The Inland Koi Connection

THE OFFICIAL NEWSLETTER OF IKS
ISSUE 319
SEPTEMBER 2025

SUNDAY 9/28/25

WWW.INLANDKOISOCIETY.ORG

IKS GENERAL-POTLUCK MEETING

3:00 - 6:00 PM

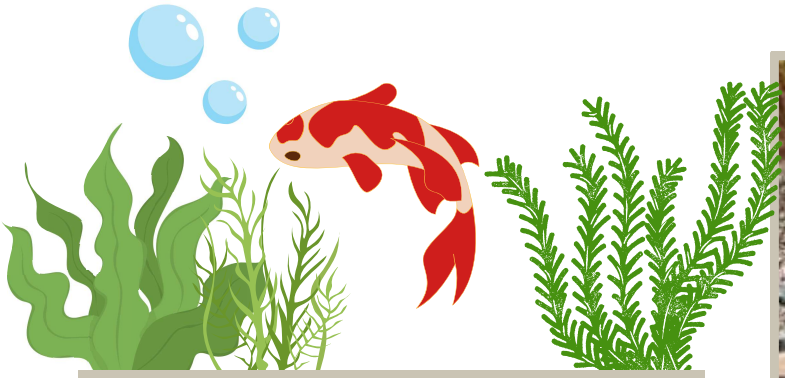
SUNDAY, SEPTEMBER 28TH

LONI VOGLER

951. 323. 0633

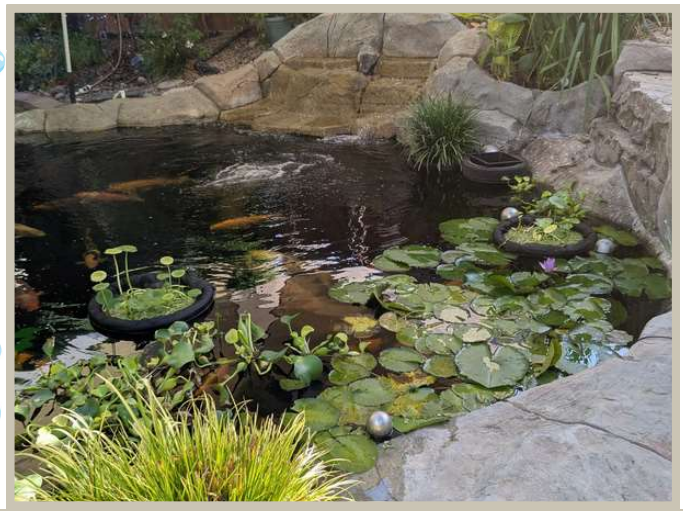
7866 HAGEN CIRCLE,
HEMET, 92545

BRING CHAIRS AND A DISH FOR THE POTLUCK!



The Inland Koi Society is happy to be back this month after a nice August "Siesta"! For **the month of September**, we will meet at the home and pond of one of our newer members, **Loni Vogler.**

Loni currently has about **23 koi** that she personally handpicked. She got several koi on a trip to Japan in 2022, but most she acquired from **Shawn at Mystic Koi in Upland. Loni's** koi fish all have names and most love to be hand fed with a little pat on the forehead for their human interaction!



Loni has about 9000 gallons of water capacity between her lower main pond and the upper bog pond, which is stocked with **water lilies and lotus.** Since our last visit, she added an Evolution bead filter with a blower as a pre-filter in front of her Ultima II 10,000 filter. In addition to that, another Ultima II 6000 filter keeps the upper bog pond running clear and clean.

Fun Fact! Loni is also a member of the **San Diego Koi Club!** Some of you may remember the joint meeting we had in May of last year at her home in Hemet. Her location makes getting to meetings at both clubs easy for her. We are pleased that **"Koi Jack" Chapman** will be our speaker and will discuss pond care as we transition into cooler fall and winter weather.

Officers

06

- President —

Scott Zehm ~ c 951.237.2508
scottzehm@eee.org

- Vice President — Location Chair

Rob Fales ~ 951.279.0181

- Secretary —

Monica Dirac ~ c 909.754.1944
monicadirac@aol.com

- Treasurer —

Nick Milfeld ~ c 951.892.4269
Nick Milfeld-@inlandkoisociety.org

- Newsletter Editor —

Braelynn Zoetemelk ~ c 951.529.3328

Directors

- **Brenda Aker** ~ 951.316.0263
@inlandkoisociety.org
- **Gavin Alexander** ~ 951.922.5868
gamial@aol.com
- **Tony Coby** ~ 951.486.1816
Jazzman19@gmail.com
- **Deanna Fales** ~ 951.279.0181
@rob_fales@sbcglobal.net
- **Linda Kushner** ~ 951.520.0092
@lindakushner1@gmail.com
- **Larry Leverett** ~ 951.500.2157
@inlandkoisociety.org
- **Theo Zoetemelk** ~ 951.735.9896
@inlandkoisociety.org

Upcoming Events

09 28 ~ IKS Board Meeting
1:30 pm
Loni Vogler
7866 Hagen Circle, Hemet, 92545
Interested members are welcome to attend, but please call the host to let them know beforehand 951.323.0633

09 28~ IKS General/Potluck meeting
3:00pm - 6:00pm
Loni Vogler
7866 Hagen Circle, Hemet, 92545

10 26 ~ IKS Board Meeting
12:30 pm
John & Cricket Mouw
16187 Portr Avenue. Riverside, 92504
Interested members are welcome to attend, but please call the host to let them know beforehand 951.776.8323

09 26~ IKS General/Potluck meeting
2:00pm - 5:00pm
John & Cricket Mouw
16187 Portr Avenue. Riverside, 92504

The most important aspect in a healthy koi pond is oxygen and therefore we need to consider ways to increase and maintain a high level of oxygen in the water. Unfortunately, competition for oxygen in the water environment is rife. In practice, the instant that oxygen is diffused into water, all the organisms in the water will start competing for this scarce resource. Oxygen should therefore be added back into the water on a continuous basis.

Algae produce oxygen during the day but remove it at night. Studies have found that in ponds with relatively high stocking densities and blooms of plankton algae, the algae removed more oxygen from the water than the fish during the course of the night.

Fish need oxygen to convert food into growth and energy. In warmer water this is happening all the time. Therefore, the oxygen levels have to be high all the time.

Many factors will influence the solubility of oxygen into water. The most important are atmospheric pressure, altitude, and temperature. None of those are under the control of the Pond Owner, but adding oxygen is.

The bio filter consumes considerable amounts of oxygen converting ammonia to less toxic substances. The more mature the filter, the larger the biomass is that needs oxygen.

Decomposing material consumes oxygen.

Millions of bacteria exist in every 1cc of pond water and they all use oxygen.

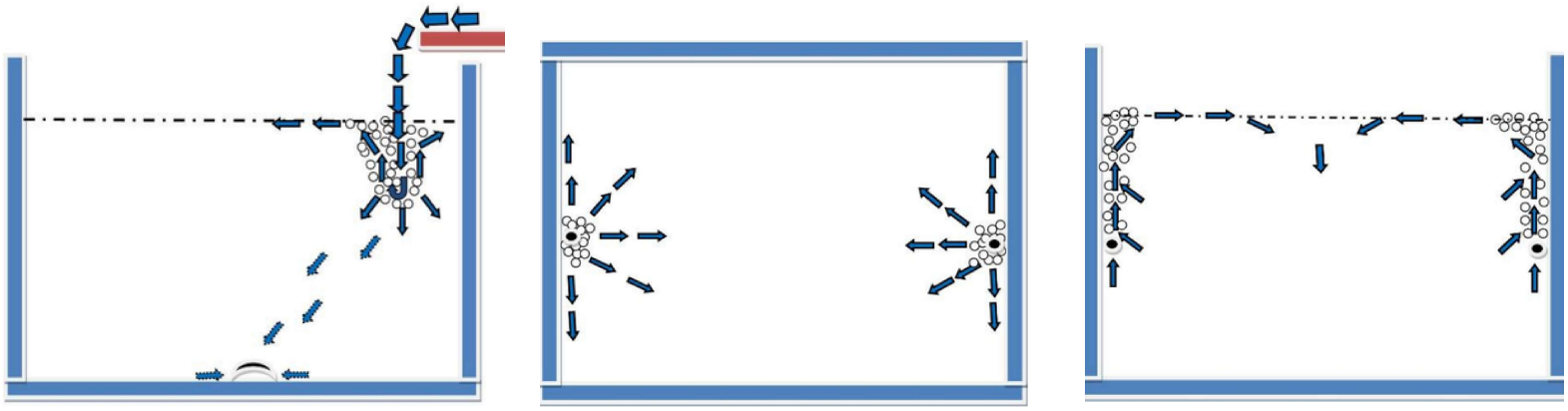
The total dissolved organics in the pond will determine the water’s ability to carry oxygen.

Some chemicals when added to pond water act as oxygen scavengers.

Well designed aeration and circulation encourages other harmful gases and excess nitrogen and carbon dioxide to escape to the atmosphere.

With the exception where some complicated devices are used, oxygen can only enter the water by diffusion between molecules of water in contact with atmospheric air. In other words, the ideal will be to bring all the water's molecules into contact with the atmosphere at some time or the other. Although the surface area of every air bubble created in the water will assist in gas exchange, it is also generally accepted that most diffusion of oxygen into the water and the release of unwanted gasses into the atmosphere takes place at the surface of the water because of the large contact area with oxygen. In order to achieve this, the pumping system must run 24 hours a day and the turnover rates should be as fast as possible. Twice an hour for ponds under 5000 gallons, and once an hour for larger ponds is recommended.

The question that the pond owner needs to ask is whether a high turnover rate is good enough?



In view of the various factors mentioned above the answer is not an easy one and will differ from pond to pond, depending largely on the filtration system, depth of the pond, surface area of the water, chemical composition of the water, temperature as well as the way the water returns to the pond. I will give two examples.

In the first case a pond is equipped with a nexus, and from there to a baki shower. Even if the filtered water returns to the pond via mid-water returns, the oxygen content of the water will be very close to saturation level, provided the circulation and mixing in the pond is sufficient.

In the second case (like the majority ponds in South Africa) a pond is equipped with a settlement chamber/vortex, some static filtration and then a sand filter and/or closed pressurised filters. Water is returned via a water feature and some mid-water returns. The water returning via mid-water returns will be virtually devoid of oxygen. Even if the turnover rate is many times per hour, the oxygen content of the water will not even be close to saturation level.

In essence the pond depth and shape, water temperature, water quality as well as the filter design will determine the need for extra aeration.

There are various ways, all with different success rates that can be employed to aerate ponds. In fact there are also so many permutations that it will be impossible to take all of them into consideration. I will therefore focus on a few well known techniques, but in order to demonstrate the various ways of aerating, the assumption must be made that no other ways of circulation exist in the pond. It is up to the pond owner to decide what technique will/can be employed in a specific pond. Please note that all techniques of oxygenating the pond will raise the oxygen level to saturation point in a pond without any Koi. As soon as you add Koi to the pond, the oxygen consuming cycle stars. It is therefore the speed that oxygen is replaced that will determine the aeration technique that should be employed by the keeper.

Waterfall:

The waterfall is one of the most efficient ways of aerating a pond. The success of a waterfall will depend on the volume of water going through the waterfall, height and width of the waterfall and of course the agitation of the stream as it cascades over a few pools or rocks to bring as many of the water molecules into contact with air as possible. In a medium to large pond, a waterfall will aerate the immediate area where the water returns and therefore good circulation is essential to distribute the oxygenated water evenly throughout the pond. As the water splashes back into the pond, it also creates enough surface movement to increase the surface area exposed to the atmosphere.

Multiple Small Airstones:

Multiple airstones are frequently used in ponds and are moderately successful. This method of aeration does bring some water to the surface and creates ripples on the water that will increase the surface area of the water exposed to the atmosphere. It is doubtful if the smaller airstones will “lift” sufficient volume of water from the bottom of the pond to keep the water sufficiently aerated. When viewed from the top it can be seen that the volume of water brought from below is insufficient as is the agitation of the surface.

Large diffuser disc on Bottom drain:

As can be seen in the illustration, a disc shaped diffuser will create a large column of air with the accompanying huge lift. It will inevitably also draw substantial amount of water from the bottom of the pond and sides of the column and forces it to the surface. In this process it will create currents as depicted below, and over time will expose a lot of water molecules to the atmosphere. This technique works well in a deep pond with a small surface area.

Flooming:

“Flooming” is the term used for the effect created by a small submersible pump placed on the bottom of the pond which forces a jet of water towards the surface. As the jet of water continues towards the surface of the pond, it has to overcome the natural resistance that exists in the pond’s water body, causing the upward energy to disperse into the surrounding water. This creates a mushroom effect and the column of water that reaches the surface has a much larger diameter than the original jet created by the small pump. Flooming is a very effective way of increasing the surface area of a pond for gas exchange, but tends to recirculate the top half of the pond’s water. The limiting factor to this technique is that the pump cannot move more water from the bottom of the pond than the maximum pumping capacity of the submersible pump.

Submersible pump with extension and elbow at surface:

This technique creates a lot of agitation on the surface of the pond. This agitation when viewed from the top tends to be V-shaped and only part of the surface are agitated sufficiently. Again the limiting factor to this technique is that the pump cannot move more water from the bottom of the pond than the maximum pumping capacity of the submersible pump and has to be assisted by other ways of circulation in the pond.

Aeration hose:

The aeration hose has actually made it possible for pond owners to create an air curtain that can be shaped in various ways to fit any specific pond, even large circles. It also has the ability to generate micro bubbles that are viewed as the most efficient use of aeration with an air pump. This rubber hose with micro fine holes should be anchored in the pond because of its tendency to float. The best way to keep the hose in place is to push a 10 mm (or diameter dictated by the air hose) stainless steel rod through the pipe to reduce the buoyancy

Because of the length of the hose and the micro bubbles, this technique will deliver bubbles over a wide area with the accompanying massive lift of water and the creation of a wide, even current where over time, the most water will come into contact with the atmosphere.

Water fountain:

A water fountain is based on the same principles as flooming, with the exception that it has an extended pipe with a spray nozzle on top that forces water in the form of a fountain that sprays into the air that breaks up into hundreds of individual drops before it splashes back into the pond. The oxygen saturated drops creates more agitation on the surface for further gas exchange.

Again the limiting factor to this technique is that the pump cannot move more water from the bottom of the pond than the maximum pumping capacity of the submersible pump and has to be assisted by other ways of circulation in the pond. Note that the force of the water will only keep the pipe clean if the outlet hole(s) are large enough. Frequent cleaning may be required.

Aspirator:

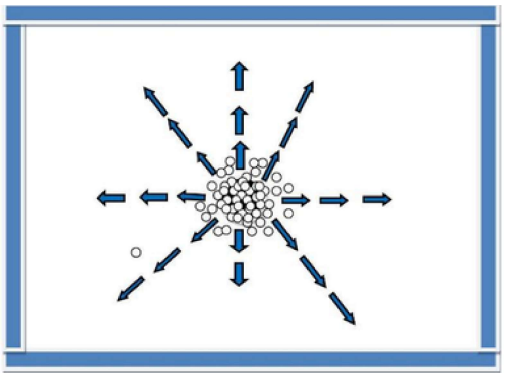
The aspirator is nothing more than a high velocity jet of water that is aimed at the surface of the pond at a 60 degrees angle, drawing air into the water and creating tremendous disturbance of the surface area and penetrating deep into the water body of the pond. In a study conducted in Australia it was found that in mud ponds, this technique is the second best to employ. The study rated the “paddlewheel” the best technique. It requires a powerful pump.

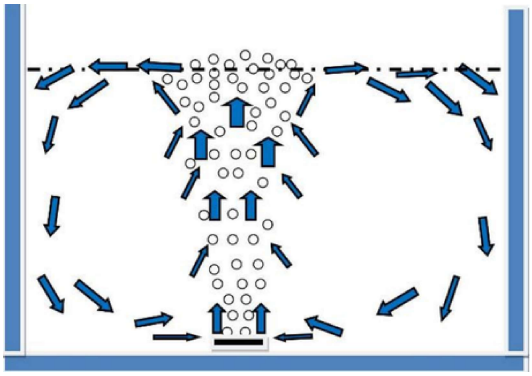
Conclusion:

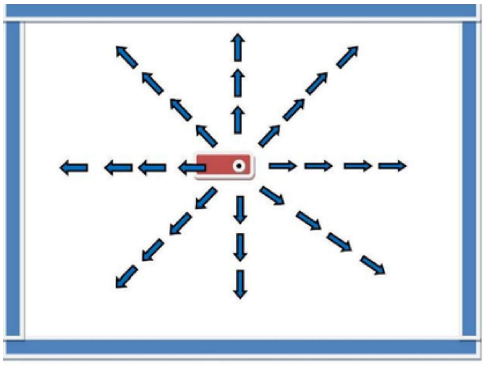
The illustrations are various ways to aerate your pond. The techniques are all acceptable means of adding oxygen to your pond. Some techniques are just more effective than others. The effectiveness will really depend on the specific pond, because the following variables will influence the decision:

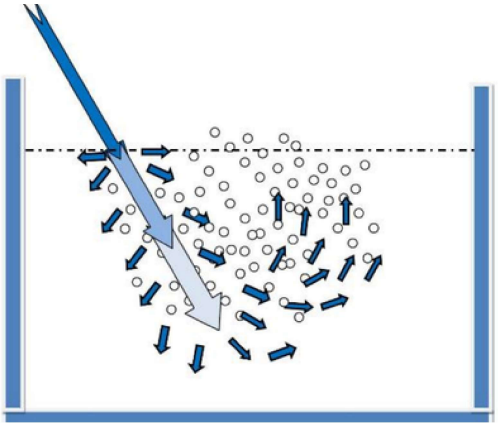
Pond shape, surface area, depth, filter system, turnover rate, water returns, Stocking density, chemical composition of the water, atmospheric pressure and power consumption.

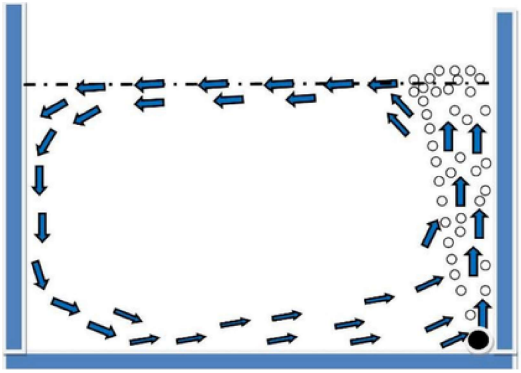
Generally, if effectiveness and power consumption are the criteria, the best bet will be the aeration hose.

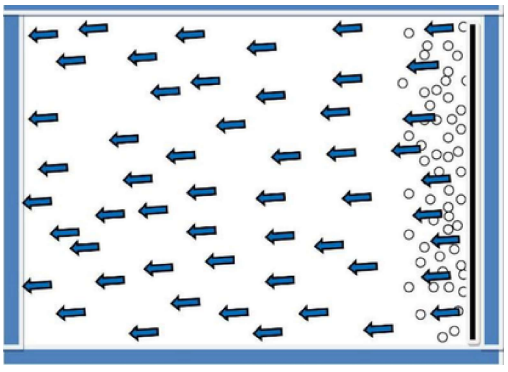












K.O.I.™ News!
Koi Organisation International
Current Accurate Useful
September 2025

Looking for entries!

Pond of the Year

One perclub(club affiliation not required):

4-6 photos, 10-30 sec video if desired
Description – location, size, design, filtration, inhabitants
Email to: pattist@snet.net

Koi/Goldfish of the Year

One perclub(club affiliation notrequired):

Photos (or 10-30 sec video)
Description – if desired–breeder, age, when purchased
Email to: pattist@snet.net

Champion of Champions

Championofyour KoiShow:

Photos (or 10-30 sec video)
Description –breeder, age, how long you've owned
Email to: pattist@snet.net

Entries Due Dec 31, 2025!

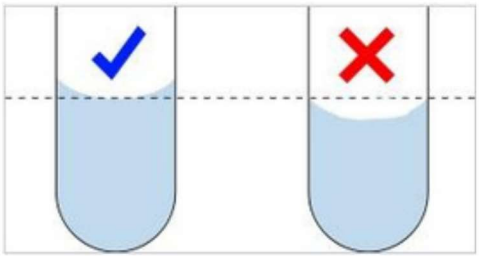
If your club received a Friendship Award for your Koi Show:

You MUSTsend us 2 pictures!
1. Photo of the winning Koi
2. Photo of the Koi Owner receiving the Friendship Award
Send both photos to pattist@snet.net

TIP OF THE MONTH

How tocorrectly read the results of your water test kits:

- Fill thetube with the right amount of water from the pond:



-Use Daylight to read results
-Hold Tube Against White on Card
-Match water color with Chip on Card:

Thank you to **Chien Lee of Nijikawa USA** and to **Iva Gaglione of Ultra Balance** for supplying the Inland Koi Society with a supply of nutritional koi food for its rehoming program!!!

INLAND KOI SOCIETY
5198 ARLINGTON AVE., #146
RIVERSIDE, CA 92504

Return Service Requested

Visit Our Website: www.inlandkoisociety.org