

AQUARIUM WORLD

4. WEEK: POPULAR AQUARIUM INVERTEBRATES

WEEKLY TOPICS (CONTENT)

- 1. Week Why there is an interest on aquarium? Introduction and motivation
- 2. Week Aquarium world: To be a fish
- 3. Week Aquarium world: Biodiversity
- 4. Week Popular aquarium invertebrates
- 5. Week Popular aquarium fishes: Freshwater and brackish-water species
- 6. Week Popular aquarium fish: Marine species
- 7. Week Public aquariums: Aquarium world
- 8. Week Personal hobby aquarium: Aquarium world.
- 9. Week Species selection
- 10. Week World aquarium sector
- 11. Week Cleaning an aquarium, main principles
- 12. Week Education: Aquarium world
- 13. Week General evaluation and discussion: About species exhibited in public aquariums
- 14. Week How to keep an aquarium fish healthy

Several groups of vertebrates inhabit planet Earth. Let's take a tour of the five main vertebrate groups alive today: the fishes, amphibians, reptiles, birds, and mammals.

How many of you remember the Brady Bunch episode in which Peter was studying for a biology test? He asked Marcia for help, and she taught him the mnemonic: "A vertebrate has a back that's straight." Well, not all vertebrates have straight backs, but all have backbones, or vertebral columns, that help support their bodies.

<https://www.britannica.com/list/5-vertebrate-groups>

All living things are placed into groups depending on common characteristics. The animal kingdom is informally divided into two groups, the vertebrates and invertebrates. Invertebrates are a group of animals that have no backbone, unlike animals such as reptiles, amphibians, fish, birds and mammals who all have a backbone.

Classification or taxonomy is a means of arranging living things into orderly groups. These groups are mostly distinguished by structure and reflect evolutionary relationships. Standardised categories allow quick recognition of individuals and groups of similar organisms.

http://www.ento.csiro.au/education/what_invertebrates.html

The Reef Aquarium: A Comprehensive Guide to the Identification and Care of Tropical Marine Invertebrates (Volume 1)

Sprung, J., & Delbeek, C. (1997). The reef aquarium: a comprehensive guide to the identification and care of tropical marine invertebrates (volume 1).

Marine invertebrates

Sponges

Cnidarians

Marine Worms

Lophophorates: Lophophorates are characterized by a special feeding organ called a lophophore which is an extension of the body wall into a tentacled structure that surrounds the mouth and is either U-shaped or circular.

Mollusks

Arthropods

Echinoderms

Hemichordates: Hemichordates are a relatively small phylum. These creatures are extremely important to the study of the evolution of vertebrates. They are characterized by a body divided into three main areas: the preoral lobe, the collar, and the trunk. Hemichordates are partial chordates and are closely related to the first chordates. There are three classes of hemichordates which include Enteropneusta, Pterobranchia, and Graptolithina. The most well-known class is the Enteropneusta or “acorn worms”.

<http://marinebio.org/oceans/marine-invertebrates-3/>

Freshwater invertebrates

Freshwater invertebrates are an important part of the freshwater ecosystem and food chain. Freshwater invertebrates are invertebrates that spend at least part of their lifecycle in freshwater (e.g. rivers, streams, ditches, spring, seepages, ponds and lakes).

Freshwater invertebrates play a vital role in maintaining the quality of our water; they help to breakdown organic matter and provide a food source for other species such as fish, birds and mammals. They can also be used to assess the health of freshwater systems.

<https://www.buglife.org.uk/bugs-and-habitats/freshwater-invertebrates>

Marine Aquarium Biodiversity and Trade Flow

<https://www.aquariumtradedata.org/>

Aquarium Industry Threatens Biodiversity

<http://science.sciencemag.org/content/341/6145/457.1>

The aquarium industry is a major source of aquatic invasions, especially in terms of the number of species and potential sites of species release (5,6).

References

- Verdonschot, R., Keizer-vlek, H. E., & Verdonschot, P. F. (2011). Biodiversity value of agricultural drainage ditches: a comparative analysis of the aquatic invertebrate fauna of ditches and small lakes. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 21(7), 715-727.
- Batzer, D., & Boix, D. (2016). Invertebrates in Freshwater Wetlands.
- Guillard, R. R. (1975). Culture of phytoplankton for feeding marine invertebrates. In *Culture of marine invertebrate animals* (pp. 29-60). Springer, Boston, MA.