

Text S1

The following workflow was implemented to clean the database and minimize potential errors in the records collected from online databases (GBIF, OBIS, and iNaturalist).

Taxonomical cleaning:

- a. To check the validity of names: Verify any changes in species names. Records were updated to reflect the newest nomenclature, ensuring consistency and accuracy.
- b. Removal of wrong species: It is possible that when the databases download, other species which are not the species under study were included in the list. Those record was removed from the databases.
- c. iNaturalist records: If the taxonomy of a record was doubtful, it was not included. Only records with a "research grade" designation were considered because they have high reliability and are checked with specialists.

Georeferenced cleaning:

Most of the records were supported by primary evidence (see next section) for validation. Also, the following considerations were taken:

- a. For records falling on land, if there was no primary evidence that allowed them to be corrected, they were removed.
- a. Incorrect Mapping: records with georeferencing errors were identified, such as incorrect latitude or longitude coordinates, and primary evidence was used to correct these errors.
- b. Limited Precision: records that were georeferenced only for Uruguay/Argentina but lacked the precision of a specific point on the map were removed unless primary evidence was available for correction.
- d. If records indicate a species in a locality or area that suggested a new record or a range expansion, the information using primary evidence or consultation with specialized taxonomists for validation was gathered to adjust the georeferentiation.
- e. Duplicated records were deleted.
- f. Missing information: some records were included in databases, but the georeference data were missing and thus were not included.

References used as primary evidence of records

- Albano MJ, Obenat SM (2019) Fouling assemblages of native, non-indigenous and cryptogenic species on artificial structures, depths and temporal variation. *J Sea Res* 144:1–15.
- Alonso de Pina GM (2005). A new species of *Notopoma* Lowry & Berents, 1996, and a new record of *Jassa marmorata* Holmes, 1903, from the southwestern

- Atlantic (Amphipoda: Corophiidea: Ischyroceridae). Proc. Biol. Soc. Wash 118:528-538
- Antaclí J, Tatián M, Morsan E, Schejter L, Roux A, Giberto D (2003) Aportes al conocimiento de la ascidiofauna del Mar Argentino. V Jornadas Nacional de Ciencias del Mar, Argentina, p 65
- Bastida R, Torti MR (1971) Estudio preliminar sobre las incrustaciones biológicas de Puerto Belgrano. Laboratorio de Ensayo de Materiales e Investigaciones Tecnológicas, Argentina, serie II, n° 188p 47-75
- Bastida RO, Brankevich G (1982) Estudios ecológicos sobre las comunidades incrustantes de Puerto Quequén (Argentina). II. Características del macrofouling. [Ecological aspects of fouling communities of Puerto Quequén (Argentina). II. Macrofouling]. CIDEPINT Anales. 157-193.
- Bastida R, L'Hoste S (1976) Relaciones tróficas de las comunidades incrustantes ("fouling") del puerto de Mar del Plata. LEMIT Anales 329: 159-203.
- Battini N, Reginaldo Lejarraga R. (2017) Expandiendo los límites de una especie exótica con alto potencial de impacto sobre las comunidades nativas: Registro más austral de *Rapana venosa* (Valenciennes, 1846) (Gastropoda: Muricidae) en la costa bonaerense. Congreso Latinoamericano de Malacología, Uruguay, p 20.
- Battini N, Farías N, Giachetti CB, Schwindt E, Bortolus A (2019) Staying ahead of invaders: Using species distribution modeling to predict alien species' potential niche shifts. Mar Ecol Prog Ser:127–140.
- Becherucci ME, Jaubet ML, Bottero MS, Llanos EN, Elias R, Garaffo GV (2018) Rapid sewage pollution assessment by means of the coverage of epilithic taxa in a coastal area in the SW Atlantic. Sci. Total Environ 628: 826-834.
- Biancalana F (2008) Dinámica del mesozooplankton y su regulación ambiental en las bahías Ushuaia y Golondrina (Canal Beagle). PhD dissertation. Universidad Nacional del Sur, Bahía Blanca, Argentina.
- Boraso de Zaixso AL, Zaixso HE, Casas G (1999). Asociaciones de algas bentónicas submareales en el golfo San José (Chubut, Argentina). Physis (Buenos Aires), Secc. A, 57:17-27.
- Boraso de Zaixso AL, Akselman R (2005) *Anotrichium furcellatum* (Ceramiaceae, Rhodophyta) en Argentina. Una posible especie invasora. Bol Soc Argent Bot 40:207-213.
- Boraso AL, Zaixso JM (2007) Algas Marinas Bentónicas. In: Boltovskoy (Ed.) (PNUD) Atlas de Sensibilidad ambiental del mar y de la costa, p 1-28
- Borges ME, Parodi ER, dos Santos EP (2005) Influencia de la comunidad incrustante (fouling) en la obtención de semillas de ostras sobre colectores, en Bahía Anegada. Producción, recursos y medioambiente en el sudoeste bonaerense. EdiUNS, Bahía Blanca.
- Borges ME (2006) Ecología de las ostras en ambientes del sur bonaerense: cultivo y manejo de suspensiones. PhD Thesis. Universidad Nacional del Sur, Argentina.

- Bortolus A, Schwindt E, Mendez MM, Ortiz, N, Ré ME, Piriz ML, Elias I, Gosztonyia E, Kuba L, Ciocco N, Gagliardini DA, Orensanz JM (2006). Estudio de línea de base y plan de monitoreo de la biodiversidad de los ambientes marinos adyacentes al Parque Nacional Monte León. Informe Técnico Final. Proyecto de Conservación de la Biodiversidad. UEP Donación BIRF/GEF TF, p. 1-65
- Borthagaray AI, Clemente JM, Boccardi L, Brugnoli E, Muniz P (2006) Impacto potencial de invasión de *Ficopomatus enigmaticus* (Fauvel) (Polychaeta: Serpulidae) en la Laguna de Rocha, Uruguay. Pan-Am J Aquat Sci 1: 57-65.
- Bottero MS, Jaubet ML, Llanos EN, Becherucci ME, Elías R, Garaffo GV (2020) Spatial-temporal variations of a SW Atlantic macrobenthic community affected by a chronic anthropogenic disturbance. Mar Pollut Bull 156:111189.
- Bravo G, Livore JP, Battini N, Gastaldi M, Lauretta D, Brogger M, Raffo MP, Lager C, Bigatti G (2021) Rocky reef biodiversity survey: Punta Pardelas, Argentina. Biodivers Data J 9:1–13.
- Brazeiro A, Borthagaray A, Giménez L, Conde D, Scarabino F (2006) Patrones geográficos de diversidad bentónica en el litoral rocoso de Uruguay. In: Bases para la conservación y manejo de la costa uruguaya. Vida Silvestre, Montevideo.
- Calliari DG, Cervetto D, Bastrerl M, Gómez (2001) Short-term variability in abundance and vertical distribution of the opossum shrimp *Neomysis americana* in the Solís Grande river estuary, Uruguay. Atlântica 23: 117-125.
- Calliari D, Cervetto G, Castiglioni R, & Rodríguez L (2007) Salinity preferences and habitat partitioning between dominant mysids at the Río de la Plata estuary (Uruguay). J Mar Biol Assoc UK 87: 501-506.
- Calvo-Marcilese L, Langer MR (2010) Breaching biogeographic barriers: the invasion of *Haynesina germanica* (Foraminifera, Protista) in the Bahía Blanca estuary, Argentina. Biol Invasions 12, 3299-3306.
- Cardelli NV, Cervellini PM, Piccolo MC (2006) Abundancia estacional y distribución espacial de Mysidacea en el Atlántico sudoccidental, estuario de Bahía Blanca (38°42-39° 26' S y 62°28-61° 40 W). Rev biol mar oceanogr 41: 177-185.
- Carranza A, Scarabino F, Ortega L (2008) Distribution of large benthic gastropods in the Uruguayan continental shelf and Río de la Plata estuary. J Coast Res 24:161–168.
- Carranza A, de Mello C, Ligrone A, González S, Píriz P, Scarabino F (2010) Observations on the invading gastropod *Rapana venosa* in Punta del Este, Maldonado Bay, Uruguay. Biological invasions 12: 995-998.
- Castro K, Giachetti C, Battini N, Bortolus A, Schwindt E (2020) Cleaning by beaching: introducing a new alternative for hull biofouling management in Argentina. Aquat Invasions 15:63–80.

- Castro KL, Battini N, Giachetti CB, Trovant B, Abelando M, Basso NG, Schwindt E (2021) Early detection of marine invasive species following the deployment of an artificial reef: Integrating tools to assist the decision-making process. *J Environ Manage* 297: 113333.
- Cavaleiro NP, Lazoski C, Tureck CR, Melo CMR, do Amaral VS, Lomovasky BJ, Absher TM, Solé-Cava AM (2019) *Crassostrea talonata*, a new threat to native oyster (*Bivalvia*: *Ostreidae*) culture in the Southwest Atlantic. *J Exp Mar Biol Ecol* 511: 91–99.
- Croce ME, Parodi ER (2014) The Japanese alga *Polysiphonia morrowii* (Rhodomelaceae, Rhodophyta) on the South Atlantic Ocean: first report of an invasive macroalga inhabiting oyster reefs. *Helgol Mar Res* 68: 241–252.
- Croce M, Fernández C, Gauna M, Parodi E (2015) Intertidal seaweeds from North Atlantic Patagonian coasts, Argentina. *Check List* 11: 1739
- Croce ME, Parodi ER (2017) The establishment of the non-native seaweed *Polysiphonia morrowii* in Northern Patagonia: Size of thallus and reproduction. *Aquat Bot* 136: 35–38.
- Demicheli Á, Verdi A (2018) First record of *Apocorophium acutum* (Chevreux, 1908) (Amphipoda, Corophiidae, Corophiinae) from Uruguay, with notes on the biology and distribution. *Check List* 14: 1169-1173.
- Dos Santos EP, Fiori S (2010) M Primer registro sobre la presencia de *Crassostrea gigas* (Thunberg, 1793) en el Estuario de Bahía Blanca, (Argentina). *Comun Soc Malacol Urug* 9: 245-252.
- Dos Santos EP, Carcedo MC, Zotelo C, Fiori SM (2018) Effects of erosion-accretion processes on a community dominated by *Brachidontes rodriguezii* (Mollusca: Mytilidae) on a rocky outcrop of the South Atlantic coast. *J Mar Syst* 187:146-155.
- Doti, BL, Schwindt E, Scarabino F (2012) First record of the exotic isopod *Sphaeroma serratum* (Crustacea: Isopoda) from Uruguayan waters (southwestern Atlantic). *Zootaxa* 3565: 65-68.
- Escapa CM, Isacch, JP, Daleo P, Alberti, J, Iribarne OO, Borges M, Dos Santos DA, Gagliardini DA, Lasta M (2004) The distribution and ecological effects of the introduced Pacific oyster *Crassostrea gigas* (Thunberg, 1793) in Northern Patagonia. *J Shellfish Res* 23: 765-772
- Escofet A (1973) Los géneros de anfípodos más comunes en el área de Mar del Plata-Clave para su reconocimiento. *Contrib Inst Biol Mar* 239.
- Excoffon AC, Zamponi MO (1993) Anemonas de Mar del Plata y localidades vecinas. IV. *Tricnidactis errans* Pires, 1988 (Actiniaria, Haliplanellidae). *Iheringia (Zool)* 75: 47-53.
- Fricke A, Biancalana F, Tonicelli G, Berasategui AA, Kopprio GA, Gauna MC, Parodi EE (2015) Insights into ecological and reproductive aspects of two cryptogenic peracarid crustaceans of the Argentinian coast. *Braz. J. Oceanogr* 63: 195-206.
- Gaete Olivares H, Moyano Lagos N, Jara Gutierrez C, Carrasco Kittelsen R,

- Lobos Valenzuela G, Hidalgo Lillo ME (2016) Assessment oxidative stress biomarkers and metal bioaccumulation in macroalgae from coastal areas with mining activities in Chile. *Environ Monit Assess* 188:1–11.
- Gastaldi M, Firstater, FN, Daleo P, Narvarte MA (2016) Abundance of the sponge *Hymeniacion cf. perlevis* in a stressful environment of Patagonia: relationships with *Ulva lactuca* and physical variables. *J Mar Biol Assoc UK* 96: 465-472.
- Genzano G, Bremec CS, Diaz-Briz L, Costello JH, Morandini AC, Miranda TP, Marques AC (2017) Faunal assemblages of intertidal hydroids (Hydrozoa, Cnidaria) from Argentinean Patagonia (Southwestern Atlantic Ocean). *Lat Am J Aquat Res* 45: 177-187.
- Genzano GN, Meretta PE (2020) *Kirchenpaueria halecioides*: a non-native hydroid in the coast of Buenos Aires, Argentina. *J Fish Mar Sci* 34:109–112.
- Giachetti CB (2020) Patrones y procesos ecológicos que determinan el éxito en la colonización de especies exóticas en áreas portuarias PhD Thesis. Universidad de Buenos Aires. Buenos Aires, Argentina.
- Giberto DA, Bremec CS, Schejter L, Escolar M, Souto VS, Schiariti A, Romero MV, Dos Santos EP (2012) La ostra del pacífico *Crassostrea gigas* (Thunberg, 1793) en la provincia de Buenos Aires: reclutamientos naturales en Bahía Samborombón; Instituto Nacional de Investigación y Desarrollo Pesquero. *Rev Invest Desarr Pesq* 21:21-30.
- Giberto DA, Bruno LI (2014) Recent records of the exotic gastropod *Rapana venosa* (Valenciennes, 1846) along the Argentine coastline: is the invasion progressing southwards?. *Pan-Am J Aquat Sci* 9:324-330.
- Glou, H., Costa, M., de Lecea, A., Goodwin, C., Cartwright, S., Díaz, A., Brickle, P. y Brewin, P. (2020). First record of the plumose sea anemone, *Metridium senile* (Linnaeus, 1761), from the Falkland Islands. *BiolInvasions Rec* 3: 461-470.
- Guerrero E, Gili JM, Rodriguez C, Araujo EM, Canepa A, Calbet, A, Gonzalez RA (2013) Biodiversity and distribution patterns of planktonic cnidarians in San Matías Gulf, Patagonia, Argentina. *Mar Ecol* 34:71-82.
- Hidalgo FJ, Baron PJ, Orensanz M (2005) A prediction come true: the green crab invades the Patagonian coast. *Biol Invasions* 7: 547-553
- Hoffmeyer MS (1990) The occurrence of *Neomysis americana* in two new localities of the South American coast (Mysidacea). *Crustaceana* 58: 186–192.
- Hoffmeyer MS (2004) Decadal change in zooplankton seasonal succession in the Bahía Blanca estuary, Argentina, following introduction of two zooplankton species. *J Plankton Res* 26:181-189.
- Jaubet ML, Saracho Bottero MA, Hines E, Elías R, Garaffo GV (2018) *Boccardia proboscidea* (Polychaete: Spionidae) from SW Atlantic: how far has the 5 invasion spread?. *Aquat Invaders* 13:351-363.
- Jaubet ML, Martinez LE, Saracho Bottero MA, Bazterrica MC (2021) *Boccardiella*

- ligerica, an exotic polychaete in a Southwestern Atlantic coastal lagoon: Morphology and abundance variations. *Ecol Res* 36:57-69.
- Lagger C (2015) Ascidas del Sur de Sudamérica y de la Península Antártica. PhD Thesis. Universidad Nacional de Córdoba, Córdoba, Argentina.
- Lanfranconi A, Hutton M, Brugnoli E, Muniz P (2009) New record of the alien mollusc *Rapana venosa* (Valenciennes 1846) in the Uruguayan coastal zone of Río de la Plata. *Pan-Am J Aquat Sci* 4:216-221.
- Leoni V (2014) Fauna de hidroides (Cnidaria: Hydrozoa) de La Coronilla-Cerro Verde (Rocha, Uruguay): primer inventario y posibles mecanismos de dispersión. Bachelor in Biological Science Thesis, Facultad de Ciencias, Universidad de la República, Uruguay.
- Liuzzi MG, López Gappa J, Piriz ML (2011) Latitudinal gradients in macroalgal biodiversity in the Southwest Atlantic between 36 and 55°S. *Hydrobiologia* 673: 205–214
- Liuzzi MG, López Gappa J, Schwindt E (2018) Hallazgo de una especie exótica del género *Smittoidea* (Bryozoa: Cheilostomata) en dos puertos argentinos. X Jornadas Nacionales de Ciencias del Mar, XVIII Coloquio Nacional de Oceanografía “Universidad, ciencia y sociedad: estrategias de hoy para sostener el mañana” Argentina, p 218.
- López Gappa J, Tablado A, Fonalleras MC, Adami ML (2001) Temporal and spatial patterns of annelid populations in intertidal sediments of the Quequén Grande estuary (Argentina). *Hydrobiologia* 455:61-69.
- López Gappa J, Carranza A, Gianuca NM, Scarabino F (2010) *Membraniporopsis tubigera*, an invasive bryozoan in sandy beaches of southern Brazil and Uruguay. *Biol Invasions* 12:977-982.
- López Gappa J, Liuzzi MG (2018) Recent discovery of non-indigenous bryozoans in the fouling assemblage of Quequén Harbour (Argentina, Southwest Atlantic). *Mar Biodivers Rec* 48: 1159–1167.
- Machado Gaye A (2016) Relevamiento de especies exóticas acuáticas incrustantes en la bahía de Montevideo. Bachelor in Biological Science Thesis. Universidad de la República. Bahía de Montevideo, Uruguay.
- Martorelli SR, Alda P, Marcotegui P, Montes, MM, La Sala LF (2012) New locations and parasitological findings for the invasive shrimp *Palaemon macrodactylus* in temperate southwestern Atlantic coastal waters. *Aquat Biol* 15: 153-157.
- Martin JP, Bastida R, Trassens M (2004) Polychaete assemblages of intertidal mixohaline flats of Bahía Samborombón (La Plata River estuary–Argentina). *Thalassas* 20: 39-53.
- Martín LA, de Zaixso ALB, Miravalles AB, Rodríguez MC, Leonardi PI (2012). Epiphytism in a subtidal natural bed of *Gracilaria gracilis* of southwestern Atlantic coast (Chubut, Argentina). *J Appl Phycol* 25:1319–1329
- Martin JP, Garese A, Sar A, Acuña FH (2015) Fouling community dominated by *Metridium senile* (Cnidaria: Anthozoa: Actiniaria) in Bahía San Julián

- (southern Patagonia, Argentina). Sci. Mar. 79: 211-221.
- Martin JP, Cuevas JM (2006) First record of *Undaria pinnatifida* (Laminariales, Phaeophyta) in Southern Patagonia, Argentina. Biol Invasions , 8, 1399-1402.
- Martinetto, P., Daleo, P., Escapa, M., Alberti, J., Isacch, J. P., Fanjul, E., ... & Iribarne, O. (2010). High abundance and diversity of consumers associated with eutrophic areas in a semi-desert macrotidal coastal ecosystem in Patagonia, Argentina. Estuarine, Coastal and Shelf Science, 88(3), 357-364.
- Mendez, M. M., Schwindt, E., & Bortolus, A. (2015). Differential benthic community response to increased habitat complexity mediated by an invasive barnacle. Aquatic Ecology, 49(4), 441-452. Uruguay, Biol Invasions12: 977-982
- Meretta PE, Matula VC, Casas G (2012). Occurrence of the alien kelp *Undaria pinnatifida* (Laminariales, Phaeophyceae) in Mar del Plata, Argentina. BiolInvasions Rec 1(1):59–63.
- Miranda, T. P., Genzano, G. N., & Marques, A. C. (2015). Areas of endemism in the Southwestern Atlantic Ocean based on the distribution of benthic hydroids (Cnidaria: Hydrozoa). Zootaxa, 4033: 484.
- Muniz P, Venturini N (2001) Spatial distribution of the macrozoobenthos in the Solís Grandestream estuary (Canelones-Maldonado, Uruguay). Braz J Biol 61:409-420.
- Molina LM, Valiñas MS, Pratolongo PD, Elias R, Perillo, GME (2009) First record of the sea anemone *Diadumene lineata* (Verrill 1871) associated to *Spartina alterniflora* roots and stems, in marshes at the Bahía Blanca estuary, Argentina. Biol Invasions 11: 409-416
- Moreira PS (1972) Species of marine Isopoda (Crustacea, Peracarida) from southern Brazil. Braz J Oceanogr 21: 163-179
- Obenat S, Spivak E, Garrido L (2006) Life history and reproductive biology of the invasive amphipod *Melita palmata* (Amphipoda: Melitidae) in the Mar Chiquita coastal lagoon, Argentina. J Mar Biol Assoc UK 86: 1381-1387.
- Orensanz JM (Lobo), Schwindt E, Pastorino G, Bortolus A, Casas G, Darrigran G, Elías R, Gappa J, Obenat S, Pascual M, Penchaszadeh P, Piriz ML, Scarabino F, Spivak ED, Vallarino EA (2002) No longer the pristine confines of the world ocean: a survey of exotic marine species in the southwestern Atlantic. Biol Invasions 4:115–143.
- Palomo MG, Bagur M, Quiroga M, Soria S, Bugnot A (2016) Ecological impacts of two non-indigenous macroalgae on an urban rocky intertidal shore. Mar Biol 163: 178
- Parodi ER, Gauna MC, Fernández C. Cáceres EJ (2012) Risk of biodiversity changes in native macroalgal communities from Argentina by the introduction of brown seaweeds along the Atlantic coast: First record of *Saccharina sessilis* First International Conference of Coastal and Estuarine

Research Federation, Argentina

- Penchaszadeh PE Boltovskoy D, Borges M, Cataldo D, Damborenea C, Darrigran Obenat S, Pastorino G, Schwindt E, Spivak EG., Silvestre F (2005) Invasores: Invertebrados exóticos en el Río de la Plata y región marina aledaña. Eudeba, Buenos Aires.
- Pereyra PJ, Narvarte MA, Tatián M, González RAC (2015) The simultaneous introduction of the tunicate *Styela clava* (Herdman, 1881) and the macroalga *Undaria pinnatifida* (Harvey) Suringar, 1873, in northern Patagonia. *Bioinvasions Rec* 4:179-184.
- Puente Tapia FA, Genzano GN (2019). Seasonal succession of gelatinous zooplankton (medusae and ctenophores) from Mar del Plata Harbor, Argentina (SW Atlantic Ocean). *Ecol Austral* 29:339-351.
- Raffo MP, Lo Russo V, Schwindt E (2014) Introduced and native species on rocky shore macroalgal assemblages: Zonation patterns, composition and diversity. *Aquat Bot* 112:57–65.
- Ramirez ME, Nuñez JD, Ocampo EH, Matula CV, Suzuki M, Hashimoto T, Cledón M (2012). *Schizymenia dubyi* (Rhodophyta, Schizymeniaceae), a new introduced species in Argentina. *NZ J Bot* 50: 51-58.
- Rico A, Peralta, R, López Gappa J. (2012) Succession in subtidal macrofouling assemblages of a Patagonian harbour (Argentina, SW Atlantic). *Helgol Mar Res* 66: 577-584.
- Riestra G, Giménez JL, Scarabino V (1992) Análisis de la comunidad macrobentónica infralitoral de fondo rocoso en Isla Gorriti e Isla de Lobos (Maldonado, Uruguay). *Frente Marítimo*, 11: 123-127.
- Roche A, Cetra N, Gastaldi M, Valencia Cuervo L, Losada A, Biagioni P (2020) Primer registro de *Pleurobranchea maculata* (NUDIPLEURA: PLEUROBRANCHAEIDAE) de la Bahía de San Antonio. Informe Técnico N° 002-2021. Escuela Superior de Ciencias Marinas, Universidad Nacional del Comahue, pp 1-7.
- Rodríguez C, Mianzan H, Genzano GN (2007) First record of *Eutonina scintillans* Bigelow, 1909 (Hydrozoa: Leptomedusae: Eirenidae) in temperate waters from the South Western Atlantic Ocean. *Rev Invest Mar* 35: 135–138.
- Rodríguez CS, Pujol MG, Mianzan HW, Genzano GN (2014) First record of the invasive stinging medusa *Gonionemus vertens* in the southern hemisphere (Mar del Plata, Argentina). *Lat Am J Aquat Res* 42(3):653–657
- Roux AM, Bastida R (1990) The occurrence of *Sphaeroma serratum* (Fabricius, 1787) in the western south Atlantic (Crustacea: Isopoda). *Proc Biol Soc Wash* 103: 350-352.
- Rumbold C, Battini N, Giachetti CB, Castro KL, Obenat S, Schwindt E (2020) Biological invasions in artificial habitats: factors that determine the presence of native and exotic peracarid Crustacea species in Southwestern Atlantic. *Mar Biol Res* 16: 340-355.
- Scarabino F (2003) Lista sistemática de los Bivalvia marinos y estuarinos

vivientes de Uruguay. *Comun Soc Malacol Urug* 8: 227-258.

- Scarabino F, Maggioni T, Taverna A, Lager C, Schwindt E, Orensanz L, Guzmán Ortega L, Garcia Rodriguez F, Tatián M (2018) Ascidiacea (Chordata, Tunicata) from Uruguay (SW Atlantic): checklist and zoogeographic considerations. *Rev Mus Argent Cienc Nat Bernardino Rivadavia Inst* 20: 251-270.
- Schiariti A, Berasategui AD, Giberto DA, Guerrero RA, Acha EM, Mianzan HW (2006) Living in the front: *Neomysis americana* (Mysidacea) in the Río de la Plata estuary, Argentina-Uruguay. *Mar Biol* 149: 483-489.
- Schwindt E, Battini N, Giachetti CB, Castro K, Bortolus A (2018) Marino-costeras exotic species. Argentina. Vázquez Mazzini.
- Schwindt E, López Gappa J, Raffo MP, Tatián M, Bortolus A, Orensanz JM, Alonso G, Diez ME, Doti B, Genzano G, Lager C, Lovrich G, Piriz ML, Mendez MM, Savoya V, Sueiro MC (2014) Marine fouling invasions in ports of Patagonia (Argentina) with implications for legislation and monitoring programs. *Mar Environ Res* 99:60–68.
- Spivak ED, Luppi TA (2005) Southern range extension of two western Atlantic intertidal mud crabs: *Panopeus meridionalis* Williams, 1984 and *Eurypanopeus depressus* Smith, 1869 (Crustacea: Brachyura: Panopeidae) in Argentinian waters. *Proc Biol Soc Wash* 118: 551–557.
- Tanzola D, Guagliardo S (2012) *Marionia blainvillea* (Gastropoda; Nudibranchia; Tritoniidae) en las costas del Sudoeste de Buenos Aires (Argentina). Segundo Congreso Uruguayo de Zoología. Universidad de la República. Uruguay, p 235.
- Tatián M, Schwindt E, Lager C, Varela MM (2010) Colonization of Patagonian harbours (SW Atlantic) by an invasive sea squirt. *Spixiana* 33:111–117.
- Taverna A (2020) Biodiversidad de ascidias del Mar Argentino y el Pacífico Sudoriental: comparación desde una perspectiva multidisciplinaria. PhD Thesis, Universidad Nacional de Córdoba, Argentina.
- Torres A, Caille G (2009) The hard-bottom intertidal communities before and after removal of an anthropogenic disturbance: a case study in the coast of Puerto Madryn (Patagonia, Argentina). *Rev Biol Mar Oceanog* 44:517-521.
- Trinchin et al. (2013) Diversidad y dinámica de crustáceos decápodos del Área Marina Protegida Cerro Verde y su zona costera aledaña. Conference: Comisión Sectorial de Investigación Científica (CSIC – UR).
- Zbawicka M, Sanko T, Strand J, Wenne R (2014) New SNP markers reveal largely concordant clinal variation across the hybrid zone between *Mytilus* spp. in the Baltic Sea. *Aquat Biol* 21:25–36.

Table S1. List of introduced and established species along the SWA, considering all the spatial, statistical, and beta diversity analyses.

Major taxonomic group	Species
Rhodophyta	<i>Ahnfeltiopsis devoniensis</i> (Greville) P.C.Silva & DeCew 1992
Bryozoa	<i>Amathia verticillata</i> (Delle Chiaje, 1822)
Crustacea, Cirripedia	<i>Amphibalanus amphitrite</i> (Darwin, 1854)
Crustacea, Amphipoda	<i>Ampithoe valida</i> S.I. Smith, 1873
Rhodophyta	<i>Anotrichium furcellatum</i> (J.Agardh) Baldock 1976
Crustacea, Amphipoda	<i>Apocorophium acutum</i> (Chevreux, 1908)
Chordata, Ascidiacea	<i>Ascidia interrupta</i> Heller, 1878
Chordata, Ascidiacea	<i>Ascidiella aspersa</i> (Müller, 1776)
Crustacea, Cirripedia	<i>Balanus glandula</i> Darwin, 1854
Crustacea, Cirripedia	<i>Balanus trigonus</i> Darwin, 1854
Mollusca, Bivalvia	<i>Barnea truncata</i> (Say, 1822)
Cnidaria, Hydrozoa	<i>Blackfordia virginica</i> Mayer, 1910
Annelida, Polychaeta	<i>Boccardia proboscidea</i> Hartman, 1940
Annelida, Polychaeta	<i>Boccardiella ligerica</i> (Ferronière, 1898)
Chordata, Ascidiacea	<i>Botryllus schlosseri</i> (Pallas, 1766)
Cnidaria, Hydrozoa	<i>Bougainvillia muscus</i> (Allman, 1863)
Chlorophyta	<i>Bryopsis rhizophora</i> M.Howe, 1914
Bryozoa	<i>Bugula neritina</i> (Linnaeus, 1758)
Bryozoa	<i>Bugulina flabellata</i> (Thompson in Gray, 1848)
Bryozoa	<i>Bugulina simplex</i> (Hincks, 1886)
Bryozoa	<i>Bugulina stolonifera</i> (Ryland, 1960)
Crustacea, Decapoda	<i>Carcinus maenas</i> (Linnaeus, 1758)
Chordata, Ascidiacea	<i>Ciona intestinalis</i> (Linnaeus, 1767)
Chordata, Ascidiacea	<i>Ciona robusta</i> Hoshino & Tokioka, 1967
Chordata, Ascidiacea	<i>Ciona savignyi</i> Herdman, 1882
Bryozoa	<i>Conopeum seurati</i> (Canu, 1928)
Crustacea, Amphipoda	<i>Crassikorophium bonellii</i> (H. Milne Edwards, 1830)
Bryozoa	<i>Cryptosula pallasiana</i> (Moll, 1803)
Ochrophyta, Phaeophyceae	<i>Cutleria multifida</i> (Turner) Greville 1830
Cnidaria, Anthozoa	<i>Diadumene lineata</i> (Verrill, 1869)
Ochrophyta, Phaeophyceae	<i>Dictyota dichotoma</i> (Hudson) J.V.Lamouroux 1809
Chordata, Ascidiacea	<i>Diplosoma listerianum</i> (Milne Edwards, 1841)
Crustacea, Isopoda	<i>Dynamene edwardsi</i> (Lucas, 1849)
Cnidaria, Hydrozoa	<i>Ectopleura crocea</i> (Agassiz, 1862)
Crustacea, Amphipoda	<i>Erichthonius punctatus</i> (Spence Bate, 1857)
Annelida, Polychaeta	<i>Eulalia clavigera</i> (Audouin & Milne Edwards, 1833)
Crustacea, Decapoda	<i>Eurypanopeus depressus</i> (S.I. Smith, 1869)
Crustacea, Copepoda	<i>Eurytemora americana</i> Williams, 1906
Cnidaria, Hydrozoa	<i>Eutonina scintillans</i> (Bigelow, 1909)
Bryozoa	<i>Fenestulina delicia</i> Winston, Hayward & Craig, 2000
Annelida, Polychaeta	<i>Ficopomatus enigmaticus</i> (Fauvel, 1923)
Cnidaria, Hydrozoa	<i>Gonionemus vertens</i> A. Agassiz, 1862
Cnidaria, Hydrozoa	<i>Gonothyraea loveni</i> (Allman, 1859)

Major taxonomic group	Species
Rhodophyta	<i>Grateloupia turuturu</i> Yamada, 1941
Crustacea, Isopoda	<i>Halophiloscia couchii</i> (Kinahan, 1858)
Foraminifera	<i>Haynesina germanica</i> (Ehrenberg, 1840)
Annelida, Polychaeta	<i>Hydroides dianthus</i> (Verrill, 1873)
Annelida, Polychaeta	<i>Hydroides elegans</i> (Haswell, 1883)
Porifera	<i>Hymeniacion perlevis</i> (Montagu, 1814)
Crustacea, Amphipoda	<i>Jassa marmorata</i> Holmes, 1905
Crustacea, Amphipoda	<i>Jassa slatteryi</i> Conlan, 1990
Crustacea, Isopoda	<i>Joeropsis dubia</i> Menzies, 1951
Cnidaria, Hydrozoa	<i>Kirchenpaueria halecioides</i> (Alder, 1859)
Rhodophyta	<i>Leptosiphonia brodiei</i> (Dillwyn) Savoie & G.W.Saunders 2019
Crustacea, Isopoda	<i>Ligia (Megaligia) exotica</i> Roux, 1828
Crustacea, Isopoda	<i>Limnoria tripunctata</i> Menzies, 1951
Nemertea	<i>Lineus sanguineus</i> (Rathke, 1799)
Chordata, Ascidiacea	<i>Lissoclinum fragile</i> (Van Name, 1902)
Rhodophyta	<i>Lomentaria clavellosa</i> (Lightfoot ex Turner) Gaillon 1828
Mollusca, Bivalvia	<i>Lyrodus pedicellatus</i> (Quatrefages, 1849)
Crustacea, Amphipoda	<i>Maera grossimana</i> (Montagu, 1808)
Mollusca, Bivalvia	<i>Magallana gigas</i> (Thunberg, 1793)
Mollusca, Gastropoda	<i>Marionia blainvillea</i> (Risso, 1818)
Rhodophyta	<i>Melanothamnus harveyi</i> (Bailey) Díaz-Tapia & Maggs 2017
Crustacea, Amphipoda	<i>Melita palmata</i> (Montagu, 1804)
Bryozoa	<i>Membraniporopsis tubigera</i> (Osburn, 1940)
Cnidaria, Anthozoa	<i>Metridium senile</i> (Linnaeus, 1761)
Chordata, Ascidiacea	<i>Molgula manhattensis</i> (De Kay, 1843)
Crustacea, Amphipoda	<i>Monocorophium acherusicum</i> (Costa, 1853)
Crustacea, Amphipoda	<i>Monocorophium insidiosum</i> (Crawford, 1937)
Annelida, Clitellata	<i>Monopylephorus rubroniveus</i> Levinsen, 1884
Mollusca, Gastropoda	<i>Myosotella myosotis</i> (Draparnaud, 1801)
Mollusca, Bivalvia	<i>Mytilus galloprovincialis</i> Lamarck, 1819
Crustacea, Mysidacea	<i>Neomysis americana</i> (S.I. Smith, 1873)
Crustacea, Amphipoda	<i>Orchestia mediterranea</i> A. Costa, 1853
Crustacea, Decapoda	<i>Palaemon macrodactylus</i> Rathbun, 1902
Crustacea, Isopoda	<i>Paracerceis sculpta</i> (Holmes, 1904)
Mollusca, Gastropoda	<i>Pleurobranchaea maculata</i> (Quoy & Gaimard, 1832)
Rhodophyta	<i>Polysiphonia morrowii</i> Harvey 1857
Crustacea, Isopoda	<i>Porcellio lamellatus lamellatus</i> Budde-Lund, 1885
Rhodophyta	<i>Porphyra linearis</i> Greville 1830
Crustacea, Decapoda	<i>Pyromaia tuberculata</i> (Lockington, 1877)
Mollusca, Gastropoda	<i>Rapana venosa</i> (Valenciennes, 1846)
Chlorophyta	<i>Rosenvingiella polyrhiza</i> (Rosenvinge) P.C.Silva 1957
Ochrophyta, Phaeophyceae	<i>Saccharina sessilis</i> (C.Agardh) Kuntze 1891
Rhodophyta	<i>Schizymenia dubyi</i> (Chauvin ex Duby) J.Agardh 1851
Bryozoa	<i>Smittoidea spinigera</i> (Liu, 1990)
Crustacea, Isopoda	<i>Sphaeroma serratum</i> (J. C. Fabricius, 1787)

Major taxonomic group	Species
Chordata, Ascidiacea	<i>Styela clava</i> Herdman, 1881
Chordata, Ascidiacea	<i>Styela plicata</i> (Lesueur, 1823)
Crustacea, Isopoda	<i>Synidotea laevidorsalis</i> (Miers, 1881)
Mollusca, Bivalvia	<i>Talonostrea talonata</i> X.-X. Li & Z.-Y. Qi, 1994
Mollusca, Gastropoda	<i>Tenellia adspersa</i> (von Nordmann, 1845)
Mollusca, Bivalvia	<i>Teredo furcifera</i> E. von Martens, 1894
Mollusca, Bivalvia	<i>Teredo navalis</i> Linnaeus, 1758
Ochrophyta, Phaeophyceae	<i>Undaria pinnatifida</i> (Harvey) Suringar 1873

Table S2. Beta diversity Pairwise comparison among hotspot sites. Sørensen dissimilarity index (β_{sor}), and the partition into turnover (β_{sim}) and nestedness (β_{sne}) components.

		PM	PP	SAE	PQ	MDQ
PP	β_{sor}	0.333				
	β_{sim}	0.136				
	β_{sne}	0.196				
SAE	β_{sor}	0.323	0.346			
	β_{sim}	0.266	0.227			
	β_{sne}	0.056	0.118			
PQ	β_{sor}	0.655	0.688	0.66		
	β_{sim}	0.565	0.681	0.608		
	β_{sne}	0.089	0.007	0.05		
MDQ	β_{sor}	0.4482	0.5135	0.512	0.6	
	β_{sim}	0.314	0.182	0.33	0.3478	
	β_{sne}	0.133	0.332	0.178	0.252	
LAP	β_{sor}	0.754	0.772	0.846	0.7333	0.6216
	β_{sim}	0.681	0.772	0.818	0.727	0.363
	β_{sne}	0.072	0	0.027	0.0006	0.2578