



List of Protostome Species

Lista de Especies de Protostomas

Updated March 2017 / actualizado marzo 2017

This list includes taxa otherwise called invertebrates including annelids, mollusks, flatworms, nematodes, velvet worms, and arthropods. No doubt this is the largest group of organisms in the Reserve with thousands of species.

Esta lista representa los taxa que son conocidos como invertebrados e incluyen caracoles, gusanos y artrópodos. Las protostomas es el grupo más diverso en la Reserva con miles de especies.

Annelida

Mollusca

Platyhelminthes

Turbellaria

Tricladida

Geoplanidae

Bipalium sp. (invasive)

Nematomorpha

Onychophora

Arthropoda

Chelicerata

Arachnida

Acari

Amblypygi

Araneae

Opisthothelae

Mygalomorphae

Theraphosidae

Araneomorphae

Scytodoidea

Scytodidae

Ringed Worms

Snails and Slugs

Flatworms

Horsehair Worms

Velvet Worms

Arthropods

Spiders

Tarantulas

Spitting Spiders

	<i>Scytodes</i> sp.	
	Pholcoidea	
	Pholcidae	Daddy long-leg Spiders
	Uloboroidea	
	Uloboridae	Hackled orb-weaving Spiders
	Araneoidea	
	Araneidae	Orb-weaving Spiders
	<i>Araneus</i> sp.	
	<i>Argiope argentata</i>	
	<i>Argiope savignyi</i>	
	<i>Micrathena espinosa</i>	
	Tetragnathidae	Long jawed Orb-weaving Spiders
	<i>Nephila clavipes</i>	
	Theridiidae	Cobweb Spiders
	<i>Argyodes elevatus</i>	
	<i>Faitidus caudatus</i>	
	Theridiosomatidae	Ray Spiders
	Lycosoidea	
	Ctenidae	Tropical Wolf Spiders
	<i>Cupanius</i> sp.	
	Pisauridae	Nursery Spiders
	Salticoidea	
	Salticidae	Jumping Spiders
Opiliones		Harvestmen
Scorpiones		Scorpions
Mandibulata		
Myriapoda		
	Diplopoda	Millipedes
	Chilopoda	Centipedes
Crustacea		
Malacostraca		
	Decapoda	Crabs and Shrimp
	Palaemonidae	
	<i>Macrobrachium heterochirus</i>	
	Pseudothelphusidae	
	Potamocarcinini	
	<i>Potamocarcinus magnus</i>	
	Isopoda	Sow Bugs
Hexapoda		
Insecta		
	Paleoptera	
	Odonata	Dragonflies and Damselflies
	Anisoptera	
	Aeshnidae	Darners
	Corduliidae	Emeralds
	<i>Neocordulia batesi</i>	
	Gomphidae	Clubtails
	<i>Epigomphus tumefactus</i>	
	Libellulidae	Skimmers
	<i>Cannaphila mortoni</i>	
	<i>Dythemis multipunctata</i>	

	<i>Elasmothermis cannacrioides</i>	
	<i>Erythrodiplax andagoya</i>	
	<i>Macrothemis musiva</i>	
	<i>Orthemis discolor</i>	
	<i>Paltothemis lineatipes</i>	
	<i>Tauriphila argo</i>	
	<i>Uracis imbuta</i>	
Zygoptera		
	Calopterygidae	Broad-winged Damselflies
	<i>Hetaerina majuscula</i>	
	<i>Hetaerina miniata</i>	
	<i>Hetaerina occisa</i>	
	Coenagrionidae	Pond Damselflies
	<i>Acanthagrion speculum</i>	
	<i>Argia adamsi</i>	
	<i>Argia cupraurea</i>	
	<i>Argia frequentula</i>	
	<i>Argia indicatrix</i>	
	<i>Argia johannella</i>	
	<i>Argia popoluca</i>	
	<i>Argia</i> “popoluca near”	
	<i>Metaleptobasis bovilla</i>	
	<i>Telebasis digiticollis</i>	
	Megapodagrionidae	Flatwinged Damselflies
	<i>Heteragrion albifrons</i>	
	<i>Heteragrion erythrogastrum</i>	
	<i>Heteragrion mitratum</i>	
	<i>Philogenia expansa</i>	
	Perilestidae	Shortwinged Damselflies
	<i>Perissolestes magdalenae</i>	
	<i>Perissolestes remotus</i>	
	Platystictidae	Shadow Damselflies
	<i>Palaemnema collaris</i>	
	<i>Palaemnema dentata</i>	
	<i>Palaemnema distadens</i>	
	<i>Palaemnema gigantula</i>	
	<i>Palaemnema</i> “orange tail”	
	<i>Palaemnema paulirica</i>	
	Protoneuridae	Threadtails
	<i>Psaironeura remissa</i>	
	Pseudostigmatidae	Helicopter Damselflies
	<i>Mecistogaster linearis</i>	
	<i>Megaloprepus caerulatus</i>	
Ephemeroptera		Mayflies
	Baetidae	
	<i>Baetodes</i> sp.	
	<i>Camelobaetidius</i> sp.	
	Leptophlebiidae	
	<i>Thraulodes</i> sp.	
Neoptera		
Exopterygota		

Orthopteroidea		
Plecoptera		Stoneflies
	<i>Anacroneuria</i> sp.	
Dermaptera		Earwigs
Orthoptera		Katydid, Grasshoppers and Crickets
Caelifera		
	Acrididae	
	<i>Dryophilacris bimaculata</i>	
	Tetrigidae	
Ensifera		
	Gryllidae	
	<i>Uvaroviella</i> sp.	
	Tettigoniidae	
	<i>Neoconocephalus</i> sp.	
	<i>Copiphora rhinocerus</i>	
	<i>Pristonotus latistylus</i>	
Dictyoptera		
Phasmatodea		Stick Insects
Blattodea		Cockroaches and Termites
	Blaberidae	
	<i>Blaberus giganteus</i>	
	<i>Blaberus</i> sp.	
	<i>Panchlora nivea</i>	
	Blatellidae	
	<i>Blatella germanica</i>	
	Blattidae	
	<i>Periplaneta americana</i>	
	Termitidae	
	<i>Nasutitermes</i> sp.	
Mantodea		Mantids
	Acanthopidae	
	<i>Pseudacanthops</i> sp.	
Hemipteroidea		
Hemiptera		
Auchenorrhyncha		
Cicadomorpha		
Cercopoidea		
Cercopidae		
Cicadoidea		
Cicadidae		Cicadas
	<i>Fidicina mannifera</i>	
Membracoidea		
Membracidae		
Fulgoromorpha		
Fulgoroidea		
Fulgoridae		Peanut Bugs
	<i>Fulgora laternaria</i>	
Heteroptera		
Cimicomorpha		
Reduviidae		Assassin Bugs

Emesinae	Thread-legged Bugs
Triatominae	Kissing Bugs
Gerromorpha	
Gerridae	Water Striders
Nepomorpha	
Naucoridae	Creeping Water Bugs
<i>Ambysus</i> sp.	
Pentatomomorpha	
Pentatomidae	Stink Bugs
<i>Edessa rufomarginata</i>	
Endopterygota	
Hymenopteroidea	
Hymenoptera	
Apidae	Bees
Apinae	
<i>Apis mellifera</i>	
Bombinae	
<i>Bombus</i> sp.	
Euglossini	
<i>Euglossa</i> sp.	
<i>Eulaema</i> sp.	
Meliponinae	
<i>Trigona</i> spp.	
<i>Tetragonisca angustula</i>	
Formicidae	Ants
Dolichoderinae	
<i>Azteca alfari</i>	
<i>Azteca constructor</i>	
<i>Azteca xanthochroa</i>	
<i>Dolichoderus curvilobus</i>	
<i>Tapinoma ramulorum inrectum</i>	
Ecitoninae	
<i>Eciton burchellii foreli</i>	
<i>Eciton hamatum</i>	
<i>Labidus coecus</i>	
<i>Neivamyrmex pilosus mexicanus</i>	
<i>Nomamyrmex esenbeckii</i>	
Formicinae	
<i>Camponotus sericeiventris</i>	
<i>Camponotus</i> spp.	
<i>Myrmelachista flavocotea</i>	
<i>Paratrechina caeciliae</i>	
<i>Paratrechina longicornis</i>	
Myrmicinae	
<i>Acromyrmex octospinosus</i>	
<i>Acromyrmex volcanus</i>	
<i>Aphaenogaster araneoides</i>	
<i>Apterostigma collare</i>	
<i>Atta cephalotes</i>	
<i>Cephalotes</i> spp.	

	<i>Crematogaster longispina</i>	
	<i>Crematogaster</i> spp.	
	<i>Cyphomyrmex cornutus</i>	
	<i>Cyphomyrmex salvini</i>	
	<i>Pheidole</i> spp.	
	<i>Solenopsis geminata</i>	
	<i>Solenopsis picea</i>	
	<i>Solenopsis</i> spp.	
	<i>Trachymyrmex</i> spp.	
	<i>Wasmannia auropunctata</i>	
	Ectatomminae	
	<i>Ectatomma ruidum</i>	
	<i>Ectatomma tuberculatum</i>	
	<i>Gnamptogenys</i> spp.	
	Heteroponerinae	
	<i>Acanthoponera minor</i>	
	Paraponerinae	
	<i>Paraponera clavata</i>	
	Ponerinae	
	<i>Anochetus</i> sp.	
	<i>Hypoconera</i> spp.	
	<i>Odontomachus bauri</i>	
	<i>Odontomachus erythrocephalus</i>	
	<i>Odontomachus hastatus</i>	
	<i>Odontomachus meinerti</i>	
	<i>Pachycondyla apicalis</i>	
	<i>Pachycondyla</i> spp.	
	Pseudomyrmecinae	
	<i>Pseudomyrmex</i> spp.	
	Halictidae	
	Ichneumonidae	
	Pompilidae	
	Psychidae	
	Sphecidae	
	Vespidae	Wasps
	Polistinae	
	<i>Agelaia</i> sp.	
	<i>Apoica pallens</i>	
	<i>Apoica thorasica</i>	
	<i>Metapolybia mesoamerica</i>	
	<i>Mischocyttarus</i> sp.	
	<i>Parachartergus apicalis/ fraternus</i>	
	<i>Parachartergus smithii</i>	
	<i>Polistes</i> sp.	
	<i>Polybia occidentalis</i>	
Neuropteroidea		
Megaloptera		
	Corydalidae	Dobsonflies
	<i>Corydalus cornutus</i>	
Neuroptera		Lacewings and Ant Lions
	Mantispidae	

	Myrmeleontidae	
Coleoptera		Beetles
Adephaga	Carabidae	Ground Beetles
	Cicindellinae	Tiger Beetles
Polyphaga		
Staphyliniformia		
Staphylinoidea		
Staphylinidae		
Scarabaeiformia		
Scarabaeoidea		
Passalidae		Bessbugs
	<i>Passalus</i> sp.	
	Scarabaeidae	Scarab Beetles
	<i>Cyclocephala</i> sp.	
	<i>Dynastes hercules</i>	
	<i>Phyllophaga</i> sp.	
	<i>Strategus</i> sp.	
Elateriformia		
Elateroidea		
Elateridae		Click Beetles
Cucujiformia		
Cucujoidea		
Coccinellidae		Ladybird Beetles
Erotylidae		Pleasing Fungus Beetles
Chrysomeloidea		
Chrysomelidae		Leaf Beetles
Cerambycidae		Long-horned Beetles
Prioninae		
Anacolini		
	<i>Otheostethus melanurus</i>	
Callipogonini		
	<i>Callipogon</i> sp.	
Prionini		
	<i>Derobrachus</i> sp.	
Cerambycinae		
Anaglyptini		
	<i>Pempteurys sericans</i>	
Clytini		
	<i>Neoclytus cacticus</i>	
	<i>Pirangoclytus amaryllis</i>	
	<i>Placosternus guttatus</i>	
Eburiini		
	<i>Eburia</i> sp.	
Elaphidiini		
	<i>Aneflus planus</i>	
Heteropsini		
	<i>Chrysoprasis</i> sp.	
	<i>Tobipuranga belti</i>	
Necydalopsini		
	<i>Ozodes multituberculatus</i>	

Platyarthrini	
<i>Platyarthron chilense</i>	
Rhinotragini	
<i>Acyphoderes cribricollis</i>	
Trachyderini	
<i>Trachyderes hilaris</i>	
Lamiinae	
Acanthocinini	
<i>Lagocheirus araneiformis ypsilon</i>	
<i>Leptostylus</i> sp.	
<i>Nyssodrysina haldemani</i>	
<i>Oedopeza ocellator</i>	
<i>Oedopeza setigera</i>	
<i>Urgleptes</i> sp.	
Acanthoderini	
<i>Steirastoma breve</i>	
Anisocerini	
<i>Batesbeltia belti</i>	
Bothriospilini	
<i>Chlorida festiva</i>	
Colobotheini	
<i>Carterica pygmaea</i>	
<i>Colobothea aleata</i>	
<i>Colobothea bitincta</i>	
Lamiini	
<i>Taeniotes scalatus</i>	
Onciderini	
<i>Lochmaeocles consobrinus consobrinus</i>	
<i>Jamesia papulenta</i>	
Curculionoidea	
Curculionidae	Weevils
Mecopteroidea	
Diptera	Flies
Nematocera	
Culicomorpha	
Ceratopogonidae	No-see-ums
Chironomidae	Non-biting Midges
<i>Corynoneurini</i> spp.	
<i>Cricotopus</i> sp.	
<i>Nandeeva</i> sp.	
Culicidae	Mosquitoes
Simuliidae	Black Flies
Tipulidae	Crane Flies
<i>Hexatoma</i> sp.	
Brachycera	
Cyclorrhapha	
Schizophora	
Calypttratae	
Muscidae	House Flies
Tachinidae	
Drosophilidae	Fruit Flies

Streblidae	Bat Flies
Acalyptrae	
Micropezidae	
Aschiza	
Phoridae	
Stratiomyidae	Soldier Flies
Syrphidae	Hover Flies
Orthorhapha	
Asilidae	Robber Flies
Dolichopodidae	Long-legged Flies
Tabanidae	Horse or Deer Flies
Lepidoptera	
Ditrysia	
Tineoidea	
Psychidae	Bagworm Moths
Bombycoidea	
Bombycidae	
<i>Prothysana felderi</i>	
Saturniidae	Giant Silkworm Moths
<i>Automeris hamata</i>	
<i>Automeris</i> sp.	
Geometroidea	
Geometridae	Inchworm Moths
Uraniidae	Swallowtail Moths
Uraniinae	
<i>Urania fulgens</i>	
Hesperioidea	
Hesperiidae	Skippers
Noctuoidea	
Arctiidae	Tiger Moths
Noctuidae	Underwing Moths
Notodontidae	Prominents
Papilionoidea	
Lycaenidae	Gossamer-wing Butterflies
<i>Eumaeus godartii</i>	
Nymphalidae	Brushfoot Butterflies
Biblidinae	
<i>Hamadryas feronia</i>	
<i>Hamadryas laodamia saurites</i>	
Heliconiinae	
Heliconiini	
<i>Heliconius cydno</i>	
<i>Heliconius hecale</i>	
<i>Heliconius</i> spp.	
<i>Philaethria dido</i>	
Ithomiinae	
<i>Mechanitis</i> sp.	
Limentidinae	
<i>Adelpha iphicles</i>	
Morphinae	
Brassolini	

	<i>Caligo</i> sp.	
	Morphini	
	<i>Morpho amathonte</i>	
	<i>Morpho cypris</i>	
	<i>Morpho peleides</i>	
	Nymphalinae	
	Kallimini	
	<i>Anartia fatima</i>	
	Insertae sedis	
	<i>Cithaeriasmenander</i> sp.	
	Satyrinae	
	<i>Pierella helvetia</i>	
	<i>Pierella helvina</i>	
	Papilionidae	Swallowtail Butterflies
	Riodinidae	Metalmark Butterflies
	<i>Rhetus</i> sp.	
	Sphingoidea	
	Sphingidae	Hawk Moths
	<i>Hemeroplanes</i> sp.	
	Zygaenoidea	
	Megalopygidae	
Trichoptera		Caddisflies
	Hydropsychidae	
	<i>Leptonema albovirens</i>	

Acknowledgments / Agradecimientos:

Asociación de Naturalistas de Sarapiquí (ANASA), Socorro Avila, Jimmy Barrantes, Carlos de la Rosa, Paul Foster, Bill Haber, Richard Jacobson, Kevin Loope, Mollie McIntosh, Piotre Naskrecki, Gino Nearn, Ann Ray, Marcía Snyder, Ian Swift, Phil Torres, Gabriele Uhl, Orlando Vargas, Ronald Vargas, Ingo Wehrtman, and Heather York.

References / Referencias:

- Barquero González, José Pablo, Adrián Alonso Cabrera Alvarado, Stephanie Valle Cubero, Julián Monge Nájera, and Bernal Morera Brenes. 2016. The geographic distribution of Costa Rican velvet worms (Onychophora: Peripatidae). *Revista de Biología Tropical* 64(4): 1401-1414.
- Borowiec, Marek L. 2016. Generic revision of the ant subfamily Dorylinae (Hymenoptera, Formicidae). *ZooKeys* 608: 1-280.
- Chacón, Isidron, and José Montero. 2007. *Mariposas de Costa Rica*. Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica.
- Hanson, Paul E., and Nishida, Kenji. 2016. *Insects and other arthropods of tropical America*. Zona Tropical Publications, Ithaca, New York.
- Kohlmann, Bert, Ángel Solís, Ortwin Elle, Xinia Soto, and Ricardo Russo. 2007. Biodiversity, conservation, and hotspot atlas of Costa Rica: a dung beetle perspective (Coleoptera: Scarabaeidae: Scarabaeinae). *Zootaxa* 1457: 1-34.

- , and ---. 2012. Checklist and distribution atlas of the Scarabaeinae (Coleoptera: Scarabaeidae) of Costa Rica. *Zootaxa* 3482: 1-32.
- Lawrence, J. F., and A. F. Newton, Jr. 1995. Families and subfamilies of Coleoptera (with selected genera, notes, references and data on family-group names). pp. 779-1006 *In*: Pakaluk, J., and S. A. Slipinski (eds.): *Biology, phylogeny, and classification of Coleoptera: Papers celebrating the 80th Birthday of Roy A. Crowson*. Museum i Instytut Zoologii PAN, Warszawa.
- Magalhães, Célio, Ingo S. Wehrtmann, Luis Rólier Lara, and Fernando L. Mantelatto. 2015. Taxonomy of the freshwater crabs of Costa Rica, with a revision of the genus *Ptychophallus* Smalley, 1964 (Crustacea: Decapoda: Pseudothelphusidae). *Zootaxa* 3905: 301-344.
- Monné, Miguel A., and Larry G. Bezark (Compilers). 2011. Checklist of the Oxypeltidae, Vesperidae, Disteniidae and Cerambycidae, (Coleoptera) of the Western Hemisphere. 2012 Version (updated through 31 December 2011) <http://plant.cdfa.ca.gov/bycidb/checklists/WestHemiCerambycidae2012.pdf>.
- , and ---. 2012. Update for the Checklist of the Cerambycidae of the Western Hemisphere (references through 2011).
- Springer, Monika, Alonso Ramírez, and Paul Hanson (eds.). 2010. Macroinvertebrados de agua dulce de Costa Rica I. *Revista de Biología Tropical*. 58 (Supl.4): 1-238.
- Swift, Ian P., Larry G. Bezark, Eugenio H. Nearn, Ángel Solís, and Frank T. Hovore. 2010. Checklist of the Cerambycidae (Coleoptera) of Costa Rica. *Insecta Mundi*: 0131: 1-68.
- Vardy, C.R. 2000. The New World tarantula-hawk wasp genus *Pepsis* Fabricius (Hymenoptera: Pompilidae). Part 1. Introduction and the *P. rubra* species-group. *Zool. Verh. Leiden*: 1-86.
- Whitfield, James B., and Alexander H. Purcell III. 2013. *Daly and Doyen's Introduction to Insect Biology and Diversity*. Oxford University Press, New York.