

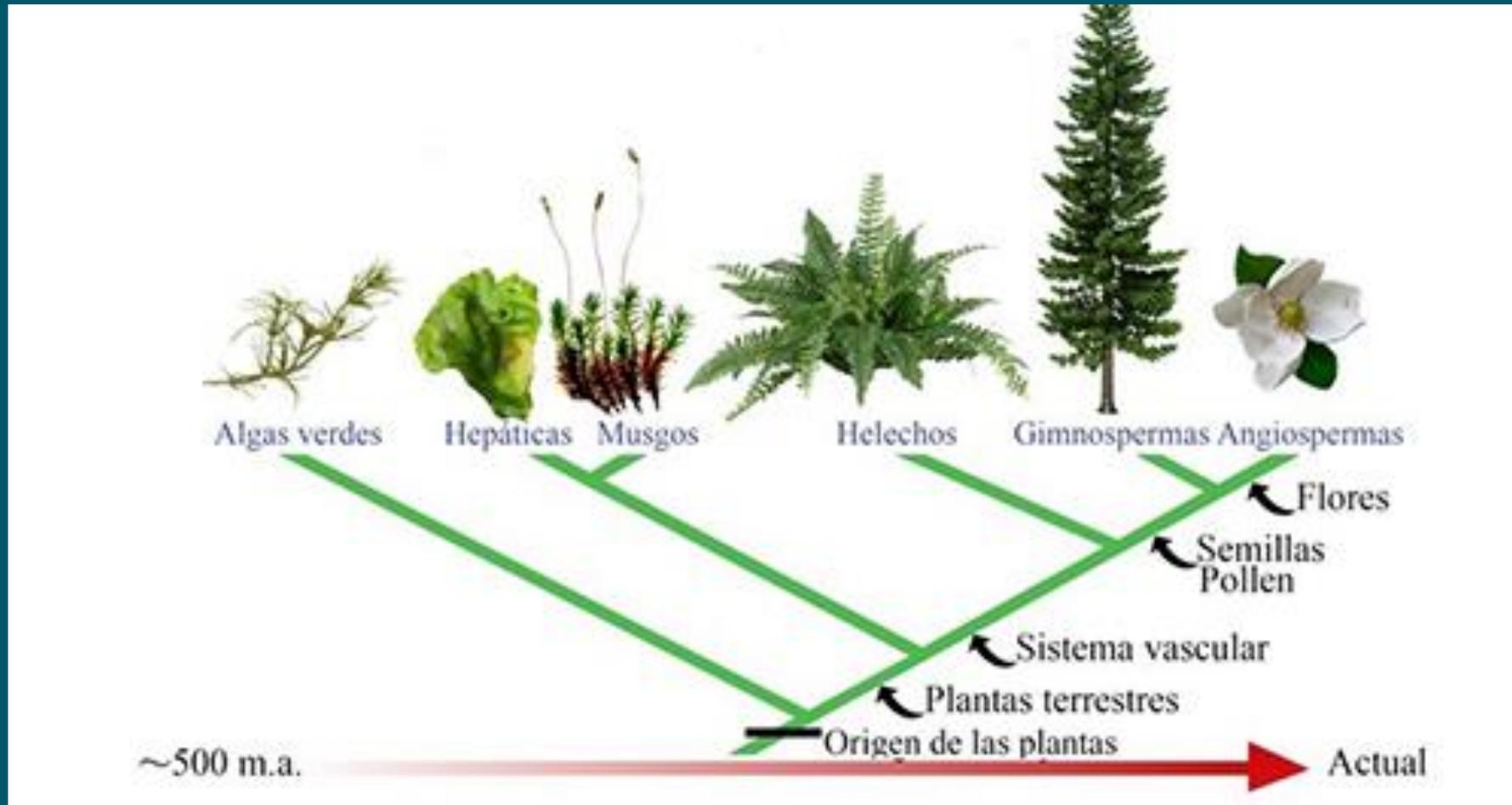
Aquatic Macrophytes and Ferns

Researcher Victor Mendoza



FLAAR
MESOAMÉRICA

EVOLUTION OF PLANTS



Phylum CHLOROPHYRA (green algae)

- Macroscopic
- Large amounts of chlorophyll therefore very important in the production of oxygen.
- 7,000 species with 13% marine. Common in shallow places with clear water
- They carry out much of the world's photosynthesis

Acetabularia are giant (0.5 to 10 cm long), marine, unicellular green algae with a characteristic umbrella shape.

SEEDLESS NON-VASCULAR PLANTS

Phylum BRIOPHYTA (mosses and liverworts)

- Lack roots, stems and leaves.
- Considered the transition between terrestrial and aquatic plants.
- It does not have a vascular system.
- Need water to survive and reproduce.
- Useful as bioindicators because they are very sensitive.
- In some countries it is used as fuel or as packaging material.
- Because they retain moisture, help the seeds of other plants to germinate and grow.





FLAAR
MESOAMÉRICA

SEEDLESS VASCULAR PLANTS

Phylum PTRIDOPHYTA (Ferns)

- Generally live in the tropics.
- Measure from a few cm to 18 meters in height.
- Have a well-developed root, stem, leaves and vascular system.
- Its reproduction is by means of spores produced on it instead of its fronds.
- Its stems are called rhizomes and produce roots in the ground generating new fronds.



CYATHEACEAE



FLAAR
MESOAMÉRICA



Acrostichum sp. - Photo by Victor Mendoza - Manglares de Tapón Creek



FLAAR
MESOAMÉRICA



Nephrolepis sp. - Photo by Nicholas Hellmuth - Cañón de Río Dulce



Lomariopsis recurvata. - Photo by Nicholas Hellmuth- Cerro San Gil



Phylum LYCOPHYTA (Lycopods, Selaginelas and isoetes)

Approximately 1,000 living species, classified into three orders

*Lycopodiales

*Isoethals

*Selaginellales: Small, grow horizontally on the ground, small and delicate leaves and cones.

Phylum SPHENOPHYTA (Horsetails)



Selaginella - Photo by Alejandra Gutierrez - Río Lámpara



VASCULAR PLANTS WITH SEED COVER

ANGIOSPERMS

- Evolution of gymnosperms (130 million years)
- Dominant in plant life on the planet
- Adapted to different climates, both deserts, bodies of water, mountains and very cold climates.
- Represent the most important block of animal and human nutrition.



AQUATIC MACROPHYTES

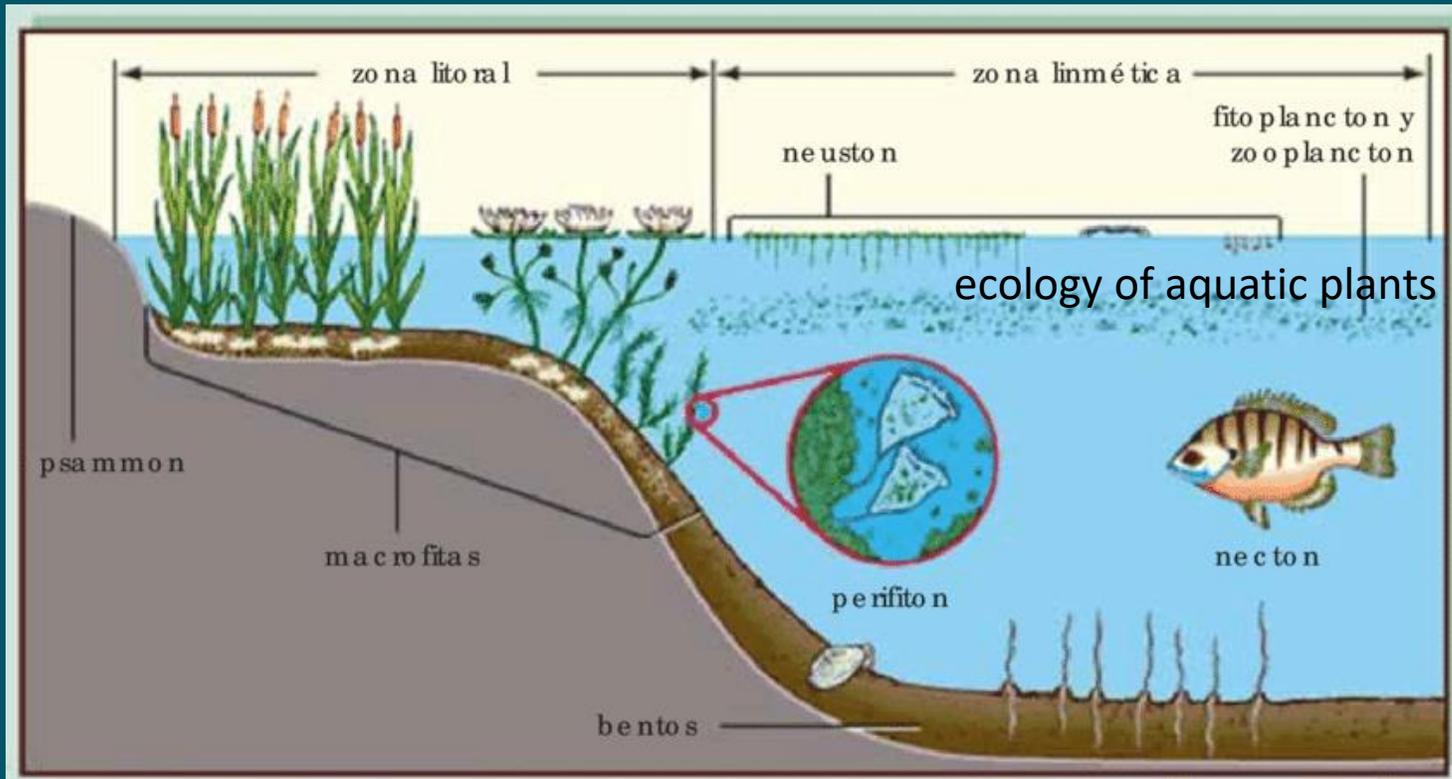
Aquatic macrophytes are characterized by having adapted to aquatic life, which is why they have a thin epidermis, dysfunctional stomata and little lignified elements. They inhabit lagoons, dams, swamps, riverbanks, lakes and even the seas. These are important as they serve as a filter for nutrients in bodies of water, in addition to producing oxygen and can maintain the ecological balance in their aquatic habitat.



Nymphoides indica - Photo by Alejandra Gutierrez - Río Dulce



Ecology of aquatic plants



horizontal stratification

- **Coastal Zone:** Interface between the land and the pelagic zone where there is great diversity and presence of light.
- **Pelagic zone:** also called limnetic, open zone, diversity suspended in the water.



Classification of Aquatic Macrophytes

Emerging Rooted Macrophytes



Have their roots at the bottom of the body of water, but their leaves and parts of the flora emerge from the water.



Typha dominguensis- Photo by David Arrivillaga - Río Cáliz



Floating Rooted Macrophytes



Rooted at the bottom of the body of water and their leaf and flower parts only float on the mirror of the water.

Nymphaea ampla - Photo by Nicholas Hellmuth - Laguna Grande Sarstún



Submerged Rooted Macrophytes

Take root at the bottom of the body of water, and their leaf and flower parts are submerged in the water.



Potamogeton illinoensis - Photo by Victor Mendoza - Río Dulce



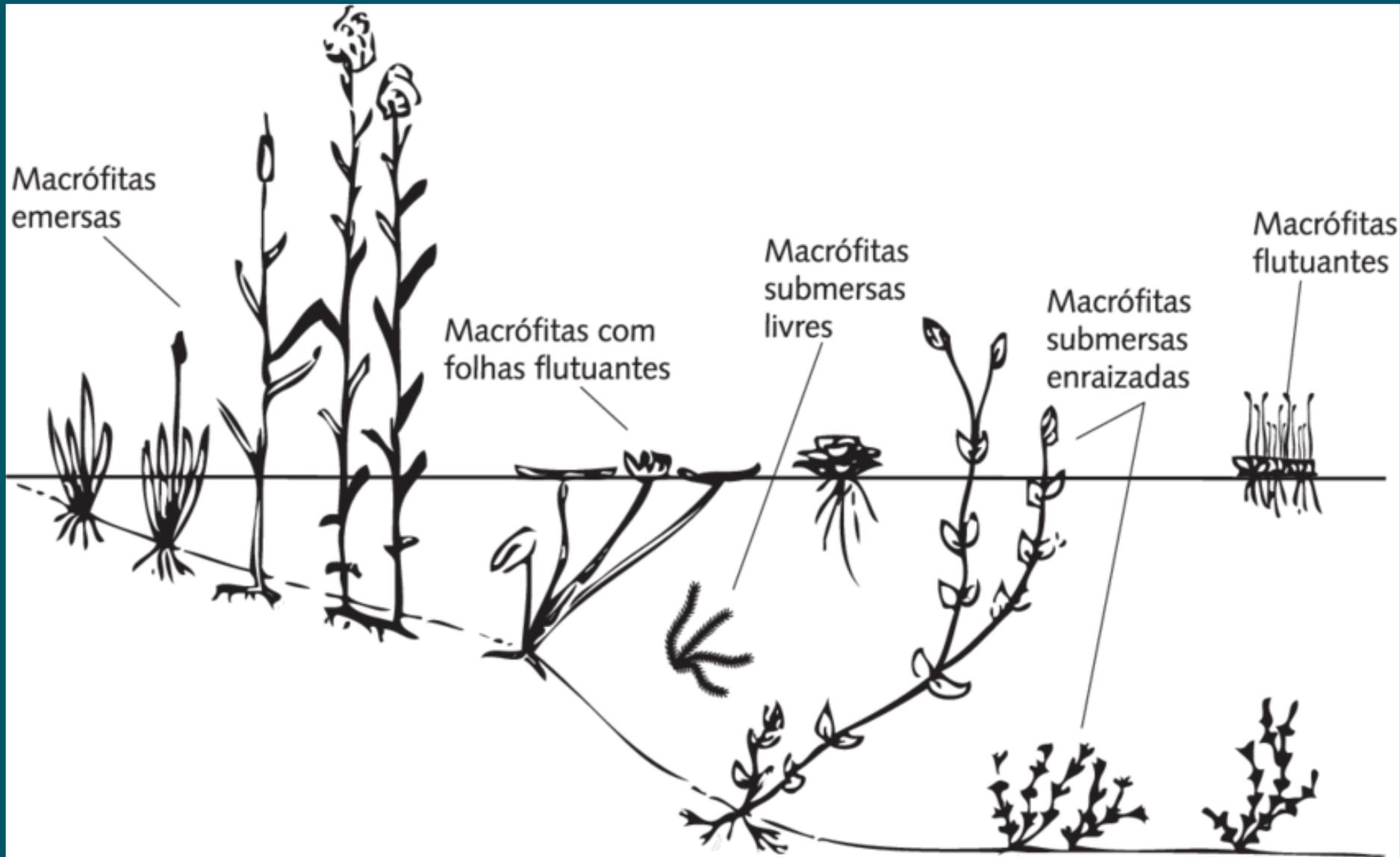
Floating Macrophytes

Floating in the mirror of the water and their roots are not anchored to the bottom of the body of water.



Salvinia sp. - Photo by Victor Mendoza - Lago de Izabal





Final Report and List of Species



Listado de especies

MACRÓFITAS

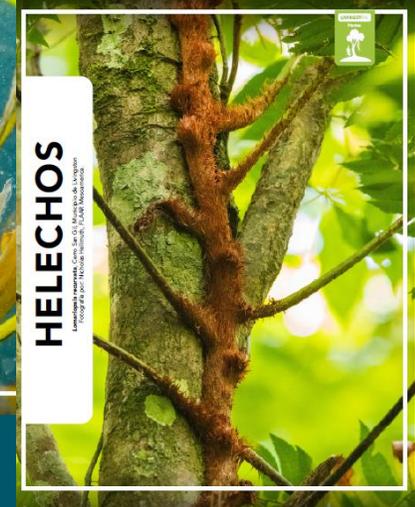
FAMILIA	ESPECIE	NOMBRE COMÚN
ALISMATACEAE	<i>Sagittaria lancifolia</i> L.	Flecha de agua
AMARYLLIDACEAE	<i>Crinum</i> sp.	Spider lily
AMARYLLIDACEAE	<i>Hymenocallis littoralis</i> (Jacq.) Salisb.	Spider lily
ARALIACEAE	<i>Hydrocotyle umbellata</i> L.	Ombigo de Venus
CABOMBACEAE	<i>Cabomba</i> sp.	Cola de zorro
CYPERACEAE	<i>Cyperus esculentus</i> L.	Cebollín
CYPERACEAE	<i>Cladium mariscus</i> (L.) Pohl	Navajuela
CYPERACEAE	<i>Eleocharis geniculata</i> (L.) Roem. & Schult.	Pajiza
CYPERACEAE	<i>Rhynchospora cephalotes</i> (L.) Vahl	Pasto de playa
CYPERACEAE	<i>Cyperus brevifolius</i> (Rottb.) Hassk.	Cebollín amarillo
CYPERACEAE	<i>Cyperus luzulae</i> (L.) Retz.	Cebollín blanco
CYPERACEAE	<i>Eleocharis caribaea</i>	
CYPERACEAE	<i>Eleocharis</i> sp.	
CYPERACEAE	<i>Oxycaryum cubense</i> (Poepp. & Kunth) Palla	
CYPERACEAE	<i>Schoenoplectus acutus</i> (Muhl.)	
HYDROCHARITACEAE	<i>Vallisneria americana</i> Michx.	Pasto acuático
MAYACACEAE	<i>Mayaca fluviatilis</i> Aubl.	Mayaca
MENYANTHACEAE	<i>Nymphoides indica</i> (L.) Kuntze	Lirio pequeño
NYMPHAEACEAE	<i>Nymphaea ampla</i> (Salisb.) DC.	Lirio blanco
ONAGRACEAE	<i>Ludwigia leptocarpa</i> (Nutt.) H.Hara	Clavito
ONAGRACEAE	<i>Ludwigia</i> sp.	Calavera
POACEAE	<i>Phragmites australis</i> (Cav.) Trin.	Carrizo, Tafil
PONTEDERIACEAE	<i>Pontederia cordata</i> L.	Espiga de agua
POTAMOGETONACEAE	<i>Potamogeton illinoensis</i> Morong	Hierba de agua
SALVINIACEAE	<i>Salvinia</i> sp.	Lenteja de agua
TYPHACEAE	<i>Typha domingensis</i> Pers.	Junco, Tifa, Tul

Fuente: (Mendoza, V. & Hurtado, V., FLAAR Mesoamérica, 2022)

Contact Sheet Catalog



Cinco catálogos de fotografías generados en el proyecto.



THANKS!!!!

Contacts:

Researcher Victor Mendoza

botany-zoology@flaar.org

viic.im8@gmail.com



FLAAR
MESOAMÉRICA