

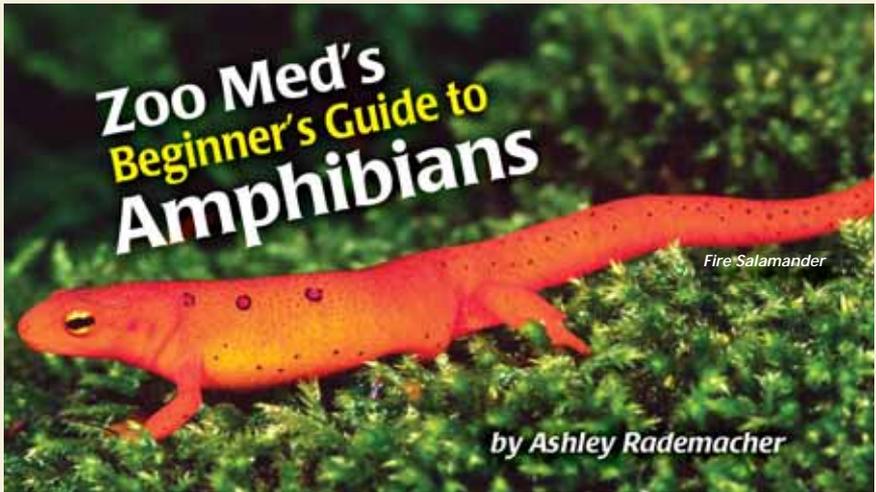
Zoo Med's  
Beginner's Guide to



# Amphibians



by Ashley  
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## Introduction

What is an amphibian? A Frog? A Newt? A Toad? A Salamander? YES! These are all examples of amphibians. An Amphibian is an animal that spends the first part of its life in water, breathing with gills. Later it may metamorphose or change into an adult form with legs and may even develop lungs to breathe with. These incredible creatures can take on many different shapes, sizes and colors and can make fun, fascinating pets. When selecting a pet amphibian, there are many species to choose from. This book is intended to be an introduction to the care of amphibians. It will discuss some of the most popular species that are kept as pets and should help you decide which is right for you! Once a species is chosen, additional research should be done to ensure that you are well prepared to care for your new pet.



There are a few traits that make amphibians unique. Amphibians hatch from eggs into a “larval” aquatic form with a tail. This form is known as a “Tadpole” or “Pollywog.” Some species, such as frogs and toads, will eventually lose this tail and develop legs.



Newts and Salamanders will grow legs and keep their tail throughout their lifetime.

Amphibians have thin, permeable and sometimes slimy skin through which they can absorb oxygen and impurities. This makes them very vulnerable to toxins so their habitat must be kept very clean and hands must be washed before handling them. Some may produce toxins through their skin or carry bacteria so it is imperative to always wash hands after handling them as well.

Amphibians are found on every continent except Antarctica. They range in size from the tiny Gold Frog (*Psyllophryne didactyla*) measuring only 3/8 of an inch to the Giant Chinese Salamander (*Andrias davidianus*) measuring 5.9 feet long and weighing 55-65 pounds! Most pet amphibians are small and are usually about two to eight inches in length.

**Wash hands before handling amphibians for their health.  
Wash hands after handling amphibians for your health!**

As adults, amphibians are all insectivorous -eating insects, or carnivorous – eating small mammals, birds, fish or even other amphibians!

Amphibians are ectothermic meaning they must use heat from their environment to maintain their body temperature. It is very important to create the proper habitat for these animals to live in. To do this, we try to simulate the animal’s natural environment as close as possible within the vivarium. Some people find creating and maintaining the vivarium just as rewarding as keeping the animal itself!

## The Vivarium

A vivarium is an enclosure that your amphibian will live in. Usually a glass tank is used with substrate, lights, live or artificial plants, a water source and heating elements. A vivarium can be very basic or extravagant! (The type of vivarium you build will depend on the needs of the species you have chosen.)

First, decide on what size enclosure you will want. We do not recommend using smaller than a 7-10 gallon tank for any pet amphibian. Then, determine if your pet is an aquatic species (spending most of its time in the water,) Semi-Aquatic (spending equal amounts of time in the water and on land) or if it is terrestrial and spends most of its time on land.

Following are some examples of different amphibian habitats and species that live in these habitats.

## Fully Aquatic Habitat



### COMPONENTS:

- 10-20 Gallon Aquarium
- ReptiSun® Terrarium Hood
- NatureSun® Fluorescent Lamp
- Smooth Aquarium Gravel
- Turtle Hut™
- Turtle Dock™ or Natural Cork Flat
- Betta Plants
- Submersible Microclean 316 Filter
- ReptiSafe® Water Conditioner



Mudpuppy

## Some popular species that live in fully aquatic environments



**Fire Belly Newt -**  
*Cynops pyrrhogaster*  
**Temperature:** 60-68 °F  
**Lifespan:** 5-10 years  
**Size:** 3-5 inches  
**Number of animals per 10 gal tank:** 3-5

**Diet:** Aquatic Newt Food, bloodworms, blackworms pinhead crickets, Can O' Worms  
Any leftover food should be removed from the tank 2 hours after feeding.



**African Dwarf Frog -**  
*Hymenochirus boettgeri*  
**Temperature:** 75-82°F  
**Lifespan:** up to 5 years  
**Size:** 1-2 inches  
**Number of animals per 10 gal tank:** up to 10

**Diet:** Aquatic Frog and Tadpole Food, bloodworms, blackworms  
These purely aquatic frogs are often found in the fish section of a pet store. They spend much of their time near the bottom of the tank, but must be able to swim to the surface to breathe.



**Axolotl -**  
*Ambystoma mexicanum*  
**Temperature:** 57-68°F  
**Lifespan:** 8-12 years  
**Size:** 6-12 inches  
**Number of animals per 10 gal tank:** 1

**Diet:** Aquatic Newt and Salamander Food, bloodworms, blackworms, chopped earthworms  
Axolotls usually remain in their aquatic form and retain gills throughout their lifetime.  
Axolotls should be kept on sand or bare bottom tanks-no gravel.

## Semi-Aquatic Habitat



### COMPONENTS:

- 10-20 Gallon Terrarium
- ReptiSun® Terrarium Hood
- NatureSun® Fluorescent Lamp
- Aquarium Gravel
- Eco Earth® Substrate
- Live or Artificial Plants
- Habba Hut™
- Moss
- Food Dish
- Mopani Wood / Rocks
- Dual Thermometer and Humidity Gauge

## Some popular species that live in Semi - Aquatic Environments

**Fire Belly Toad -**  
*Bombina orientalis*  
**Temperature:** 70-78°F  
**Humidity:** 60-70%  
**Lifespan:** 5-10 years  
**Size:** 2-3 inches  
**Number of animals per 10 gal tank:** 3-4  
**Diet:** Crickets, mealworms



Fire Belly Toads are diurnal, active during the day, and may spend time in and out of the water. They are active and fun to watch during feeding time!

**Fire Salamander -**  
*Salamandra salamandra*  
**Temperature:** 60-68°F  
**Humidity:** 60-70%  
**Lifespan:** 10-20 years  
**Size:** 6-10 inches  
**Number of animals per 10 gal tank:** 1



**Diet:** Crickets, chopped earthworms

This salamander is found mainly in the southern and central parts of Europe. There are many different subspecies of Fire Salamander which exhibit different variations of the yellow on black color pattern. They are mostly active at night but can become quite tame and may approach the keeper.

## Terrestrial Habitat



### COMPONENTS:

- 10-20 Gallon Terrarium
- ReptiSun® Terrarium Hood
- NatureSun® Fluorescent Lamp
- Eco Earth® Substrate
- Live or Artificial Plants
- Habba Hut™
- Water & Food Dish
- Branches / Mopani Wood
- Terrarium Moss, Frog Moss, Sphagnum Moss
- Analog Dual Thermometer and Humidity Gauge

## Some popular species that live in terrestrial environments



### North American Toad - *Anaxyrus (Bufo) spp.*

**Temperature:** 60 - 70° F

**Humidity:** at least 70%

**Lifespan:** up to 10 years

**Size:** 2-4 inches

**Number of animals per 10 gal tank:** 1-2

**Diet:** Crickets, mealworms, earthworms

These toads are nocturnal and are most active at night.

The bumps on their skin are not really warts and cannot be transmitted to people.



### Mandarin Newt / Emperor Newt - *Tylototriton shanjing*

**Temperature:** 65-70°F

**Humidity:** at least 70%

**Lifespan:** 8-10 years

**Size:** 5-8 inches

**Number of animals per 10 gal tank:** 1-2

**Diet:** Chopped earthworms, crickets, bloodworms

The Mandarin Newt is slow moving and mainly nocturnal.

They can be taught to eat from your hand and will often approach the front of the tank at feeding time!



### Pac Man Frog - *Ceratophrys ornata*

**Temperature:** 75-84°F

**Humidity:** at least 70%

**Lifespan:** 7-10 years

**Size:** 5-7 inches

**Number of animals per 10 gal tank:** 1

**Diet:** Crickets, fish, mealworms, mice

A Pac Man Frog must be housed individually as it will eat almost anything that moves – even other Pac Man Frogs.

While they are not aggressive, they can mistake fingers for food so use caution when handling. They will spend most of their time partially buried in leaf litter or moss and do not move around much. Provide a substrate layer that is at least 2 inches deep.

## Arboreal- Terrestrial Habitat



### COMPONENTS:

- Zoo Med's Naturalistic Terrarium and Hood
- ReptiSun® 5.0 UVB Lamp
- Nightlight Red Reptile Bulb
- Eco Earth® Substrate
- Waterfall Kit
- Frog Moss / Terrarium Moss
- Mopani Wood / Branches
- Live or Artificial Plants
- Analog Dual Thermometer and Humidity Gauge



### Green Tree Frog -

*Hyla cinerea*

**Temperature:** 68-77°F

**Humidity:** 65%+

**Lifespan:** 2-5 Years

**Diet:** Insects



### White's Tree Frog -

*Litoria caerulea*

**Temperature:** 70-85°F

**Humidity:** 50-70%

**Lifespan:** 7-10 years

**Diet:** Insects



### Red Eye Tree Frog -

*Agalychnis caladryas*

**Temperature:** 78-85°F

**Humidity:** 80-100%

**Lifespan:** 3-5 years

**Diet:** Insects

Tree frogs come in many shapes, sizes and colors. Most of them can be kept in groups and they usually make great pets for beginner amphibian keepers!



### Poison Arrow Frogs -

*Dendrobates* sp., *Epipedobates* sp.,  
*Phyllobates* sp.

**Temperature:** 75-80°F

**Diet:** Fruit Flies, Crickets

**Humidity:** 70-100%

**Lifespan:** 7-10 years

**Number of animals per 10 gal tank:**  
depends on species

There are over 100 species of Poison Arrow Frog or Dart Frog. They come in many sizes and colors and are active during the day.

**Poison Arrow Frogs or Dart Frogs can be delicate and are best left to the advanced amphibian keeper.**

## Substrates

Next, you will need to decide on the appropriate substrate. Substrate is the material that lines the bottom of the tank. Some species can be kept in a bare bottom tank but usually some kind of substrate is recommended.

**Aquarium gravel** can be used on the bottom of an aquatic tank or as an accent in a terrestrial setup. Prevent accidental ingestion by using pieces too large for your animal to eat and watch your animal at feeding time.

(continued on page 8)

# Setting up a Terrarium

## Follow this easy step-by-step guide to creating a tropical waterfall terrarium

Zoo Med's Waterfall Kit can be used to build a beautiful tropical terrarium. The concept behind the Waterfall Kit is quite simple, and if set-up properly, uses a very natural process of percolation to

highlight your terrarium. HYDROBALLS® are used to create an underground "aquifer". The terrarium holds enough water to be pumped by the water pump to the top of the terrarium. The pump simply drops water over a terrarium decoration such as Mopani Wood. The water naturally runs down the wood and percolates through the different substrate layers back to the pump. This system keeps water moving and is perfect for retaining humidity. The Waterfall Kit is designed to let the hobbyist create their own Natural Living Terrarium.



**NT-2 with  
Waterfall Kit**

**WATERFALL KIT**  
Item# WK-10



**1** Thoroughly rinse and clean your Naturalistic Terrarium. Suction cup the waterfall pump to the bottom glass, towards the back corner as shown. Next insert the Natural Tile background of your choice. Feed the power cord from the water pump behind the background. The electrical cord can be fed through the cord groove in the back corners of the terrarium lid.



**2** Thoroughly rinse your HYDROBALLS® to remove dust and debris. Distribute HYDROBALLS® evenly across bottom of terrarium. The waterfall pump must be submerged completely in the HYDROBALLS® for proper function (2"-3" (5-8 cm) layer). Be sure the tubing from the pump is positioned upright to allow you to build the waterfall.



**3** Cut a small hole in the Terrarium Mesh to allow the Waterfall tubing to be fed through the mesh. Lay Terrarium Mesh flat. Zoo Med's Black Silicone is a great way to secure Terrarium Mesh and other décor inside your terrarium.



**4** Add at least 1.5" (4 cm) of moistened Eco Earth® on top of the Terrarium Mesh and evenly spread throughout terrarium. Add additional Eco Earth® to create natural mounds and contour the landscape.



**5** Guide the Waterfall hose to the desired position and anchor it to Mopani Wood, rocks, or other terrarium décor. Be sure the hose is securely fastened in place before moving to the next step.



**6** Once your Waterfall is built, the next step is to add additional terrarium accents to beautify your terrarium. Zoo Med offers an entire line of Naturalistic Flora plants that bring your terrarium to life. Terrarium Moss, Frog Moss and New Zealand Sphagnum Moss are a great choice for a "substrate topper." These mosses are an attractive addition and function as a medium to retain humidity in your tropical terrarium.



**7** Once your terrarium has been built, the next step is to start the waterfall. Treat all water with ReptiSafe® Water Conditioner before adding to terrarium. Add water slowly to your terrarium until the waterline reaches the top layer of HYDROBALLS®. Once the water is added, you can plug the water pump in to start the waterfall.



## Substrates *(Continued from page 5)*

**Cage Carpet** is a safe substrate that cannot be accidentally ingested. Carpet should be used with mosses to help keep humidity up. It can be cleaned easily and re-used.

**Eco Earth®** is a soil like substrate that is made of ground up coconut husks. It is excellent for retaining moisture and for growing live plants.

**Mosses** such as Frog Moss, Terrarium Moss and New Zealand Sphagnum Moss can be used to help retain moisture and elevate humidity. They can be used in combination with other substrates to create a natural forest look.



## Water and Humidity

Amphibians can absorb impurities through their skin so remember to always provide clean, fresh water that has been treated with a water conditioner such as Zoo Med's ReptiSafe®. ReptiSafe® will remove harmful chlorine, chloramines and other heavy metals from your tap water making it safe for your pet to drink and soak in. If your pet is an aquatic species, you do not need an additional water source because most of the tank should be filled with water. A terrestrial animal will need a source of water. There are many different ways to provide water to amphibians and sometimes more than one method should be used. While each animal is born in the water and spends the first part of their life there, not all species are good swimmers as adults so it is important to provide the correct water source for the species you choose. While not all amphibians spend much time in the water, most of them live in moist habitats so keeping the proper humidity in the vivarium is essential to healthy amphibians. Use a Hygrometer or Humidity Gauge to monitor humidity levels in your vivarium. A HygroTherm™ can be used to control heating and humidity devices to help provide ideal conditions for your pet amphibian!



**A Waterfall** can be built in to your terrarium utilizing a small pump. Zoo Med's Waterfall Kit can help you create a natural looking waterfall.



**A Water Dish** can provide amphibians with drinking water as well as a place to soak. The dish should be big enough for the animal to fit in but shallow enough that the animal won't drown or get stuck in!

**A Repti Fogger™** will help maintain humidity by creating fog and pumping it into your tank. This is great for humidity loving amphibians and makes a cool rainforest look!



**Misting** your tank will provide water droplets for your animal to drink and help maintain humidity. This can be done by hand with a pump sprayer or by using an automatic misting machine like the Habba Mist®.



## Heating



Amphibians come from many different climates. Some are from temperate regions and can endure cooler temperatures but animals from tropical regions must be kept in warmer tanks. The first step in creating the proper temperature for your pet is to place a thermometer in the tank and determine how much heat you need

to add – if any! Many heating elements are available to help maintain the proper temperature in your tank:

A Daylight Blue heat lamp can bring temperatures up during daytime hours for tropical species. This kind of bulb should not be used at night as it will disturb your pet’s photoperiod i.e. night/day light cycle.



A Nightlight Red heat lamp is appropriate for nighttime use or as a 24 hour heat source and will help create tropical conditions.

A ReptiTherm® UTH Under Tank Heater can be placed on the bottom or the side of your tank to add heat on terrestrial setups but should not be used for an aquatic environment.



## Lighting



Lighting plays an important role in a vivarium. In nature, the sun comes up and goes down each day. The length of time that the sun is up and is light outside is referred to as a “photoperiod.” Some animals use the photoperiod to determine what time of year or what season it is. A timer can be used to control your daylight lamp to ensure that you are providing the proper photoperiod.

Most amphibians should be



exposed to UVA. This is part of the light spectrum that

we cannot see but plays an important role in the health and well being of amphibians. UVA is part of the light spectrum that amphibians can see and without it they are essentially color blind. Use of a full color spectrum lamp such as the NatureSun® for 10 – 12 hours a day in your vivarium provides your animal with a day and night cycle and promotes natural feeding and breeding behaviors. If you choose to keep live plants in your vivarium, these lamps will also promote the life and growth of your plants!

Some amphibians, such as Arrow Frogs and some species of Tree frogs may benefit from exposure to low levels of UVB. UVB is part of the light spectrum that helps these animals make their own vitamin D3 which is essential for calcium

absorption. Too much UVB exposure can be detrimental to the animal's health so be sure to follow manufacturer's guidelines for use and watch your animal for unusual behaviors, such as constantly avoiding the light, which may indicate that the lamp is too close. Plenty of shaded hiding places should be available so that your animal can retreat from the light if needed.



## Cage Furniture

Cage furniture includes branches, live or artificial plants, rocks and hiding huts that are used in your vivarium. These items provide climbing space and hiding areas for your amphibian. Inadequate hiding and climbing areas can cause a great deal of stress for your animal. Proper cage furniture will help your pet feel secure and exhibit natural behaviors.



## Foods and Feeding

As adults, amphibians are all insectivorous or carnivorous. Primarily, live feeders are used but canned, dried and frozen varieties are available. If frozen feeders are used, they must be thawed completely before offering to your pet. A number of different feeders are available commercially and can be purchased at most pet stores.

**Crickets** can be purchased in many different sizes. Many amphibians' feeding responses are triggered by the quick movements of live crickets. However, some amphibians are too slow to catch crickets so be sure that you are offering the appropriate foods to your animals.



**Mealworms** are a "slower" food source. They have a harder exterior and should not be the main food source for most amphibians.

**Flightless Fruit Flies** are very tiny and make an excellent food source for tiny animals such as Dart Frogs. A wingless variety is usually sold at pet stores and the flies are easy for your pets to catch.

**Goldfish and Mice** can be offered to larger amphibians such as Pac Man Frogs. They are high in fat and should only be offered on occasion.

**Earthworms** are a staple in many amphibian diets. They should usually be chopped into bite-sized pieces for your animals.

**Blackworms and Bloodworms** can be purchased in live or frozen varieties. They are often fed to aquatic species and smaller amphibians.

**Zoo Med's Aquatic Frog and Tadpole Food and Aquatic Newt Food** are available for some species and are an excellent staple for these animals.



**Live feeder insects** should be “gut loaded” with high quality insect food such as Zoo Med's Cricket Care prior to feeding to your pets to ensure that they contain the highest possible nutritional value. All feeder insects

should be “dusted” with Zoo Med's Repti Calcium® and ReptiVite™ before feeding. To dust insects, place them in a plastic bag with a small amount of calcium and or Reptivite™ and shake them around until they are coated in the powder. Addition of calcium and vitamins will help prevent metabolic bone disease and help keep your pet healthy.



## Choosing your Pet

Once you have decided what kind of amphibian you want and have the habitat set up, you are ready to obtain your new pet! It is easier to start with a healthy animal and keep it that way than to nurse a sick animal back to health. Here are some guidelines to help you choose a healthy pet. When you look into the tank to select an animal, be sure that the tank is clean. Animals coming from a dirty tank may not be well and should be avoided. Your animal should not look too thin or bloated. Inspect the animals for abnormal marks on the skin like red, gray or white spots or patches. These may indicate wounds or skin infections. Even if it is a nocturnal species, it should wake up and be responsive if handled. Be sure that both eyes open and look clean and clear. Check limbs and tails for swelling. Try to get as much information from the seller about the animal as possible. Here are some good questions to ask:

How old is the animal? Is it “Captive Bred” or “Wild Caught”? What has it been eating? How much and how often is it fed? Is there anything else the seller thinks you should know about this animal? Finding the answers to these questions will help you acclimate your pet to its new home and can help if any problems arise in the future.

## Basic Amphibian Maintenance and Health

While there are a number of health conditions that may affect amphibians, most of these can be prevented with proper care and maintenance. Many amphibians require little daily care. The temperature and humidity should be monitored and adjusted according to your species' needs. One of the most important factors to your amphibian's health is a clean environment. The habitat should be spot cleaned daily by removing any waste and uneaten food. The water dish should be cleaned and refreshed daily. Dirty substrate should be replaced as needed or at least every 2-3 months.

Never use household cleaners in your amphibian's habitat! Zoo Med's Wipe Out 1® can be used to clean cage furniture and dishes but items must be rinsed thoroughly before returning them to your pet's habitat. Aquatic environments should have 30% of the water changed every week. A filter will help keep water clean and clear in aquatic setups. Change activated carbon in the filter ever 2-3 weeks and rinse the sponges weekly. Many aquatic amphibian species naturally live in ponds, lakes and slow moving streams. While they may spend most or all of their time in the water, they are usually not very strong swimmers and are not well equipped to swim against a current. It is important to use a filter that does not provide too fast or too strong flow. Zoo Med's MicroClean 316 has flow adjustment which can be turned down to provide a safe, comfortable flow for aquatic amphibians. Always watch your pet for behavioral changes. If you notice that your amphibian is acting different, is not eating as it normally does, has abnormal marks on its body, or appears to be losing weight, you should consult your veterinarian right away.

## Wild Amphibians

As pet keepers, we have a responsibility to protect wild populations of animals too. No matter where you get your pet amphibian from, it is never ok to release one into the wild. Pet amphibians may harbor diseases that could be easily transmitted to wild populations. Non-native pets may play a role in destroying local ecosystems or outcompeting native animals for food or other resources. It is important to know the local laws about collecting wild animals and never release your pet into the wild. To learn more about wild amphibians and conservation efforts, visit [www.amphibianark.org](http://www.amphibianark.org)



## Summary

Amphibians can make fun, fascinating pets! They come in a wide range of sizes, colors and shapes. They can live in a number of different habitats and display a variety of different behaviors. By reading this book, you should have a greater understanding of some of the different types of amphibians available as pets and how to care for them. If you have decided that an amphibian may be the right pet for you, below are some sources of additional information.

## Websites:

Caudata Culture - This website has many care sheets, photos and articles all about Newts and Salamanders.

[www.caudataculture.org](http://www.caudataculture.org)

Amphibian Ark – Learn about amphibians in nature, what roles they play in the environment, and conservation efforts to save them!

[www.amphibianark.org](http://www.amphibianark.org)

## Books:

Frogs, Toads and Tree frogs

by R.D. Bartlett and Patricia P. Bartlett

Red Eyed Tree frogs and Other Leaf Frogs

by R.D. Bartlett and Patricia P. Bartlett

Poison Dart Frogs

by R.D. Bartlett

Newts and Salamanders

by Frank Indiviglio

Popular Amphibians

by Philippe De Vosjoli

Popular Tree Frogs

by Philippe De Vosjoli, Robert Mailloux and Drew Ready

Horned Frogs plus Budgett's Frogs

by Philippe De Vosjoli

# More Zoo Med Amphibian Products



NT-A10 10 Gallon Amphibian Kit



NT-4 Naturalistic Terrarium



NCB-4 Cork Tile Background



BU-10 Naturalistic Plastic Plants



BU-45 Bird's Nest Fern



BU-49 Button Fern



MW-Medium Mopani Wood



CF-9 (S, M, L, X) Cork Rounds



CF-8 (S, M, L, X) Cork Flats



CF3-NZ New Zealand Sphagnum Moss



CF3-FM Frog Moss



EE-8 Eco Earth® Loose Coconut Fiber Substrate



TD-5 Mini Floating Dock



RC-30, RC-31 and RC-32 Repti Shelter 3 in 1 Cave



TA-21 Feeding Tongs



MC-20 Micro Clean 316 Multi-Function Internal Filter



RF-10 ReptiFogger™

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