

Temperate rocky subtidal reef community reveals human impacts across the entire foodweb

Alejandro Pérez-Matus^{1*}, Andres Ospina-Alvarez², Patricio A. Camus³, Sergio A. Carrasco¹, Miriam Fernandez^{2,4}, Stefan Gelcich^{2,4,5}, Natalio Godoy^{5,6}, F. Patricio Ojeda⁶, Luis Miguel Pardo^{7,8}, Nicolás Rozbaczylo⁶, Maria Dulce Subida², Martin Thiel^{9,10,11}, Evie A. Wieters², Sergio A. Navarrete^{2,6}

¹Subtidal Ecology Laboratory & Center for Marine Conservation, Estación Costera de Investigaciones Marinas, Pontificia Universidad Católica de Chile, Casilla 114-D, 2690931 Santiago, Chile

²Center for Marine Conservation and Estación Costera de Investigaciones Marinas, Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Casilla 114-D, 2690931 Santiago, Chile

³Centro de Investigación en Biodiversidad y Ambientes Sustentables (CIBAS), Departamento de Ecología, Universidad Católica de la Santísima Concepción, Casilla 297, 4090541 Concepción, Chile

⁴Laboratorio Internacional en Cambio Global (Lincglobal), Departamento de Ecología, Pontificia Universidad Católica de Chile, 8331150 Santiago, Chile

⁵Center of Applied Ecology and Sustainability (Capes), Facultad de Ciencias Biológicas, Departamento de Ecología, Pontificia Universidad Católica de Chile, Santiago 8331150, Chile

⁶Departamento de Ecología, Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, 8331150 Santiago, Chile

⁷Instituto de Ciencias Marinas y Limnológicas, Laboratorio Costero Calfuco, Facultad de Ciencias, Universidad Austral de Chile, 5110566 Valdivia, Chile

⁸Research Centre for the Dynamics of High Latitude Marine Ecosystems (IDEAL), Facultad de Ciencias, Universidad Austral de Chile, 5110566 Valdivia, Chile

⁹Facultad Ciencias del Mar, Universidad Católica del Norte, Larrondo 1281, 1781421 Coquimbo, Chile.

¹⁰Millennium Nucleus Ecology and Sustainable Management of Oceanic Island (ESMOI), Coquimbo, Chile

¹¹Centro de Estudios Avanzados en Zonas Áridas (CEAZA), 1781681 Coquimbo, Chile

*Corresponding author: aperez@bio.puc.cl

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Supplement 1

Strengths and potential biases of the dataset

Table S1 presents the dataset included in our food web. The designation “taxa” corresponds to the core unit of analysis in the food web.

The subtidal food web contains a total of 147 taxa, from which 133 were resolved to the following taxonomic categories: 3 phyla, 2 classes, 1 infraclass, 1 order, 18 genus, 103 species. The remaining taxa correspond to: i) species lumped by taxonomic and trophic relatedness (10 taxa containing lumped groups of amphipods, isopods and polychaetes), ii) resources lumped by ecological function (biofilm, plankton, detritus and human; the latter included in the node fisheries).

1. Lumping

We grouped different taxa in the same group (lumping) in order to reduce the bias associated with the lack of both taxonomic and ecological knowledge for individual species within the group. Below we describe the composition and general ecological role of each lumped taxa.

Biofilm. Epilithic biofilms are made up of macromolecules, bacteria, diatoms, fungi, protozoa, and spores of macroalgae (Anderson 1995) entangled in a matrix of extracellular polymeric substances (Decho 2000). Besides its role in macroalgae (Park et al. 2011) and sessile invertebrate larvae settlement (Dahms 2004, Harder 2002), this multi-taxa assemblage represents the main food source for a wide variety of benthic macro-grazers (Hillebrand et al. 2000). The lack of information on the specific composition of these assemblages, summed to their high spatial variability (Christofoletti et al. 2011) and substrate specificity (Uribe et al. 2015) hampers the task of disentangling trophic interactions within the subtidal epilithic biofilm assemblage. Thus, in our food web we have treated it as a black box included in a single node. However, we are aware that different grazers may feed upon, and thus produce different impacts over, different components of the biofilm (Aguilera et al. 2013, Christofoletti et al. 2011) and this should be one of the drawbacks of our food web to resolve in the future.

Plankton. Zooplankton, phytoplankton and suspended particulate organic matter (POM) were treated as a single node upon which benthic filter and suspension-feeders, as well as some deposit feeders, prey. Just like Kéfi et al. (2015) have already pointed out for the intertidal network of trophic and non-trophic interactions in the same study system, we do not see any way in which differential feeding, even if it could alter plankton composition/abundance, could feed back into the subtidal trophic web. Therefore, lumping plankton species and POM seems less consequential for the subtidal food web than lumping biofilm taxa. Nevertheless, we know that a large fraction of invertebrate species at all trophic levels of the web have pelagic larval stages that can feed on phyto- and/or zooplankton. It is well-known that food availability can influence larval performance, and therefore these feeding links are important and are part of the basic life history of these species. However, at this point we have no way to incorporate them into any marine ecological web and we cannot begin to anticipate the consequences on the structural patterns of the subtidal food web.

Detritus. Marine detritivores and deposit feeders satisfy their nutritional needs from the organic content of the sediments they ingest (Lopez et al. 2012). So, this benthic trophic guild is expected to be found in all marine habitats where some degree of sedimentation occurs, particularly where sediment is trapped within algae and/or sessile invertebrate mats (Airoldi 2003), just like the rocky bottoms targeted in our study. In this node we considered the resources consumed by detritivores and

deposit feeders: mostly macroscopic pieces of dead fauna and flora and sediment POM. Since this node does not represent an assemblage of taxa, there is no bias expected to occur associated to its use in the subtidal food web. Nevertheless, in a further step of this food web, where energy flow is somehow incorporated (through biomass exchange estimates, for example), we expect this node to be one of the most difficult to quantify, due to the high variability in the amount of organic matter it refers to (Levinton 1972).

2. Fisheries

The central coast of Chile is heavily impacted by small-scale benthic artisanal fisheries (Fernández & Castilla 2005). The most important subtidal resources targeted by these fisheries, in terms of landings and income, are the muricid gastropod *Concholepas concholepas*, keyhole limpets (*Fissurella* spp.), the red sea urchin (*Loxechinus albus*) and kelps (*Lessonia trabeculata* and *Macrocistys pyrifera*). Owing to the deep impact these fisheries have on the studied ecosystem, directly through biomass removal and indirectly through cascading ecological effects in the network of trophic interactions (Giacaman-Smith et al. 2016, Godoy et al. 2010), dismissing this node would yield an unrealistic food web. Therefore, the node “fisheries” has the category of consumer in the food web and refers to the exploitation of resources performed by human. The assignation of resources to this consumer node was based on public information from the official fisheries-related entities (the National Service of Fisheries and the Undersecretary of Fisheries of the Chilean Government) and expert knowledge.

3. Missing taxa and deliberate taxa exclusion

We deliberately excluded all the taxa that we assumed, based on expert knowledge, to be marginal to the food web of the studied system. Pelagic fish species such as the Pacific sardine (*Sardinops sagax*), the Chilean jack mackerel (*Trachurus murphyi*) or the corvina drum (*Cilus gilberti*) were not included in the food web, since these are considered as transient species in the study system. Nevertheless, the impact that small to medium shoals of these species crossing through the shallow waters of the studied rocky coasts have on its food web is largely unknown. For instance, analysis of stomach contents of *T. murphy* collected off the Peruvian coast, have shown that around 1 to 4 % of stomach content weight corresponded to prey that may be commonly found in shallow rocky habitats (Alegre et al. 2015). Additionally, we excluded mammals such as the sea lion (*Otaria flavescens*) as their diet is composed mainly by pelagic species and species outside the depth range and habitat included in the study (George-Nascimento et al. 1985). Other species that occur in rocky substratum such as skates (*Sympterygia* spp.) are considered transient in rocky substratum and they forage mainly in soft-bottom habitats. Typical intertidal species were also excluded from the food web. Nevertheless, the intertidal kelp *Lessonia spicata* has been recorded in low numbers at a depth of 6 m within the study area (pers. obs). Although we presume that these are exceptional occurrences, and thus have minimal impacts in our food web, we are not able to predict the magnitude and direction of changes in web statistics that its inclusion in the food web would bring.

All the feeding links considered as incidental by expert knowledge, i.e. quite trivial as their representation in the diet of a consumer could be incidental and relatively rare, were not included in our web. Although it is possible that a small fraction of these links are still included in the web, we do not forecast an important contribution to the statistics of the web.

Invertebrate species, whose adult body size was smaller than 10 mm, such as meiofauna and parasites, are probably poorly represented in our web. It is hard to predict the degree of bias associated with these missing links. However, we are aware that small macroinvertebrates and meiofauna are usually associated not only with processes of detritus recycling but also with biofilm consumption, including kelp spores, gametophytes and small sporophytes (Dayton 1985), an activity that may have a strong impact on the dynamics of the basal species of our web.

4. Literature used to build the food web

The species list and trophic links were initially assembled from published records, including theses and unpublished reports, which included qualitative, quantitative and experimental studies conducted in the study region over the past 30 years. “Specific references” in Table S1 refer to manuscripts focusing on a specific node, and “General references” refer to the literature covering assemblages of nodes. The initial dataset was then revised and expanded by expert knowledge through personal interviews and workshop meetings among co-authors and personal communication (pers. comm.). Expert knowledge is increasingly being used in ecological models and conservation science, mainly due to the paucity of empirical data available to respond (often urgent) questions regarding conservation management and environmental risk assessments in complex systems. It has been actually recommended that the use of expert opinion in ecological models is preferable to delay management decisions while more data are collected (Martin et al. 2011, Martin et al. 2012).

The references cited in Table S1 are bilateral for all the nodes that may be both resource and consumer, but unilateral for basal nodes (primary producers and function nodes), since these have no resources, and also for node fisheries and top taxa, since these have no consumers.

Table S1. Dataset used to build the subtidal foodweb.

Taxa (nodes) were resolved to taxonomic categories or lumped by taxonomic/trophic relatedness or ecological function. The “yes” value in the column “Harvested” means that the node is a resource for the node Fisheries. References included in this table refer only to the consumer function of each node; so, primary producers and lumped taxa have no references associated. Specific references refer to literature focusing on the node. General references refer to literature covering several nodes. EK refers to expert knowledge.

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Acanthistius pictus</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Ahnfeltiopsis durvillaei</i>	species	no		
<i>Alia unifasciata</i>	species	no	Jofré-Madariaga et al. 2013, Vásquez 1993	
<i>Allopetrolisthes angulosus</i>	species	no	Empananza 2007, Morales & Antezana 1983	Zagal & Hermosilla 2001
<i>Allopetrolisthes spinifrons</i>	species	no	Morales & Antezana 1983, Valdivia & Stotz 2006	
Alpheidae	family	no	Palomar et al. 2004	
Amphipoda_depositivore	relatedness	no	Kanneworff 1965	
Amphipoda_detritivore	relatedness	no	EK, Zimmerman et al. 1979	
Amphipoda_herbivore	relatedness	no	Buschmann 1990, Cerda et al. 2010, EK, Gutow et al. 2012, Lörz et al. 2010, Pansch et al. 2009	

Node	Resolved to / Lumped by	Harvested	Specific references	General references
Amphipoda_omnivore	relatedness	no	Brawley & Fei 1987, Cruz-Rivera & Hay 2000, Dixon & Moore 1997, Douglass et al. 2011, EK, Gibbs et al. 2011, Guerra-Garcia & Tierno de Figueroa 2009, Taylor & Brown 2006, Yu et al. 2003, Yu & Suh 2011	
Amphipoda_suspensivore	relatedness	no	Barnard et al. 1991, Dixon & Moore 1997, EK	
<i>Anemonia alicemartinae</i>	species	no	Emparanza 2007, Häussermann & Försterra 2001, Morales & Antezana 1983, Palomar et al. 2004	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Antholoba achates</i>	species	no	Zabala et al. 2013	
<i>Anthothoe chilensis</i>	species	no	Genzano et al. 2011	
<i>Aplodactylus punctatus</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Athyonidium chilensis</i>	species	yes	EK, Fuentes 1982	
<i>Auchenionchus microcirrhis</i>	species	no	van Son & Thiel 2006	Angel & Ojeda 2001, Barrientos et al. 2004, Boyle & Horn 2006, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Aulacomya atra</i>	species	yes	Biffi & Iannacone 2010, EK, Morales & Antezana 1983, Villegas et al. 2007	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Austromegabalanus psittacus</i>	species	yes	Morales & Antezana 1983, Zagal & Hermosilla 2001	
Balanus spp.	genus	no	Morales & Antezana 1983	
Biofilm	function	no		

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Blidingia</i> sp.	genus	no		
<i>Bossiella chiloensis</i>	species	no		
<i>Bovichthys chilensis</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Brachidontes granulata</i>	species	no	Jofré-Madariaga et al. 2013	
Bryozoa	phylum	no		Zagal & Hermosilla 2001
<i>Calliclinus geniguttatus</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Boyle & Horn 2006, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Calyptraea trochiformis</i>	species	no		Vásquez 1993
<i>Cancer plebejus</i>	species	yes		Häussermann & Försterra 2009, Zagal & Hermosilla 2001
<i>Ceramium</i> spp.	genus	no		
<i>Chaetomorpha</i> spp.	genus	no		
<i>Cheilodactylus variegatus</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Chiton cumingsii</i>	species	no	Bedford & Moore 1985	
<i>Chondria californica</i>	species	no		
<i>Chondrus canaliculatus</i>	species	no		
<i>Choromytilus chorus</i>	species	yes	Häussermann & Försterra 2009, Morales & Antezana 1983	
<i>Chromis crusma</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Cladophora</i> spp.	genus	no		
<i>Codium</i> spp.	genus	no		
<i>Colpomenia</i> spp.	genus	no		
<i>Concholepas concholepas</i>	species	yes		Vásquez 1993, Zagal & Hermosilla 2007
<i>Corallina</i> spp.	genus	no		
<i>Crassilabrum crassilabrum</i>	species	no	Jofré-Madariaga et al. 2013	Vásquez 1993
<i>Cycethra verrucosa</i>	species	no	EK	Zagal & Hermosilla 2007
Demospongiae	class	no		Fauchauld & Jumars 1979, Zagal & Hermosilla 2001
Detritus	function	no		
<i>Dictyota kunthii</i>	species	no		
<i>Eatoniella</i> sp.	genus	no		Vásquez 1993
<i>Ectocarpus</i> sp.	genus	no		
<i>Eptatretus bischoffii</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Eulithidium umbilicatum</i>	species	no	Steneck & Watling 1982	
Fisheries	function			
<i>Fissurella costata</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella crassa</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella cumingi</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella latimarginata</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella limbata</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella maxima</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Fissurella picta</i>	species	yes	Salgado 1988	Camus et al. 2013
<i>Gaudichaudia gaudichaudi</i>	species	no	EK	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980, Zagal & Hermosilla 2007
<i>Gelidium</i> spp.	genus	no		

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Genypterus chilensis</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980, Zagal & Hermosilla 2001
<i>Girella laevisfrons</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Gobiesox marmoratus</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Graus nigra</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Halopterus spp.</i>	genus	no		
<i>Helcogrammoides cunninghami</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Heliaster helianthus</i>	species	no	Barrios et al. 2008, EK, Fuentes 1982, Manzur & Navarrete 2011	Angel & Ojeda 2001, Barrientos et al. 2004, Boyle & Horn 2006, Fuentes 1981, Muñoz & Ojeda 1997, Ortiz & Wolff 2002, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Hemilutjanus macrophthalmos</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Heterosiphonia subsecundata</i>	species	no		
<i>Hildenbrandia lecancellieri</i>	species	no		
<i>Homalaspis plana</i>	species	yes	Morales & Antezana 1983	
Hydrozoa	class	no		Fauchauld & Jumars 1979, Zagal & Hermosilla 2001
<i>Hypsoblennius sordidus</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Isacia conceptionis</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
Isopoda_herbivore	relatedness	no	EK, Poore et al. 2014, Thiel 2002, Thiel 2003	
Isopoda_omnivore	relatedness	no	EK, Lorenti & Mariani 1997, Martinez-Haro et al. 2014	
<i>Labrisomus philippi</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Laurencia</i> sp.	genus	no		
<i>Lessonia trabeculata</i>	species	yes		
<i>Liopetrolisthes mitra</i>	species	no	Baeza & Thiel 2000, Morales & Antezana 1983	
<i>Lithothamnium</i> sp.	species	no		
Lottiidae	family	no		Vásquez 1993
<i>Loxechinus albus</i>	species	yes		Vásquez 1993

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Lutra felina</i>	species	no	Biffi & Iannacone 2010, Villegas et al. 2007	Zagal & Hermosilla 2001, Zagal & Hermosilla 2001
<i>Macrocystis pyrifera</i>	species	yes		
<i>Metacarcinus edwardsii</i>	species	yes	EK,	
<i>Meyenaster gelatinosus</i>	species	no	Dayton et al. 1977, Ortiz et al. 2003	Zagal & Hermosilla 2007
<i>Mytilus chilensis</i>	species	no		
<i>Myxodes</i> sp.	genus	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Nassarius gayii</i>	species	no	Jofré-Madariaga et al. 2013	Vásquez 1993
Nematoda	phylum	no	EK	
Nemertea	phylum	no	EK, Salgado 1988	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Odontaster penicillatus</i>	species	no		Avila et al. 2012
Ophiuroidea	family	no	EK	
<i>Opisthobranchia</i>	infraclass	no		Vásquez 1993
<i>Oulactis concinnata</i>	species	no	Häussermann 2003	
<i>Pagurus comptus</i>	species	no		
<i>Pagurus edwardsii</i>	species	no		
<i>Pagurus vilosus</i>	species	no		
<i>Paralabrax humeralis</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Paralichthys adspersus</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Paralichthys microps</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Paraxanthus barbiger</i>	species	no	Manríquez et al. 2008	
<i>Patiria chilensis</i>	species	no		Zagal & Hermosilla 2007
<i>Petrolisthes desmarestii</i>	species	no	Gabaldon 1979, Morales & Antezana 1983	
<i>Petrolisthes laevigatus</i>	species	no	Gabaldon 1979, Morales & Antezana 1983	
<i>Petrolisthes tuberculatus</i>	species	no	Gabaldon 1979, Morales & Antezana 1983	
<i>Petrolisthes tuberculosus</i>	species	no	Gabaldon 1979, Morales & Antezana 1983	Zagal & Hermosilla 2001
<i>Phymactis clematis</i>	species	no	Acuña & Zamponi 1995	
<i>Pilumnoides perlatus</i>	species	no	Biffi & Iannaccone 2010	Kyomo 1999
<i>Pinguipes chilensis</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Pisoides edwardsii</i>	species	no		Zagal & Hermosilla 2001
Plankton	function	no		
<i>Plocamium cartilagineum</i>	species	no		
Polychaeta_carnivore	relatedness	no	EK Fauchald & Jumars 1979, Rouse & Pleijel 2001	
Polychaeta_depositivore	relatedness	no	Fauchald & Jumars 1979, Penry & Jumars 1990, Rouse & Pleijel 2001	
Polychaeta_herbivore	relatedness	no	Bedford & Moore 1985	
Polychaeta_omnivore	relatedness	no	Fauchald & Jumars 1979, Rouse & Pleijel 2001	
<i>Polysiphonia spp.</i>	genus	no		
<i>Prisogaster niger</i>	species	no		Camus et al. 2013
<i>Pterosiphonia sp.</i>	genus	no		
<i>Pyura chilensis</i>	species	yes		Zagal & Hermosilla 2001
<i>Ralfsia spp.</i>	genus	no		
<i>Rhodymenia skottsbergii</i>	species	no		
<i>Rhynchocinetes typus</i>	species	no	EK	
<i>Robsonella fontaniana</i>	species	no	Ibañez et al. 2009	
<i>Romaleon polyodon</i>	species	yes	Baeza & Fernández 2002, Gutiérrez & Zuñiga 1976,	

Node	Resolved to / Lumped by	Harvested	Specific references	General references
			Zagal & Hermosilla 2001	
<i>Scartichthys viridis</i>	species	no		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Schottera nicaeensis</i>	species	no		
<i>Schroederichthys chilensis</i>	species	no	Piaget et al. 2005	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980, Zagal & Hermosilla 2001
<i>Sebastes oculatus</i>	species	yes	Manríquez et al. 2008	Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Semicossyphus darwini</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Semimytilus algosus</i>	species	no	Barrios et al. 2008, Morales & Antezana 1983	Häussermann & Försterra 2009, Zagal & Hermosilla 2001
<i>Sicyases sanguineus</i>	species	yes		Angel & Ojeda 2001, Barrientos et al. 2004, Fuentes 1981, Muñoz & Ojeda 1997, Palma & Ojeda 2002, Pérez-Matus et al. 2012, Quijada & Cáceres 2000, Vásquez 1993, Vásquez et al. 1998, Vial & Ojeda 1980
<i>Siphonaria lessoni</i>	species	no		Vásquez 1993
<i>Stichaster striatus</i>	species	no		Zagal & Hermosilla 2007
<i>Taliepus dentatus</i>	species	no	Häussermann 2003, Jofré-Madariaga et al. 2013	

Node	Resolved to / Lumped by	Harvested	Specific references	General references
<i>Taliepus marginatus</i>	species	no	Jofré-Madariaga et al. 2013	
Tanaidacea	order	no	EK	
<i>Tegula quadricostata</i>	species	no	Camus et al. 2013, Morales & Antezana 1983	Vásquez 1993
<i>Tegula tridentata</i>	species	no	Camus et al. 2013, Morales & Antezana 1983	Vásquez 1993
<i>Tetrapygus niger</i>	species	no	Manzur & Navarrete 2011, Navarrete et al. 2008	Vásquez 1993
<i>Tonicia chilensis</i>	species	no	EK	
<i>Turritella cingulata</i>	species	no	Declerck 1995	Vásquez 1993
<i>Ulva</i> spp.	genus	no		
Vermetidae	family	no		Vásquez 1993

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Supplement 2

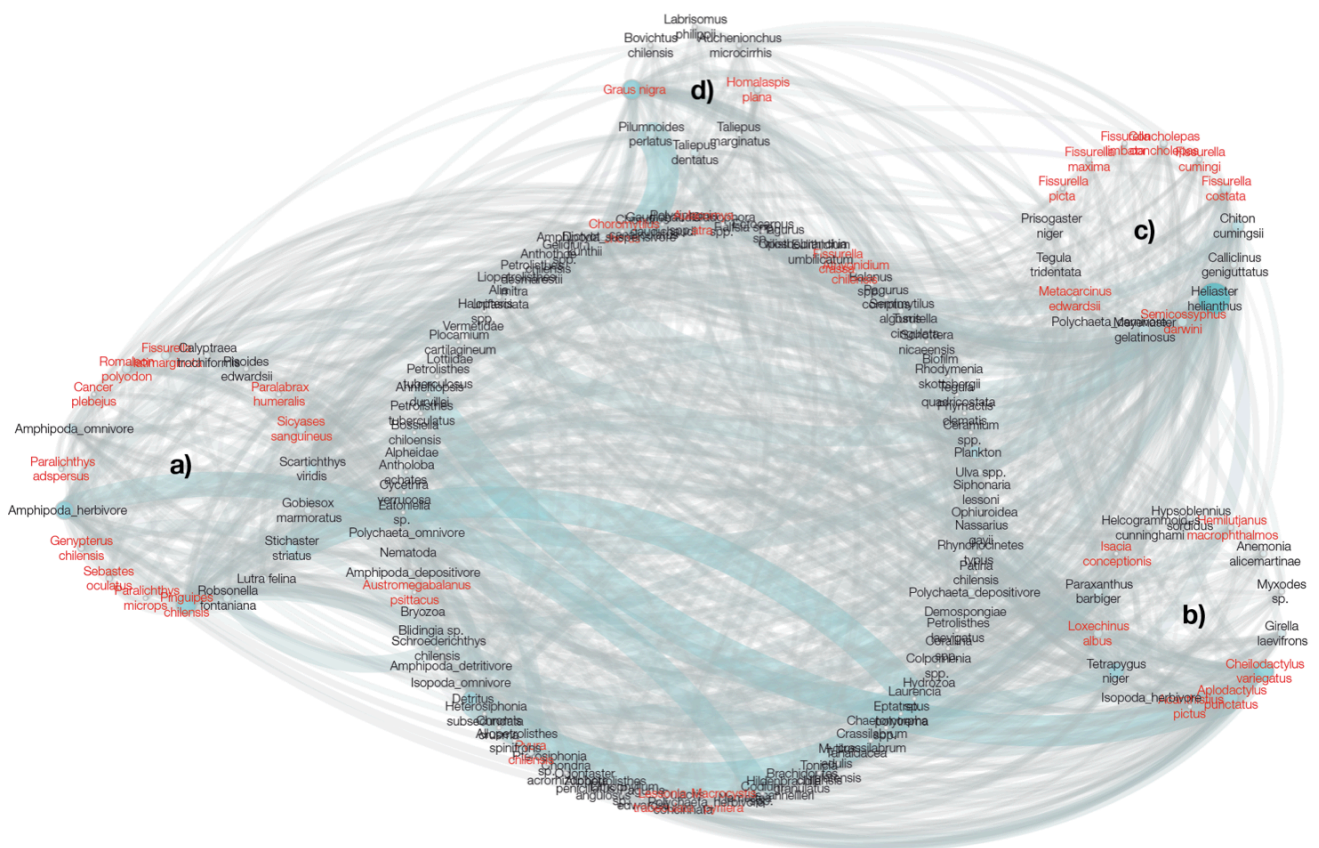


Fig. S1. Representation of the subtidal rocky shore food web excluding the fishery (i.e. human) node partitioned using the spin glass method for module detection. The communities are represented by four small circles orbiting the large core group. Black labels and font represent non-harvested species and red labels and font represent harvested species. The relative size of nodes and labels indicates the number of trophic links (degree).

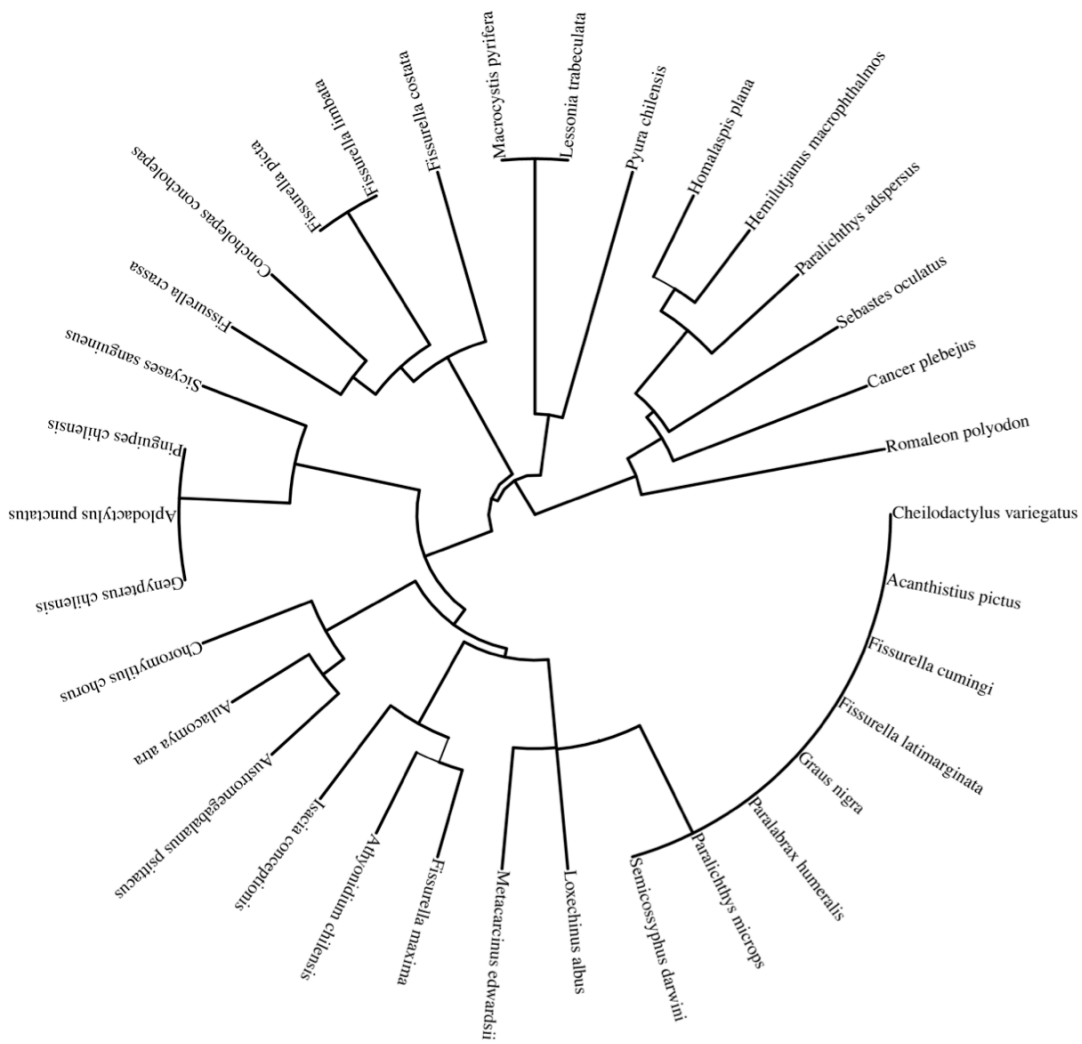


Fig. S2. Ward's Cluster Similarity analysis based on all incoming and outgoing links including only harvested nodes in the Chilean subtidal food web.