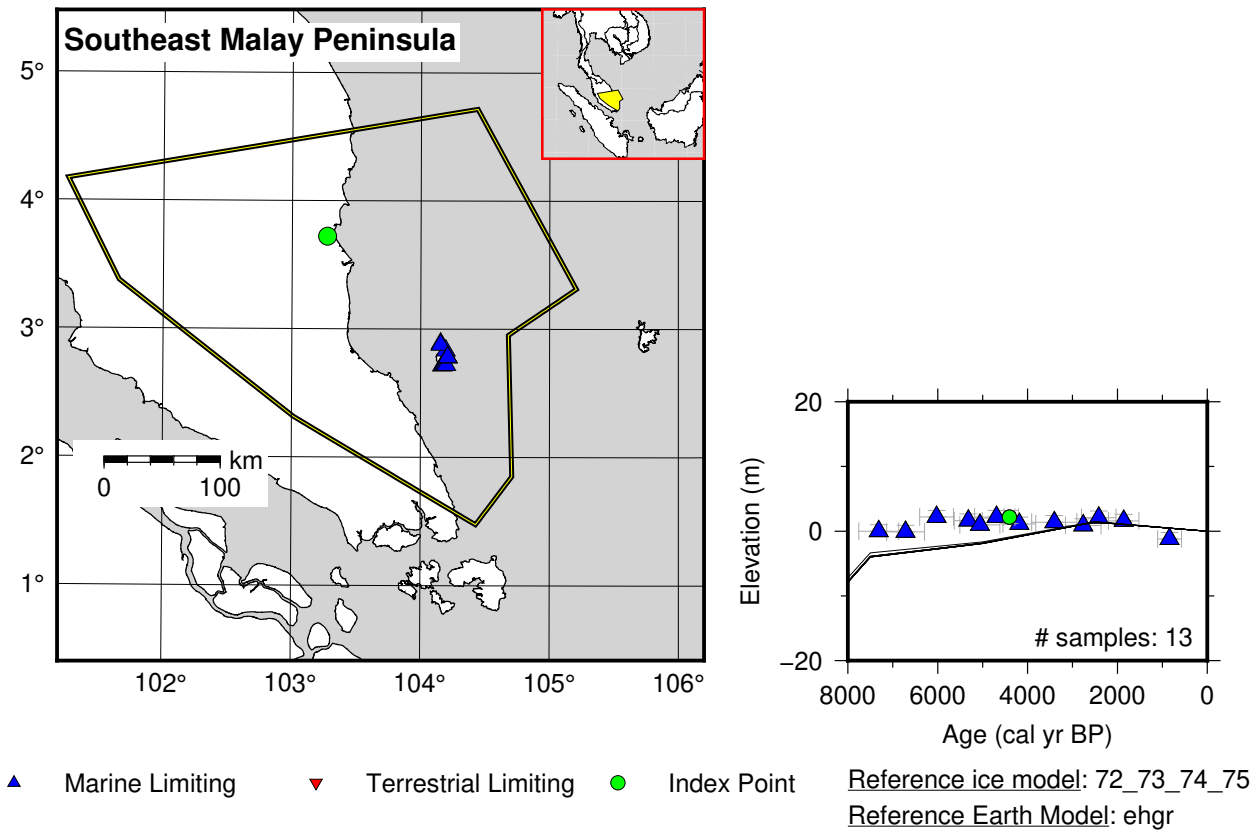


Figure 166: Paleo-sea level and comparison of six models for subregion Sundaland, location East Malay Peninsula.



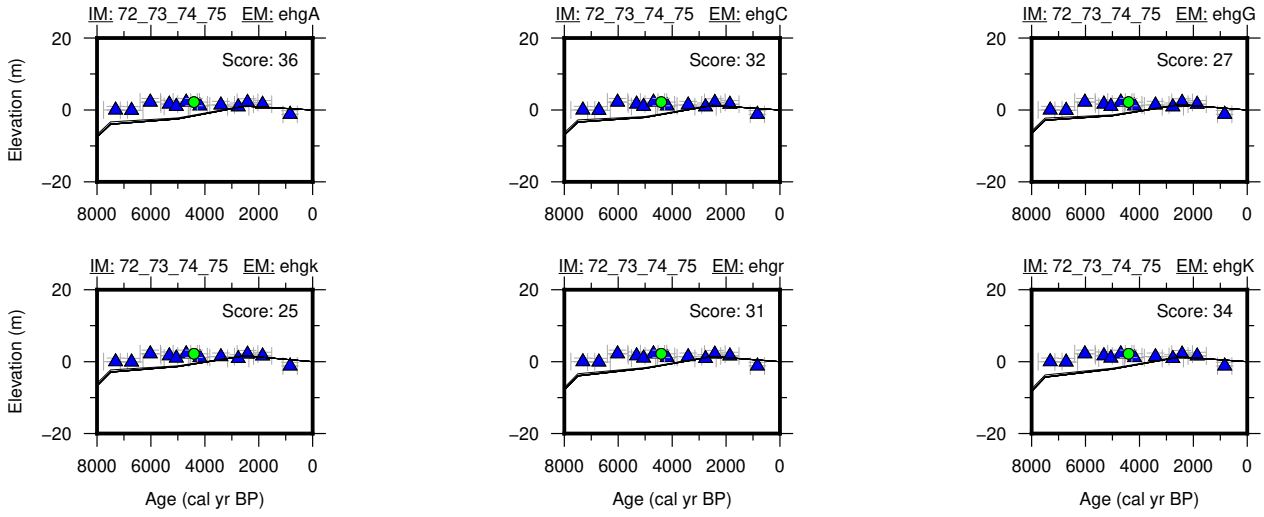
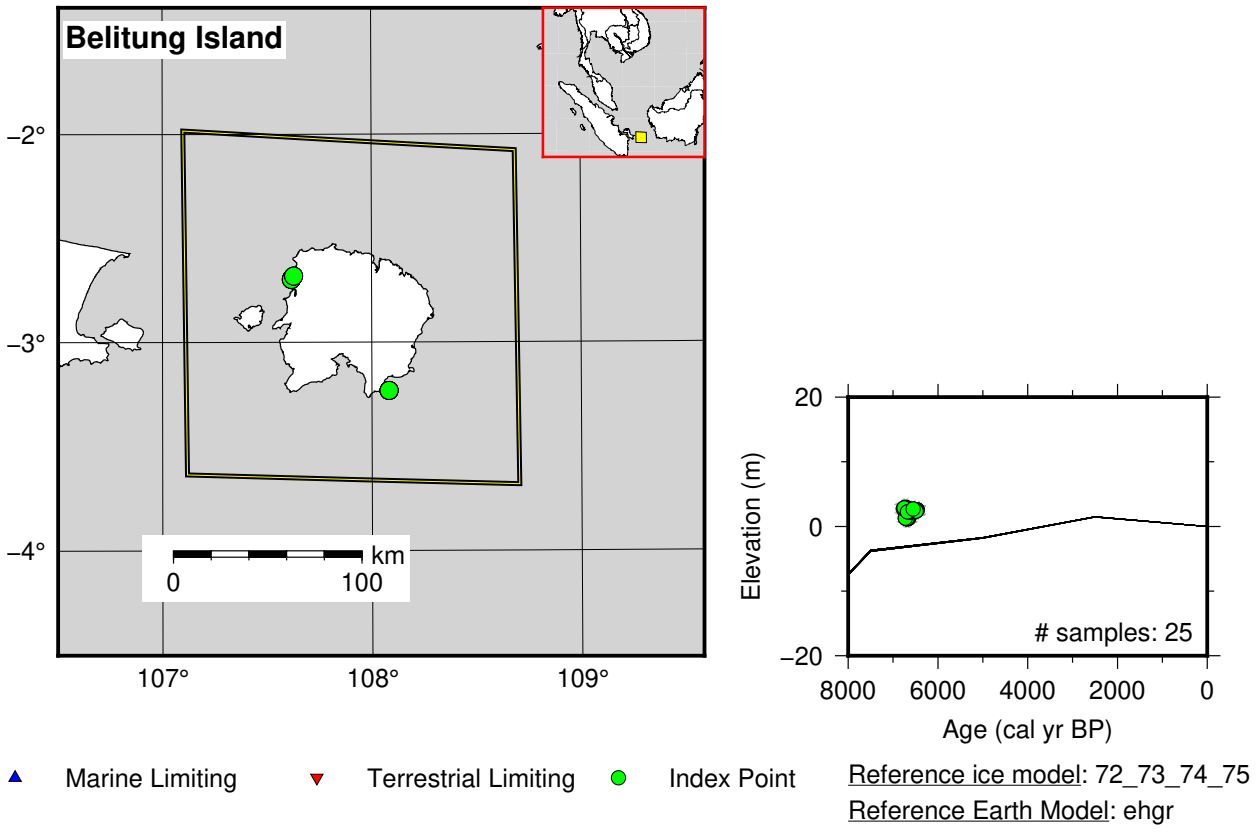


Figure 167: Paleo-sea level and comparison of six models for subregion Sundaland, location Southeast Malay Peninsula.



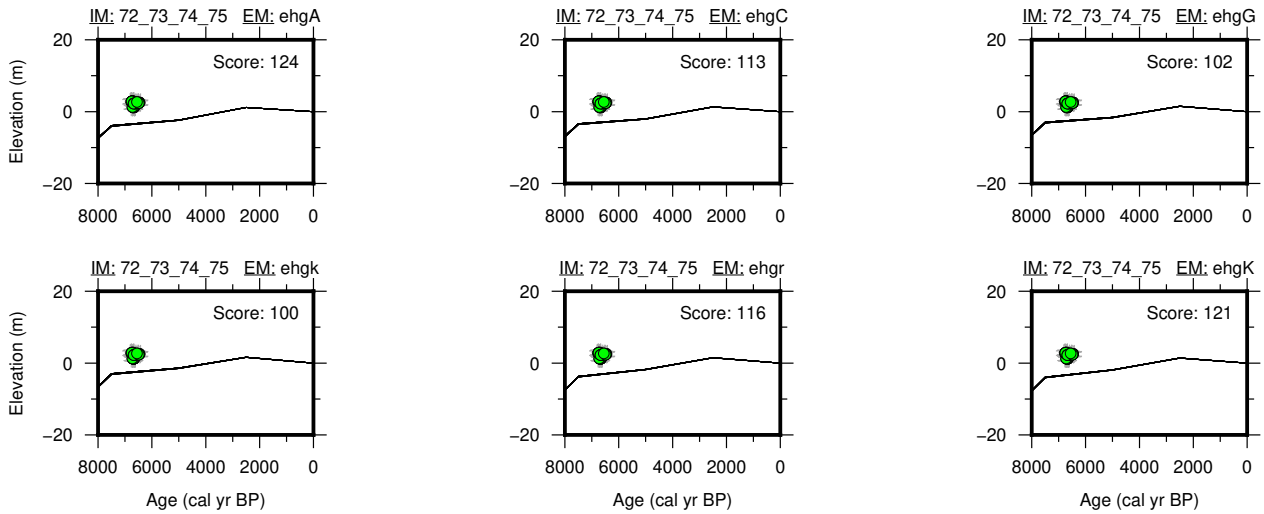
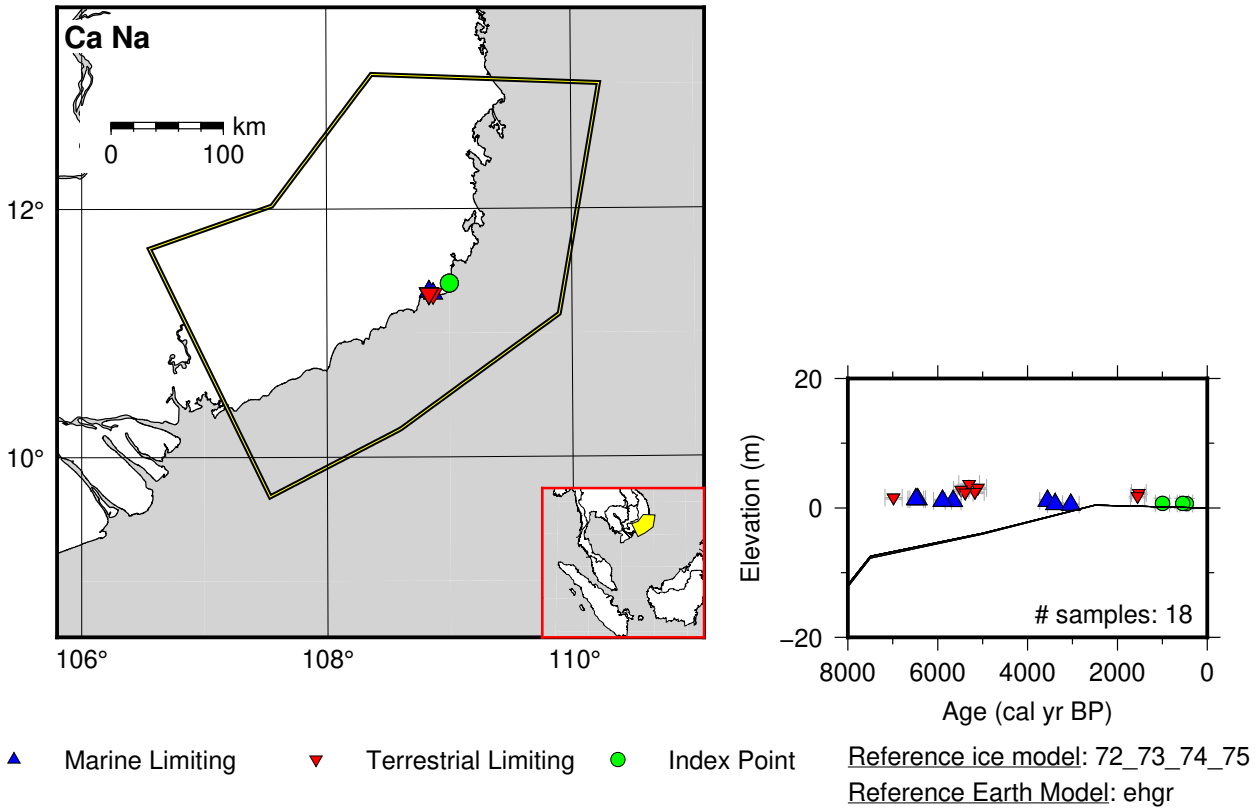


Figure 168: Paleo-sea level and comparison of six models for subregion Sundaland, location Belitung Island.



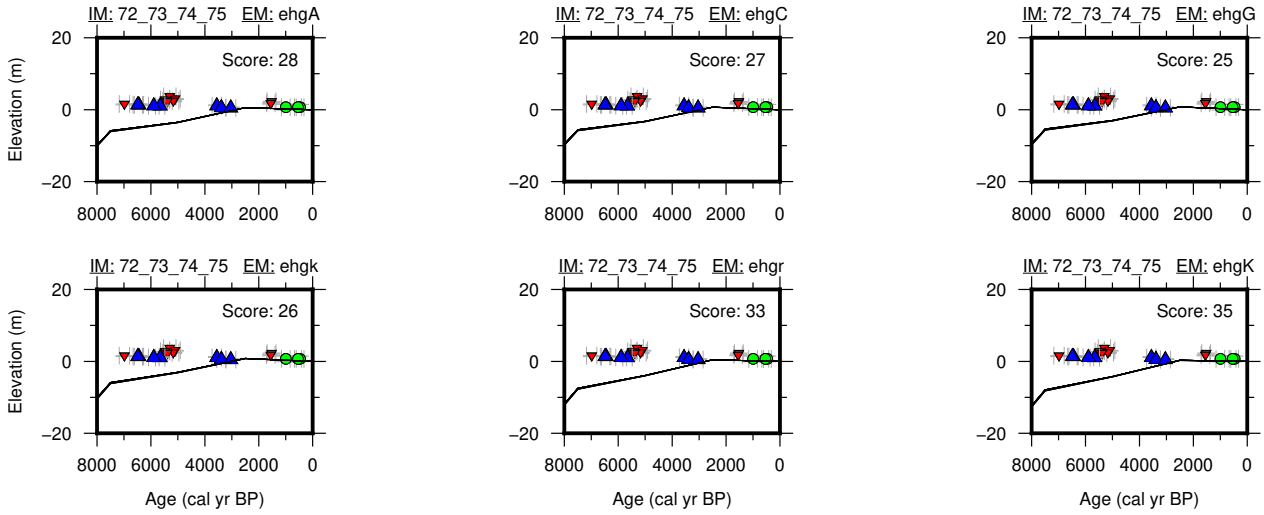


Figure 169: Paleo-sea level and comparison of six models for subregion Sundaland, location Ca Na.

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