Data repository items for "Slow Rates of Subduction Erosion and Coastal Underplating along the Andean Margin of Chile and Peru", by Clift, P.D. and Hartley, A.

Figure DR1. Figure showing how the rates of mass loss are calculated for the Andean margin since ~20 Ma. Present day section is redrawn from von Huene and Ranero (2003). The difference between the forearc prism at 20 Ma and the present can be clearly seen and quantified, abeit partially offset by underplating under the coastal regions, mostly since ~2 Ma.

Table DR1. Thicknesses, ages, lithologies and estimated water depths for the sections backstripped in Figure 2. For the purpose of this study we estimate nearshore facies to have been deposited in 0–5 m, inner shelf to represent 5–50 m water and outer shelf to range 50–150 m. Pisco Basin data is taken from Dunbar et al. (1990) and Tsuchi (1992). Mejillones Peninsula log is derived from work of Hartley and Jolley (1995), Krebs et al. (1992), Ortlieb et al. (1996) and Ibaraki (2001). Caldera and Carrizalillo sections are simplied from Marquardt et al. (2004) and Le Roux et al. (2005) respectively. Water depth uncertainties are shown in parentheses.

Table DR2. Table showing the calculated amount of underplating required to generate the terraces mapped and dated on the Andean margin. The calculations assume local isostic equilibrium and a density of 2.75 g/cm^3 for the underplated material.

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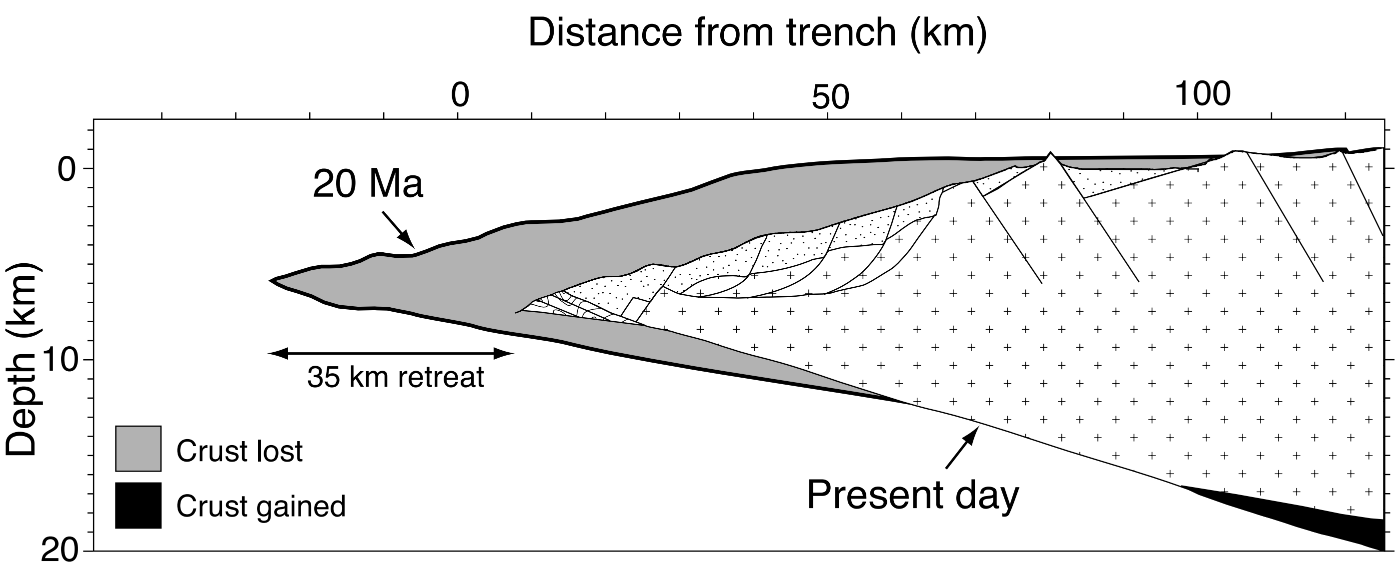

Figure DR-1
Clift and Hartley

Table DR1

Caldera Basin

Depth (m)	Age (Ma)	Water Depth (m)		Paleo-sealevel (m)	Top depth (m)	Unit thickness (m)	Lithology 1	%	Lithology 2	%	Lithology 3	%
		Minimum	Maximum									
-162	0	-162	-162	0	-162	52	Sand	50	Limestone	10	Siltstone	40
-110	0.083	-110	-110	-40	-110	85	Sand	50	Limestone	10	400	40
-44	0.125	-44	-44	0	-44	41	Sand	50	Limestone	10	400	40
-25	0.21	-25	-25	-20	-25	25	Sand	50	Limestone	10	400	40
-3	0.33	-3	-3	0	-3	3	Sand	50	Limestone	10	400	40
0	0.43	-10	0	-120	0	42	Sand	50	Limestone	10	400	40
0	4	5	50	60	0	72	Sand	50	Conglomerate	10	400	40
42	12	5	50	50	42	30	Sand	75	Conglomerate	25		
72	15	-100	0	120	72	0	Sand	75	Conglomerate	25		
72	24	-100	0	120	72							

Carrizalillo Basin

Depth (m)	Age (Ma)	Water Depth Minimum (m)	Water Depth Maximum (m)	Paleo-sealevel (m)	Top depth (m)	Unit thickness (m)	Lithology 1	%
0	0	-100	-100	0	0	5	Limestone	100
5	1	-100	0	0	5	3	Limestone	100
8	1.9	0	5	10	8	1	Limestone	100
9	2.3	50	150	-70	9	8	Sandstone	100
17	3	5	50	60	17	10	Sandstone	100
27	3.9	0	5	-20	27	9	Limestone	100
36	4	5	50	60	36	0	Limestone	100
36	4.9	50	150	80	36	8	Limestone	100
44	5.5	0	5	-30	44	5	Limestone	100
49	6	50	150	40	49	6	Siltstone	100
55	9	0	5	0	55	2	Limestone	100
57	14.6	0	20	120	57	0	Limestone	100
57	15.4	-100	0	50	57			

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Table DR1

Mejillones Basin

Depth (m)	Age (Ma)	Water Depth (m)		Paleo-sealevel (m)	Top depth (m)	Unit thickness (m)	Lithology 1	%	Lithology 2	%	Lithology 3	%
-36	0	-36	-36	0	-36	12	Sand	50	Limestone	50		
-24	0.19	-24	-24	-40	-24	14	Sand	50	Limestone	50		
-10	0.17	-10	-10	-70	-10	10	Sand	50	Limestone	50		
0	1.64	-10	0	-70	0	0	Sand	50	Limestone	50		
0	2.4	5	50	-70	0	40	Sand	80	Conglomerate	20		
40	5	-10	0	80	40	0	Sand	80	Conglomerate	20		
40	5.2	50	150	75	40	160	Sand	70	Shale	20	Conglomerate	10
200	15	-10	0	120	200							

Pisco Basin

-50	0	-50	-50	0	-50	1	Sand	50	Limestone	10	Siltstone	40
1	1.8	-10	0	-70	1	0	Sand	80	Conglomerate	20		
1	3	5	50	55	1	80	Diatomite	100				
81	7	50	150	25	81	525	Siltstone	100				
606	12	-10	0	50	606	0	Siltstone	100				
606	16	50	150	120	606	200	Sand	40	Siltstone	40	Diatomite	20
806	23	-10	0	110	806	0	Sand	40	Siltstone	40	Diatomite	20
806	34	50	150	175	806	40	Shale	50	Diatomite	50		
846	41	5	50	160	846	700	Sand	70	Conglomerate	15	Siltstone	15
1546	44	-10	0	165	1546							

Salinas Basin

-200	0	-200	-200	0	-200	1	Sand	100				
0	1.8	-10	0	-70	0	40	Sand	100				
40	3.5	0	5	0	40	40	Sand	65	Shale	35		
80	3.9	0	5	-20	80	120	Sand	70	Shale	30		
200	5.2	5	50	-10	200	210	Sand	100				

Table DR2

Terrace Location	Caldera (N Chile)	Caldera (N Chile)	Hornitos	Hornitos	Hornitos	Coloso	Mejillones	Mejillones	Mejillones	Playa de los Hornos	Hornitos
Reference	Marquandt et al. (2004)	Marquandt et al. (2004)	Ortlieb et al. (1996)	Ortlieb et al. (1996)	Ortlieb et al. (1996)	Hartley and Jolley (1995)	Hartley and Jolley (1995)	Hartley and Jolley (1995)	Hartley and Jolley (1995)	Hartley and Jolley (1995)	Hartley and Jolley (1995)
Height of terrace	0.16	0.14	0.09	0.025	0.08	0.01	0.01	0.024	0.036	0.045	0.036
Age of terrace (Ma)	0.43	0.43	0.22	0.11	0.33	0.11	0.17	0.19	0.34	0.23	0.13
Width of terraced zone (km)	10.00	10.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00
Underplated thickness	0.96	0.84	0.54	0.15	0.48	0.06	0.06	0.14	0.22	0.27	0.22
Rate of underplating (km^3/m.y.)	22.33	19.53	14.93	8.57	8.73	2.73	1.80	3.73	3.16	5.87	8.06