

Table 5.3 Morphology of BCI soil classes

Soil form	Geology	BCI Soil Class	Number of auger sites	Main profile features	Topography	Drainage	Differences from similar & associated classes	Type profile (Appendix B)	Other profiles *
Brown fine loam	Andesite	Marron	35	<p>0 – 4/10 cm: Dark brown cracking silty clay loam, friable crumb;</p> <p>4/10 – 30/100: Brown – reddish brown increasingly stony silty clay - clay, friable - firm, compound block - crumb, variable FeMn concretions</p> <p>30/100+: Red, orange, brown & grey saprolite, with patches of stony brown & reddish brown loam.</p>	On lower steps & scarp slopes fringing andesite dipslope/plateau	Freely drained	<p>Browner, stonier & sometimes shallower; more & larger FeMn concretions, & less compact than <u>Ava</u></p> <p>Fewer Mn concretions than <u>Chapman</u></p> <p>More over saprolite than boulders, cf <u>Hood</u></p>	PR03	(PR11, transitional to <u>Lake</u>)
Brown fine loam	Bohio	Standley	67	<p>0 – 4/10 cm: Dark brown cracking silty clay loam, friable crumb;</p> <p>4/10 – 30/100: Brown – reddish brown increasingly stony silty clay - clay, still friable crumb, variable FeMn concretions</p>	Steep Bohio scarp slopes in N & Centre of island	Freely drained	<p>Similar to <u>Marron</u> & <u>Wetmore</u></p> <p>More over saprolite than boulders, cf <u>Hood</u></p>	PF03	-

				30/100+: Red, orange, brown & grey saprolite, with patches of stony brown & reddish brown loam.					
Brown fine loam	Caimito marine sedimentary	Wetmore	30	0 – 4/10 cm: Dark brown cracking silty clay loam, friable crumb; 4/10 – 30/100: Brown – reddish brown increasingly stony silty clay - clay, still friable crumb, variable FeMn concretions 30/100+: Red, orange, brown & grey saprolite, with patches of stony brown & reddish brown loam. Also profiles with grey subsoils, some with sandy loam & sandy clay layers	Steep slopes on Caimito marine facies, especially on eastern section of SW outcrop	Freely drained	Many of brown loams are similar to <u>Marron & Standley</u> Over saprolite more than boulders, cf <u>Hood</u> More variable than other brown light clays, with some grey & sandier subsoils	PR08	(PF11 transitional to <u>Zetek & Oscuro</u>)
Brown fine loam	Caimito volcanic	Hood	39	0 – 4/10 cm: Bouldery dark brown silty clay loam, friable crumb 4/10 – 20/100: Bouldery brown silty clay - clay, common FeMn concretions, increasing stones	Moderate-gentle graded boulder field upper & mid dipslopes in E of island	Freely drained	More over boulders than saprolite, cf <u>Marron, Standley & Wetmore</u> Boulders impenetrable at shallower depth than <u>Chapman</u>	PR09	PF09

				20/100+: Undiggable/ unaugerable coarse boulders with interstitial brown loam - clay						
Dark fine loam	Andesite	Nemesia	7	0 – 5/40 cm: Black – v dark brown humic silty clay loam, friable crumb;	Patches in Marron	Freely drained	Dark topsoil deeper than Marron	PF12		
				5/40 – 50/150+: Dark brown increasingly stony silty clay - clay, friable - firm, compound block - crumb, variable FeMn concretions						
				50/150+: Grey, red, orange, brown & yellow saprolite.						
Dark fine loam	Bohio	Miller	22	0 – 5/35 cm: Black – v dark brown humic silty clay loam, friable crumb;	Patches in Standley & Fairchild	Freely drained	Dark topsoil deeper than Standley	PR05	(PR03, transitional to <u>Standley</u>)	
				5/35– 50/100+: Dark brown very stony bouldery silty clay (loam)						
				50/100+: Grey, red, yellow, orange, & brown saprolite, with patches of stony brown loam.						

				(Sometimes subsoil is undiggable stones & boulders)					
Dark humic clay	Caimito marine	Oscuro	5	<p>0 – 5/25cm: Black – v dark brown humic silty loam - clay loam</p> <p>5/25 – 40/100+: Dark brown variably stony silty clay loam – silty clay</p> <p>40/100+: Grey, red, yellow, orange, & brown saprolite, with patches of stony brown loam.</p>	Patches in Wetmore	Mostly freely drained	<p>Dark topsoil deeper than Wetmore</p> <p>Dominant brown loam subsoil version is morphologically similar to Miller & Nemesia</p> <p>Some profiles with grey subsoils and higher sand contents</p>	-	(PF11 – transitional to Wetmore & Zetek)
Red light clay	Andesite	Ava	33	<p>0 – 3/10 cm: Moderately cracking dark brown silty clay loam, friable crumb;</p> <p>3/10 – 50/100: Bright red – brownish red silty clay- clay, moderately firm, compound blocky - crumb</p> <p>50 – 100/300+: Similar but firm & compact; one or more weak stone lines of orange weathered andesite; occasional floating andesite boulders</p>	Flat & gently graded upper surface of dipslope plateau in centre of island	Mostly freely drained, but restricted subsoil permeability gives temporary wet season ponding	<p>Similar to <u>Poacher</u></p> <p>More cracks, slightly, more compact, fewer Mn concretions & more ponding than <u>Harvard</u> & <u>Balboa</u></p> <p>Deeper, redder, less stony & and fewer FeMn concretions than <u>Marron</u></p>	PR01	PR10, (PF02, intergrade to <u>Poacher</u>)

Red light clay	Caimito volcanic	Harvard	28	<p>0 – 3/10 cm: Moderately cracking dark brown silty clay loam, friable crumb;</p> <p>3/10 – 30/80: Bright orange - red silty clay- clay, friable - firm, compound block-crumb</p> <p>30/80 – 100/300+: Similar but firmer & slightly compact; occasional floating volcanic boulders</p>	Moderate-gentle graded mid & lower dipslopes in SE of island	Well drained, but slight dry season ponding	<p>Similar to Ava, Balboa & Poacher but :</p> <p>- less cracked, more orange matrix, more friable than <u>Ava</u> & <u>Poacher</u></p> <p>- more FeMn concretions than <u>Balboa</u> & <u>Poacher</u></p> <p>Redder than <u>Chapman</u></p>	PR07	<p>PF10,</p> <p>(PF07, <u>Chapman</u> with some <u>Harvard</u> features)</p>
Red light clay	Caimito marine sedimentary	Poacher	22	<p>0 – 3/10 cm: Moderately cracking dark brown silty clay loam, friable crumb;</p> <p>3/10 – 30/80: Bright orange - red silty clay- clay, friable - firm, compound block-crumb</p> <p>30/80 – 100/300+: Similar but firmer & slightly compact; occasional floating boulders</p>	Less steep slopes on W side of Poacher Peninsula, & intermixed with <u>Wetmore</u> on steeper & better drained eastern parts of SW outcrop of Caimito marine facies	Freely drained	<p>Similar to Ava higher proportion of 2.5YR red than <u>Harvard</u> & <u>Balboa</u></p> <p>Redder & deeper than <u>Wetmore</u></p>	-	(PF02, possibly <u>Ava</u>)
Red light clay	Bohio	Balboa	17	<p>0 – 3/10 cm: Moderately cracking dark brown silty clay loam, friable crumb;</p>	Moderate Bohio scarp slopes in N & Centre of island	Freely drained	<p>Similar to <u>Harvard</u> & <u>Balboa</u> with higher proportion of orange subsoils than <u>Ava</u>. (Orange soils</p>	PR13 PR06 (orange – formerly	PF05,

				3/10 – 30/80: Bright orange - red silty clay- clay, friable - firm, compound block- crumb			provisionally had own class – Lathrop – but these are now subsumed into Balboa)	Lathrop))
				30/80 – 100/300+: Similar but firmer & slightly compact; rare floating boulders			Deeper than <u>Fairchild</u>	
							Deeper & redder than <u>Standley</u>	
Red light clay (shallow)	Bohio	Fairchild	40	0 – 4/10 cm: Dark brown cracking silty clay loam, friable crumb;	Steep Bohio scarp slopes in N & Centre of island	Freely drained	Shallower than <u>Balboa</u>	PR12
				4/10 – 30/250: Red -reddish brown increasingly stony & bouldery silty clay - clay, still friable crumb, variable FeMn concretions			Subsoil redder than <u>Standley</u>	
				30/250+: Red, orange, brown & grey saprolite, with patches of stony brown & reddish brown loam.				
Brown light clay (deep)	Caimito volcanic	Chapman	5	0 – 4/10 cm: Bouldery dark brown silty clay loam, friable crumb;	Intricately intermixed with <u>Hood</u> on moderate-gentle graded boulder field upper & mid dipslopes in e of island	Freely drained	Browner & more often over boulders than <u>Harvard</u>	-
				4/10 – 100+: Bouldery brown silty clay - clay, common FeMn concretions, increasing clasts			Boulders augerable to greater depth than <u>Hood</u>	(PF07, transitional to <u>Harvard/</u> <u>Barbour</u>)

				100+: Undiggable/ unaugerable coarse boulders in brown loam – clay					
Pale swelling clay	Caimito marine sedimentary	Barro Verde	7	0-5/10: Wide cracking black silty clay 5/10 – 200+: Layers of pale bluish grey with dark red mottles & pale yellowish- greenish grey with orange mottles, sandy clay – clay	Moderate-gentle mid & lower slopes in S & W of island, intermixed with Zetek	Poorly drained in rainy season – pit stayed full, Dries to slightly moist in dry season	Surface more cracking & micro-gilgaied, topsoil darker; & lacks reddish upper subsoil of <u>Zetek</u> , <u>Lake, Barbour</u> & <u>Gross</u>	PR01	
Pale swelling clay	Caimito marine sedimentary	Zetek	11	0- 5/10: Patchily wide cracking dark brown silty clay loam 5/10 – 30/70: Brown – reddish brown with orange & red mottles; loam - silty clay; patchy boulders. 30/70 – 200+: Layers of pale bluish grey with dark red mottles & pale yellowish- greenish grey with orange mottles, silty clay – clay; patchy boulders.	Moderate-gentle mid & lower slopes in S & W of island, intermixed with <u>Barro Verde</u>	Poorly drained in rainy season – pits stay full Dries to slightly moist in dry season.	Topsoil less dark & cracking & upper topsoil redder than <u>Barro Verde</u> Similar to <u>Lake, Gross</u> & <u>Barbour</u> but subsoil less sticky than <u>Barbour</u>	PR 02	PR14
Pale swelling clay	Caimito volcanic	Barbour	13	0- 5/10: Patchily wide cracking dark brown silty clay	Moderate-gentle mid & lower slopes in S & W of island	Poorly drained in rainy season,	Topsoil less dark & cracking & upper topsoil redder than	PR 08	

				loam				<u>Barro Verde</u>		
				5/10 – 30/70: Brown – reddish brown with orange & red mottles; loam - silty clay; patchy boulders.			Dries to slightly moist in dry season.	Similar to <u>Zetek, Lake & Gross</u> subsoil more sticky		
				30/70 – 200+: Layers of pale bluish grey with dark red mottles & pale yellowish-greenish grey with orange mottles, sandy clay – clay; extremely firm & v sticky						
Pale swelling clay	Andesite	Lake	4	0- 5/10: Patchily wide cracking dark brown silty clay loam	Moderate-gentle shelves on upper & mid slopes of N scarp of andesite cuesta	Poorly drained in rainy season	Dries to slightly moist in dry season	Topsoil less dark & cracking than <u>Barro Verde</u>	PF04	PF06, (PR11, transitional to Marron)
				5/10 – 30/70: Reddish brown with faint orange & red mottles; loam - silty clay; patchy boulders.				More reddish & less mottled upper subsoil than to <u>Zetek, Barbour & Gross</u>		
				30/70 – 200+: Light grey & yellowish-greenish with red & orange mottles, sandy clay – clay; patchy boulders.				Lower subsoil less saprolitic structure than <u>Gross</u>		
								Lower subsoil less firm & sticky than <u>Barbour</u>		
Pale swelling clay	Bohio	Gross	5	0- 5/10: Patchily wide cracking dark brown silty clay loam	Gentle lower slopes & saddles on spurs of northern peninsulae	Poorly drained in rainy season	Dries to slightly moist in dry	Topsoil less dark & cracking than <u>Barro Verde</u>		PR13
								More reddish & less		

				5/10 – 30/70: Reddish brown with faint orange & red mottles; loam - silty clay; patchy boulders.		season	mottled upper subsoil than <u>Zetek</u>		
				30/70 – 200+: Light grey & yellowish-greenish with red & orange mottles, sandy clay – clay; patchy boulders.			Lower subsoil more saprolitic structure than <u>Lake</u> , & less firm & sticky than <u>Barbour</u>		
Shallow mottled clay	Caimito marine sedimentary	Lutz	15	0 – 5/10 cm: Dark brown humic silty clay loam	Slopes in Lutz Creek catchment	Imperfect, despite steep slopes	Heavier texture firmer & stickier consistence, & more mottled than <u>Wetmore</u>	PR04	PF14
				5/10 – 40/100: Brown mottled silty clay, with patches of red & orange saprolite, sticky & very firm					
				40/100+: Red, yellow, orange & grey saprolite, silty clay hand texture, firm & sticky					
Shallow mottled clay	Bohio	Weir	4	0 – 5/10 cm: Dark brown humic silty clay loam	Patches in Standley & Fairchild		Heavier texture, firmer & stickier consistence, & more mottled than <u>Standley</u> or <u>Fairchild</u>	-	-
				5/10 – 60/150: Brown silty clay, patches red & orange saprolite, sticky & very firm					
				60/150+: Red, yellow, orange &					

				grey saprolite, silty clay texture, firm & sticky					
Gley	Andesite colluvium & local alluvium	Swamp	4	<p>0 – 10 cm: Black humic silty loam - clay loam</p> <p>10 – 40/80: Grey – dark grey unmottled wet –moist silty clay loam - clay</p> <p>40/80 - 100+: Light grey – pale yellow silty mottled silty clay - clay</p> <p>Variable depth (60 100+) to grey, yellow & orange saprolite</p>	In headwater basin on dipping andesite plateau, & few small seasonal ponds elsewhere	Poorly drained	<p>Greyer topsoil than Zetek</p> <p>Subsoil wetter & more banded than all others</p>	-	-
