

# *The Inland Koi Connection*



THE OFFICIAL  
NEWSLETTER  
OF IKS  
ISSUE 257  
SEPTEMBER  
2018



**IKS General Meeting**  
**Sunday, Sept. 23 ~ 2-5 pm**

Hosted & Catered by

**Tom's Farms**

**23900 Temescal Canyon Rd.**  
**Corona 92883**  
**951.277.4422**



*The IKS Board meeting time is the second Sunday evening at 5:00 or 6:00 pm; they share hosting the meetings and providing simple refreshments. Members are welcome to attend, but should let the hosts know their intention to do so.*

The **September 2** Board meeting was hosted by the Leveretts at 6PM, with dinner served; 11 attended.

- **August 26** at the *Nyiradys' in Yucaipa*: A long drive the other direction and 52 drove it. The Padgetts, Parks, and Stockdales made this their first meeting, and **Steve McHan** and **Roy & Ana James** came specifically to join. Ed Brown shared tons of information in Part 1 of a talk on plants for in and around the pond, with Q&A following; he will do Part 2 next month at Tom's Farms.
- **Membership** is up to 87, with 19 new members and 68 renewals. Forms for 2019 renewals will be inserted in the November newsletters.
- **Meeting Dates**: **Ed Kushner** and **Brenda Aker** have been working with the new owner of Tom's Farms in Corona to stock the pond and give advice on filtration. In return, he has invited us to hold the **September 23** meeting there in the big tent near their pond; they will cater lunch at no charge, allow us to provide our beverages as usual, and bring desserts. The owner will attend, and a rep will talk to us about the history and the ponds. **Ed Brown** will also finish his "Plants" presentation. Meeting is planned for 2-5pm, with lunch served about 2:30; this will allow those who wish to to attend the 2:00 Magic Show (children are invited, and two rows will be reserved for us.) **Must RSVP to Milfelds** for a count.
- **Koi Rescue**: •One good sized koi was taken from an elderly couple in Corona; they can no longer care for their pond. •Ed has been talking with Ed Brown and Eric Triplett, encouraging them to suggest their clients consider rehoming some of our rescue koi. •One of Ed Brown's clients is moving to Arizona and has 19 koi he would like the club to take. •A Riverside man is asking to be a rehoming pond: raccoons cleaned him out, and he thinks he's removed their access.
- **Outreach Proposal**: Norco HS is back in session; **Theo** is awaiting to hear from the teacher if she has enough students interested to proceed.
- **New Business**: Discussed possibility of another Auction in 2019: Nick agreed to chair. Proposed date is June 1, the first Saturday, but want to avoid conflicts with Mystic's "Grow Out" event. Motion passed to give Ed about a \$300 budget to purchase a new aboveground pool for QT in advance of the Auction.
- **Next Board meeting**: **Sunday 7 October, at 5pm** at the Milfelds. The Board was adjourned at 6:30 pm.



## BOARD OF DIRECTORS

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 951.279.0181 ~ DeannaFales@inlandkoiociety.org

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 951.279.0181 ~ robfales@inlandkoiociety.org

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 951.781-3887 ~ larryleverett@inlandkoiociety.org

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 951.990.5479 ~ tomwright@inlandkoiociety.org

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 951.735.9896 ~ theozoetemelk@inlandkoiociety.org

## IKS HELP LINE

Koi Health ~ K.O.I. Rep.: **Spike Cover** ~ 949.855.2371

AKCA Representative ~ **Mac McClain** 951.398.7048  
 macmcclain@inlandkoiociety.org

Librarians: Books & Videos listed on IKS website  
**Jim & Tess Poyle** ~ 951.797.3007

Database: **Orville Hanson** ~ 951.682.3107

Web Master: **Alecia Everett** ~ ikswebmaster@yahoo.com

Badges: **Jack Marrin** ~ 909.792.3603 ~  
 jackmarrin@inlandkoiociety.org

Sunshine: **Francine Hoffman** ~ 951.781.8209

•When calling our volunteers, you might get a recorded message. Please suggest a time when you're home to receive a return call, or when you would like to call back.

•Remember that phone advice is given based on your input; the ultimate responsibility for treatment remains with you.

•You can call our Librarians to request information on a particular topic and they will bring it for you to the next meeting, or make other arrangements to get it.

The goal of IKS is to “expand the knowledge and appreciation of koi keeping” among its members. In addition to that, we seek to promote a public awareness of and interest in koi and the club. For a number of years we worked with AKCA to man the booths at the **Great American Pet Expo** held at the LA County Fairgrounds in Pomona, and for a while we set up a display in the garden area at the **National Orange Show** in San Bernardino. When those venues were no longer available to us, we partnered with the Riverside Community Flower Show, setting up a display pond for them and trying to keep someone there to answer questions and sign up new members.

Our first **Pond Tour**, in 1997, opened a handful of gardens & ponds to the curious for a day. I don’t recall when we started rescuing koi — possibly around 2006 — for in 2007 we held our first **Koi Auction & Used Equipment Sale**. We quickly decided to alternate the two events year to year. In the meantime, IKS also served as consultant and caretaker of the ponds at the **Kimberly Crest Mansion**, a registered State Heritage House in Redlands. Soon we were also actively working on the pond at **Edward-Dean Museum** in Cherry Valley.

Many clubs falter as their members age, so this Summer **Theo Zoetemelk** suggested we reach out to high schools with FFA or Ag departments and encourage them to add koi keeping and water gardening to their animal husbandry and landscaping programs, thus introducing the next generation to our hobby. With luck, kids would take the idea to their parents and maybe campaign for a pond at home.... We have actively sought other public ponds with which to partner to help put water-gardening and koi on public display year ’round, and that brings us to this month’s meeting.

Such a popular place is **Tom’s Farms in Corona** that their pond begs for us to be involved. With a new owner who wants to clean up the pond and have more koi, Ed and Brenda have been offering advice and working to rehome rescue koi there. The clear water pictured on the cover is deceiving, the photo taken prior to the recent local fire. Covered with ash, the pond has turned a sickly green, but new filtration is working on it and a couple dozen new koi are exploring it.



Founded in 1971, Tom’s Farms’ history is the story of one man’s dreams. His parents said that Tom wanted to be a farmer from the day he was born in Kansas City, Missouri. When he turned five, they let him work at his father’s produce stand. Tom moved west in the early 70’s and leased some land in Lake Elsinore to house his first produce stand. He did so well that the landowner began to covet it for himself, and sent Tom packing.

Anaheim bound — slightly brokenhearted but with his boundless energy, strong work ethic, and unwavering integrity still intact — Tom found an idyllic spot in Temescal Canyon, right below the Cleveland National Forest. He named this place Tom’s Farms and started growing. The produce was fresh, the people were friendly, and folks came from miles away, making Tom’s Farms a favorite stop for travelers. Not wanting a repeat, Tom eventually bought the land, and the place grew and grew. In 1974, he opened a 3,500-sq ft produce stand; in 1977, he added a hamburger restaurant, and the opening of Interstate 15 in 1978 gave easy access for visiting tourists. Today, the property has grown to include a variety of shops, restaurants, and attractions for family entertainment.

Reinforcing our new partnership, the owner of Tom’s Farms has invited us to hold our meeting in a tent near the pond, complete with tables and chairs for 60, and he has offered to cater lunch from the Mexican restaurant. Although rules don’t permit any outside food or drink on site, he has agreed to let us provide our beverages as usual and to bring our own desserts. Therefore, we ask that you all ‘potluck’ desserts only for this meeting, and we will provide plates and forks for them. And to give an accurate count to the caterer, we ask that members RSVP to the Milfelds if you plan to attend.

Many of you signed up at the August meeting — 50 so far — and those names are listed on page 4. If you did not sign up and want to, please call, and if you signed up but must cancel, please call. [call and leave a message at 951.780.7395, or email us at [PeggyMilfeld@inlandkoiociety.org](mailto:PeggyMilfeld@inlandkoiociety.org). Children are invited too, as there will be a half-hour magic show by the pond at 2:00, after which lunch will be served. Two rows of seats are reserved for us for the magic show. Do plan to come early or stay late to explore this fun destination. Besides the shops, there are pony rides and a petting zoo, a carousel, train ride, and a craft fair, and live entertainment. Some things require small fees, others are free. Come for a fun-filled afternoon


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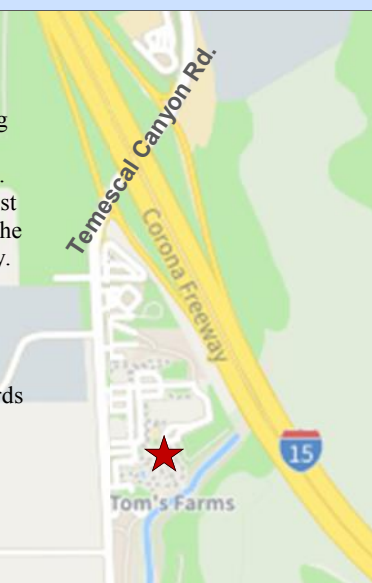
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From the 15 Freeway, exit at **Temescal Canyon Rd**, turning RIGHT or LEFT to put you on the WEST side of the freeway heading SOUTH. **Tom’s Farms** will be on your left, with several driveways. Please **park in the dirt lot** nearest the red and white striped tent at the southernmost part of the property.

The fastest way to return to the freeway is to exit the parking lot and turn RIGHT, then choose the north- or south-bound lane towards your home....

**Tom’s Farms**  
23900 Temescal Canyon Rd.  
Corona 92883 ~ 951.277.4422





## September 23, 2018 Meeting at Tom's Farm's Pond

The following 50 people signed up for this meeting. If you are not on the list and wish to attend — or are on the list and need to cancel — please contact the Milfelds by Tuesday evening, Sept. 18. Call 951.780.7395 and leave a message, or email [PeggyMilfeld@inlandkoiociety.org](mailto:PeggyMilfeld@inlandkoiociety.org)

	Family Name	#
1	NEW ~ Jeff & Pam Buswell	2
2	Tony Coby	1
3	Aiko Howo	1
4	Ed & Trina Brown	2+2
5	William & Donise Li	2
6	Alvin & Darlene Watson, Nisha	3
7	Theo & Jeanne Zoetemelk + grands	2+3
8	Rob & Deanna Fales	2
9	Armand & Eve Blais	2
10	Scott & Phyllis Zehm	2
11	Jim & Tess Poyle	2
12	Larry & Debby Leverett	2
13	NEW ~ Steve McHan	2
14	Monica Dirac	1
15	NEW ~ Gary & Janet Parks	2
16	NEW ~ Roy & Ana James	2
17	NEW ~ Doug & Cindy Padgett	2
18	Larry & Dorothy Wolf	2
19	Ed & Linda Kushner	2
20	NEW ~ Bob & Linda Stockdale	2
21	Gavin & Stephanie Alexander, Lauren, Courtney	2+2
22	Steve & Laura Nyirady	2
23	Brenda Aker	1

## WELCOME TO OUR NEWEST MEMBERS!

*Write these folks into your Directory, seek them out at meetings, and make them welcome! More than fellow members, make them friends!*

**3/2018: Tom Nguyen** ~ Rejoining us again: Welcome back!  
1674 Via Provincia Circle ~ Corona 92881  
909.208.5704

**4/2018: Altan Ingrahm** ~ Referred by Ed Brown  
37878 Orlana Court ~ Murrieta 92563  
760.277.1983 ~ aroc214@yahoo.com

**4/2018: David Kim** ~ Referred by Ed Brown  
9 Peppermill Lane ~ Pomona CA 91766

**4/2018: Ruben Pandes** [Pandasia Koi and Garden]  
21185 Canyon Drive ~ Wildomar CA 92595  
cell 951.265.3691 ~ infopkoi@gmail.com

**5/2018: Ruth Terrell** ~ Referred by Ed Brown  
16399 High Bluff Court ~ Riverside CA 92503  
909.519.1968 ~ Terrellclan@msn.com

**5/12/2018: Gary & Janet Parks** ~ Joined at Pond Tour  
Riverside CA 92504 ~ 951.315.8273

**5/12/2018: Jeff & Pam Buswell** ~ Joined at Pond Tour  
3745 Castle Reagh Place ~ Riverside CA 92506  
cell 951.538.0080 ~ jeffpamjeffsam@aol.com

**7/22/2018: Stan Suh** ~ found us on the internet  
4724 Golden Ridge Drive ~ Corona CA 92880  
cell 714.900.7865 ~ stan@flowlandscape.com

**8/5/2018 ~ Bob & Linda Stockdale** ~ joined at Board meeting  
9979 Timbermist Court ~ Rancho Cucamonga CA 91737  
909.774.1125 ~ bobandlindastockdale@gmail.com

**8/5/2018 ~ Bill Campbell** ~ Referred by Ed Brown  
1811 Wesley St. ~ Banning CA 92220  
951.922.9708

**8/5/2018 ~ Al Lubes** ~ Referred by Ed Brown  
35334 Smith Avenue ~ Beaumont CA 92223

**8/5/2018 ~ Debbie Strangel** ~ Referred by Ed Brown  
17265 Ridge Canyon Dr. ~ Riverside CA 92506  
951.347.9547 ~ dandjoseph@aol.com

**8/5/2018 ~ Ron Winsser** ~ Referred by Ed Brown  
430 West King Street ~ Banning CA 92220  
951.849.2967 ~ janetkloos@yahoo.com

**8/26/2018 ~ Roy & Ana James** ~ found us on the internet  
P.O. Box 18088 ~ Anaheim CA 92817  
714.283.2839 ~ RJ@Bet-Products.com

**8/26/2018 ~ Steve McHan** ~ Referred by a member  
11525 Richardsson St. ~ Loma Linda CA 92354  
916.662.1367 ~ STEVEMcHan14@gmail.com

***New Members:** Our Member Directory includes photos of members. If you won't be able to attend meetings for a while, please send me a selfie so you can at least be included in the next update, and we'll be able to recognize you when we do meet!*

*Email photos to Peggy at [peggymilfeld@inlandkoiociety.org](mailto:peggymilfeld@inlandkoiociety.org)*

We met on a sunny afternoon at **Steve & Laura Nyirady's** home in Yucaipa. At 4:30pm, after a big lunch, **Linda Kushner** officially opened the meeting and thanked the Nyiradys for hosting the meeting. She then introduced guests and several new members, asking each about their pond and koi:

♦**Doug & Cindy Padgett**, of Cherry Valley, joined last October but this was their first meeting. They have a 10,000-gallon pond built by Ed Brown, and they hope to host a meeting next year.

♦**Gary & Janet Parks**, of Riverside, joined at the Pond Tour. They have had a pond for six or seven years and have lost four batches of koi in the process, most recently while on vacation: fires came through, ash rained down, and no water changes were done while they were gone. They're cleaning it out to start over and celebrating their anniversary on Aug. 27: after 52 years, they know how to keep going until they get it right!

♦**Bob & Linda Stockdale**, from Rancho Cucamonga, visited our August Board meeting and joined there. They have a 1000-gallon above-ground pool with 12 koi in it and an empty 27,000-gallon swimming pool that they want to convert.

♦**Roy & Ana James** and daughter Sophia, of Anaheim, finished a 500-gallon pond a month ago. They visited and joined today so they can "learn to do it better."

♦**Steve McHan**, from Loma Linda, finished a 4500-gallon pond two months ago – his third. He came today specifically to join, and says his goal is to make all of us "look good!"

Linda acknowledged the August birthdays and anniversaries, noting that **Dorothy Wolf** chose to party with us today for her birthday. *A very happy day to you!* The next General Meeting will be held at and catered by Tom's Farms, in south Corona, on Temescal Canyon Road, from 2:00-5:00pm. Kids (all ages) can enjoy the two o'clock Magic Show before lunch is served. Members planning to attend the meeting should sign up so we can give the caterer a count.

Steve & Laura gave us all the details of the two ponds and the stream. The larger pond holds 3,500 gallons and the smaller, 2,500. Steve showed us his rotary drum filters that he purchased from Seaside Aquatics; he has been very pleased with them. One is a Red Label.



The stream has no filtration system, just the pump. The fish have an automatic feeder, currently set to feed three times a day; that way, Steve and Laura no longer need to ask each other, "Did you feed the fish?" The feeder holds enough food to last for one week.

Ed Brown gave a talk on *Aquatic Plants In and Around Your Pond*. Ed has a background in Plant Sciences, worked for Fish and Wildlife as a wildlife biologist, and then as a farm advisor before starting to build ponds in the 2000s. He talked about planting taller trees for a windbreak to shelter the pond and about decorative trees such as Japanese Black Pines. He also discussed having an area where you can sit and enjoy watching your fish, having pathways around your pond, and having shade over 30-40% of the pond. He recommended collecting pictures of pond landscaping that you like, and spending a lot of time sketching out ideas. He stressed the importance of knowing the nature and pH of your soil and water, and being careful not to have runoff from the landscape irrigation draining into the pond.

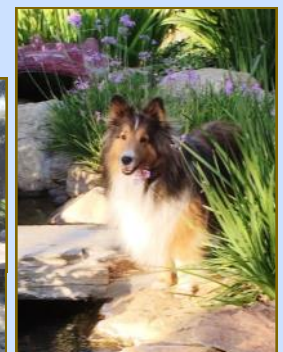
For good information on landscaping, Ed recommended the *Sunset Western Garden Book* and passed around a couple of books on Japanese gardens. Plants in ponds take up nitrates and nitrites and look pretty, some but can become a nuisance and take over. Plants give off oxygen in the daytime but consume oxygen some at night. He cautioned us not to plant too near the pump, and not to plant poisonous plants such as oleander, rhododendrons, foxgloves. He also warned us to be careful of plants -- such as bamboo and palm trees -- whose roots can grow through a pond liner.

Hope to see you all at the next meeting; Ed Brown will finish his talk on plants.

~Monica Dirac, Secretary

By the way: Ed is busy redoing my pond and putting in a bottom drain. He has just removed a large quantity of water lilies that were shading about 80% or more of the pond. Deanna stopped by to pick up some lilies as well as some goldfish. Lilies...anyone else interested? Call me at 909.887.7497

~Monica



Irresistible Shelby the Shetland Sheep Dog



**The wildfire** in the Cleveland National Forest had Ed Kushner seeking advice as to what to do to protect his koi and the club's QT of rescued koi. Not a question to be taken lightly, transferring koi to another prepared pond or temporary pool can be an all day affair, and the receiving water must be ready well in advance of the need. Any emergency evacuation order is not going to allow the time you need to save your fish.

**Gary & Janet Parks** would attest to this truth: their pond was destroyed by the effects of fire while they were away on vacation. Allan Pollock has also seen the effects of fires in his pond, but no fish were lost because he was able to continue treating the water, doing water changes, etc. Recently returned from the Washington-Oregon border, he reported that some 600 fires are raging in Canada and another in Portland flooded the valley with smoke and the river with ash.

**High temperatures and drought** contribute to dangerous fire seasons across the country, and wildfires are becoming more and more familiar to land and lake managers as they deal with nutrient and sediment inputs following a fire. Soil burn severity, topography and weather variables like wind and precipitation are important aspects of the problem. Burn severity is a measure of the fire's effect on the soil and ground cover; high severity burns cause higher concentrations of white ash and burned soil organic matter to flow overland as the soil erodes where no surviving plants hold the soil in place. Topography and weather influence erosion and deposition of nutrients in the lower elevations...in the waters.

**In the recent Wine Country fires** an abandoned pond was found by UC Davis veterinarians used to treating horses and livestock; they made an all out effort to save the fish that were dying in their ponds, the waters contaminated with ash and lacking oxygen due to power loss in the area. No filtration, no water movement, the koi were suffocating. The team secured a horse water trough in the back of a pickup and carefully raked the pond to extract 10 fish. Concerned about lack of oxygen for the two-hour trip back to campus, they utilized a tire pump air compressor, running a cord through the back window and plugging the compressor into the truck's auxiliary power ports. A tube from the compressor was placed into the water to provide airflow. Plywood was tied down over the top of the trough to keep the fish and water in.

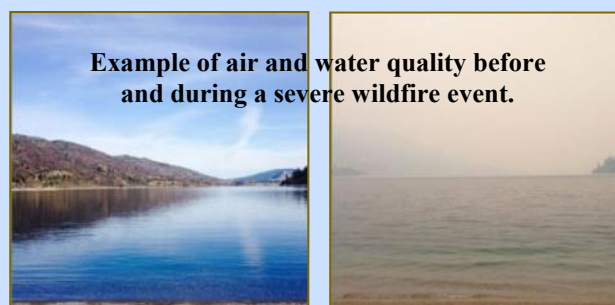
**Back at Davis**, all 10 koi immediately thrived once in large tanks with plenty of oxygen and food. Six and then 14 more koi were rescued in the same way, some over 30 years old; all were examined. Once the fish were acclimatized (stress induced from the fires, poor water quality and transportation are risk factors for opportunistic infections), a complete physical exam under anesthesia was performed, with gill clips and skin scrapes, as well as blood collection and analysis to evaluate overall health of the animals.

#### What happens after the fire?

**NITROGEN:** Surface water concentrations of nitrate tend to spike within weeks or months, and then slowly decline. Nitrogen volatilizes at a relatively low temperature (200°C) to am-

monium, becoming airborne or depositing directly into surface water as organic matter combusts (smoke). Weather is influential at this point: ammonium is deposited directly to surface water as airborne ash or by precipitation, and travels by wind. **Nitrification of ammonium produces the nitrate spike.** This source of nitrogen can also be detected in adjacent watersheds; as we know, smoke ignores boundaries!

A later **nitrate peak** can occur from increased nitrification on the burned landscape, which will move more slowly than airborne nitrogen. The increase in nitrate may be observed for as many as eight years following a wildfire. Nitrate levels gradually decline to normal as landscape vegetation recovers.



Example of air and water quality before and during a severe wildfire event.

**PHOSPHORUS:** The primary source of phosphorus is the direct deposit of ash in surface water. Post-fire erosion and flooding can carry soil and ash (and anything in its path) to streams and lakes. Even in areas with few plants, leaching that occurs on burned uplands tends to be taken up by vegetation, minimizing phosphorus in surface water run-off. Phosphorus concentrations usually return to normal levels within a few years.

**Erosion can also increase turbidity** and reduce the water quality. While the increase in turbidity from airborne material or sediment tends to limit growth initially, eventually the increase in nutrients can contribute to algal blooms. In some cases, erosion can kill fish or drastically alter their habitat.

**Increased concentrations of dissolved organic carbon** are a concern in drinking water sources. Chemicals used to treat drinking water can react with dissolved organic carbon and produce several toxins, including carcinogens.

**Wildfire is natural** to many landscapes, and post-fire effects pose challenges for most public uses of natural resources. Research shows that the effects are relatively short-lived, particularly when soil burn severity is low. ♡

## PROTECTING AND RESTORING PONDS FOLLOWING A WILDFIRE

### Quick facts....

- ▶ Ponds and streams are vulnerable to an influx of sediment, ash, fire retardant, nutrients and other potential contaminants during and following wildfire.
- ▶ Flame retardants used in wildfire control can affect pond water quality.
- ▶ If ponds have been severely affected by post-fire ash and sediment, provide an alternative water source for fish and livestock until steps have been taken to assure water quality.

Surface water bodies such as ponds and streams are vulnerable to an influx of sediment, ash, fire retardant, nutrients and other potential contaminants following wildfires. Property owners in burned areas need to protect their ponds and streams from further degradation and evaluate the suitability of these water sources for pets and livestock.

*Post-fire delivery of ash and sediments is the greatest concern for pond health* following wildfire. Ash is mainly composed of particulate organic matter from burned plant material, but it also contains nutrients and other elements found in the forest. *High-alkalinity runoff* from burned areas *may increase pond pH temporarily but tends to become neutralized as it is diluted by sufficient quantities of fresh water.*

Research shows that *ash concentrations rapidly decrease through a series of moderate-intensity convective storms in the first rainy season after the fire.* Maximum impacts from ash and other fine-grained sediment tend to occur soon after a fire.

*Ash may contain trace levels* of lead, antimony, arsenic, copper, mercury or zinc, but concentrations in water that exceed guidelines for livestock drinking water have rarely been documented. It has been observed, however, *that low concentrations of ash can clog fish gill surfaces leading to respiratory failure in fish.*

Nutrient levels in surface water (ammonium, nitrate, phosphate, potassium) and alkalinity have been observed to increase following ash input. Concentrations of each returned to pre-fire conditions within several days to several months (depending upon refreshment rate and erosional events) and generally are not considered to be a significant threat to healthy livestock. Increased concentrations of major ions (calcium, chlorine, magnesium, sodium, sulfur, potassium) as well as turbidity, conductivity and pH, have been documented in stream water below the point of ashing, while dissolved oxygen may decrease.

The potential for severe soil erosion is a consequence of wildfire because, as a fire burns, it destroys plant cover and the litter layer. *Large quantities of post-fire sediment can overwhelm the habitat requirements for fish*, as well as organisms that depend on water for some life stage, such as amphibians and insects.

There are several steps landowners can take to reduce the amount of soil sediment and surface contaminants that reach your pond or stream. Contour log terraces can be constructed using dead trees placed upslope of the waterbody perpendicular to the direction of the slope to reduce the velocity of the runoff. In severe fires, the combustion of vegetative materials at the soil surface causes the soil to form a waxy layer that repels water — a phenomena called *hydrophobicity*. This hydrophobic condition increases the rate of water runoff and can overwhelm pond capacity in the event of thunderstorms. Commercially available straw wattles and silt fences can be purchased and installed in areas where runoff is more dispersed over a broad flat area. Straw bales can be securely placed and staked in small drainages to act as dams, collecting sediment from upslope and slowing the water moving down slope.



*Fire retardants are water-soluble ammonia-based chemicals.* They are generally considered to be non-toxic to terrestrial organisms and of low to moderate toxicity to aquatic organisms. They have no odor once in water, but they may create a noticeable red or orange coloration.

*Flame retardant contains an ammonium polyphosphate* solution that can make its way into ponds and streams. *Ammonium polyphosphate is a common component in fertilizers and will sting if it gets into cuts or scratches.* To be safe, do not allow pets and livestock to drink water that appears to contain fire retardant or other chemicals. If your animals appear ill after drinking from puddles or standing water, make sure your veterinarian knows that they may have ingested contaminated water.

Assuming your pond is refreshed by clean stream water or groundwater, pond water quality should improve over time. However, if steps are not taken to prevent up-gradient erosion, your pond can continue to deteriorate. Testing is recommended if you suspect the quality of your pond water has been affected by flame retardant or contaminated runoff. Provide an alternative water source, preferably groundwater, until you are satisfied that the surface water is safe for your animals. ♡

~Taken from several reports , P.M.



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We don't keep koi...

## WE KEEP BEAUTIFUL WATER!

*So say the Japanese, and the koi will take care of themselves.*

Water quality is affected by six key issues and how well we handle them: the **Nitrogen Cycle**, **Stress**, use of **Water Test Kits**, **O<sub>2</sub> & Nitrates**, making frequent partial **water changes** (FPWC), and **pond stocking density**.

A **biologic filter** is a home for beneficial bacteria whose job it is to convert ammonia [NH<sub>3</sub>, which is toxic at high a pH] in pond water (created by decaying fish poop and mulm, and by our fish breathing) into Nitrite [NO<sub>2</sub>, which is toxic at a low pH], and then converting that to Nitrate [NO<sub>3</sub>, which is beneficial to plants in and out of the water, including algae]. Many ponders irrigate their yards with filter water.

**Stress** seriously affects koi health and comes from poor water quality. Koi live in water temps from 35°F to 90°F, and tolerate any pH, but they don't do change well. They adapt readily, but not to big changes, such as no more than 5° up or 2° down in rapid water temperature changes. Ammonia, nitrite or nitrate levels over 20ppm will burn their gills, but take months to do it. Surprisingly, low O<sub>2</sub> levels affect your larger koi first. You can't always see stress, but it reduces a koi's first and best immune system defense, their slime coat.

**Water Test Kits** are tools to be used regularly, and there are four key kits:

[1] **Ammonia** is the #1 killer of koi, more than all other factors combined. Test for it!

[2] **Nitrite** has no allowable level; long term exposure to as little as 0.5ppm is lethal. Symptoms include gasping, lethargy, sitting on pond bottom, refusing food, clamped or red-streaked fins. Test it!

[3] **pH** is a measure of H<sup>+</sup> ions, and there is no right number or level. Koi don't care about it as long as they have a stable environment; pH should be between 6.5 and 8.6 without fluctuations.

[4] **Total Alkalinity** (t.a. or KH) is a measure of the buffer for pH fluctuations. *(All of these tests and issues need a lot more information than is provided here, and each koi keeper needs to have a clear understanding of the WHAT and WHY of testing.)*

**Oxygen** [O<sub>2</sub>] is an absolute necessity for all life; splash, pump, aerate...and keep it circulating around and from top to bottom. Air pumps are very economical to run, with little loss in long air lines. For a waterfall, a sheet type with a large/steep drop is best; the alternative is a cascade with lots of rocks.

**Frequent Partial Water Changes** [FPWC] is the single best thing you can do for your pond: they increase alkalinity levels to make filters work better, reduce dissolved organics, replace trace elements, dilute growth-inhibiting pheromones, and reduce nitrates. How much, you ask? A minimum 10% per day, and if that seems like a lot, consider up to 50% per day for a heavily stocked pond

Finally, fish grow. While water volume and filtration capacity don't change, your **Stocking Density** does, and it grows exponentially. Assume ten koi in a new pond; in two years they may double in length, but body mass would be increased 8-fold, to the equivalent of 80 koi! That's 8X more Oxygen required, 8X more Ammonia produced. In two more years, as they double in length again, you'll have 8X 8X the mass — 64 times the body mass or the equivalent of 640 koi! Do you remember Mark Corser's 18,000-gallon pond? It's home to just 20 enormous *Kohaku*...that's body mass!

~ Karen Pattist



*Pandasia Koi and Garden*

21185 Canyon Drive, Wildomar 92595

951-265-3691

infopkoi@gmail.com

www.pandasiakoi.com

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# CCKS KOI SOCIETY

## 40TH ANNUAL KOI SHOW

### SEPTEMBER 22-23, 2018

**FIG GARDEN VILLAGE**  
5082 N. Palm Ave, Fresno, CA 93704  
(Shaw and Palm Avenues)

Koi and long fin Competition Judging  
Pond & Koi Vendors  
Raffle & Silent Auction  
Koi & Pond Health Information

**SATURDAY 9:00AM - 4:00PM**

- ▶ Raffle & Silent Auction
- ▶ Judging Starts - 10am
- ▶ Awards Banquet - 5:00pm  
Elbow Room  
431 W. San Jose Avenue

**SUNDAY 9:00AM - 3:00PM**

- ▶ Raffle Drawing - 12:30pm
- ▶ Silent Auction Winners Announced - 1pm


**RAFFLE PRIZES**  
1st place: \$250 VISA GIFT CARD  
2nd Place: \$100 VISA GIFT CARD

**FREE ADMISSION  
OPEN TO THE PUBLIC**

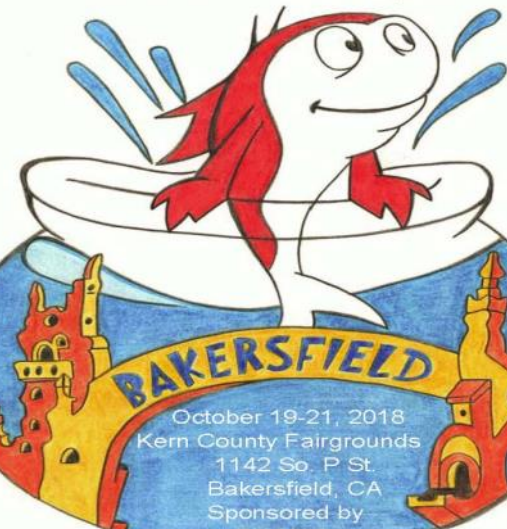





Exhibitors & Banquet, contact: Rosimeri Tran, CCKS President, 559-970-8508, cencalkoi@gmail.com  
For Sponsorships, contact Show Chairs:  
Richele Kleiser 559-312-3892 or Lisa Lamoure 559-341-1412  
CCKS is a 501c-3 Non-profit Organization | cencalkoi.com

S E P	thru 9/23	<b>LA County Fair</b> ~ August 31-Sept 23 / Adult 1-day thru \$20/weekday \$14; Child (6-12) \$12/\$8; Seniors (60+) \$15/\$10; Parking \$15 / Fairplex, Pomona / info at <a href="http://lacountyfair.com">lacountyfair.com</a>
	2	<b>IKS BOARD MTG</b> ~ 5pm / Hosts: the <b>Leveretts</b> , 5349 Jasper Lane, Riverside 92506 ~ 951.781.3887 ~ Members welcome; please let the hosts know.
	23	<b>IKS MEETING</b> ~ 2-5pm / Hosted & catered by <b>Tom's Farms</b> , 23900 Temescal Canyon Road, Corona 92883 ~ <b>RSVP to Milfelds</b> (951.780.7395, milfeld@msn.com) by <b>Tuesday evening, Sept. 18</b> ~ Kids welcome! Seats reserved for 2pm Magic Show. Lunch served at 2:30 ~ Tables & chairs provided for 60 ~ We will <b>potluck DESSERTS ONLY</b> ~ Please park in the dirt lot closest to the red & white striped tent ~ Speaker: Ed Brown with Part 2, "Plants In and Around the Pond"
O C T	7	<b>IKS BOARD MTG</b> ~ 5pm / Hosts: the <b>Fales</b> , 760 La Cumbre St., Corona 92879 ~ 951.279.0181 ~ Members welcome; please let the hosts know.
	28	<b>IKS POTLUCK MEETING</b> ~ 3-6pm / Hosts <b>Armand &amp; Eve Blais</b> , 26723 Manchester Drive, Menifee 92586 ~ 714.717.2470 / Speaker: Eric Triplett
	31	<b>Hallowe'en &amp; Harvest Festivals</b> ~ Join friends/neighbors at a local school or church to celebrate with kids of all ages!
N O V	4	<b>IKS BOARD MTG</b> ~ 5pm / Hosts: the <b>Zoetemelks</b> , 1407 Second St., Norco 92860 ~ 951.735.9896 ~ Members welcome; please let the hosts know.
	18	<i>Note: this is the 3rd Sunday, one week earlier....</i> <b>IKS POTLUCK MEETING &amp; KOI RACES</b> — 2-5pm / Hosted by Jerry & Pat Mall ~ 43024 Via Las Rocas, Temecula 92590 ~ 951.506.4814 ~ Annual Feast, Elections, 2019 Dues are due, Koi Races! ~ IKS will provide the turkey, members sign up to bring all the traditional sides!
	22	Celebrate your Blessings with Family & Friends 

**One Fish, Two Fish . . .**  
**It's the 19th Annual**  
**Golden Empire Koi Show!**



**BAKERSFIELD**  
October 19-21, 2018  
Kern County Fairgrounds  
1142 So. P St.  
Bakersfield, CA  
Sponsored by BKWGS

**Show Chairman: Ron Unruh**  
secretary@bkwgs.com  
(661)619-6353

**Fish Check in**  
Friday noon to 6:30 pm  
Saturday 8:00 am to 9:00 am

**Vendor Chairman: Malise Unruh**  
president@bkwgs.com  
(661) 378-6137

**Exhibit Hours**  
Friday Noon to 7:00 pm  
Saturday 10:00 am to 7:00 pm  
Sunday 10:00 am to 5:00 pm

### ELECTIONS 2018 ~ IS IT YOUR TURN??

**Elections** will take place at the November meeting to fill the **2019 term**. Consider carefully what you want out of IKS and whether you can give a few extra hours a month to help keep us moving forward with success.

**Taking an office** means adding a two-hour Board Meeting, on the first Sunday evening of the month, to your schedule.

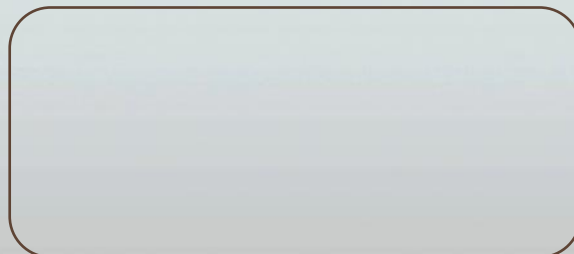
And don't be afraid of the idea of becoming President: it's a one-year term (*a second is ok*) keeping the Board Meetings running smoothly, emceeding Regular Meetings (*polishing your public speaking persona*), and working with all the other crazies on the board. Directors (*help make decisions for the club*) are elected for two-year terms. Couples can do it together and make it a monthly night out with good koi friends!

**Questions?** Call Ed Kushner (951.520.0092) or Larry Leverett (951.781.3887) and ask away! It's a small commitment to a great club.





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



### Food policies notwithstanding...

IKS has permission to provide beverages as usual, and to bring desserts. The rest of our meal will graciously be catered by Tom's Farms. Do plan some time for their wonderful food shops for homemade breads and pastries, wines and cheeses. And ice cream and candies! Oh my, the selections!

Visit our website: [www.inlandkoiociety.org](http://www.inlandkoiociety.org)