# The Inland **Koi Connection**

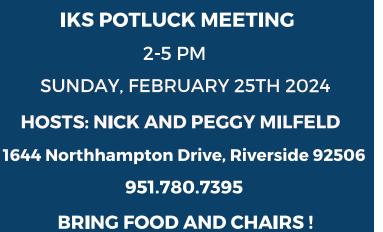


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WWW.INLANDKOISOCIETY.ORG











#### JANUARY HOST PROFILE

Some 72 trees – pines and redwoods, ginkgoes, Japanese maples, crape myrtles and liquid amber – were planted on Nick's half acre, all on drip irrigation, and every few years the yard gets a makeover with the trees trimmed and laced to allow more light. A dozen of the redwoods have fallen victim to our hot, dry inland climate. The front yard has the best sunlight, so the roses and vegetables are there.

This month we will visit the Milfeld's beautiful pond in Riverside. Nick and Peggy are opening up their home to us where we will sit outside with a view of the pond. Our speaker this month is Ed Broomfield who will present about the topic "Koi health specifically after a cold winter". Please dress warm and bring a jacket because the weather this Sunday might be chilly. Remember to bring your chairs and something tasty to add to the buffet ... maybe even something to add to the raffle table, too.



Landscaping and a pond were priorities when the Milfelds bought their pond 36 years ago. They had a blank slate to work with and Nick had a good idea of what he wanted: a pond & waterfalls, a pool & spa, patio, lots of green, and a forest.

Nick's pond is roughly 30' x 15' rebar and gunite construction with an island in the middle and two waterfalls. One waterfall runs 24/7 as part of the filter return, while the other, larger falls can be turned on from the house. The pond ranges in depth from three to four feet, with two low walls dividing it into two sections that can be drained separately if the bottom drains need attention. The full system holds 12,000 gallons and includes the original 3-chamber up-flow rockgravelsilica sand filter above and behind the pond which polishes water after it passes through a UV light. By 2002, tree roots had cracked a corner of one of the chambers and a combination of three gravity-fed vortexes and a 120watt Aqua UV were added by the garage. The dividing walls served to contain the koi near the deck while the larger section was drained and drilled through on the lawn-side wall; two bottom drains were

added as a retro-fit.

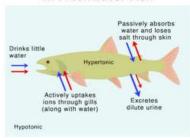
There will be handicap parking in the driveway; enter through the gate to the left



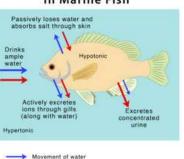


#### Osmoregulation

#### In Freshwater Fish



#### In Marine Fish





Our kidneys are amazing organs; they clean our blood of waste products, regulate water, control blood pressure and even assist in the formation of blood. The development of a variety of aspects of the kidney probably played an important role in evolution. In "From Fish to Philosopher: The Story of Our Internal Environment" by Homer Smith (in 1953) it was suggested that the earliest creatures resided in saltwater that had a composition similar to their own internal environment. The elimination of waste was as simple as propelling some of their own body fluids out through small openings in the skin, containing dissolved waste. As these early creatures migrated into fresh water, it became mandatory that a water impermeable exterior develop, to avoid fatal dilution from their freshwater surroundings. The kidney needed to evolve so that it had the ability to excrete large quantities of excess fluid. In addition, it became essential to preserve salt in this freshwater environment, and the kidney had to evolve to provide that function as well. Eventually, as mammals (including man) moved to dry land, the kidney had to evolve further to conserve fluid.

Koi, like all freshwater fish, have body fluids that are hypertonic to their environment; that is they have a higher salt concentration (0.9%) than the water in which they live. Koi may produce as much as 20% of their weight in urine each day. Therefore, the urine that they produce has to be very dilute, excreting much excess water. Water passes into the blood through the gills and excess is then excreted into the surrounding water along with wastes such as hydrogen and carbon dioxide (as bicarbonate). Energy is needed to remove the excess water as it is flowing against the concentration gradient. Water and dissolved substances will move from an area of higher concentration to one of lower concentration. Since the concentration of water is higher in the pond than in the Koi, water will naturally try to flow into the fish. This direction of movement is called the concentration gradient. Energy is required to move water the opposite way, and this process happens in the kidney. There are two kidneys in Koi. The caudal kidney is long and narrow, running the length of the body and is located just below the spine. Water removal occurs in the caudal kidney. The anterior kidney, located just above the heart, is an immunologic organ, producing cells and substances that help fight disease.

Osmoregulation refers to the combination of processes that both get rid of excess water and retain the proper concentration of salt. This process requires energy (even if the Koi is at rest). Anything that increases the demand for osmoregulation can stress a fish and greatly increase the amount of energy that is needed. An example is an infection leading to an ulcer. This disrupts the skin/scale barrier to water, allowing more water to enter the fishes system. Because more water has to be excreted, even more energy is required in the ulcerated fish. When we therapeutically add salt to water, it decreases the concentration difference, reducing the energy demand on the Koi, allowing them to rest, and giving them a better chance for recovery. For this reason, we often will raise the salinity of water to 0.3%. This lessens the difference between the pond water and the Koi (0.9%), decreasing the amount of water taken up through the damaged integument (their skin and scales).

Finally, because the kidneys are filters, they may collect toxins and infections. In a necropsy of Koi, the kidneys may be cultured to identify the cause of death by assessing what infection is present. This may be needed so as to know how to treat other affected fish, and hopefully prevent their death as well.

The kidneys are incredibly important organs for the survival and health of Koi. Our understanding of their function, the importance of the electrolyte composition of our ponds and how this relates to kidney function will assist in keeping our valuable pets healthy.



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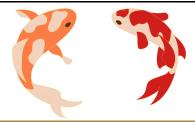
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## **Upcoming Events** 25~ IKS General Potluck meeting Nick and Peggy Milfeld 51644 Northhampton Drive, Riverside 92506 03~ IKS Board Meeting 03 5:30 PM **Gavin Alexander** Interested members are welcome to attend, but please call hosts to let them know beforehand, 951,922,5868 0324~ IKS General Potluck meeting 2-5PM Rick and Dee Dee Henry 1563 Dodge Way, Norco 92860 07~ IKS Board Meeting 04 5:30 PM **Tony Coby** Interested members are welcome to attend, but please call hosts to let them know beforehand, 951.486.18168 27 & 28~ Riverside Flower Show 10 AM - 4 PM **Garden Tour 05~ IKS Board Meeting** 05 5:30 PM Nick and Peggy Milfeld Interested members are welcome to attend, but please call hosts to let them know beforehand, 951.780.7395 WWW.INLANDKOISOCIETY.ORG



### January meeting recap

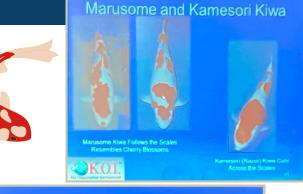
January's General meeting at
the Leverett's was a success!
Our Guest Speaker Bill Layman
presented about the
Appreciation of the Kohaku fish.
Boy did we learn a lot from
him!





During this meeting, **Bill Layman** taught us about the methods of koi judging as well as ways to get more desired features on your koi at home.

In addition to all of these intriguing koi facts, **Bill** also threw in a quick Japanese lesson as well as a few koi judging practice rounds. We also got the opportunity to ask some questions of our own.



A huge thank you to Larry and Debby
Leverett for welcoming us into their
home, Bill Layman for being our
speaker, and Orville Hanson for setting
up the Zoom meeting! Thank you to
those who attended, you are the
reason for success!!



#### Membership Renewals to Date

Members listed below have turned in their dues and renewal forms for 2024. The list will be culled in March, and there are so many names still missing!

Please look for your pre-printed Renewal Form, sent with your November Newsletter, or pick up a blank one at the sign-in desk at this meeting, and renew now. We want to keep all our Koi Friends!

Aguilar	Hille	Nyirady
Aker	Hoffman	Pierce ~ honorary
Alexander	Houston ~ honorary	Poyle
Atkiss	Hurley	Ross
Coby	Jam es	Rowland
Dirac	Krause	Schoo
Elkind	Kushner	Syelan ~ honorary
Fales	Lei	Triplett
Foote	Leverett	Walters
Frady	MacLaren	Wolf
Halterman	Maii	Wright
Ham ilton	Marrin	Zara
Hanson	Mathews	Zehm
Henry (Bonnie)	McHan	Zoetem elk
Henry (Richard)	Milfeld	Are YOU listed?

# Remember to turn in your renewal forms!!!

By the end of March the list of all of our members will be culled and those who haven't renewed will be dropped from the mailing list. We want to keep all of our great Koi Friends!!!



New members Michael Robinson and son Michael



# Please Welcome our newest members!!!

- Dan Schoo and Lily ~ joined in May 2023
- Michael Robinson and son Michael ~ joined in July 2023
- Loni Vogler ~ joined on January 28th 2024



New members Loni Vogler (left) and Dan and Lily Schoo (right)

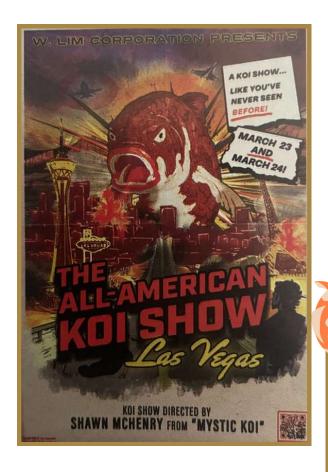


### Thinking of you!!!

At the beginning of 2024 two of our koi friends, **Cricket Mouw** and **Armand Blais**, went into the hospital for sperate reasons. Please keep them in your thoughts and prayers for a smooth and speedy recovery.

### **Congratulations!!!**

Please congratulate our Amazing
President **Scott Zhem** while he gets
settled into his new home.
Congratulations Scott!!



On the weekend of March 23-24, 2024

W. Lim Corporation is organizing

"The All-American Koi show"! It is
being hosted at the Silverton Hotel
and Casino in Las Vegas, Nevada.

AAKS (All American Koi Show) will
feature an amazing display of worldclass koi from Japan. Attendees of the
koi show will also be able to enter
their koi into a competition, directed
by Shawn McHenry of Mystic Koi.

# Thank you to our new raffle Directors!!!

Thank you to **Jason and Christine Zara** for volunteering to take over the raffles!! We greatly appreciate it!

2024
Riverside
Community
Garden Tour

When
April 27th and 28th Gardens Open 10.5

Where
Riverside Elka Lodge,
6166 Brockton Ave, Riverside, CA 92506,
USA

Buy Tickets
f x in

Get tickets to the Riverside community flower and Garden show!!! April 27th - 29th

\*\*Tickets will be exchanged for a wristband and map at the Riverside Elks Lodge\*\*

\*\*Six spectacular local home gardens will help demonstrate how to attract our precious hardworking pollinators while providing a truly beautiful garden environment for our "friends". \*\*

\*\*Tickets can be purchased through our website (see above) and both days of the event.\*\*

\*\*Presale Tickets can be purchased at the following locations: Parkview Nursery 2 Riverside Locations 3841 Jackson St. 951-351-6900 4377 Chicago Ave.

Wild Birds Unlimited 10456 Magnolia Ave. Riverside (west of Tyler)

Louie's Nursery 16310 Porter Ave. (at Van Buren) Woodcrest

Mrs. Tiggy-Winkles 3675 Main St., Riverside

Elks Lodge 6166 Brockton Ave., Riverside We are in need of someone with enough space to house rescue fish!!! Please see Scott Zehm for more information.





Visit Our Website: www.inlandkoisociety.org