

Long Beach Dune Sheet, Washington

UTM Sector and Datum (xx/yr), Northing, Easting, Estimated Error (EPE +-m), DEM Altitude (Alt m NGVD88).

Exposure Type: Active (AC), Trench (TR), Auger (AU), Road Cut (RC), Creek Cut (CC), Sea Cliff (SC), Slope (SL).

Units: Age: Tertiary (T), Pleistocene (P), Holocene (H), Wave-cut Platform (W); Parent Material; Soil Horizon

Parent Material: Eolian Dune (D), Loess (L), Colluvium (U), Peat (P), Alluvial/Fluvial (V), Lagoonal/Estuary (N),

Beach Shoreface (S), Basal Conglomerate (M).

Note: Loess (L) is designated where it overlies bedrock, colluvium, or pre-existing Bw/Bt horizons.

Soil Horizon: Organic (A), Leached (E), Accumulation (B), Fe+3 Accumulation (Bw),

Incipient Clay Accumulation (Btj), Clay Accumulation (Bt), Humate Accumulation (Bh),

Calcrete (Bk), Silcrete (Bq), Reduced Glade Layer (Bg), Subsoil Calcrete (K),

Dune Parent (C), Oxidized Parent (Cox).

Subsurface depth (cm); Dominant Grain Size: Silt, Sand, Pebbles, Cobbles (default is sand)

Sand sizes (Coarse U/L, Medium U/L, Fine U/L, VeryFine U/L)

Bedding: Cross Beds (XB,dipxx), Planar Beds (PB), Fluidization (FL), Heavy Mineral Laminae (HM)

Munsell Maximum Color (moist): lowest value and highest chroma.

Penetrometer: (P. kg/square cm) unconfined compressive strength.

Soil Structure: loose, very weak blocky, weak blocky, strong blocky, columnar/prismatic.

Diagenesis: Fe-ortstein, Fe-humate, allophane, gibbsite, calcrete, silcrete

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG1	10N/83	5155280	419160	10	3	7/17/97	AU
Site Notes: OYCR1 Heavy mineral placer at 275 cm. No developed topsoil.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDC	0-225	FU		10YR5/3			
HS	225-275	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG2	10N/83	5155320	419990	10	5	7/17/97	AU
Site Notes: OYCR2 Heavy Fe-precipitation at shallow groundwater surface.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-15			5YR3/2			
HDBw	15-50			5YR3/3			
HDC	50-185			10YR3/4			

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG3	10N/83	5155410	420430	10	5	7/20/97	AU
Site Notes: OYCR4 Heavy mineral enrichment at 175 cm depth.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HD	0-150						
HS	150-200						

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG4	10N/83	5155400	421010	10	4	7/25/97	AU
Site Notes: OYCR3A							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDBw	5-25			10YR5/6			
HDCox	25-50	FU		10YR5/8			
HDBw	50-75			10YR5/6			
HDC	75-125	FU					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG5	10N/83	5151320	419160	10	6	7/17/97	AU
Site Notes: JOEJ7 Heavy mineral enrichment at 125 cm depth.							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDC	5-100	FU					
HS	100-175	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG6	10N/83	5151300	419770		10	7/16/97	AU

Site Notes: JOEJ6

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HD	0-200	FU					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG7	10N/83	5151290	420030		10	5/7/16/97	AU

Site Notes: JOEJ5 Fe-precipitation at seasonal (shallow) groundwater surface.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDBw	5-50	FU		10YR5/4			
HDC	50-200	FU/ML		2.5Y6/4			
HS	200-300	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG8	10N/83	5151290	420430		10	10/7/16/97	AU

Site Notes: JOEJ4 Heavy mineral enrichment at 650 cm.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDBW	5-20						
HDC	20-625	FU					
HS	625-700	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG9	10N/83	5151250	420470		10	11/7/16/97	AU

Site Notes: JOEJ3 Reactivated dune ridge, paleosol at 135 cm depth.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-20						
HDBW	20-25						
HDC	25-135	FU					
HDA	135-145						
HDCox	145-150						
HDC	150-425	FU					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG10	10N/83	5151230	420510		10	6/7/16/97	AU

Site Notes: JOEJ2 Minimum fill at this site.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Fill	0-20						
HDA	20-25						
HDA	25-40						
HDBw	40-50						
HDCox	50-75	FU					
HDC	75-125	FU/ML					
HS	125-200	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG11	10N/83	5151230	420510		10	6/7/16/97	AU

Site Notes: JOEJ1

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Fill	0-60						
HDA	60-75						
HDBw	75-85			5YR3/3			
HDC	85-125	FU/ML					
HS	125-150	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG12	10N/83	5151150	421380	10	3	7/20/97	AU
Site Notes: JOEJ-0 No developed Bw at top of section (?) dune ridge section (1-12 m depth) is suspect.							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-10 in photo						
HDCox	10-50	FU		10YR5/6			
HDC	50-150	FU		2.5Y5/4			

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG13	10N/83	5151230	420540	10	6	7/15/97	AU
Site Notes: SAYC1V							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Disturbed	0-10						
HP	10-100						
HD	100-200	FU					
HS	200-300	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG14	10N/83	5146210	420880	10	9	7/25/97	AU
Site Notes: KLIP1							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HD	0-100	FU					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG15	10N/83	5138360	420460	10	7	7/21/97	AU
Site Notes: CRAN3							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HD	0-275	FU					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG16	10N/83	5138420	420510	10	7	7/21/97	AU
Site Notes: CRAN1							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-10						
HDBw	10-25			5YR3/2			Very Weak B.
HDCox	25-75	FU		10YR5/8			
HDC	75-150	FU		2.5Y4/4			
HS	150-225	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG17	10N/83	5138020	421320	10	5	7/21/97	AU
Site Notes: CRAN2 Heavy mineral enrichment below 200 cm.							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDBw	5-10						
HDC	10-175	FU					
HS	175-275	FU/ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG18	10N/83	5137290	418990		10	5 7/15/97	AU
Site Notes: BRE44							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDC	0-250	FU					
HS	250-255	ML					
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG19	10N/83	5137290	419020		10	5 7/17/97	AU
Site Notes: BRE43 Heavy mineral placer below 270 cm depth.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-2						
HDC	2-225	FU		2.5Y6/3			
HS	225-275	ML					
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG20	10N/83	5137300	419050		10	7 7/15/97	AU
Site Notes: BRE42 Reactivated dune ridge, paleosol at 75 cm depth.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Disturbed	0-15						
HDA	15-25						
HDCox	25-75	FU					
HDBw	75-100						
HDC	100-400	FU/ML					
HS	400-500	ML					
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG21	10N/83	5137290	419140		10	5 7/15/97	AU
Site Notes: BRE41							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-10			10YR4/2			
HDBw	10-25	FU		10YR5/3		Very Weak B.	
HDC	25-200	ML		2.5Y6/2		Loose	
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG22	10N/83	5135780	421130		10	2 7/20/97	AU
Site Notes: GILE1 Oldest soil profile (possibly reactivated). Heavy mineral placer below 3.25 cm depth.							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Disturbed	0-25						
HDBw	25-75						
HDCox	75-100						
HDBw	100-150						
HDC	150-200						
HS	200-350						
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG23	10N/83	5133030	418830		10	7 7/21/97	AU
Site Notes: SEVE1 Heavy mineral placer at 175 cm. (RC Sample).							
Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
Disturbed	0-100						
HS	100-185						
Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG24	10N/83	5131070	418630		10	6 7/21/97	AU
Site Notes: SEAV1 Heavy mineral placer at 190 cm.							

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDC	0-50	FU		2.5Y6/4			
HS	50-190	ML		2.5Y5/6			

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG25	10N/83	5131100	418720		10	6 7/21/97	AU

Site Notes: SEAV3 Heavy mineral placer below 200 cm.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HDA	0-5						
HDBw	5-10						
HDC	10-100						
HDA	100-105						
HDC	105-150						
HS	150-250						

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG26	10N/83	5131090	418750		10	6 7/21/97	AU

Site Notes: SEAV4 Heavy mineral placer below 150 cm.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HD	0-75	FU					
HS	75-210	ML					

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
LONG27	10N/83	5129990	419760		10	3 7/16/97	AU

Site Notes: BLAC1V

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm^2	Structure	Diagenesis
HP	0-225						
HD/S	225-375						