



The Raleigh Aquarium Society

P.O. Box 31564, Raleigh, North Carolina 27612-1564
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February 5th, 2009

Next Meeting: Thursday @7:30pm April 2nd, 2009.

Meetings are held on the first Thursday of each month at the [North Carolina State University College of Veterinary Medicine](#) located at [4700 Hillsborough Street in Raleigh](#). Visitors are welcome! Snacks and light refreshments are provided. A raffle of fish and fish related items follow the meeting. Due to Security Issues, NCSU has required that the doors going into the downstairs lobby remain locked. Please be on time, as we will have a designated person standing by the door to let you in. If you are late, you may try knocking or call Linda Twaddle at 919-880-3782 or John Patterson at 919-264-4011.

Meeting Agenda

Poison Dart Frogs – Their Keeping and Natural Habitat Research

Justin Yeager

Although Justin's done very well with dwarf cichlids, this month he'll be telling us about his frog research in Central America. He's lived in the jungles and seen these animals in the wild. He can also tell us how to keep them in captivity. Also, be thinking about where YOU can help out at our workshop, March 6-8.

Finally, NO MEETING IN MARCH!!! The regular meeting date falls on the Thursday prior to the workshop so we'll be having a raffle prize BAGGING PARTY at Linda's place. Stay tuned for details as they become available.

Business Meeting

Business meetings are open to everyone who is interested in participating in Committees, general business of the club and the Workshop and Swap Meet planning. Business Meetings are held on the 3rd Thursday of the month at the NC State Vet School, upstairs in the lobby area as follows:

February 19, 2009

March 19, 2009

April - no meeting

May - no meeting

June - no meeting

July

August - no meeting

September - no meeting

October

November

December

January



ARTICLE INFORMATION:**Author:** Brett Fogle**Title:** How to Choose a Pond Pump**Summary:** Submersible pumps may be suitable for smaller ponds, but external pumps are best for medium or large ones, and in fact are better overall. Flow rates are discussed.**Contact for editing purposes:****e-mail:** brett@macarthurwatergardens.com**Date first published:****Publication:** *Pond Stuff*, newsletter of:<http://www.macarthurwatergardens.com>**Reprinted from Aquarticles:****ARTICLE USE:*****Internet publication (club or non-profit web site):***

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How to Choose a Pond Pump

by Brett Fogle

A series of five pieces reprinted, with permission, from *Pond Stuff*, newsletter of <http://www.macarthurwatergardens.com> of Baton Rouge, Florida
Aquarticles

Pond pumps are the very heart of any fish pond. All water gardens can be enhanced by the addition of water fountains, waterfalls, and other moving-water features.

The pond pump is your best friend if you're planing to create water effects in your pond. Even if you are not planning to have fountains or waterfalls, pond pumps are essential for oxygenating your pond.

When choosing a pond pump, keep the following requirements in mind. The first thing is to determine your required flow rate. Your minimum flow rate should be at least half of your pond volume. So, if you have a pond with 2,000 gallons of water then your pump needs to at least circulate 1,000 gallons per hour (gph). This is a minimum. You might find that 1,000 gph is not enough if you will be including, for example, a waterfall that is more than 10 inches wide. Generally a waterfall requires 100 - 150 gph per inch of width of the weir (the portion that the water spills over). This can vary depending up on how smooth or rough the weir is. You will also need to be sure that the pump moves enough water to satisfy the requirements of your filter and ultraviolet sterilizer.

So, which type of pond pump is right for you? That depends upon your pond's design and purpose.

Submersible pumps are best suited to small to medium sized ponds with roughly 200 - 800 gallons of water. These types connect easily to most of the submersible filters built for small to medium sized ponds. Flow rates usually range between 250 GPH and 4,100 GPH. for a larger

waterfall pump.

Submersible pumps operate inside the pond. They are generally low cost to buy and operate. Many models of submersible pumps are available, and they are a good choice for flow rates around 1,000 gph or less. Submersible pumps are usually less expensive and easier to install than an external pond pump. On the downside, they can cost more to operate and usually don't last as long as external pumps. The motors of most submersible pumps are totally encased in a resin so that they are safe to use underwater. Most submersible pumps cannot be repaired for safety reasons. So once it wears out, it's time to get a new one.

There are a lot of variables in determining how long a good submersible pump will last. Issues such as how dirty the water is, how often the pump is cleaned, and if it is operated nonstop all will influence a pump's life span.

Submersible pump power supplies come in 110 – 240 volts, 12 or 24 volts, or solar powered. Solar submersible pumps are becoming more popular - but you need lots of sun for effectiveness and, of course, they won't run at night when your water needs the most oxygenation.

Your pond may be too large for a submersible pump. If so, then an **external pond pump** is your best choice. External pond pumps are best suited to medium to larger sized ponds with 1000 gallons of water or more. These are often the best choice because they are typically more energy efficient and can handle larger water flows. They are also designed to work well with most biological filters, which can cause significant backpressure on the pump. These pumps usually come with a priming pot and leaf strainer which is easily accessible without having to get your hands wet. Flow rates range from 1800 GPH to as high as 7000 GPH for a larger pump. Generally, the ideal external pump will circulate the total volume of the pond at least once per hour. For example, if your pond is 2000 gallons, you would want to go with at least a 2000 GPH pump.

There are several advantages to a submersible pond pump over a submerged pump. They are more energy efficient, resulting in lower annual operating costs and they tend to last longer. On average, submersible pumps tend to wear out after about 1 year because they spend their life sitting smack in the middle of pond sludge which eventually damages the pump's impeller.

Overall, an external pump has a longer mean time between failure (MTBF) than its submersible cousin. Most submersible pumps carry a 1 year warranty, and tend to last around 18 months. Do the math and you'll see that a longer-lasting external pump is almost always the best bargain.

Finally, unlike a submersible pump, most parts can be replaced rather easily. As I mentioned before, when something goes awry with a submersible pump, its next home is the trash can.

For more information about pond pumps, please visit us at www.macarthurwatergardens.com

Until then - Happy Pondkeeping!

Brett Fogle is the owner of MacArthur Water Gardens and several pond-related websites including macarthurwatergardens.com and pond-filters-online.com. He also publishes a free monthly newsletter called PondStuff! with a reader circulation of over

6,000 pond owners. To sign up for the free newsletter and receive a complimentary 'New Pond Owners Guide' for joining, visit <http://www.macarthurwatergardens.com>



Trading Post



Monthly Web Links

[Raleigh Aquarium Society Forum](http://groups.yahoo.com/group/raleighaquariumsociety/) on Yahoo Groups
<http://groups.yahoo.com/group/raleighaquariumsociety/>

[Potomac Valley Aquarium Society](http://www.pvas.com/) in the Washington D.C. area <http://www.pvas.com/>

[Atlanta Area Aquarium Association](http://www.atlantaaquarium.com/) in Atlanta, Georgia <http://www.atlantaaquarium.com/>

[Carolina Fish Talk](http://www.carolinafishtalk.com/) <http://www.carolinafishtalk.com/>

[Charlotte Area Aquarists Society](http://www.aquacharlotte.net) www.aquacharlotte.net

[Marine Aquarium Society of the Carolinas](http://masotc.net/) <http://masotc.net/>

[North Carolina Koi & Watergarden Society](http://www.nckws.com/) <http://www.nckws.com/>

[Carolina Aquatic Plant Enthusiasts](http://www.ncaquaticplants.org/) <http://www.ncaquaticplants.org/>

[Aquatic Gardeners Association](http://www.aquatic-gardeners.org/) <http://www.aquatic-gardeners.org/>

[KingFish Services](http://www.kingfishservices.net/) <http://www.kingfishservices.net/>



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You may be asked to show your RAS membership card*

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919.662.8820

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[Triangle Tropical Fish](#) 3600 N. Duke St. Suite #36 Durham (10% excluding aquariums and stands) **919.479.0088**

Please contact John Jankowski at raleighaquariumsociety@yahoo.com if you are an active member of the Raleigh Aquarium Society and do not have an up to date membership card. Membership cards can be picked up at any meeting.

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Raleigh Aquarium Society

Application for Membership

Membership privileges include:

- Ability to post items in trading post section of monthly newsletter
- A discount card good at participating local pet stores
- All club discounts on club functions
- Education from the most knowledgeable aquarium experts in NC
- Yearly Membership - \$15.00 (includes spouse and children)

(Membership dues run from March 1st each year. New members joining any other time will be pro-rated at \$3 + \$1 for each month remaining in the year.)

Name(s): _____

Date to begin membership: ____/____/____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (____) _____ (2) (____) _____

Email Address: _____

New Membership

Renewal Membership

Mail to:

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