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The Greater Everett Brewer's League Journal

The purpose of The Greater Everett Brewers League is to promote and educate homebrewers in the production of craft-style homebrewed beers. As an AHA social club we improve members brewing skills by providing mentoring and networking to fellow brewers, promote BJCP judging, evaluation and competition entry, as well as promoting the local craft beer movement.

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Join Zoom Meeting
https://us02web.zoom.us/j/83114787199?pwd=Y1EydFB0cSs2S0FsSVFXRWhDb3BzQT09

Meeting ID: 831 1478 7199
Passcode: GEBL

Sound to Summit Beligian Witbier Competition

Hopefully you arehave your yeast and registered for the competition and even brewed it already. Even if you are not competing we will be able to enjoy a great beer soon!

I thought I would include a little history.

History of Belgian-Style Witbier
All of Belgium's modern brewing history can be traced to sustenance brewing, either on the family farm or in monasteries. The witbier style, also known as bière blanche in the French speaking part of Belgium, is no different. It's origins as a monastery brew stretches back to at least the 14th century and a time when all brewing ingredients came from local crops, and hops had not yet gained the monopoly they later would in the brewing world. Instead, specific combinations of herbs and/or spices known as gruit were used to balance the sweetness of the malt, but both their medicinal and sometimes intoxicating qualities were also welcomed in the brew kettle.

The farming communities and monasteries in the province of Broadbent, and particularly around the cities of Leuven and Hoegaarden, became well known for their witbiers. By the 16th century, there was over two dozen brewer's plying their trade in the small village of Hoegaarden.

Witbier Glass
As hops slowly choked out other bittering herbs, Belgian brewers made the transition reluctantly. Many Belgian styles, witbier included, pay homage, even today, to a history abounding in the use of other herbs.

Further changes in the brewing landscape caused a shift in consumer popularity. Lager brewing gained a foothold and slowly began to clamber across Europe. Though Belgium probably held out the longest, even they succumbed, no longer able to compete with the lighter, crystal-clear lagers.

Through the late 1800s and into the 1900s, one by one Belgian brewers found no other alternative but to shut their doors. Hit especially hard was the witbier style and the area around Hoegaarden. In 1957, the last Hoegaarden brewery closed shop.

That could have been the final gloomy note in witbier's history, but for one man. Enter the hero, Pierre Celis. A milk-man who dearly loved the local brew, he made it his self-prescribed mission to revive the witbier style to its former glory.

In 1965, Celis built a small brewery in his shed and after experimenting with various witbier recipes, released his first belgian wit to the public in 1966. It found a willing and exuberant audience, an audience ready for a backward glance and rediscovery of styles left behind in the rural landscape of the country's past. Riding the coattails of his unexpected success other brewer's dug in attics and dusted off old witbier recipes.

In 1978, Celis moved his brewery to an abandoned soft drink facility and renamed it De Kluis (The Cloister). When a fire destroyed the brewery in 1985, he found himself in a bit of a spot. The brewery was under-insured and in desperation he sold a piece of it to Stella Artois. Three years later Stella merged with Piedboeuf and became Interbrew. Almost immediately, Celis ran into disagreements with those in charge about how his beer should be brewed. Refusing to compromise his craft he sold the rest of the shares to Interbrew. Then in 1989 he packed up, and headed for America.

He settled in Austin, Texas, with plans for another brewery already simmering. With help from his daughter Christine, he opened the Celis Brewing Company in 1992 and began to brew Celis White. It was a hit with the burgeoning craft beer crowd. But, again, he had the misfortune of falling in with big beer. This time it was Miller and after more disagreements — again largely about craft compromise in search of higher profits — he opted out and moved back to Belgium.

A year later Miller shelved the Celis name in the wake of waning sales, due in large part to the very compromises Pierre fought against. From 2002 until its closing in 2012, Michigan Brewing Company had the rights to the Celis trademark, but when the company went under in 2012 the name and all its rights returned to the Celis family. A few years later, Christine Celis relaunched the family business, bringing back her fathers original witbier recipe along with the first brewmaster hired to brew it.

Not many styles owe their revival and renewal in popularity to a single man. Witbier does. Today, it continues to be a force in not only its home country, but has found new and fertile ground in America's flourishing craft brewing scene.

Water Treatment for New England IPAs

Shawn Williamsby Shawn Williams June 1, 20210

Water chemistry is a very complex topic and something I am still learning and experimenting with myself. Many experienced brewers will tell you that water treatment is critical in producing the best hazy beers. I'm still determining what exactly makes that true and what is 100% essential for the style. This post will touch on my personal experiences with NEIPA water treatment and everything I've researched up to this point. If you're looking for a more in-depth overview of the style in general, check out this post.

Good tasting water makes good beer, right? Not exactly. While this logic may work with some styles, it doesn't work for producing great NEIPAs. But why is this exactly? I think it comes down to a few things. 1. Hazy IPAs are very sensitive beers where off-flavors have NO PLACE TO HIDE. Yes, these beers are brewed with a crapload of hops but not in the same way a big malty bitter beer is. In fact, the delicate aroma-forward nature of the style can be easily overshadowed or clash with things that aren't supposed to be there. At least that's what I've found from my own personal failed trials and experiments.

NEIPAs are very light-colored beers with pretty basic grain profiles. I can't say any combo of flaked oats, white wheat and 2-row are going to create an explosive beer on their own. They step aside to let the yeast and hops SHINE. A more malt-forward and bitter beer with crystal malt is going to do a better job at hiding imperfections. But we're talking about water right? Yes, imperfections in water are going to have detrimental effects on your hazy IPA. This includes tap water that doesn't taste right, has a distinct taste, or is treated with chlorine/chloramines (city water).

Treating for Chlorine/Chloramines

Chlorine is a NEIPA killer. Chlorine and chloramine can produce chlorophenols in beer that contribute plastic-like or medicinal off-flavors. More delicate styles, such as NEIPAs are more susceptible to these types of off-favors. If your water comes from a municipal source, it was likely treated with one or the other. I would strongly encourage you to always treat your brewing water with Campden at an absolute minimum. Chlorine can be removed from water by simply letting it sit out for 24 hours or by pre-boiling it. Chloramines MUST be treated with Campden to remove.

The good news is it's really easy to take care of this step and one of the easiest variables to eliminate/troubleshoot right off the bat.

Get a Water Report

If you're serious about brewing NEIPAs, you need to understand the mineral makeup of your tap water. Why? because we need to understand how we can dial in our water profile/minerals to the desired level. I'll dive into this more later. Go to Ward Laboratories and get yourself a water report. Lucky brewers have access to very soft water. This means their water is naturally low in mineral content, allowing them to freely adjust upward as needed without too many constraints. It's very easy to add minerals to water and more difficult to remove minerals.

Ward Laboratories Brewer's water report

Above is my water report I obtained from Ward Labs. The figures we really care about are highlighted in yellow. My water is naturally higher in chloride and low in sulfate. This works in my favor since I usually target higher chloride and lower sulfate in my NEIPA water profile. The "bad" news is I'm stuck with a minimum of 86ppm chloride for all styles unless I dilute my tap water with RO or distilled water. Brewing software (Bru'n Water, Brewfather, and BeerSmith) will help you input your starting water profile and allow you to calculate additional salts as needed.

Just as an FYI, your town/city may already have a public water report you can access. All of this is public information so if it's not posted online you can try to call your townhall and get the information you need. I was able to get SOME information from my town's water report but it was missing certain necessary figures. The other kicker is some towns may source water from different locations depending on where you live geographically. Two

households in the same town could actually get their water from different facilities. I don't live in a very large town, but from what I was told, there are three different sources.

If all of this seems overwhelming to you, start by brewing with 100% RO or distilled water and trust that you're basically brewing with a completely blank slate. You'll still need software to determine salt/pH adjustments but it eliminates the tap water component.

Water Adjustment Basics

The most common minerals/additions used to adjust water are calcium chloride, calcium sulfate (gypsum), Epsom salt, chalk, baking soda, lactic acid, and phosphoric acid. I honestly really only use calcium chloride, gypsum, and 88% lactic acid. This article here does a really good job of breaking down some of the basics. I've outlined what I typically use below along with general guidelines.

Calcium chloride: Raises both calcium and chloride levels. Enhances malt character, sweetness, and body/mouthfeel.

Calcium sulfate (gypsum): Raises both calcium and sulfate levels. Enhances hop character and bitterness.

Epsom salt: Raises both sulfate and magnesium levels. I really only use this if my gypsum/chloride additions are increasing calcium too much. Minimal magnesium is needed so I usually leave it alone. For calcium, I try to keep it around 100ppm and under 150ppm. Too much calcium is said to add a chalky flavor to beer. I've experienced something very similar however it could also be the plastic-like flavors associated with hop burn.

88% lactic acid: Most homebrewers use lactic acid to decrease the ph of wort/mash. Brewing salts will contribute to lowering pH as well, however usually some level of lactic acid is needed. My tap water pH is on the higher side, so I need to use more than when I brew with RO/distilled.

Chloride & Sulfate

Chloride and sulfate levels are the two most important minerals to focus on. This is where you will find a wide array of opinions and practices—so much that you could probably start a bar fight over it (which is reasonable to me).

I've done a lot of experimenting with chloride to sulfate ratios and typically target a 3-1 or 2-1 chloride to sulfate ratio. This will help really round out your beer to achieve a soft pillowy mouthfeel that compliments the hop character. If you were to inverse those numbers, you'd be left with a sharper, more hop-forward emphasis on your beer. I've done both extremes and can tell a difference.

I've done a lot of research on how commercial breweries are handling chloride/sulfate and it seems the trend is on par with the above advice. The more difficult information to obtain is the actual AMOUNT of salts (parts per million), breweries are using in their hazy beers. The typical ballpark figures I've gathered are 225-175 ppm chloride to 100-75 ppm sulfate. The highest number I've heard was around 300 ppm of either chloride or sulfate. I've never personally added this much salt but I'm tempted to push the envelope to see what happens.

One particular local brewery I really love actually uses the inverse of 1-2 chloride to sulfate. Being a huge proponent of their hazy IPAs, it makes me really question which ratio/amount I do actually prefer. Of course there are a number of other factors like mashing temps, grain bill, yeast, and final gravity that impact final beer character.

If you're just starting out with water treatment, I would target a chloride to sulfate ratio of 2-1. A great starting point on the actual target amount is 200ppm chloride and 100ppm sulfate. Assuming many of the breweries I heard from aren't lying to me, you'll be replicating pretty typical practices for the style.

My typical water profile for a hazy IPA usually looks something like this.

Calcium (Ca2+) 119
Magnesium (Mg2+) 3
Sodium (Na+) 33
Choride (Cl–)195
Sulfate (SO42-) 75
Bicarbonates (HCO3–) 58

Minerals and Haze

This is a newer area to me but there is lots of discussion (and maybe even concrete proof) that minerals can actually contribute to haze stability. I've done some basic research on this but it seems to me that my higher sulfate beers tend to have better stable haze through the life of the keg. Not sure if this is true or if I'm biased based on what I've heard. Since I started treating my water in general, I started developing hazier final beers.

Water/Beer pH

Wort pH is another hot topic when it comes to water adjustment. There are actually two things to note here. Mash pH and boil pH. Mash pH helps promote mash conversion and better-tasting beer. This is no news to most seasoned homebrewers. Boil pH is another story and deals more with hop extraction and bitterness. Read this article here regarding boil pH and hop utilization. In short, this article suggests that hop bitterness extraction is greater with a higher boil pH. Lower boil pH may lead to smoother bitterness.

This is another area I'm currently experimenting with after hearing details on a few popular commercial breweries targeting a boil ph of about 4.9. This means you'll likely have to adjust mash ph using lactic acid to hit your typical 5.1-5.4 target and then adjust down AGAIN at the start of the boil.

From what I've heard, you'll get more hop character and less bitterness from hot side hops. I'm assuming this also pertains to the whirlpool, even though we aren't technically boiling the hops. There is also evidence that heavy dry hopping can increase final beer pH. This is a massive topic and extensive research has been done. I would highly suggest you check out Scott Janish's article on beer pH as he covers the topic in a lot more depth.

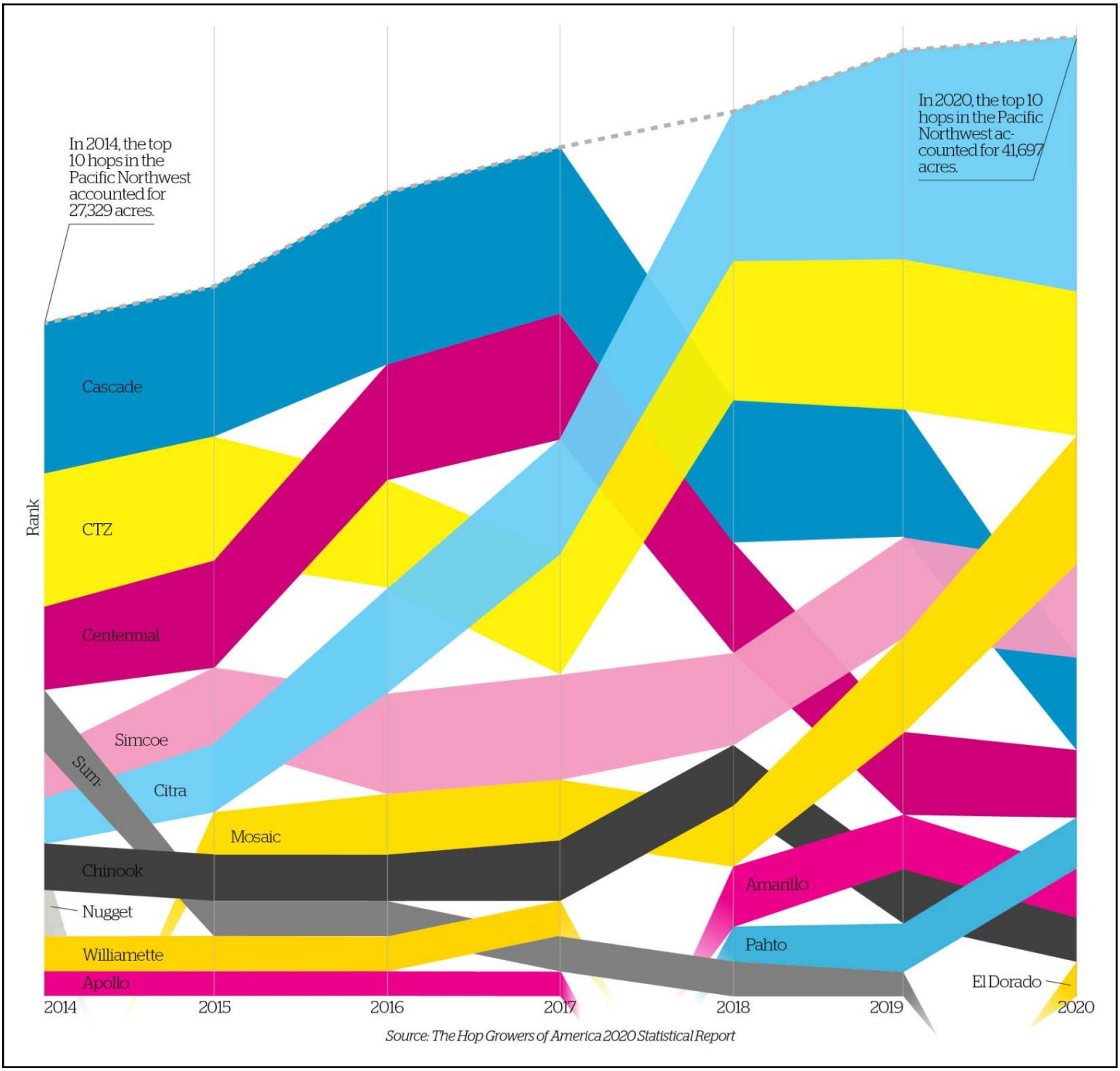
At this point, I don't have a great method for calculating boil pH adjustments. As of now, I slowly adjust with lactic acid, a little at a time, and take digital pH readings in between until I hit my target. If anyone has a better idea, I'd love to hear it.

Wrapping Up

If you focus on gradually improving your water practices you're going to get more refined results. At a minimum, your water won't be what's holding you back. To recap, start with RO or distilled water if you're unsure of your tap water quality or want to eliminate that variable altogether. At a minimum, you should be treating your tap water with Campden tablets to eliminate chlorine/chloramines. If you have city/town water, you likely have one or the other.

Use brewing software to build your desired water profile based on the guide above. It's something that's worth experimenting with and trying something new each time. I'd love to do an inversed split batch one of these days. Lactic acid will help you dial in mash pH and ensure you're getting the most out of your mash in terms of conversion. Try experimenting with adjusting boil pH once you've mastered all of the above. It can be overwhelming at first but once you get the hang of it it just becomes another brew day step that becomes second nature.

References: http://braukaiser.com/wiki/index.php/How_pH_affects_brewing#Hop_utilization



Infographic: Tracking the Top Hops

As growers look to meet demand from brewers, here's a look at how the most-grown hops in the Pacific Northwest have changed in recent years.

It's no small feat for hop growers to put thousands of acres of new hops in the ground in a given year, but demand from brewers today has led to huge growth in acres and a dramatic shift in which hops are being grown. Here we depict the most-grown hops (by acres harvested) in the Pacific Northwest from 2014 to 2020, showing the top 10 each year. The height of each band represents the number of acres grown that year; one inch is about 6,500 acres.

Source: The Hop Growers of America 2020 Statistical Report, By: Jamie Bogner

INCREDIBLE GEBL RECIPES

If you have a great recipe to share or just something you like please send to editor@gebl.org so it can be included

MONROE WEISS

ABV: 3.90%
SRM: 3
OG: 1.037 (9.3° P)
FG: 1.008 (2° P)
Yield: 5.5 US gallons (20.8 L)

BERLINER WEISSE
Ingredients:
MALTS
2.5 lb. (1.13 kg) Pilsner malt
4.2 lb. (1.91 kg) white wheat malt
7 oz. (198 g) Weyermann acidulated malt
YEAST
Fermentis Safale S-04 English ale yeast
Swanson Lactobacillus plantarum

ADDITIONAL ITEMS
11 oz. (312 g) passion fruit (secondary)
6 oz. (170 g) mango (secondary)
6 oz. (170 g) guava (secondary)
6 oz. (170 g) yogurt (primary)
3 oz. (85 g) grapefruit (secondary)
20 mL phosphoric acid added to mash
3/4 cup (175 mL) corn sugar (priming bottles) or 0.33 cups (80 mL) for kegging
Specifications:
Original Gravity: 1.037 (9.3° P)
Final Gravity: 1.008 (2° P)
ABV: 3.90%
SRM: 3
Efficiency: 75%

Directions:
Mash grains at 148° F (64° C) for 60 minutes in reverse osmosis water treated with phosphoric acid. Fly sparge at 168° F (76° C). Then raise temperature to 167° F (75° C), lauter, and sparge with 3.5 gal. (13.5 L) of 170° F (77° C) water. Collect about 5.5 gal. (21 L) of runoff. Bring to a full and vigorous boil.

The total boil time will be 90 minutes. Cool to 110° F (43° C) and add yogurt and Lacto culture. Purge kettle with CO2 and seal. Allow wort to sit for 5 days at 90° F (32° C) or until pH reaches 3.4. Bring to a boil, then chill to 67° F (19° C) and pitch English ale yeast. Once fermentation slows, rack onto fruit. Package after secondary fermentation is complete.

EXTRACT VERSION Substitute 5.5 lb. (2.49 kg) wheat malt extract syrup for malts. Dissolve extract in reverse osmosis water and bring to a boil. After boil, chill to 110° F (43° C) and add yogurt and lacto for kettle souring as above

Brewer Rankings, Events, Tasting Calendar and Club Presentations

Club Calendar and Information

CLUB SCHEDULE

June 10th - Yvonne from Local Liquid Arts!

July 8th - Stan Heironymous (Brew like a Monk, author) Social half-happy hour 5:30pm and meeting to begin at 6pm!
September 9: Dick Cantwell (dickcantwell30@gmail.com) Review of Brew Like a Monk book
December 9: Jamil Zainasheff jzainasheff@hereticbrewing.com Recipe formulation; Brewing classic styles book

CLUB SAME BREWS

August: Belgian Wit
November: Double IPA

EVENTS

June 13 - Heart of Cascadia, Portland Oregon – IPA only comp https://hoc.oregonbrewcrew.org/

July 10 - GEBL Sound to Summit Belgian Witbier competition

Aug 7 - Best of the Bay, Bellingham, https://bellinghamhomebrewersguild.org/bestofthebay/

June 17 to 19 HBC

All dates are subject to change

Membership Drive: We are always looking for new members. Please let us know if you have anyone interested. As suggested by one of our members, wearing your GEBL gear helps start a conversation. If you have any ideas please let us know.

If you would like to be added to the GEBL email list send your request to: ed_andresen@hotmail.com**:**
The GEBL Elected Club Officers for 2121 are:

- President: Jesse Free (president@gebl.org)
- Vice President: Todd Johnson (vicepresident@gebl.org)
- Treasurer: Pete Stachowiak (treasurer@gebl.org)
- Secretary: Will Fredin (secretary@gebl.org)
- Librarian: Robin Sparks (library@gebl.org)
- Newsletter: Bryan Collazo (editor@gebl.org)
- Membership Coordinator: Randy Neumaier (membership@gebl.org)

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