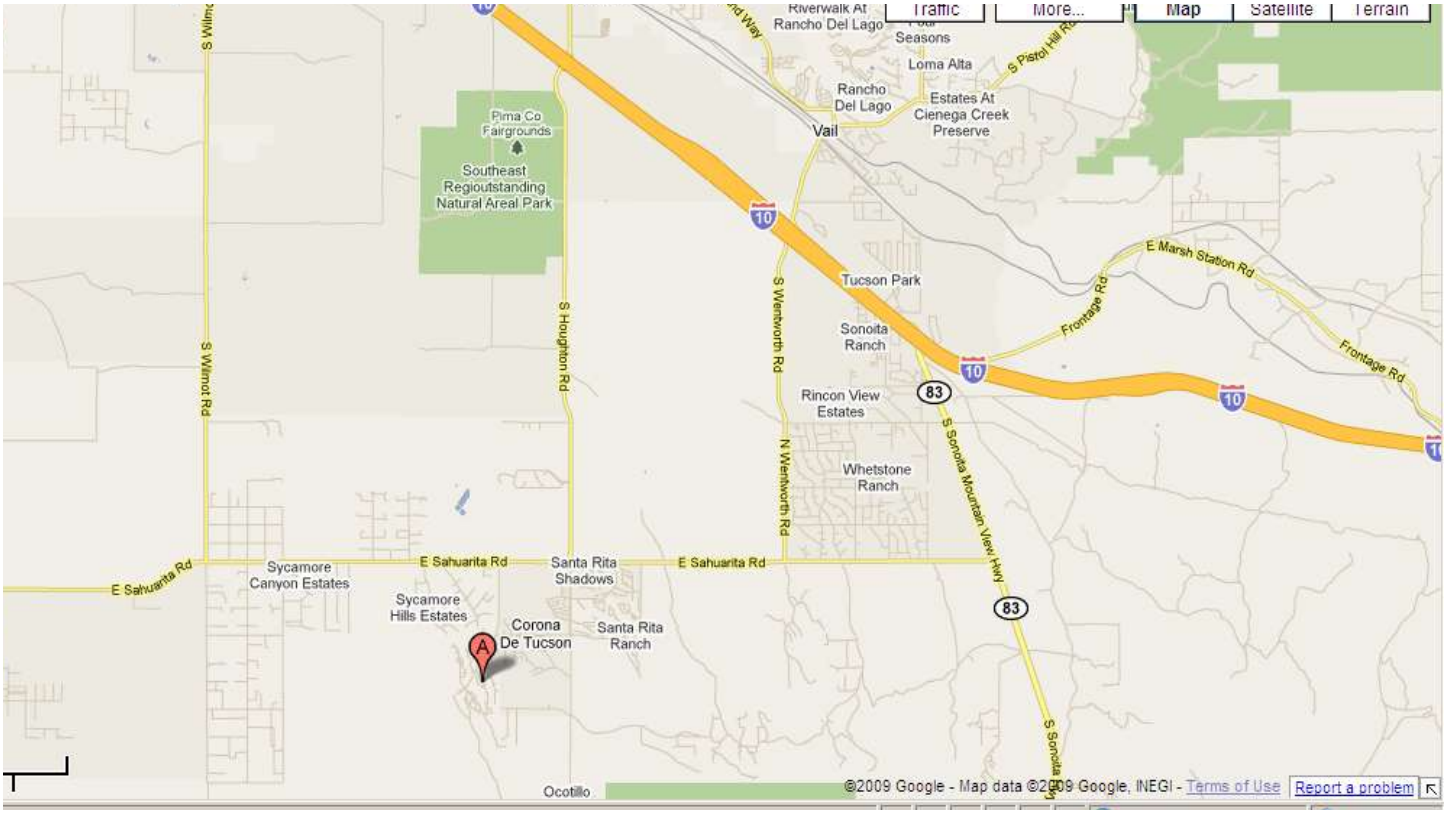
Noel and Debbie Shaw's House
January 24
Education Starts at 2:00

4905 N Via Entrada
Tucson, AZ 85718
Address Service Requested

Noel and Debbie Shaw
17407 S Purple Mesa Trail
Phone: (520) 400-0335



Noel and Debbie Shaw's House
January 24
Education Starts at 2:00

On Houghton road, go south past I-10 about 6 miles to the large recently done intersection at Sahuarita Road. Stop at the Roadrunner Market on the SE corner and pick up a couple of 1 lb ribeyes and a cold six pack of Fat Tire (optional step). Make a right (west) on Sahuarita Road. Take the first left (south), about 1 mile, onto Harrison. Purple Mesa Trail is the fifth street on the left, about 1 1/2 miles south on Harrison. Watch the speed limits. Green and blue Meritage flags are flying on poles on Purple Mesa. We are up several houses on the left. Address is 17407 S. Purple Mesa Trail. My phone is 400-0335.

SAKA, Inc Club Officers

President	Bob Panter sakabob@yahoo.com (520) 747-7278
Vice President	David Young koiman@mindspring.com (520) 682-7697
Secretary	Lynn Riley (520) 825-9066
Treasurer	Dan and Martha Cover mardan79@msn.com (520) 297-4071

Committees/Points of Contact

2010 Pond Tour	Jeanmarie Schiller Tucsonpondtour@yahoo.com (520) 299-1876
31st Koi Show Co-Chairperson(s)	TBD
AKCA Representative	Debby Young debbyt@akca.org (520) 682-7697
Newsletter Editor	Brent VanKoevering bvankoevering@longrealty.com (520) 780-3980
Koi Health Advisor	Noel Shaw koidoc@noelshawdc.com (520) 400-0335
Membership Chairperson	Faye Hall (520) 297-1253
Raffle Chairpersons	Wanda & Bruce Triebel wkt56@comcast.net (520) 572-0060
Education Committee	Erin Riley elriley@aol.com (520) 818-6490

Editor's Note: Articles published herein are intended for the enjoyment of all and come from a variety of sources. The articles are not intended to replace veterinary advice. Pond owners, and not the club, are responsible for the health of their koi, water changes, what to do, and how to treat their pond. Reasonable effort is made to review these articles for accuracy before including them in the newsletter.

Presidents Corner 1-7-10

I would like to take this time to wish all of you a very Happy New Year.

2010, what kind of year will this be? Will I have the best pond on our annual Pond Tour? Will I be speaking at a school or a youth group? What will I bring this year to our annual Pot Luck? Our Koi Show, will I enter for the first time? These are just a few things to think about for the New Year. I do hope this year is the best ever for everyone.

The weather is still cool out. Your pond still needs some tending to. Your koi will love you to pieces if you take the time to make sure your water quality is where it should be. Take a good look at your fish. You can see them very well this time of year. Just how do they look? Do you see any sores, missing scales, or anything out of the ordinary? If you do just come to our meetings each month and ask all the questions you want. You will be surprised to find someone with the answer to, maybe, all of your questions.

I hope this year is our association's best year ever, and all of you the greatest ambassadors we have ever had.

For the love of Koi,

Bob Panter, President SAKA, Inc.

SAKA, Inc 10% Discount

With your SAKA, Inc Membership Card at:

Boyd Equipment Center
3625 S Country Club Road
Tucson, AZ
(520) 792-2244 or
1 (800) 844-2244

Mountain View Koi Fish & Aquatic Plants
3828 E. Keeling Road
Hereford, AZ 85615
(520) 378-3710

Oasis Tropical Fish

Patty's Water Plants

3865 N. Oracle
Tucson, AZ
(520) 408-9700

By Appt Only
E. Benson Highway, Tucson AZ
(520) 294-0748

Club Meetings

Hosting Meetings: For those wishing to host an upcoming business/education meeting, the club will reimburse the host up to $50 (with receipts) toward food/beverage for the meeting. **We would like to see your pond!** Please contact Bob Panter if you are interested in hosting a meeting.

Club Announcements

We are looking for hosts for our 2010 meetings. Please contact Brent VanKoevering or Bob Panter if you are interested. See below for available dates.

January 17th, 2010 is the Valley of the Sun Koi Club meeting date. Nick Saint-Erne, DVM will be the presenter at a Koi Health Seminar on that date. The initial plan is for a 2-3 hour presentation and wet lab.
David Yee and Dennis Beard are the coordinators. Likewise, VSKC will be assisting members in a group purchase of hobbyist quality microscopes prior to the event. We also want to have some slides and covers to be available. Please contact Dennis or David for additional information.

December Business Meeting Minutes

Date & Location: December 13, 2009 at Conrad and Sarah Slonaker's in Tucson, AZ

Call to Order: Meeting called to order by Bob Panter at 3:40 PM.

October Minutes: Motion made to accept and second the October Minutes; motion passed.

Number of members in attendance: 19 members.

Treasurer's Report: Current checking account balance: $6924.37. CD is active until March 2010. Koi Show resulted in $8526.79, approximately $3800 profit for the Club. We also got 10 new members registered at the Show.

2009 Membership: 55 active members.

AKCA: Debby Young had ordered Koi ID posters some time ago and has cancelled the order since it was never filled. Pick up your Koi Winner Certificates from her if you have not received one yet. She and Dave are taking orders for the Impact Koi Food, so please contact Debby or Dave to place your order.

Correspondence: San Diego Koi Show will be held in February 2010.

2009 Show and Auction Committee: The Koi Show was a wonderful success. Bob Panter thanked everyone for volunteering and/or participating to making it succeed. Jean McGinnis-Schiller reported that we made $550 profit on the sale of Club Calendars. There are still some left if you would like one.

Old Business: Bob Panter had sent information to the IRS requesting non-profit status; we received our non-profit status from the IRS.

New Business: No new business at this time.

Adjournment: The meeting adjourned at 3:52 PM.

Educational Talk: No educational meeting at this time.

Lynn Riley

Featured Articles

To UV or Not To UV

That is the question...

By Ben Plonski Reprinted from AKCA.org

Pond keeping should be enjoyable and relaxing not a frustrating battle with green water. Ultraviolet sterilizers are here to stay. If you are thinking of purchasing a unit you will need to consider the capabilities and the limitations.

U/V sterilizers will keep your water clear of planktonic algae. This means that a new pond does not have to go through the green water stage. If you already have an established pond an ultraviolet system will clear an algae bloom within one to two weeks. The unit will only work, provided it is of good quality and is sized properly for the water volume in your pond and it is properly installed.

U/V sterilizers will not affect the hairy stringy types of filamentous algae that adhere to the walls of the pond. The ultraviolet rays only kill the algae which passes through the unit.

U/V sterilizers will allow a new pond to become established and balanced sooner than without such a device. New ponds need to become established with beneficial bacteria in the biofilter, and a smooth coat of dark algae about 1/4 inch thick on the walls and floor of your pond. These two types of organisms are necessary for a healthy pond. The bacteria and smooth algae are slow growers especially in cold water The planktonic algae on the other hand can bloom in two days. The planktonic algae in full bloom inhibits the bacteria and wall algae by competing for nutrients and blocking out sunlight. This makes the planktonic algae "king of the pond" and can dominate indefinitely. Shallow ponds in full sunlight and overcrowded ponds can be subject to quite lengthy bouts of "pea soup". The ultraviolet rays kill the planktonic algae. By removing the planktonic algae, your pond is able to become balanced more quickly.

Ultraviolet sterilizers will not be very effective at controlling disease within the pond. These units are more capable of controlling disease within a smaller aquarium. To control disease with a ultraviolet system the water must pass through the unit very slowly. Microscopic bacteria and parasites may need a fifteen second exposure time to affect a kill. The planktonic algae is very light sensitive and can be inhibited at much faster flow rates. To effectively control diseases within a large body of water with a ultraviolet unit the entire volume of water must be passed through at a slow rate. The trouble with this method is that the pathogens are reproducing within the pond faster than an ultraviolet system can kill them. An ultraviolet system will not kill any pathogens on the skin of the fish. A very large and expensive system would be required to control disease within a pond.

Good quality ultraviolet sterilizers will be constructed with an external housing made of PVC or other inert material and hued with waterproofed caps. When used outside, a waterproof housing should cover the ballast. The unit like all electrical parts used on your pond should be UL listed.

Ultraviolet rays are in the extremely short wavelength of the light spectrum and can only penetrate a few inches into the water chamber. Ultraviolet units for ponds are only about three inches in diameter The bulb itself needs to function at a certain temperature to produce the peak amount of ultraviolet rays and penetration into the surrounding water area. A quartz sleeve between the water and the bulb, keeps the bulb at the proper temperature and does not interfere with the light penetration.

Proper installation of the unit consists simply of adding a bypass line to an existing pressurized water line from your pond pump or allow better light penetration. Add two PVC tees and a ball valve to your existing line and connect the unit to the assembly. Use the ball valve to control the flow through the unit. Do not exceed the manufacturers suggested flow rate.

Ultraviolet sterilizers have their advantages but are not without limitations. New ponds as well as ponds that have a persistent problem with green water will benefit from a ultraviolet system. Older more established ponds with adequate filtration may not see a noticeable difference. Use ultraviolet systems to complement a good filtration system. A unit will assist in achieving maximum results and appreciation of your pond.

THE TRICKLE DOWN THEORY

If one attempted to create the same surface space in gravel. the filter would measure 100 feet long x 5 feet wide x 4 feet deep.

by James P. Reilly Reprinted from AKCA.org

The most efficient filtration system today is the trickle or wet/dry filter design. Perhaps the best way to explain this rather bold statement is to study and dissect other systems and identify their weaknesses.

As an approach, I would divide all filtration systems into two groups long term and short term designs. The short term design is one that will work efficiently for a period of time and gradually the performance will begin to fail off. This design is best illustrated by the traditional undergravel in pond filter and the gravel filled chamber filter. In both designs, channeling and anaerobic activity become more and more likely over time. Frequent maintenance can put off real problems, but eventually the low levels of stress created by the fluctuating water quality affect the fish. Low oxygen levels usually go hand-in-hand with this system and it has been demonstrated that only the top few inches of gravel can support aerobic (oxygen loving) bacteria, regardless of the overall media depth.

This short term design can be - and in fact has been improved by the substitution of material in the same traditional design configuration. In this evolution of an old idea, gravel is replaced with open cell foam and/or Japanese matting (actually air conditioning filtering material). This simple substitution of material solved 95% of the problems associated with the old systems. Both water distribution and oxygen levels are greatly improved, but over time these submerged materials can become inefficient as well. As bacteria dies and new bacteria "glues" itself to the substrate, a coating or debris builds up. Algae and diatoms also contribute coating

to the original surface. Slowly, this once prime growing surface becomes overwhelmed with decaying materials. Oxygen levels still "test" high, but B.O.D. (biological oxygen demand) levels begin to drop.

To prove this point, I would suggest that the hobbyist look at an accelerated version of this scenario. If you use brushes in your pre-filter take note of the odor that is emitted from your system when doing normal maintenance. If maintenance is done often, no odor is usually detected. This is due to the likelihood that the brushes are performing like a biological filter. When a foul odor is detected, it is likely that the brushes have been overwhelmed by anaerobic bacteria and decay due to excess debris build tip even though oxygen rich water is rushing by and through the brushes. It certainly would be a disaster if these conditions built up in a biological filter chamber right next door! These same conditions can and do build up - given time in open cell foam and mat filters. Odors during this descent may or may not be detected and oxygen levels may only drop modestly. The evidence, however, will be found in lower pH readings, low B.O.D. tests, periodic ammonia spikes (1-2 hours after feeding). excessively high nitrates, fish flashing in early morning only or midday only and/or frequent cloudy water (bacteria blooms). These all can be classic signs of an undersized filter or an overaged short term system crash.

Other examples of short term designs are reverse flow chamber filters, biobrush systems submerged bioball and canister style systems. It is not my intention to destroy people's confidence in these filter media and designs. Most problems with these systems can be corrected with frequent maintenance and regular water changes. I only want to point out the limitations of these designs and - more importantly - identify these systems as "changing" systems that decline in performance over time. All of these systems. when properly maintained, are fine for planted goldfish and shubunkin ponds seasonal koi ponds and moderately stocked nishikigoi ponds.

The group I referred to as long term filter designs would include any system which can remain debris free and oxygen rich indefinitely and employ in its design superior surface space for aerobic bacteria to grow. The three leading designs currently available are the trickle or wet/dry filter, the bead filter and the fluidized bed filter.

To appreciate these filter designs.. we must first understand the problem - how to maintain a large number of koi in a reatively small body of water.

The facts...

- it takes 2.2 grams of oxygen to break down I gram of ammonia
- koi produce lots of ammonia... 35 - 10 inch koi produce 1000 milligrams of ammonia/day
- any trapped debris will decay and reduce O2;
- koi reduce O2 in the water through normal respiration.

The answer... the trickle fitter! The trickle filter is designed to convert ammonia to nitrate by incorporating an oxygen rich environment and a very large surface area for aerobic bacteria to perform. Water enters the top of a

trickle filter through a spray bar or drip plate. No debris can pass through the small openings that distribute water evenly over the plastic media. As the water cascades over the media, two events occur. First, this action allows gases, such as carbon dioxide to escape and this aids in keeping pH high. Secondly. by trickling water over the media contact between bacteria and ammonium is maximized. During this process, fresh air is pumped upward through the media column insuring conH stant high oxygen levels in all areas of the media. As a bonus, the falling water has a secondary cleaning and rinsing effect on the plastic media by washing away any hits of debris and dead bacteria into the sump below. The exit to the tower can be hooked to a foam fractionator to remove the foam that naturally builds up from the agitation created by the rising air and falling water meeting at the base of the tower.

Now that a perfect oxygen rich environment has been created, how much surface is there for bacteria to grow on? The size of the living aerobic bacteria colony will adjust to its food supply and O2 level We do not want to restrict surface area in any way since we have enough oxygen and the koi will certainly supply the food.

Each one of my trickle towers holds 1500 sq. feet of surface space per 150 gallons. I use four towers in all for a total surface space of 6000 sq. feet. If one attempted to create the same surface space in gravel, the filter would measure 100 feet long x 5 feet wide x 4 feet deep. In both cases. however, the true action would be less than the trickle tower, because oxygen levels could never be as high or as uniform as in the tower.

My system has been in place for I year and 4 months at the time of this article. The pond is 4,600 gallons and contains 25 show koi ranging in size from 21" to 28". Water quality is good: oxygen levels of 9.2 and pH of 7.4. 1 believe this system matured about S months ago and has remained solid since then. The towers themselves are located in a basement room and, to my surprise, this location has a slight warming effect on the overall winter pond temperature.

I would highly recommend this long term design to anyone wishing to upgrade their present system and I would further recommend a good foam fractionator as the only other device needed to maintain the highest quality environment for our fishy friends.

FOAM FRACTIONATORS
PROTEIN SKIMMERS

Have you noticed foam on top of your pond water? Even though you have a good filter, is your water sort of tea color? These conditions are generally caused by excess dissolved organic solids, a condition that generally cannot be cleared by the filter alone. Water changes will tend to clear the water; however this will most likely be a recurring condition after a short time. One needs to find the cause for these conditions and a way to prevent them in the future.

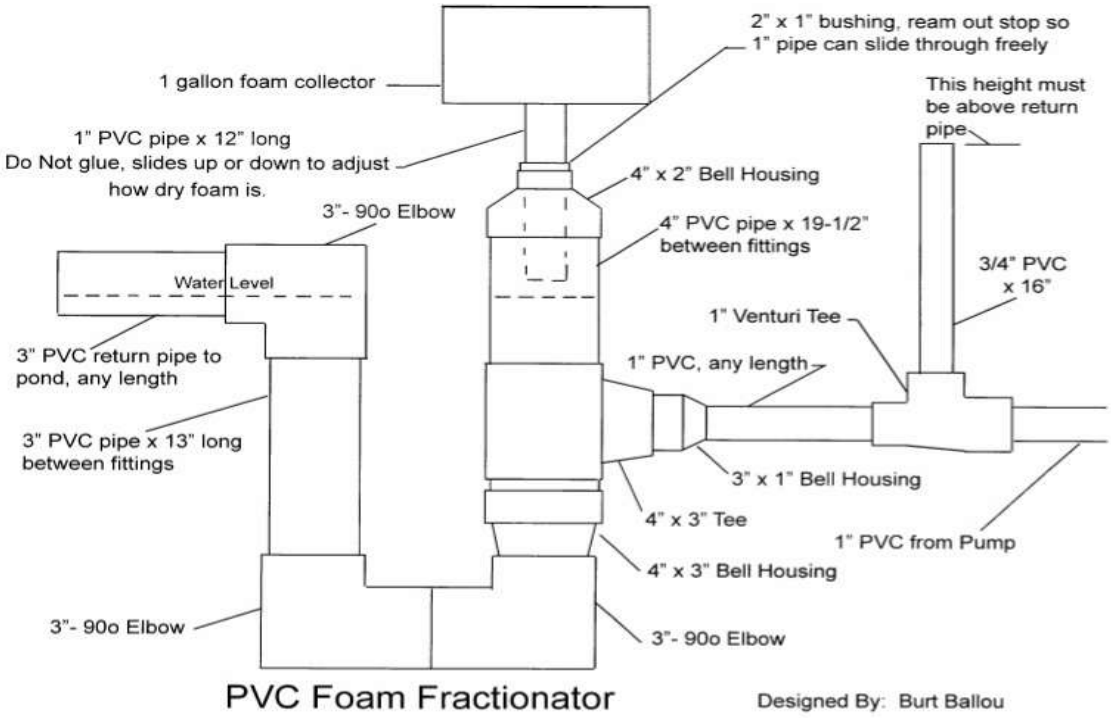
Dissolved organic solids build up through the metabolism of koi and other aquatic organisms, depositing their products of digestion into solution into pond water. Protein levels within the water can also increase rapidly through the inappropriate use of higher protein fish foods. Compounds from uneaten fish food can leach into the water, leading to the formation of foam. Other compounds causing foam include a variety of fats, fatty acids, carbohydrates, metals, detritus, phytoplankton, and trace elements. Spawning activity can cause a foaming pond because of the release of large amounts of protein matter (in the form of eggs and sperm) into the water. All these materials combined, cause an enormous quantity of different organic solids dissolved in the pond water. These dissolved solids when subjected to water agitation, such as waterfalls, result in the formation of foam.

Foam fractionation or protein skimming is a process by which dissolved organic compounds are removed from a liquid by adsorbing them onto the surface of fine bubbles. The bubbles collect proteins and other dissolved substances, and carry them to the top of a device where the foam collects in a cup. Here the foam condenses to a liquid, which can then be easily removed from the system. The material that collects in the cup appears as a pale greenish-yellow liquid. Constant removal of these compounds will help clear pond water and result in better overall water quality.

All foam fractionators have key features in common. For one to function effectively, the following features must be present:

- A large amount of air/water interface must be generated.
- Water containing dissolved organic solids must be allowed to flow through the air/water interface.
- The bubbles must accumulate to form a foam.
- The water in the foam must partially drain without the bubbles popping prematurely.
- The drained foam must be separated from the bulk water and discarded.

Bubble size is the most important of these parameters and is controlled within the design of the protein skimmer. An efficient air diffuser or venturi plays an important part in generating the bubbles that are as small as possible, ensuring maximum surface area for the adsorption of the organic compounds. Smaller bubbles also rise more slowly, allowing more contact time with the process water.



This is a protein skimmer designed by Burt Ballou that can be built by anyone handy with using ABS or PVC pipe. The cost of building this apparatus is less than $100.

The water is pumped through the venturi, in which fine bubbles are introduced, and enters the skimmer body. The input of air from the venturi creates a large volume of oxygen rich water which passes through the main column. The foam and air then rises above the water surface and passes through the 1 inch stand pipe, collecting the foam in a chamber above, which requires either manual emptying or is fitted with a drain to waste. The main water flow then empties back into the pond through the 3 inch return pipe.

When a foam fractionator is first installed, large quantities of foam and greenish-yellow liquid are first formed. Over time, as the DOC concentration drops, so does the rate at which the foam is formed and removed. When run continuously, once it has cleared the residual problem, it should keep the water free from excess dissolved organic solids.

I recently built this model and tried it in one of my ponds. It works great!!!

Don Harrawood,
Koi Health Advisor
Southwest Koi and Pond Association

Bubble Bead Filter

From LSU

By Tom Graham Reprinted from AKCA.org

"Building an effective biomechanical filter is not tough, making one that is easy to maintain was the challenge."

What is the single most important element to a healthy koi pond? Filtration! What often represents the most work in owning a koi pond? Filtration! Where do many pond builders cut comers? Filtration!

It has been said over and over again. The single most important element of koi keeping is water quality, and water quality is a product of good waste treatment. Somehow we must remove the waste products produced in our ponds. I recently had the opportunity to visit Dr. Ron Malone, an Associate Professor in the Department of Civil and Environmental Engineering at Louisiana State University. in Baton Rouge Louisiana. Over the past 12 years, his team of researchers have invested over $750,000 in funding from the Louisiana Sea Grant College Program and the National Coastal Resources Research and Development Institute, studying biological filtration systems.

They have focused on the development of cost effective water treatment approaches for use with high density aquaculH ture production facilities. The result of this effort is a series of head filters ranging from aquarium size to a unit that can handle the largest whale exhibits.

Dr. Malone, who leads the project, spent the day with me and took me step by step through the development and operation of these new filters. He told me that when he began the prqject 12 years ago, they started working with flooded gravel beds, similar to what is used widely in our hobby. As they studied the workings of this type of filter, they saw that the surface area of the media was not efficiently being used, and that the systems were very difficult to clean.

In their research, they studied the entire gamut of filtration media and filter designs. (An interesting story in it's own right). The goal was to find a media that would provide a high specific surface area for biofilm development in a small amount of space (in cubic feet) and to develop a filter design that would be easy to clean and cost effective.

They found that a spherical plastic bead, approximately 1/8in diameter (half the size of a pencil eraser), was the media of choice. The beads they use are made from food grade low density polyethylene plastic and they float. The beads provide a great deal of surface area for bacteria growth - about 400 square feet of surface area for every cubic feet of beads. This compares to around 100 for typical pea gravel, and 125 for bio-balls. And, since they are very durable they never have to be replaced.

They discovered that a floating bead worked particularly well, since the beads would pack into a static bed at the top of a filter chamber, providing the pockets to trap particles and grow bactena, much like an under gravel filter in an aquarium.

Then, when the filter requires cleaning, they turn off the pump and agitate the beads to break free the solids. The solids are then flushed out the bottom of the filter. In their commercial designs, called prop wash systems, they used a large chamber capable of holding 6 to 200 cubic feet of beads. The units are cleaned by a powerful propeller system which intermittently agitates the beads within the filter, shearing off excessive biofloc (loose bacterial colonies) and releasing captured solids. When the propellers are stopped, the beads float to re-form the filtration bed while the solids settle in an internal settling cone forming a thick sludge. The sludge is removed from a drain at the bottom of the cone. Only sludge is removed so the water loss associated with the cleaning process is negligible.

This system has proven to be quite effective in large commercial installations, where very heavy fish loads are being managed. The filters have been tested on systems holding food fish species (such as tilapia, catfish, striped bass, trout) along with a wide variety of specialized applications (including tropical fish, alligators and crayfish).

Once this system was perfected and in use, they switched their efforts to developing smaller, less expensive systems they call bubble bead filters. The new design features an hourglass shaped chamber where air bubbles are used to stir the beads, rather than a motor and prop.

The key element to the bubble bead filter is it's specially designed "washing throat". It is a constriction between the upper and lower chamber, which forces the beads to fluidized (disperse and flow like fluid) as they are gently scrubbed by bubbles which are literally sucked into the filter as the filter is drained. The bubbles move up from the lower chamber, while the water and beads flow down, causing the cleaning turbulence.The cleaning process is designed to remove captured solids without damaging the sensitive biofilms responsible for

nitrification, and uses 10 - 15 gallons of water per cubic foot of beads.(A two cubic foot filter will use about 25 gallons).

These smaller systems use from 1 - 3 cubic feet of media, and stand about 4 feet tall. They are constructed entirely out of fiberglass and PVC fittings, with no moving parts whatsoever.

Deciding which system to use is determined by the maximum amount of feed (dry pellets) that is put in the pond on a daily basis. One cubic foot of beads can provide complete solids capture and nitrification for a feeding rate about 1 pound of dry pellets (35 percent protein) per day under production conditions.

For koi ponds, one cubic foot of beads can effectively process one half a pound of feed per day. At a 2 percent (of body weight) feeding rate, a cubic foot of beads will support 25 to 50 fifty pounds of koi food. Commercial food fish production facilities normally support 75 to 100 pounds of fish per cubic foot of beads, but this demands close daily management of the production system. If you compare that to even the most densely populated koi ponds, you can see these systems are extremely powerful.

Bead filters used to clean koi ponds are typically back- washed once or twice a week during the warm summer months and as little as once a month once feeding drops off in the winter. If filters are not washed they slowly clog, gradually shutting off the return flow to the pond. This decline in return flow is usually visually evident, providing a convenient reminder of the need for backwashing.

Flow rates for bead filters are dependent on the total ammonia-nitrogen excretion rates (TAN) and oxygen demand for the biofilters, which are controlled by the feed rate and pounds of fish in the system. A minimum rate of about 5-10 gallons per minute per 100 pounds of fish (or per 2 pounds of feed per day) is normally used to assure proper bio-filter operation. This means the system only requires a very low flow, low pressure pump, however, higher flow rates may be demanded for large ponds with few fish particularly when a UV light is being used for algae control. This does not present a problem for the filter since performance of the filters improves when the flow rates increase.

The bead filters are effective at removing suspended particles. as small as 10 microns, but cannot harvest the small 5-10 micron algae that often infest a pond. If this is a problem, a U.V. light sized to the ponds volume, (turning over the volume of the pond 4 times a day) will produce the desired results.

Since the small bubble bead systems proved to be well suited for ornamental fish ponds. particularly koi ponds, Dr. Malone engaged the assistance of Burt Nichols, of Water Garden Gems, in Marion Texas. Together they have developed a new model designed specifically for backyard koi ponds.. The system uses 2 cubic feet of media and the bubble cleaning design. Burt is now manufacturing and distributing these filters., which are designed to handle up to a 4000 gallon pond packed with koi. The filter can be seen at his facility, and at Koi Unlimited, in Baltimore. Maryland. The larger prop wash filters are manufacturered by Armant Aquaculture (504)265-9216.

Many thanks to Dr. Malone and his associates, particularly Dr. Kelly A Rusch, Assistant Professor-Research, and Doug Drennan. Research Associate. for spending so much of their valuable time with me answering all my questions, and ferrying me all over Baton Rouge to get this story

SAKA, INC. WISHES TO THANK THE FOLLOWING SPONSORS FOR THEIR GENEROUS SUPPORT OF OUR KOI CLUB:

ALTERNATIVES IN HEALTH/D SHAW
AMADO TERRITORY INN
AQUASOLVER/MINNFINN
AQUA ULTRAVIOLET
ARBICO ORGANICS
AZ SONORA DESERT MUSEUM
BARSTOW KOI FARM
BLACKWATER CREEK KOI FARMS
CIVANO NURSERY
DAN & MARTHA COVER
DARLENE LECLUER
DAVE & TERRY JOHNSON
DESERT BLOOM NURSERY
DIANA STORM DESIGNS
DRS FOSTER & SMITH
ECOLOGICAL LABS/MICROBELIFT
E G DANNER MFG, INC
ERIN RILEY
FUNTASTICKS FAMILY PARK
HAGEN CORP/LAGUNA
HIKARI
JEANMARIE & KELLY MCGINNIS
KAREN & JERRY WILSON
KAYTEE PET PRODUCTS
KEVIN BLACK
KODAMA KOI FARM
KODENKAN OF TUCSON
KOI ART ONLINE
KOI USA MAGAZINE
KALEIDOSCOPE SALON

KORDON, LLC
LAUREL NASON
LOFT CINEMA
MAGIC GARDEN NURSERY
MDM/SEQUENCE PUMPS
MESQUITE VALLEY NURSERY
MT VIEW KOI & AQUATIC PLANTS
MUSO/JAPANESE MUSIC
ODAIKO SONORA TAIKO
OSI KOI FOOD/OCEAN STAR INT'L
PARK LANE JEWELERS
PET SOLUTIONS
PERFORMANCE PRO PUMPS
PLANT KINGDOM
PONDS PLANTS AND MORE
PURINA MILLS-MAZURI KOI FOOD
QUAIL CREEK RESTAURANT
REID PARK ZOO
SANDY PENA, LMT
SHADE SAILS, LLC
SHAW CHIROPRACTIC/DR N SHAW
SUZUYUKI-KAI/JAPANESE DANCE
SOUTHERN AZ KOI ASSN, INC STAR MILLING/ULTRA BALANCE KOI
STRATA INT'L WATER TREATMENTS
TETRA USA
THOSE FENG SHUI GUYS
TIM MOORE
TOM PEPPING
TOMIGAI KOI FOOD
TUCSON BOTANICAL GARDENS
TUCSON CHILDREN'S MUSEUM
TUCSON ORIGAMI CLUB
VITAKRAFT POND FOODS
Thank you

If you have suggestions for the newsletter or items to be included in Karawagoi Corner or the Calendar, Please contact Brent VanKoevering at 520.780.3980 or bvankoevering@longrealty.com.

Koi and butterfly koi. 12"-20". $75-$225 each depending on size.
Have 18 total. Call 574 1980 x144, ask for Roger

SAKA will have a tank or two at the Tucson Children's Museum's Japanese New Year festival. January 9th (Saturday from 1pm-4pm).

Fish in Ponds are subject to much greater stress than in their natural environments. Our new and EXCLUSIVE "IMPACT" Ultra Premium Koi and Pond Fish food supplement is bio-formulated to help strengthen fish's resistance to sickness and disease.

"OPTIMÛN" is a safe, thoroughly tested and high efficiency Biogenic Performance Enhancer that actually produces a significant immune response in your fish. SHO KOI's superior quality Koi and Pond fish food combined with OPTIMÛN now provides your fish with a TRUE measure of protection against disease causing micro-organisms and a weakened immune system due to lack of proper nutrition or not feeding during long periods of cold weather.

FOR THE FIRST TIME, "IMPACT" provides your valued fish with this unsurpassed means towards improved HEALTH, WELL BEING AND LONGER LIFE.

We are certain that your use of this scientifically formulated food will allow you to see a positive difference in the general health and appearance of your valued Koi, Goldfish, Comets and other colorful pond fish within a relatively short period of time. The addition of OPTIMÛN to SHO KOI's "Ultra Premium food will now, for the very first time, provide your valued fish with a nutritive advantage over all other fish food products.

IMPACT will provide your fish with high quality nutrition while

simultaneously ensuring: Improved health Freshness is guaranteed

Better growth Reduced mortality

More efficient absorption of nutrients Improved immune systems for you fish A stronger immune system will give your fish extra resistance to sickness and disease. This is particularly important to Koi and Pond Fish who live in artificial environments where they are subjected to many stress causing conditions which have shown to be detrimental to their health and longevity. In addition, "IMPACT" will give your fish a TRUE measure of protection against a weakened immune system due to improper nutrition or the absence of food during the winter. Studies have shown that the IMPACT resulted in a 15.2% higher growth rate in fish while their need for food was reduced by 27.9%. Also, OPTIMÛN was able to help fish resist the ravages of parasite infestation (Lernea, anchor worm), and improved the RPS (performance) of Aeromonas vaccine by 14.3% (Injection) and 30.6% (Immersion).

Contact Dave or Debby Young if you want to take part in a group purchase for the club. The price should come out to less than $4/lb. (520) 682-7697

Upcoming SAKA Education and Business Meetings

Date	Location
January 24, 2010	Host: Noel and Debbie Shaw
February 28, 2010	Host: Dan and Martha Cover
March 28, 2010	Host: Frances Case
April 25, 2010	Host: Dave and Debby Young
May 23, 2010	Host: Open
June 27, 2010	Host: Open
July 25, 2010	Host: Open
August 22, 2010	Host: Open
September 26, 2010	Host: Open
October 24, 2010	Host: Open
November	No Meeting See you at the Show
December	Host: Open

Shows, Pond Tours and Seminars

Event	Dates/Location
31st Annual SAKA, Inc. Koi Show and Auction	**TBD**
Koi Health Wet Lab	**January 17, 2010. Valley of the Sun Koi Club**

Mail for KOI USA Subscription to
P.O. Box 469070
Escondido, CA 92046
Or
Subscribe on-line at
subscribe@koiusa.com
Or
Subscribe by phone at
1-888-660-2073

For 1 year subscription (6 issues)
____ $24.95US for any person in US or Canada
____ $20.00US special price for AKCA Koi Club members

Club affiliation (for special price)
_____

Subscribers' name _____

Subscribers mailing address
_____

City, State, Zip
_____

Phone number
_____

Method of payment

___ Check made out to "KOI USA"

___ Visa or Master card

_____

Expiration date ___ ____-____ _____
Month year

http://www.sakoia.org
Annual Membership
Dues are $25.00 per family from March 1 to February 28 or 29 of the next year.

Membership Type
_____ Renewal
_____ New Member

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Phone #: _____

E-mail _____

Today's Date: _____

# of Koi _____

Years Keeping Koi: _____

Pond size: _____

Would you like to host a meeting?
_____

Would you like to serve on a committee?

_____ If yes which one?

_____

Make Checks payable to: SAKA , Inc.

Mail to: Martha and Dan Cover
2841 W. Puccini Place
Tucson, AZ 85741