

VOLUME 31, NUMBER 6 June, 2015

Gophers Build Largest Aquaponics Facility



L.E.A.F Greenhouse

May was a great time to be a member of good ole SCVKWG. On the 16th we had a dynamite Pond Social at the Haywards. More about that later, and on the 19th we had one of the most interesting presentations ever.

John Parr with his son, TJ, gave us an extremely interesting and informative lecture on water, fish husbandry and aquaponics. He probably could have talked all night. As it was, his presentation went on until almost 10:00 with lots of questions and interaction from the audience.

Continued on pg 4

Visit our Web Site at: www.sckoi.com

Club Meetings:

The club meets on the third Tuesday of each month except July (Third Friday) and December (No Meeting) in the Willow Glen Public Library, 1157 Minnesota Ave, San Jose, CA 95125. Check the web site Calendar for updates and a map. At our meetings we get acquainted with any guests, address any pond issues from guests or members. We generally follow this with a presentation which is usually related to pond or water gardening. Finally, we enjoy refreshments and open discussion.

Officers		Phone	Email
President	Cal Hansen	(408) 688-7143	koi.junky@gmail.com
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Board of Directors
Diane Stelma
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Event Coordinators	Paul Townsley	(408) 315-7216	pgtownsley@gmail.com
Dealer Relations	Cal Hansen	(408) 394-4642	koi.junky@yahoo.com
AKCA Representative	Don Chamberlain	(408) 594-4161	scvkwg@gmail.com

Membership

Club dues are \$30.00 per year. Our fiscal year starts July 1, so if you join before that date, your dues for the remainder of the current year will be prorated at the rate of \$2.50 per month.

To join, send your name, address, phone number and email address along with your check for dues to:

SCVKWG PO Box 9006 San Jose, CA 95157

Treasurer's Report

Since the Splash is widely distributed and available online, the Treasurer's Report is no longer published.

The report is available from the club Treasurer.

Refreshment Volunteers			
Meeting	Volunteer		
June:	Jack and Linda Christiansen		
July:	open- need a volunteer		
August:	Eduardo Massa		
September:	Nadine Jacobson		
October:	Linda and Alan Merrifield		
November:	Sue Zaslaw and Marty Liss		
December:	Party		

If you are unable to meet your commitment, please contact Linda Merrifield as soon as possible at: Imerrifield@comcast.net.

Hopefully someone will step up for July!

May Steering Committee

The May meeting was held Monday evening, 5/4. Frank, Cal, Eve, Jessie, Rita and myself were in attendance. Eve announced that Matt and Noreen had renewed their membership.

That was great to hear. We haven't seen them much for some time and so are glad they've decided to become more involved with the club again.

The Pond Tour was the main topic of discussion. Unfortunately several ponds that I thought I had lined up have not materialized which puts the whole enterprise in jeopardy.

We plan to redouble our efforts to located ponds and discussed alternatives if we cannot locate enough ponds for our normal tour. Possibilities include holding some sort of social at the Japanese Friendship Garden or holding a free tour at two or three ponds.

We really want to hold a tour since next year would the 25th anniversary tour, but we can't have that if we don't have the 24th. We've set a deadline of the next meeting to identify the necessary ponds.

May Meeting

Our regular monthly meeting was held Tuesday, May 19.

Guests and Attendance

We had 19 in attendance. Should have been more. The ones that didn't make it don't know what they missed, but hopefully we can give them a little flavor of it.

There were no guests, but James Barrett returned after a long absence so it was good to see him again.

Pond Problems

No new problems were announced which is a miracle given the weird weather. Water temps ought to be in the 70's by now, but still linger in the low 60's tempting fate every day.

Bill Stoye cleared up the mystery from last month when he was having problems with his pump sucking air. While backflushing his filter with the air pump he noticed bubbles coming out from around the shaft of his 3-way valve. Once he rebuilt that his problem was solved.

Noreen warned of low pH in the Peninsula as the Hetch Hechy water source has been adjusted. She reported it is about 6.0.

Club Business

Eve presented the Treasurer's Report. The club is still in good financial shape. Eve plans to move to a cheaper storage location in late July which will result in a significant savings.

Presentation

Our presentation was simply great and we'll continue the description on the next page.

Dessert

John and Rita brought refreshments including some delicious little cheesecake chocolate crumble pies. Since I've been so good with my diet recently, I took two.

Gophers Build Largest Aquaponics Facility

John started the discussion of aquaponics by reviewing the nitrogen cycle and went on to give the group a graduate level course in water chemistry.

Aquaponics is simply a system to raise fish and plants together. The question was raised how to apply this to a koi pond.

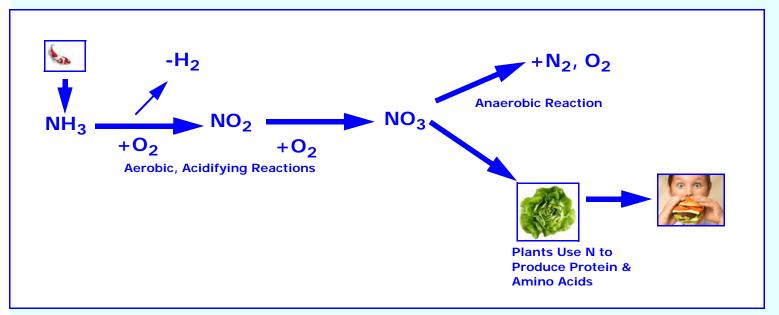
This led John to the white board to describe the nitrogen cycle. Hopefully all koi keepers are somewhat familiar with this cycle, but John's explanation provided much new detail that allowed this old koi keeper to understand it much better and to see how the fish and plants work together.

However, that's were aerobic bio-conversion ends leaving the nitrate to build up in your water until you do a water change. The beauty of aquaponics is that this undesirable by-product of fish husbandry is an ideal input for plant growth.

The first ingredient in most fertilizers is N, nitrogen. Plants use nitrogen to produce protein and amino acids which in turn can be consumed by animals and humans.

It's the perfect symbiotic relationship. The aerobic, acidifying reaction tends to lower the pH, making the water more acidic, and produces lots of nitrogen bound up with oxygen.

The plants like a lower pH because the acid dissolves



Most of us are familiar with this cycle as nitrosomonas and nitrobactor aerobic bacteria turn ammonia, NH_3 , into nitrite, NO_2 , and then into nitrate, NO_3 . However, John's explanation makes it clear why this is an aerobic reaction.

In the first step a hydrogen ion is stripped off. This tends to make the water more acidic. This is replace by an oxygen ion which comes from the air and is why it is so important to aerate you pond.

If it stopped there, your fish would be in trouble because nitrite is even more lethal than ammonia. Fortunately the bacteria add another oxygen ion creating nitrate which is fairly benign.

the metals that plants need in addition to nitrogen. Things like phosphorus, potassium, calcium, magnesium and iron.

So in a properly operating aquaponics system the pH will gradually subside to around 6.4 to 6.1. This will make everything nice an happy.

However, if the pH level is allowed to drop to 5.5 disaster awaits. This is because this level of acidity is lethal to the nitrifying bacteria.

Once they die aerobic bio-conversion ceases, the ammonia level increases and pH spikes. The results are dead fish.

To prevent this adequate buffering must be maintained. John uses a bag of oyster shell tied to the rim

of the tank. The bag is dropped into the water when the pH reaches 6.1 and removed when it returns to 6.4.

The fish don't mind the low pH and they can also do just fine with a higher pH, but they can't deal with a rapid change of pH. The allowable change of pH to keep your fish happy and well is only 0.1 per day.

Salt has long been touted as a cure all for what ails koi. I understood why salt was helpful to a fish with ulcers as it lower the osmotic pressure and makes it easier for the fish to maintain the proper level of fluids in it's body.

However, I had read that the Japanese breeders had overused salt so much as a cure all that the parasites had developed resistance to it and so it wasn't very effective. Also, in my case I reuse all of the water that I flush from the filters to water my landscape and it didn't seem prudent to adding salt to the ground around my plants.

John pointed out that salt was essential to your fish and to your plants. Just like humans a lot of salt is harmful, but the appropriate amount is essential.

He starts his pond with 1.0 ppt salt by weight. I'll spare you the math and reveal that this works out to about 8 lb for 1,000 gal.

John explained that this will improve the general health of your koi and protect against nitrite. The koi have salt (chloride) receptors in their gills. As little as 0.4 ppt salt will block the adverse effects of nitrite.

If your fish become infected by microscopic parasites salt can be an effective treatment. But what is required is a rapid change of at least 3.0 ppt in salt level.

This works because the osmotic pressure is suddenly changed and the water inside the permeable body of parasite is suddenly sucked out leaving a dried up shell that can no longer survive.

Unfortunately 1-10% of the little rascals will survive this shock and so you need to make another rapid change in the opposite direction moving the fish into fresh water with no salt. Now the reverse happens and fresh water rushes back into the desiccated bodies of the parasites and blows them to bits.

With a heavy infestation you might have to repeat this treatment several times moving the fish back and forth between a salt bath and fresh water, but eventually you should reduce the parasite load to the extent that the fish's natural immune system can deal with them. Fascinating stuff!!

If you're thinking that 3.0 ppt sounds pretty salty and might harm either your fish or your plants, John pointed out that brackish fish are living in about 15 ppt salt and the ocean is about 34 ppt.

But What About the Gophers?

With the very educational science lesson out of the way John could begin telling us about how he got into aquaponics. He recounted how he had been an urban farmer since childhood and was fortunate enough to meet a mate with similar interests.

They eventually moved to an idyllic setting in the Santa Cruz mountains and immediately began planting their garden and fruit trees. Unfortunately a very determined tribe of gophers had settled this plot earlier and were not about to move.

The gophers were soon eating the Parr household out of house and home. Despite his best efforts at eradicating the pests it became clear that the gophers were going to win this particular war.

John wasn't prepared to give up gardening so he started looking around for alternative methods, and discovered hydroponics. Hydroponics is extremely more effective than normal agriculture because the nutrients are made available to the roots of the plant without the plant having to lift a finger, so to speak.

John explained that head of lettuce grown in the ground might have a root system the size of VW bug. A head of lettuce grown in a hydroponics system might have a root system the size of his fist.

All of that energy that goes into the root system of the earthbound plant can go into the head of a hydroponically grown lettuce. Hydroponics uses 5% of the water of regular agriculture and produces 20 times the output.

A regular farmer might get 2 to 3 head of lettuce per square foot per year. John gets 4.5 head of lettuce per square foot per MONTH! OK, so if hydroponics is so great why isn't John doing that anymore. Unfortunately, many of the users of hydroponics are growing marijuana.

If you follow the news from Colorado, you know that marijuana is a very lucrative crop. Therefore, marijuana farmers are not particularly cost conscious.

John quickly got tired of paying ridiculous prices for nutrients and other supplies he needed for his hydroponic system.

On the internet he became fascinated with aquaponics and so a new career was in the making. At the time he started aquaponics was in it's infancy.

As he began building and experimenting he quickly became a world expert on the subject. He realized the commercial implications and founded what would become the largest aquaponics farm in the world near Watsonville.

And none of this would have happened if it wasn't for those darned gophers!!

This is an amazing story up to this point. John is now traveling all over the world giving lectures on aquaponics and selling aquaponics kits and supplies.

Unfortunately, an ugly serpent raises it's head out of the lettuce heads and casts a shadow on things. John took on a partner so he could concentrate on operations and other interesting things while his partner took care of a lot of the administrative duties.

However, it wasn't long before his partner had dealt him right out of the business. While proud of his accomplishment of establishing the largest facility of it's kind it was time to start a new business.

John created a non-profit. He explained that a non-profit has no owners, so there is no one that can take it away from him.

His non-profit concentrates on education. He still teaches all over the world. In addition they have created a unique educational system that they offer to schools around the world.

L.E.A.F (Living Ecosystem Aquaponics Facility) is a self contained aquaponics facility suitable for installation in any school that might be interested.

In addition to providing an ideal learning environment for a number of educational activities, it generates substantial income for the school.

Check out the details at their site: http://www.schoolgrown.com.

Really an amazing presentation. John is a great presenter. Clearly passionate about his subject and a fountain of valuable information.

Dues are Due 6/30!!!

Don't forget your annual dues are due by the end of June. Please don't make us track you down. It's not anymore pleasant for us than it is for you.

Your check for \$30.00 covers your entire family for the year, 2015-16. Send your check to:

SCVKWG PO Box 9006 San Jose, CA 95157

Why Join/Stay in A Koi Club Anyway

If you like to go "Bowling Alone" what can I say. I used to be that way. I still don't have the neighbors over for BBQ, but at least I have my koi clubs.

For years I went to a few meetings, tried to hide when Rita wanted volunteers. Didn't want to get over extended. Spent all my energy at work.

So what changed. Well quit that crappy job for one, only now I work even harder for myself. Regularly work till 8 - 9 PM. Netflixs three months old sitting unwatched.

Alarm just went off. Time to ship more product. Have to pound out this rag every month, wonder if anyone reads it. Why, oh why.

Well cause I learn a lot and it feels good when folks say how much they enjoy my emails. Pond Tour coming up and we're not sure we've got the ponds we need.

If we find the ponds we need, then the search will begin for volunteers and that's always a challenge every year. ZNA Koi Show next year, same thing. Everyone likes to go to the show, but nobody wants to help. But then we get the month of May. Weather ain't so hot. 24 inches of snow in my old home town, tornadoes all over the mid west, gray skies in California, but we had a pond social.

Boy, what a pond social. If you didn't make it, I sure hope you had a good time doing whatever you did, because those lucky few that made it sure had a good time.

But more about that later, and then we had the meeting. Until a few hours before I didn't even know if we had a speaker, but Cal came through and boy did we have a speaker.

But what I want to tell you about is entirely different, but it's another reason I love this job. Just getting soft in my old age is guess.

You may know, if you do read the Splash, that our club was founded by Carl and Peggy Friedenstien. Some time ago I put the Koi Mart on our website so that people that want to sell something related to the hobby can do so.

Well, no ever reads it, so nothing actually get's posted there, but if someone does post something I get notified.

Last week I received this posting:

- > A new comment on the post "Koi Mart" is waiting for your approval
- > Comment:
- > Hi
- > Very random here I am from New Zealand and trying to find a Peggy and Carl fridenstien. I was a ver young girl and met this amazing couple with my nana at a fuchsia club convention. And I know Carl had a love for the koi fish. Would love to get in touch.
- > Regards Vanessa Alexander (Wroe)

Of course I had no idea if Vanessa really knew Carl and Peggy or not, but I forward it to them figuring if they did and if they wanted to get in touch they would.

And so I forwarded the message with this note:

Carl & Peggy,
Hope all is well with you. Here's a

blast from the past. If you actually know this person, you might want to drop her a line.

Happy Koi Keeping,

It turns out Carl did get back in touch with Vanessa:

Hi There,

Received your message through the koi club.

We changed computers and some emails were lost. How are you doing? Tell us about your life and send pictures.Looking forward to hearing from you.

Sincerely,

Carl

And he received a nice batch of photos:

Date: May 18, 2015 at 4:07:11 PM PDT

To: Carl Fridenstine





He was kind enough to share them with me:

We were in New Zealand twice through our Fuchsia club. The second time Vanessa rode around with us in our bus. She was about 10 years old. Her grandma who we knew much better than Vanessa has dementia .A small world.

(Peggy is also suffering from dementia)

I was so glad to see the photos I asked Carl if I could share them with you and he agreed:

Don,

Feel free to use it. The dementia makes no difference-Kaiser says 1/2 of the population will have some form of it when they are 75.

This also shows what clubs can do. We were there for 30 days and total cost was about \$3000. Flight, rooms and meals. Many of the meals were with the Fuchsia clubs as they combined a meeting and a meal. It was an interesting way to go into the home and see how they lived. Wonderful people, if you ever have the chance, do it.

The second time was also 30 days, but 1/2 in New Zealand and the rest in Australia. The latter was a waist of time. Four days in Sidney were fine, the rest we could have spent in New Zealand.

Thanks again for putting us in touch. Carl

I hope those of you that know Peggy & Carl enjoyed this little story. And those of you don't can appreciate the bonds that some little thing like a koi club or fuchsia club can weave.

Happy Koi Keeping!

What Turns You On

Let us know what you'd like to hear about at our meetings or in the Splash. Just drop a line to scvkwg@gmail.com with your ideas.

The Shoe Drops

And we finally get some hard information about what the drought water restrictions will actually mean. I just received a public notice today outlining the San Jose Water Co's proposal for meeting the mandated state restrictions.

Restrictions and details of interest include:

- Limits on Watering: No more than 15 minutes per station per day, 2 days a week, Mon & Thur Odd Numbers, Tue & Fre, Even Numbers, with no watering between 10:00 AM and 8:00 PM.
- The use of potable water for filling or refilling decorative fountains, ornamental lakes or ponds except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage under Rule No. 14.1. (emphasis added by editor).

This is a relief, but doesn't bode well for new ponds.

 None of the restrictions apply to the use of recycled water (emphasis added by editor).

If you're not already doing it, you should find a way to use any water you have to take out of your pond for your landscape. Residential customers are allocated the following amounts of water based on average usage in 2013.

Month	Base ccf	Alloc ccf	Alloc gal	Daily Alloc gal
Jan	10	9	6,732	217
Feb	9	9	6,732	240
Mar	9	9	6,732	217
Apr	11	9	6,732	224
May	14	10	7,480	241
Jun	16	11	8,228	274
Jul	19	13	9.724	314
Aug	19	13	9.724	314
Sep	19	13	9.724	324
Oct	17	12	8,976	290
Nov	17	12	8,976	299
Dec	14	10	7,480	241

At the moment this is just a proposal. A public hearing will be held 5/28 at 7:00 PM at the Rotary Summit Center, 88 S 4th St, San Jose to review and receive comments. However, I doubt they have much choice given the State orders. The plan is to take effect 6/15/15.

Sweet Aloha

On Saturday, 5/16 we had our first social of the year at Lee & Linda Hayward's. They put on a great spread with fried chicken, chinese chicken salad, egg rolls and everyone brought a little something.

The day dawned dark and gloomy and I thought it was going to be a shame that it was so cool for our outing, but by noon the sun was out and it was a glorious California day.

So you enter their front door, walk through the house and step out into...Hawaii. It's really amazing the oasis they've created with palm trees, orchids, fruit trees and plants of every description.

A majestic, trained deodar cedar arches out to frame the beautiful koi pond fill with sparkling clean water and numerous colorful koi. Words don't do it justice, so I'll stop now and let you look at what you missed if you didn't make it.



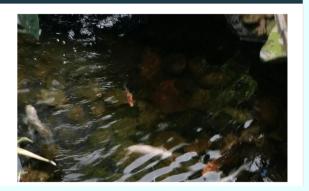
Upcoming Events

Meeting @ Merrifield Pond

When 5/30/2015 12:00 PM - 3:00 PM

Location 181 Barroihet Avenue, San Mateo, 94401

Alan will speak on his experience as an animal control officer. Must attend if you have problems with predators!!











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Splash rates are per year (12 issues). All ads will also appear on our website and will be linked to your website if possible. Ads placed mid-year will be prorated based on the number of issues remaining before July.

Annual Pond Tour Guide rates are for the tour guide for our annual pond tour held in July. A special combo rate is available if you'd like to place the same ad in the Tour Guide and the Splash.

To place an ad, please send ad copy (pdf or jpg file) to scvkwg@gmail.com and we'll send you a bill. Your ad will appear in the next issue after we receive your check.





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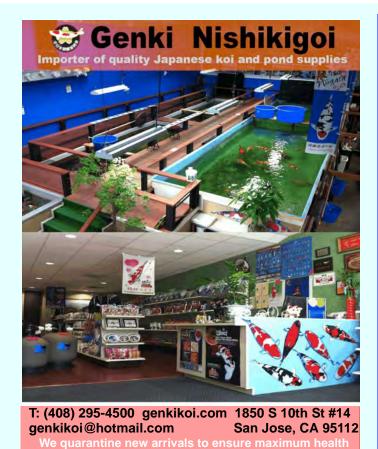
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