

Ripariums: A New Type of Planted Tank

Fish and marginal aquatic plants come together perfectly in these creative beautiful ripariums

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One of the most distinctive features of aquatic ecosystems, such as ponds, rivers, lakes and streams, are the shallow shoreline areas where the land meets the water. In this zone, both aquatic and land-dwelling animals find abundant food and other resources. Many popular aquarium fish prefer shoreline areas in their natural habitats. The lush plant growth there provides dense cover where smaller fish can hide from predators, and it also supports many aquatic insects and other small food items.

The shoreline plant habitat is such a special kind of environment that certain plant species, known collectively as marginal plants, have evolved to grow there. Marginal plants enjoy bright sunlight, usually ample nutrients and abundant water, but they must also contend with low oxygen levels in the muddy or boggy substrates where their roots grow. Marginals include beautiful foliage and flowering species. Some are popular garden pond plants. Others, mainly smaller-growing marginals, are enjoyed by hobbyists as aquarium plants. These include crypts (*Cryptocoryne* spp.), anubias (*Anubias* spp.) and swordplants (*Echinodorus* spp.).

Since they grow right at the water's edge where they are subject to changes in water level, these kinds of aquarium plants can grow with their leaves either above or below the water's surface. This article describes a specific kind of aquarium, the planted riparium, that replicates the marginal shoreline plant habitat. You might recognize the term "riparium" as similar to "riparian," which is a word used in reference to the shoreline areas in natural bodies of water. [Click image to enlarge](#)

This is a high humidity 55-gallon riparium. When grown emersed, crypts and java moss tend to do best in high humidity environments.

Special Features of Planted Ripariums

Ripariums are similar in general appearance to another kind of planted display: the paludarium. However, ripariums incorporate different methods of construction and growing plants. Paludariums involve both underwater areas and built-up land areas where plants grow - you can also think of them as terrariums that include water features. Ripariums, on the other hand, use floating and hanging-plant supports attached to the rear pane of aquarium glass to support the above-water growth of the marginal plants. As the plant roots and foliage grow, they cover up these plastic accessories and hide them from view.

Hobbyists often use paludariums as habitats for turtles, salamanders or other kinds of amphibious livestock. Ripariums are generally unsuitable for these animals because they do not have any real land area. Nevertheless, ripariums are excellent for displaying plants and aquarium fish.

Filled with lush green plant growth, ripariums also resemble regular planted tanks, but they also have a strong emphasis on the plants above the water. They have a few additional important differences from regular planted tanks, such as the ability to support many fast-growing plants without CO2 injection. Riparium plants get all of their carbon dioxide from the air where it is much more abundant than underwater. Another significant advantage of ripariums is that the plants above the water can grow without danger of having algae cover their leaves. Most other aspects of aquarium setup and plant growing are similar for ripariums and regular planted tanks. [Click image to enlarge](#)

Riparium planters and the plants they support are modular and can be easily moved about the display. This image shows a riparium hanging planter and trellis raft, along with live plants.

Selecting and Setting up the Aquarium

An important first consideration to have in mind while planning a riparium is that the plants will need vertical space so that they can grow up into the space above the aquarium. There are two general kinds of configurations that can meet this requirement: A proportionately tall aquarium with a canopy covering the top and with the water level lowered to 30 to 40 percent of total depth. An open-topped aquarium filled to the top rim, or somewhat less, with a pendant light fixture hanging above. The first configuration uses standard aquarium equipment and is easy for most hobbyists to assemble.

One special limitation for a riparium setup with a lowered water level is that you will need to fit the water filtration and heating appliances into the more shallow underwater area. Such a setup will have substantially less water, so you can use a less powerful (and shorter) water heater. Canister filters are a preferred method of water filtration and circulation for ripariums. In order to use a canister filter with this kind of riparium, you might need to modify the filter plumbing so that it can reach the water level. Submersible power filters or air-driven sponge filters are additional options.

Ripariums with closed tops are especially useful for the kinds of aquarium plants that require high humidity when growing emersed (in the air). These include crypts (*Cryptocoryne* spp.) and Java fern (*Microsorium pteropus*). The aquarium canopy keeps the moist air inside of the tank, thus maintaining a favorable environment for such plants. These closed-topped setups can result in condensation on the inside glass. Open a narrow gap along the front edge of the canopy to rid the tank of condensation (this may not work if the room is much colder than the air inside the tank).

For a riparium with the water level near the top rim and with plants reaching into the space above, the only special equipment that you will need is a pendant light fixture. A high-output T5 light fixture with polished reflectors is a good choice, and it will shine a lot of light per watt of electricity consumed. This kind of setup also looks best with a rimless aquarium - the plastic top rim on many kinds of tanks interferes with the view of the above-water plants. Rimless aquariums are quite popular in Asian and European countries. In recent years, several aquarium manufacturers have begun to offer this kind of tank in the United States. [Click image to enlarge](#)

Ripariums are a new kind of aquarium display that combine well-established aquarium gardening methods with new kinds of plants and planting techniques to emulate the shoreline areas of aquatic habitats.

Open-topped riparium displays generally look best in tanks that have broad footprints relative to their height. Such aquariums have plenty of water surface area for the riparium plants. The standard 50-gallon tank (36 inches wide by 18 inches tall by 18 inches deep) is an especially appealing shape for an open-topped riparium. The standard 15-gallon tank (24 inches wide by 12 inches tall by 12 inches deep) also looks nice with riparium plants.

Riparium Planting Design

It is best to put together a dense planting so that the riparium foliage will grow in fast and cover up the hanging and floating planters. Riparium planters and the plants that they support are fully modular in the riparium display. You can easily position the hanging planter cup on the aquarium glass with heavy-duty suction cups or sandwich magnet mounts. With plastic snap fasteners, you can situate the trellis raft securely in front of a hanging planter or next to another raft.

In general, the taller background plants grow rooted in gravel substrate within the riparium hanging planters. Shorter midground plants should be grown on riparium trellis rafts with their roots suspended in the water. There are many different kinds of plants that will grow in a riparium. The best choices are plants that grow in wet areas out in the wild. There are likewise many different ways to use aspects of garden design, such as color, texture and contrast, to design an appealing riparium layout. Riparium plant selection, plant culture and riparium design are broad topics worthy of detailed discussion.

An important effect to have in mind while maintaining a riparium is that the above-water plants will tend to cast a lot of shade on the underwater area. A thick planting of above-water marginal plants is a major feature of a planted riparium, but the whole display looks best with a vibrant underwater area. Thus, it is a good idea to use light-colored sands, gravel and stones, and a few bright green plants for the aquascape. Low-tech plants, such as *Cryptocoryne wendtii* and *Echinodorus* swordplants, are especially good underwater riparium plants because they do not require extra carbon dioxide in the water to grow well. Active fish with bright colors are good choices for planted ripariums.

Ripariums are a new kind of aquarium display that combine well-established aquarium gardening methods with new kinds of plants and planting techniques to emulate the shoreline areas of aquatic habitats. With their robust plant-based filtration and dense foliage cover, they provide excellent conditions for aquarium fish. Among other compelling benefits of planted ripariums is the ability to support vigorous plant growth without the need for CO2 gas injection. Ripariums also offer many unique tank design possibilities. Planted ripariums add a new dimension to the hobby, and they can enrich the home or office environment with aquarium fish and beautiful marginal aquatic plants. AFI

Devin Biggs is a small business owner who lives in Madison, Wisconsin, in a house filled with plants and fish tanks. He developed the Riparium Supply product line and operates a website (ripariumsupply.com) all about planted ripariums.