

Supplement to:

Reviews and Synthesis: Composition and Characteristics of Burrowing Animals along a Climate and Ecological Gradient, Chile

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Table S1: Burrowing vertebrate species list from four Chilean study sites. Abbreviations and symbology: PA= National Park Pan de Azúcar, SG = Private Reserve Santa Gracia, LC = National Park La Campana, NA= National Park Nahuelbuta; ■ = species present at site; □= species likely present at site; n.i.a. = no information available; *the full table of burrowing vertebrates in Chile with detailed information and reference list is the data publication Übernicketl et al. (2020)*

Order	Family	Species	Common name	Elevation range [m a.s.l.]	PA	SG	LC	NA
Aves	Psittacidae	<i>Cyanoliseus patagonus</i>	Burrowing Parrot, Trichahue	n.i.a.	-	■	-	-
Aves	Strigidae	<i>Athene cunicularia</i>	Burrowing Owl	n.i.a.	□	□	□	-
Reptilia	Liolaemidae	<i>Liolaemus torresi</i>	Dragon of Torres-Mura (Lizard)	n.i.a.	□	-	-	-
Reptilia	Teiidae	<i>Callopistes maculatus</i> ; (<i>Callopistes palluma</i>) <i>Lycalopex culpaeus</i>	Spotted False Monitor; Chilean Racerunner (Lizard)	0-2,200	■	■	■	-
Camivora	Canidae	(= <i>Pseudalopex c.</i>), (= <i>Dusicyon c.</i>)	Culpeo (Fox)	up to 4,500	■	■	■	■
Camivora	Canidae	<i>Lycalopex griseus</i> (= <i>Dusicyon g.</i>)	South American Gray Fox / Chilla	0-100, rare at higher elevations	■	■	■	■
Camivora	Mephitidae	<i>Conepatus chinga</i>	Molina's Hog-nosed Skunk	0-3,000	-	□	■	■
Cingulata	Chlamyphoridae	<i>Zaedyus pichi</i>	Pichi (Armadillo)	0-2,500	-	-	□	-
Lagomorpha	Leporidae	<i>Oryctolagus cuniculus</i>	European Rabbit	usually <1,500	-	■	■	-
Rodentia	Abrocomidae	<i>Abrocoma bennetti</i> (?)	Bennett's Chinchilla-Rat	0-2,000	■	■	■	-
Rodentia	Chinchillidae	<i>Lagidium viscacia</i> (= <i>Lagidium peruanum</i>)	Southern (Mountain) Viscacha	2,000-5,000	■	-	-	-
Rodentia	Cricetidae	<i>Abrothrix andinus</i> (= <i>Akodon andinus</i>)	Andean Grass Mouse	also found at 950 near Santiago; generally: 2,500-4,500	■	-	-	-
Rodentia	Cricetidae	<i>Abrothrix longipilis</i> (= <i>Akodon longipilis</i>) <i>Abrothrix olivaceus</i> (= <i>Akodon olivaceus</i> , = <i>Abrothrix herskovitzi</i>)	Long-haired Grass Mouse	0-2,000	■	■	■	■
Rodentia	Cricetidae	<i>Abrothrix olivaceus</i> , = <i>Abrothrix herskovitzi</i>	Olive Grass Mouse	0-2,500	■	■	■	■
Rodentia	Cricetidae	<i>Chelemys macronyx</i>	Mountain mole rat / Andean Long-clawed mouse	n.i.a.	-	-	-	■
Rodentia	Cricetidae	<i>Chelemys megalonyx</i>	Large Long-clawed Mouse / shrub mole rat	0-500	-	□	■	■
Rodentia	Cricetidae	<i>Geoxus valdivianus</i>	Valdivian Long-clawed Mouse	0-2,000	-	-	-	■
Rodentia	Cricetidae	<i>Phyllotis darwini</i> (<i>Phyllotis limatus</i>)	Darwin's Leaf-eared Mouse	0-2,000	■	■	■	□
Rodentia	Ctenomyidae	<i>Ctenomys fulvus</i>	Tawny Tuco-tuco / Atacama tuco-tuco (rat)	1,000 - 3,700	■	-	-	-
Rodentia	Muridae	<i>Loxodontomys micropus</i> (<i>Auliscomys micropus</i>)	Southern Pericote (mouse)	0-2,500	-	-	-	□
Rodentia	Muridae	<i>Mus musculus</i>	Common House Mouse	n.i.a.	■	■	■	■
Rodentia	Muridae	<i>Rattus norvegicus</i>	Norway Rat / Brown rat / Black rat	n.i.a.	-	□	□	□
Rodentia	Myocastoridae	<i>Myocastor coypus</i>	Coypu, Nutria (rat)	0-1,190	-	■	■	■
Rodentia	Octodontidae	<i>Aconaemys fuscus</i>	Chilean Rock Rat	high Andes 33° to 41° south, low elevations between Curicó and Ñuble provinces	-	-	-	■
Rodentia	Octodontidae	<i>Aconaemys sagei</i>	Sage's Rock Rat	lowland and precordillera	-	-	-	□
Rodentia	Octodontidae	<i>Octodon degus</i>	Degu (rat)	0 - 1,800	■	■	■	-
Rodentia	Octodontidae	<i>Spalacopus cyanus</i>	Conuro (rat)	0 - 3,400 in the Andes	■	■	■	-

Table S2: Burrowing invertebrate species list from four Chilean study sites. Abbreviations and symbology: PA= National Park Pan de Azúcar, SG = Private Reserve Santa Gracia, LC = National Park La Campana, NA= National Park Nahuelbuta; ■ = species present at site; □= species likely present at site; n.i.a. = no information available; *the full table of burrowing vertebrates in Chile with detailed information and reference list is the data publication Übernickel et al. (2020)*

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
SPIDERS								
Araneae	Actinopodidae	<i>Missulena tussulena</i>	trap door spider	n.i.a.			□	
Araneae	Actinopodidae	<i>Plesiolenabonneti</i>	trap door spider	n.i.a.		■		
Araneae	Actinopodidae	<i>Plesiolenajorgelina</i>	trap door spider	n.i.a.		□	□	
Araneae	Hexathelidae	<i>Mediotheleanae</i>	funnel-web spiders	n.i.a.			□	□
Araneae	Hexathelidae	<i>Mediotheleaustralis</i>	funnel-web spiders	n.i.a.				□
Araneae	Hexathelidae	<i>Mediothelelinares</i>	funnel-web spiders	n.i.a.			□	□
Araneae	Hexathelidae	<i>Mediotheleminima</i>	funnel-web spiders	n.i.a.			□	
Araneae	Hexathelidae	<i>Mediothele nahuelbuta</i>	funnel-web spiders	n.i.a.				■
Araneae	Hexathelidae	<i>Scotinoecusmajor</i>	funnel-web spiders	n.i.a.			□	
Araneae	Hexathelidae	<i>Scotinoecusrules</i>	funnel-web spiders	n.i.a.			□	□
Araneae	Migidae	<i>Calathotarsus coronatus</i>	trap door spider	n.i.a.			■	
Araneae	Migidae	<i>Calathotarsuspihuychen</i>	trap door spider	n.i.a.			■	
Araneae	Migidae	<i>Goloboffia biberi</i>	trap door spider	n.i.a.		□	□	
Araneae	Migidae	<i>Goloboffia griswoldi</i>	trap door spider	n.i.a.		□	□	
Araneae	Migidae	<i>Goloboffia megadeth</i>	trap door spider	n.i.a.		□		
Araneae	Migidae	<i>Goloboffia pachelbeli</i>	trap door spider	n.i.a.		□		
Araneae	Nemesiidae	<i>Chaco socos</i>	trap door spider	n.i.a.		□		
Araneae	Nemesiidae	<i>Chaco tigre</i>	trap door spider	n.i.a.			□	
Araneae	Nemesiidae	<i>Chilelopsiiscalderoni</i>	trap door spider	n.i.a.	□			
Araneae	Nemesiidae	<i>Chilelopsiispuertoviejo</i>	trap door spider	n.i.a.	□			
Araneae	Nemesiidae	<i>Chilelopsiiserena</i>	trap door spider	n.i.a.		□		
Araneae	Nemesiidae	<i>Flamencopsis minima</i>	trap door spider	n.i.a.	□			
Araneae	Nemesiidae	<i>Lycinus caldera</i>	trap door spider	n.i.a.	■	□		
Araneae	Nemesiidae	<i>Lycinus choros</i>	trap door spider	n.i.a.		■		
Araneae	Nemesiidae	<i>Lycinus domeyko</i>	trap door spider	n.i.a.	□	■		
Araneae	Nemesiidae	<i>Lycinus epipiptus</i>	trap door spider	n.i.a.		□	■	
Araneae	Nemesiidae	<i>Lycinus frayjorge</i>	trap door spider	n.i.a.		□		
Araneae	Nemesiidae	<i>Lycinus gajardoi</i>	trap door spider	n.i.a.		■	□	
Araneae	Nemesiidae	<i>Lycinus quilicura</i>	trap door spider	n.i.a.			□	
Araneae	Nemesiidae	<i>Lycinus tofo</i>	trap door spider	n.i.a.	□			
Araneae	Oonopidae	<i>Birabenella elqui</i>	Goblin spider	n.i.a.		■		
Araneae	Oonopidae	<i>Birabenella homonota</i>	Goblin spider	n.i.a.		■		

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Araneae	Oonopidae	<i>Birabenella kamanchaca</i>	Goblin spider	n.i.a.	■			
Araneae	Oonopidae	<i>Birabenella pizarroi</i>	Goblin spider	n.i.a.		□		
Araneae	Pycnothelidae	<i>Acanthogonatus alegre</i>	trap door spider	n.i.a.	□			
Araneae	Pycnothelidae	<i>Acanthogonatus brunneus</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus campanae</i>	trap door spider	n.i.a.			■	
Araneae	Pycnothelidae	<i>Acanthogonatus chilechico</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus confusus</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus francki</i>	trap door spider	n.i.a.			■	
Araneae	Pycnothelidae	<i>Acanthogonatus hualpen</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus huaquen</i>	trap door spider	n.i.a.			■	□
Araneae	Pycnothelidae	<i>Acanthogonatus juncal</i>	trap door spider	n.i.a.			□	
Araneae	Pycnothelidae	<i>Acanthogonatus mulchen</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus nahuelbuta</i>	trap door spider	n.i.a.				■
Araneae	Pycnothelidae	<i>Acanthogonatus patagallina</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus peniasco</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus pissii</i>	trap door spider	n.i.a.		□	□	□
Araneae	Pycnothelidae	<i>Acanthogonatus quilocura</i>	trap door spider	n.i.a.			■	
Araneae	Pycnothelidae	<i>Acanthogonatus recinto</i>	trap door spider	n.i.a.				■
Araneae	Pycnothelidae	<i>Acanthogonatus subalpeianus</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus tolhuaca</i>	trap door spider	n.i.a.				□
Araneae	Pycnothelidae	<i>Acanthogonatus vilches</i>	trap door spider	n.i.a.			□	
Araneae	Sicariidae	<i>Sicarius crustosus</i>	sand recluse spider	n.i.a.	■	□		
Araneae	Sicariidae	<i>Sicarius fumosus</i>	sand recluse spider	n.i.a.			□	
Araneae	Sicariidae	<i>Sicarius lanuginosus</i>	sand recluse spider	n.i.a.		□		
Araneae	Sicariidae	<i>Sicarius thomisoides</i>	sand recluse spider	n.i.a.	■	■	□	
Araneae	Theraphosidae	<i>Euathlus condorito</i>	Tarantula	n.i.a.			□	

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Araneae	Theraphosidae	<i>Euathlus manicata</i>	Tarantula	n.i.a.				□
Araneae	Theraphosidae	<i>Euathlus parvulus</i>	Tarantula	n.i.a.			□	
Araneae	Theraphosidae	<i>Euathlus truculentus</i>	Tarantula	n.i.a.			□	
Araneae	Theraphosidae	<i>Grammostola rosea</i>	Tarantula	500-2,000		□	□	
Araneae	Theraphosidae	<i>Homoeomma chilensis</i>	Tarantula	n.i.a.			□	□
Araneae	Theraphosidae	<i>Homoeomma orellanai</i>	Tarantula	n.i.a.			□	□
Araneae	Theraphosidae	<i>Phrixotrichus jara</i>	Tarantula	n.i.a.				□
Araneae	Theraphosidae	<i>Phrixotrichus scrofa</i>	Tarantula	n.i.a.				□
Araneae	Theraphosidae	<i>Phrixotrichus vulpinus</i>	Tarantula	n.i.a.				□
Araneae	Zodariidae	<i>Cybaeodamus lycosoide</i>	Ant spider	n.i.a.		□		
Araneae	Zodariidae	<i>Cyrioceta calderoni</i>	Ant spider	n.i.a.			□	
Araneae	Zodariidae	<i>Cyrioceta cruz</i>	Ant spider	n.i.a.		□		
Araneae	Zodariidae	<i>Cyrioceta mauryi</i>	Ant spider	n.i.a.		□		
Araneae	Zodariidae	<i>Cyrioceta spinifera</i>	Ant spider	n.i.a.		□		
Araneae	Zodariidae	<i>Platnickia elegans</i>	Ant spider	n.i.a.				□
Araneae	Zodariidae	<i>Platnickia wedalen</i>	Ant spider	n.i.a.		□	□	□
SOLIFUGES								
Solifugae	Ammotrechidae	<i>Ammotrecha araucana</i>	camel spider, sun spider	n.i.a.			□	
Solifugae	Ammotrechidae	<i>Chileotrecha atacamensis</i>	camel spider, sun spider	n.i.a.	□			
Solifugae	Ammotrechidae	<i>Chileotrecha romero</i>	camel spider, sun spider	n.i.a.		□		
Solifugae	Ammotrechidae	<i>Pseudocleobis chilensis</i>	camel spider, sun spider	n.i.a.			□	
Solifugae	Daesiidae	<i>Ammotrechelis goetschi</i>	camel spider, sun spider	n.i.a.	□	□		
Solifugae	Mummuciidae	<i>Mummucia variegata</i>	camel spider, sun spider	n.i.a.		□		
Solifugae	Mummuciidae	<i>Mummucina colinalis</i>	camel spider, sun spider	n.i.a.			□	
Solifugae	Mummuciidae	<i>Sedna pirata</i>	camel spider, sun spider	n.i.a.			□	
Solifugae	Mummuciidae	<i>Uspallata pulchra</i>	camel spider, sun spider	n.i.a.			□	
SCORPIONS								
Scorpiones	Bothriuridae	<i>Bothriurus coriaceus</i>	Scorpion	0-1,000		■	□	
Scorpiones	Bothriuridae	<i>Bothriurus dumayi</i>	Scorpion	0-300	□	■		
Scorpiones	Bothriuridae	<i>Bothriurus huincul</i>	Scorpion	0-2,000				□

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Scorpiones	Bothriuridae	<i>Bothriurus keyserlingi</i>	Scorpion	0-1,000			□	
Scorpiones	Bothriuridae	<i>Brachistosternus barigai</i>	Scorpion	0-250	□			
Scorpiones	Bothriuridae	<i>Brachistosternus kamanchaca</i>	Scorpion	0-500	■			
Scorpiones	Bothriuridae	<i>Brachistosternus negrei</i>	Scorpion	0-1,500				□
Scorpiones	Bothriuridae	<i>Brachistosternus ochoai</i>	Scorpion	0-1,000	■			
Scorpiones	Bothriuridae	<i>Brachistosternus paposo</i>	Scorpion	0-1,000	■			
Scorpiones	Bothriuridae	<i>Brachistosternus roigalsinai</i>	Scorpion	0-1,000		■		
Scorpiones	Bothriuridae	<i>Brachistosternus sciosciae</i>	Scorpion	0-50	□			
Scorpiones	Bothriuridae	<i>Centromachetes obscurus</i>	Scorpion	n.i.a.				□
Scorpiones	Bothriuridae	<i>Centromachetes pococki</i>	Scorpion	0-500			□	□
Scorpiones	Bothriuridae	<i>Centromachetes titschaki</i>	Scorpion	0-500				□
Scorpiones	Bothriuridae	<i>Phoniocercus pictus</i>	Scorpion	0-500				□
Scorpiones	Bothriuridae	<i>Phoniocercus sanmartini</i>	Scorpion	0-500				□
Scorpiones	Bothriuridae	<i>Rumikiru atacama</i>	Scorpion	0-500	■			
Scorpiones	Bothriuridae	<i>Rumikiru lourencoi</i>	Scorpion	0-500	■			
Scorpiones	Bothriuridae	<i>Tehuanka moyanoi</i>	Scorpion	0-500				□
Scorpiones	Bothriuridae	<i>Urophonius mondacai</i>	Scorpion	0-750			□	
Scorpiones	Bothriuridae	<i>Urophonius pizaroi</i>	Scorpion	0-500			□	
Scorpiones	Bothriuridae	<i>Urophonius transandinus</i>	Scorpion	0-1,000			□	
Scorpiones	Bothriuridae	<i>Urophonius tregualemuensis</i>	Scorpion	0-500				□
Scorpiones	Bothriuridae	<i>Urophonius tumbensis</i>	Scorpion	0-200				□
BEEPLES								
Coleoptera	Tenebrionidae	<i>Gyriosomus amabilis</i>	Darkling beetle	n.i.a.		□		
Coleoptera	Tenebrionidae	<i>Gyriosomus batesi</i>	Darkling beetle	n.i.a.	□			
Coleoptera	Tenebrionidae	<i>Gyriosomus camanchaca</i>	Darkling beetle	n.i.a.	□			
Coleoptera	Tenebrionidae	<i>Gyriosomus chango</i>	Darkling beetle	n.i.a.	■			
Coleoptera	Tenebrionidae	<i>Gyriosomus curtisi</i>	Darkling beetle	n.i.a.	□			
Coleoptera	Tenebrionidae	<i>Gyriosomus hoppei</i>	Darkling beetle	n.i.a.		■		

table 2 - continued

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Coleoptera	Tenebrionidae	<i>Gyriosomus laevigatus</i>	Darkling beetle	n.i.a.			■	
Coleoptera	Tenebrionidae	<i>Gyriosomus luczotii</i>	Darkling beetle	n.i.a.		■		
Coleoptera	Tenebrionidae	<i>Gyriosomus marmoratus</i>	Darkling beetle	n.i.a.		■		
Coleoptera	Tenebrionidae	<i>Gyriosomus multigranulosus</i>	Darkling beetle	n.i.a.		□		
Coleoptera	Tenebrionidae	<i>Praocis</i> (<i>Mesopraocis</i>) <i>arenicola</i>	Darkling beetle	0-300	■			
Coleoptera	Tenebrionidae	<i>Praocis</i> (<i>Mesopraocis</i>) <i>calderana</i>	Darkling beetle	0-500	□			
Coleoptera	Tenebrionidae	<i>Praocis</i> (<i>Mesopraocis</i>) <i>nitens</i>	Darkling beetle	0-300	□			
Coleoptera	Tenebrionidae	<i>Praocis</i> (<i>Mesopraocis</i>) <i>pilula</i>	Darkling beetle	0-300	□			
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>aenea</i>	Darkling beetle	n.i.a.		□		
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>marginata</i>	Darkling beetle	n.i.a.	□			
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>parva</i>	Darkling beetle	n.i.a.		■		
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>spinolai</i>	Darkling beetle	n.i.a.	■	■		
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>subaenea</i>	Darkling beetle	n.i.a.		■	■	
Coleoptera	Tenebrionidae	<i>Praocis (Praocis)</i> <i>sulcata</i>	Darkling beetle	n.i.a.	□	□	□	
Coleoptera	Tenebrionidae	<i>Phaleria beechei</i>	Darkling beetle	n.i.a.	■			
Coleoptera	Tenebrionidae	<i>Phaleria gayi</i>	Darkling beetle	n.i.a.	■			
Coleoptera	Tenebrionidae	<i>Phaleria maculata</i>	Darkling beetle	n.i.a.	□	□	□	
Coleoptera	Carabidae	<i>Calosoma rufipennis</i>	ground beetle	n.i.a.	■			
Coleoptera	Carabidae	<i>Calosoma vagans</i>	ground beetle	n.i.a.	■	■	■	■
Coleoptera	Carabidae	<i>Ceroglossus chilensis</i>	ground beetle	0 - 2300				■
Coleoptera	Carabidae	<i>Trechisibus angularis</i>	ground beetle	0 - 2300				■
Coleoptera	Cicindelidae	<i>Cicindela</i> (<i>Plectographa</i>) <i>nahuelbutae</i>	Ground beetle	n.i.a.				■
Coleoptera	Trogidae	<i>Polynoncus brevicollis</i>	Trogids	n.i.a.		■	■	□
Coleoptera	Trogidae	<i>Polynoncus bullatus</i>	Trogids	n.i.a.	■	■	■	■
Coleoptera	Trogidae	<i>Polynoncus chilensis</i>	Trogids	n.i.a.				■
Coleoptera	Trogidae	<i>Polynoncus crypticus</i>	Trogids	n.i.a.				■

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Coleoptera	Trogidae	<i>Polynoncus diffluens</i>	Trogids	n.i.a.			□	■
Coleoptera	Trogidae	<i>Polynoncus gibberosus</i>	Trogids	n.i.a.				□
Coleoptera	Trogidae	<i>Polynoncus longitarsis</i>	Trogids	n.i.a.				■
Coleoptera	Trogidae	<i>Polynoncus mirabilis</i>	Trogids	n.i.a.				■
Coleoptera	Geotrupidae	<i>Bolborhinum laesicolle</i>	Dung beetle	n.i.a.				■
Coleoptera	Geotrupidae	<i>Bolborhinum nasutum</i>	Dung beetle	n.i.a.			□	
Coleoptera	Geotrupidae	<i>Bolborhinum shajovskoyi</i>	Dung beetle	n.i.a.				□
Coleoptera	Geotrupidae	<i>Bolborhinum trilobulicome</i>	Dung beetle	n.i.a.				□
Coleoptera	Geotrupidae	<i>Bolborhinum tubericeps</i>	Dung beetle	n.i.a.				□
Coleoptera	Geotrupidae	<i>Frickius variolosus</i>	Dung beetle	n.i.a.				□
Coleoptera	Geotrupidae	<i>Taurocerastes patagonicus</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Acanthaphodius bruchii</i>	Scarab beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Arctodium vulpinum</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Ataenius chilensis</i>	Dung beetle	n.i.a.		□	□	□
Coleoptera	Scarabaeidae	<i>Ataenius gracilis</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Ataenius opatroides</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Ataenius picinus</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Ataenius platensis</i>	Dung beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Ataenius strigicaudus</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Aulacopalpus aconcaguensis</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Aulacopalpus castaneus</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Aulacopalpus ciliatus</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Australaphodius frenchi</i>	Scarab beetle	n.i.a.		□	□	□
Coleoptera	Scarabaeidae	<i>Calamostemus granarius</i>	Scarab beetle	n.i.a.		□	□	□
Coleoptera	Scarabaeidae	<i>Desertaclopus atacamensis</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Homocopris punctatissimus</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Homocopris torulosus</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Hylamorpha elegans</i>	Scarab beetle	n.i.a.		□		

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Coleoptera	Scarabaeidae	<i>Labarus pseudolividus</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Leiopsammodius indefensus</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Lichnia gallardoii</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Lichnia limbata</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Liogenys grandis</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Liogenys hirtus</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Liogenys palpalis</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Liogenys penai</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Liogenys wagenknechti</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Luispenaia atacamensis</i>	Scarab beetle	n.i.a.	□	□		
Coleoptera	Scarabaeidae	<i>Luispenaia paposo</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Luispenaia paradoxa</i>	Scarab beetle	n.i.a.	□	□		
Coleoptera	Scarabaeidae	<i>Luispenaia paulseni</i>	Scarab beetle	n.i.a.	□	□		
Coleoptera	Scarabaeidae	<i>Macroductylus chilensis</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Megathopa villosa</i>	Dung beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Oogenius penai</i>	Scarab beetle	1,200- 1,600			■	
Coleoptera	Scarabaeidae	<i>Oogenius virens</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Orodaliscoides rugosiceps</i>	Scarab beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Oryctomorphus bimaculatus</i>	Scarab beetle	n.i.a.			■	■
Coleoptera	Scarabaeidae	<i>Oryctomorphus maculicollis</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Pacuvia castanea</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Pacuvia philippiana</i>	Scarab beetle	n.i.a.	□			
Coleoptera	Scarabaeidae	<i>Parataenius simulator</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Platytomus micros</i>	Scarab beetle	n.i.a.			□	
Coleoptera	Scarabaeidae	<i>Plectris talinay</i>	Scarab beetle	n.i.a.		□		
Coleoptera	Scarabaeidae	<i>Pleurophorus caesus</i>	Scarab beetle	n.i.a.		□	□	□
Coleoptera	Scarabaeidae	<i>Podotenus (Podotenus) fulviventris</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Podotenus (Pseudopodotenus) fulviventris</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Ptyophis eiderae</i>	Scarab beetle	n.i.a.		□	■	■
Coleoptera	Scarabaeidae	<i>Ptyophis paulseni</i>	Scarab beetle	n.i.a.			□	
Coleoptera	Scarabaeidae	<i>Scybalophagus rugosus</i>	Dung beetle	n.i.a.				□

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Coleoptera	Scarabaeidae	<i>Symphodon anomalus</i>	Scarab beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Tesarius caelatus</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Tesserodoniella elguetai</i>	Dung beetle	n.i.a.			□	□
Coleoptera	Scarabaeidae	<i>Tesserodoniella meridionalis</i>	Dung beetle	n.i.a.				□
Coleoptera	Scarabaeidae	<i>Tomarus villosus</i>	Scarab beetle	n.i.a.		□		
BEEES								
Hymenopter a	Colletidae	<i>Cadeguala occidentalis</i>	Bee	n.i.a.		□	■	■
Hymenopter a	Colletidae	<i>Caupolicana dimidiata</i>	Bee	n.i.a.		■		
Hymenopter a	Colletidae	<i>Caupolicana fulvicollis</i>	Bee	n.i.a.		■	■	
Hymenopter a	Colletidae	<i>Caupolicana gayi</i>	Bee	n.i.a.	■	■	■	■
Hymenopter a	Colletidae	<i>Caupolicana hirsuta</i>	Bee	n.i.a.	■	■	■	■
Hymenopter a	Colletidae	<i>Caupolicana quadrifasciata</i>	Bee	n.i.a.		■	■	
Hymenopter a	Colletidae	<i>Leioproctus delahozii</i> (<i>Chilicolletes delahozii</i>)	Bee	n.i.a.			□	
Hymenopter a	Colletidae	<i>Leioproctus semicyaneus</i>	Bee	n.i.a.	■	■	□	
WASPS								
Hymenopter a	Crabronidae	<i>Sphex latreillei</i>	wasp	n.i.a.	■	■	■	□
Hymenopter a	Crabronidae	<i>Zyzyx chilensis</i>	sand wasp	n.i.a.	■	■	■	
Hymenopter a	Crabronidae	<i>Bicyrtes variegata</i>	sand wasp	n.i.a.			■	
Hymenopter a	Sphecidae	<i>Bembix brullei</i>	sand wasp	n.i.a.	■	■	■	
Hymenopter a	Sphecidae	<i>Microbembex ciliata</i>	sand wasp	n.i.a.			■	
ANTS								
Hymenopter a	Formicidae	<i>Camponotus chilensis</i>	'Hormigones' (large ant)	n.i.a.	■	■	■	■
Hymenopter a	Formicidae	<i>Camponotus distinguendus</i>	'Hormigones' (large ant)	n.i.a.		■	■	■
Hymenopter a	Formicidae	<i>Camponotus hellmichi</i>	'Hormigones' (large ant)	n.i.a.	■	■	■	■
Hymenopter a	Formicidae	<i>Camponotus morusus</i>	'Hormigones' (large ant)	n.i.a.	■	■	■	■
Hymenopter a	Formicidae	<i>Camponotus ovaticeps</i>	'Hormigones' (large ant)	n.i.a.		■	■	■
Hymenopter a	Formicidae	<i>Camponotus spinolae</i>	'Hormigones' (large ant)	n.i.a.				■
Hymenopter a	Formicidae	<i>Heteroponera carinifrons</i>	Ant	n.i.a.				□

table 2 - continued

Order	Family	Species	Common name or general classification	Elevation range [m a.s.l.]	PA ~26° S	SG ~29° S	LC ~33° S	NA ~38° S
Hymenoptera	Formicidae	<i>Monomorium bidentatum</i>	Harvester ant	n.i.a.				□
Hymenoptera	Formicidae	<i>Monomorium chilensis</i>	Harvester ant	n.i.a.		■	■	
Hymenoptera	Formicidae	<i>Monomorium denticulatum</i>	Harvester ant	n.i.a.			□	□
Hymenoptera	Formicidae	<i>Monomorium latastei</i>	Harvester ant	n.i.a.			■	■
Hymenoptera	Formicidae	<i>Pogonomymex angustus</i>	Harvester ant	n.i.a.			□	□
Hymenoptera	Formicidae	<i>Pogonomymex bispinosus</i>	Harvester ant	n.i.a.			□	
Hymenoptera	Formicidae	<i>Pogonomymex laevigatus</i>	Harvester ant	n.i.a.				□
Hymenoptera	Formicidae	<i>Pogonomymex odoratus</i>	Harvester ant	n.i.a.				■
Hymenoptera	Formicidae	<i>Pogonomymex vermiculatus</i>	Harvester ant	n.i.a.	□	□	□	□
Hymenoptera	Formicidae	<i>Solenopsis dysderces</i>	Fire ant	n.i.a.			■	
Hymenoptera	Formicidae	<i>Solenopsis gayi</i>	Fire ant	n.i.a.		□	□	□
Hymenoptera	Formicidae	<i>Solenopsis helena</i>	Fire ant	n.i.a.			■	■
Hymenoptera	Formicidae	<i>Solenopsis latastei</i>	Fire ant	n.i.a.	■	■	■	■
TERMITES								
Isoptera	Rhinotermitidae	<i>Reticulitermes flavipes</i>	Kollar (Termite)	n.i.a.			□	
NEUROPTERANS								
Neuroptera	Myrmeleontidae	<i>Elicura litigator</i>	(antlion; net-winged insect)	n.i.a.			□	
HEMIPTERANS								
Hemiptera	Cicadidae	<i>Tettigades chilensis</i>	Chicharra grande común (cicada)	n.i.a.	■	■	■	□

Table S3: Properties of study sites. Slope, Physical erosion rate, Denudation rate are values from mid-slope measurements. Elevation is deducted from a south-facing midslope position; * = unexpected finding, discussed in original paper; bulk densities are weighted means of the measured intervals to a depth of 40 cm, they are potentially overestimated as they are not corrected for amount of coarse fragments (>2mm); bulk density and angles of midslopes are approximations for PA, as several closeby slopes were used; Abbreviations: PA= Pan de Azúcar, SG = Santa Gracia, LC = La Campana, NA= Nahuelbuta, N = north-facing, S = south-facing, MAT = Mean annual temperature, MAP = Mean annual precipitation; References: ¹Bernhard et al. (2018), ²van Dongen et al. (2019), ³Fick and Hijmans (2017), ⁴Oeser et al. (2018), ⁵Schaller et al. (2018)

Site name	Pan de Azúcar		Santa Gracia		La Campana		Nahuelbuta	
Climate type	arid		semi-arid		mediterranean		humid	
Elevation [m a.s.l.] ⁴	330		682		730		1,239	
Vegetation cover [%] ⁴	<10		30-40		near 100		100	
MAT [°C] ³	16.8		13.7		14.1		6.6	
MAP [mm] ³	12		66		367		1,469	
Denudation rate $\pm 2\sigma$ [mm kyr ⁻¹] ²	7.66 ± 0.69		9.21 ± 0.84		200* ± 22		27.4 ± 2.4	
Aspect Slope [°] ⁴	S	N	S	N	S	N	S	N
	40	25	25	15	23	12	15	13
Physical erosion rate [t km ⁻² yr ⁻¹] ⁴	10.06 ± 0.68	9.13 ± 0.49	10.49 ± 7.73	8.71 ± 4.75	33.77 ± 4.60	23.36 ± 9.22	39.98 ± 4.33	14.22 ± 1.39
Denudation rate [cm kyr ⁻¹] ⁵	0.58 ± 0.03	0.46 ± 0.02	1.63 ± 0.09	1.05 ± 0.05	4.25 ± 0.23	5.65 ± 0.30	3.22 ± 0.13	n.d.
Bulk density [Mg m ⁻³] ¹	1.5	1.3	1.5	1.5	1.1	1.5	0.8	0.9

Table S4: Parameters of sampled plots (geographic location, mobile layer depth, general description of surface); 'none' plots were treated as 'bottom' plots; GPS data in WGS 84 projection; PA plots with multiple use had partly destroyed ground surfaces from sampling in previous years (especially north-facing top), loose material started to form new hardened top layer, Abbreviations: PA= Pan de Azúcar, SG = Santa Gracia, LC = La Campana, NA= Nahuelbuta, N = north-facing, S = south-facing; References: ¹Luebert and Pliscoff (2006), ²Oeser (2018)

Site name	Vegetation type ¹	Dominant plant species ²	Aspect	Position on slope	GPS lat	GPS long	Year of data acquisition	Plot surface description (2018)
PA	Mediterranean coastal desert scrub of <i>Euphorbia lactiflora</i> and <i>Eulychnia saint-pieana</i>	more abundant vegetation in small ravines; S-facing slope: <i>Tetragonia maritima</i> , <i>Nolana mollis</i> , <i>Perilyte</i> sp., <i>Stipa plumosa</i> ; N-facing slope: <i>Nolana mollis</i> and <i>Cristaria integerrima</i>	S	"none"	-26.109444°	-70.550833°	2016 / 2017 / 2018	bare ground
				bottom	-26.110556°	-70.548611°	2017	bare ground
			N	top	-26.110000°	-70.550000°	2016 / 2017 / 2018	bare ground
				top 2 (NW) "none"	-26.110000°	-70.550556°	2018	bare ground
				bottom	-26.109722°	-70.550556°	2016 / 2018	bare ground
bottom 2	-26.110556°	-70.548611°	2017	bare ground				
SG	Interior Mediterranean desert scrub of <i>Heliotropum stenophyllum</i> and <i>Flourensia thurifera</i>	original vegetation disturbed, current shrubby vegetation influenced by livestock grazing (mostly goats; Bahre, 1979), area: <i>Balbisia pedunculata</i> , <i>Baccharis paniculata</i> , <i>Bulnesia chilensis</i> ; S-facing slope: <i>Proustia cuneifolia</i> , <i>Senna cumingii</i> ; N-facing slope: <i>Cordia decandra</i> and <i>Adesmia</i> sp., <i>Cumulopuntia sphaerica</i> , <i>Eulychnia acida</i>	S	top	-29.757222°	-71.165556°	2016 / 2017 / 2018	7% bushes, 2% leave litter, 4% boulders & stones
				bottom	-29.758056°	-71.165278°	2016 / 2017 / 2018	cover: 6 m ² bushes, 5 m ² ground covering cacti; 5 m ² boulders & stones; 4 m ² thorny litter
			N	top	-29.762222°	-71.164722°	2016 / 2017 / 2018	8 m ² bushes, 4 m ² boulders & stones; 8 m ² cacti
				bottom	-29.761111°	-71.164722°	2016 / 2017 / 2018	6 m ² cacti covering the ground + leave litter; 9 m ² bushes; 5 m ² cacti; 5 m ² boulders & stones
LC	Coastal mediterranean sclerophyllous forest of <i>Lithraea caustica</i> and <i>Cryptocaria alba</i>	area: <i>L. caustica</i> , <i>C. alba</i> , <i>Quillaja saponaria</i> , <i>Kageneckia oblonga</i> ; <i>Colliguaja odorifera</i> , <i>Aristeguiella salvia</i> , <i>Retanilla trinervia</i> , <i>Podanthus mitiqui</i> , <i>Geranium robertianum</i> , <i>Stellaria media</i> , <i>Adiantum chilense</i> ; S-facing slope: <i>L. caustica</i> , <i>C. odorifera</i> , <i>P. mitiqui</i> , <i>A. salvia</i> , <i>Alstroemeria</i> sp., <i>G. robertianum</i> , <i>S. media</i> , <i>Solenomelus pedunculatus</i> , <i>A. chilense</i> . N-facing slope: <i>L. caustica</i> , <i>Jubaea chilensis</i> , <i>R. trinervia</i> , <i>A. salvia</i> , <i>C. odorifera</i> , <i>Poa</i> spp., <i>Sonchus oleraceus</i> , <i>Tropaeolum</i> sp., <i>Dioscorea</i> sp.	S	top	-32.955833°	-71.063889°	2016 / 2017 / 2018	2 cm litter with relatively large leaves, some traces of rodent faeces, about 15% of ground covered with dead wood
				bottom	-32.956111°	-71.064167°	2016 / 2017 / 2018	2-3 cm litter, conspicuously many spider webs at hole entrances, 30% surface with little slope, 5% stones, 5% dead wood; many holes under stones (often 20 cm width); rodent faeces, rodent runways, often loose litter rearranged by surface running water during rain
			N	top	-32.957500°	-71.064444°	2016 / 2017 / 2018	seemingly rodent activity (lots of faeces, runways), traces of fire, hardly any insect holes, 0-2 cm litter; 50% shrubcover
				bottom	-32.956667°	-71.063889°	2016 / 2017 / 2018	plot covered with approx. 50% with signs of trampling by i.e. cows; 20% shrubcover; 1-2 cm litter
NA	Coastal temperate forest of <i>Araucaria araucana</i>	area: <i>Nothofagus dombeyi</i> , <i>A. araucana</i> , <i>Nothofagus obliqua</i> , <i>Nothofagus antarctica</i> , <i>Gaultheria mucronata</i> , <i>Azara microphylla</i> , <i>Baccharis</i> sp., <i>Ribes magellanicum</i> , <i>Berberis montana</i> , <i>Stipa</i> sp., <i>Mutisia decurrens</i> , <i>Chusquea culeou</i> , <i>Bromus</i> sp., <i>Viola maculata</i> , <i>Adenocaulon chilense</i> ; N-facing slope: <i>N. obliqua</i> , <i>N. antarctica</i> , <i>G. mucronata</i> , <i>Stipa</i> sp.; S-facing slope: <i>A. araucana</i> , <i>N. antarctica</i> , <i>C. culeou</i> , <i>Usnea</i> sp.	S	top	-37.807778°	-73.013056°	2016 / 2017 / 2018	2 cm of litter, no understory under bamboo (<i>Chusquea</i> sp.) shrubs; edge of plot; traces of running water on surface
				bottom	-37.808611°	-73.013333°	2016 / 2017 / 2018	more understory here than at top slope position; most holes look very similar, more litter than at top slope position
			N	top	-37.809444°	-73.013889°	2016 / 2017 / 2018	surface covered with dry grass and leaf litter, hardly any difference to understory at N bottom; under grass: rodents, lizards; more grass than at N bottom
				bottom	-37.808611°	-73.013889°	2016 / 2017 / 2018	surface covered with 2 cm litter and grass, many ants present, runways of rodents under grass