Bee Audacious

Bee Audacious Bay Area 2019: Improving Pollinator Habitat

On a bright spring day in May, representatives from several Bay Area counties met at Marin Art & Garden Center for a working dialog session to discuss the plight of pollinators and what we can do to increase habitat, educate the public about their importance, and get the attention of public officials who can distribute funds and promote the benefits of protecting pollinators.

Stakeholders from local governments, universities and non-profit educational groups shared their work, their challenges and their goals for the future.

The first round-table topic was **"What's Worked."** The discussions that centered around pollinator health, forage, and active projects focused on ecology and habitats and brought up some questions: do honeybees and native bees compete for resources? How can we engage the hearts and minds of school children? How can we educate the public and government agencies about the use of pesticides? How can we influence nurseries and landscapers about habitat plants? How can we work with Fire Suppression Districts to understand the relationship between habitat and fire-safe plantings?

The groups were moderated by thought leaders who kept the discussions lively and the participants engaged. Everyone was encouraged to share their ideas, goals, perspectives and methods for creating a new project or describing a project that they are working on or have heard about.

Ongoing ecology projects:
The Presidio in San Francisco: habitat restoration and monitoring. Three things came together: monarchs, rare native plants, and campground. At the pollinator garden found rare native bee thought to be extinct. Now it's a habitat restoration project.

California Academy of Sciences in San Francisco: doing some research on species diversity and abundance.

Mt Sutro (SF) organizations: restored habitat.

Gretchen LeBuhn at University San Francisco State University, Professor of ecology and conservation, she focuses on the effects of human induced change on wildlands. She is also the Director of the Great Sunflower Project. Co-author with Kate Frey of *The Bee Friendly Garden*
http://biology.sfsu.edu/people/gretchen-lebuhn

San Bruno Mountain: pulling out scotch broom and fennel and replacing with natives.
Marin Civic Center garden is being created. Didn't start out to be pollinator garden but shifted into that.

Butterfly Restoration Projects:
US Fish and Wildlife Services: https://www.fws.gov/savethemonarch/
Monarch Watch: https://monarchwatch.org/bring-back-the-monarchs/milkweed/free-milkweeds-for-restoration-projects/
National Fish and Wildlife Foundation: https://www.nfwf.org/monarch/Pages/home.aspx

Some nurseries and other garden plant resources are shifting emphasis from human aesthetic choices to pollinator and ecological choices. They are beginning to propagate and sell native and pollinator friendly plants to homeowners and commercial clients. Many nurseries that were outsourcing plant materials in the past are now propagating in-house for greater impact and control of native plant varieties and availability. Many are going to the extra effort of seeking out diversity among tree species by contracting growers who will provide better choices and meet growing demand. Purchasing professionals becoming more aware and are gravitating to better choices. Invasive plants are being identified to and by retailers; some plants are labeled "pollinator friendly", "neonic free." More needs to be done in this area, especially with the big box stores that carry plants and pesticides. UC Davis is putting together a pollinator friendly plant list; UC Berkeley has one that is focused on native bees.

Marin Master Gardeners has a pollinator plant sale at Falkirk. They do outreach by educating the public via their website and local newspaper articles. www.marinmg.ucanr.edu

Ace Hardware and Garden Centers in Marin and Oakland host pollinator education weekends.

Annie's Annuals wholesales to nurseries and garden centers and retails to the public. Their plants are identified as pollinator friendly, and they do not use neonics on their forage plants. They host regular events highlighting habitat and pollinators. www.anniesannuals.com

Bee Campus USA and Bee City USA are beginning to have a presence and impact. University of San Francisco, College of San Mateo and UC Berkeley are Bee Campuses. San Francisco is a Bee City. www.beecityUSA.org

Outreach to community groups and schools will always be a critical component of efforts to educate homeowners, children, and neighborhood decision-making groups. Building and maintaining "Bee Hotels" by Scouts, schools, neighborhood parks and urban farms has become an effective way to educate the public.

The Pollinator Posse, a group of enthusiasts and volunteers out of Oakland, create school and community outreach by giving lectures, hosting maker workshops with adults and children, and doing fun habitat projects. One such project is "Tees for Bees", a day spent with children hitting seed "golf balls" out into the edges of golf courses to bring awareness to "seed" floral patches where there were none before. This combines the tactile (hitting balls) and partnering with golf courses and seed companies. www.pollinatorpossse.org

Government in the UK gives incentives and subsidies to farms in exchange for them growing hedgerows. Some states are beginning to do the same.

In Victoria BC homeowners get tax breaks for planting habitat gardens.

The San Francisco Department of Public Works is being encouraged to transform median strips (near Mission Dolores). Volunteers found 11 species of native bees there. The goal is public awareness of habitat.

Corporate, Non-Profit, and Government partnerships are projects of some of the participants. Master Gardeners and Beekeeping Associations are regular features of county fairs with educational booths designed to do public education.

The National Wildlife Federation has a "Million Pollinator Garden Challenge" designed to solicit donations by giving plaques and recognition to homeowners who want to demonstrate their commitment to pollinators. https://www.nwf.org/Home/Latest-News/Press-Releases/2019/02-26-19-Pollinator-Gardens

American Society of Landscape Architects conference – promoting native species; the traditional list of Mediterranean climate plants is shifting – need to consider plants to address a warming climate; 2 or 3 degrees hotter than in the past. https://www.asla.org/ContentDetail.aspx?id=43534

Freeway projects by CalTrans have been very successful. They are the largest seed purchaser in California. They are concerned about pollinator habitat and roadside stabilization as well as having fire suppression plants. These include plants that provide soil stability; initiatives exist to reseed with native plants. They work closely with NGO experts (which give them advice, like landscape architects). This roadside management saves money by requiring less maintenance and fewer pesticides.
http://www.caclimateinvestments.ca.gov/2019-project-profiles

Implementing a free National Park Pass for 4th graders and their entire family for years was a hugely successful program and has been extended. www.nationalparks.org

Partnering with private industry, food producers, growers, and food labeling companies resulted in a new branding tool/certification label from Xerces Society www.beebettercertified.org – promoting pollinator conservation in agriculture. This labeling icon signifies value-added food source qualification.

Xerces Society www.xerces.org and Pollinator Partnership www.pollinator.org do regular outreach with farmers, students, universities by providing grants for research, publicity for ongoing projects, educational materials to the public and other stakeholders.

Oregon Bee Project: www.oregonbeeproject.org Bee-friendly resources and tools for stakeholders and the public.

Civic and Utility Demonstration/ Flagship Gardens, especially with water-wise garden plantings have been important community resources.

NABA: North American Butterfly Association www.naba.org

New Bay Area Projects:
Taylor Rein and CALPIRS at UC Berkeley created Bee Campus USA.
Taylor Rein and CALPIRS working on establishing Bee City USA in Berkeley.
Pollinator Posse in Oakland is leading the effort for public, civic and corporate awareness.
Bonnie Morse is leading the education and policy effort for public, civic and fire prevention officials to understand habitat.
UC Berkeley Botanical Garden hosts annual "Bug Day" events for families.

The good news is that number of children and college students reached by environmental science programs in high schools, K-8 school gardens, botanical gardens, and nature camps is at an all-time high. Teachers are finding the resources for curriculum, field trips and community experts; graduating college students are becoming inspired and are discovering creative ways to improve our responses to the ecological challenges of the future.

Second round-table topic:

"What Hasn't Worked / What Are the Challenges"

Fire Suppression VS Pollinator Habitat:

Fire safety – is there an environmental awareness of ecological effects of eliminating foliage as a major fire preventative measure? – looking for balance. People choose to live where can look out the window to see green/vegetation.

Fire-prone plants – and plants that weather fire -- eucalyptus, juniper, 5-foot minimum clearance from foundation, educate municipalities and their community members about pollinator friendly/resilient habitat. An easy search or an academic assignment?

Cross reference plant lists to find those that are both fire-resistant and pollinator friendly.

Propagate and market "plant packs" that put together fire resistant and pollinator friend plantings

Pesticides:

Homeowners are more likely to use stronger-than-recommended strengths of pesticide.

Concern about pesticide regulation and how the EPA evaluates safety – larval-scale testing is neither required nor studied, labeling of chemicals does not warn against sub-lethal effects.

Timing of chemical use on labeling is helpful, but what about synergistic effects of multiple toxic exposures -- this affects pollinators – and what about people?!

The shift to neonics from organophosphates that damage mammals – just led to other problems.

If we want to allow use of chemical products, we must accept unknown risks. Canada has an across-the-board ban on use of pesticide for purpose of aesthetics. In California municipalities cannot have their own stricter regulation on pesticide use, must revert to state regulation if there is a state regulation in place. In drafting the last Farm Bill some legislators tried to accomplish the same by creating national standard that localities could not supersede – this failed to be adopted into the Farm Bill.

No other state has more awareness than in CA -- pesticide use reports quantify what's being used and where.

Neighbor notification requirement is a creative way to push back against state default standards – this allows neighbor complaint to which the county must facilitate communication/solution – could invite educational intervention that is often enough to prevent further pesticide use.

Registered beekeepers must be notified if pesticide will be sprayed. This doesn't stop application, only allows beekeepers to close hive entrances. Also, if labeling doesn't specify that product is toxic to bees (sublethal), then no investigation will be accomplished and no future label change made to prevent future ill effects. Notification is a strong way to curb pesticide use and to offer less toxic or non-toxic alternatives

Putting up signage prevents spraying – this is also effective for raising community awareness about pesticides and minimizing use.

Policy progress – US policies could be written to be more like in Europe, broader array of invertebrate testing for toxins – what does a risk assessment protocol look like, sub lethal effects, larval effects, impact on social insects.

Failure to create a consolidated eco approach.

In US, chemicals are considered safe until proven harmful. In Europe the precautionary principle prevents approval until chemical is proven safe.
Grassroots approach – manages risk, works with growers/stakeholders, finds win-wins.
Local pesticide ordinances – how to consolidate the effort to improve policies.

How can we achieve funding and publicity:

Pollinator plant sales by community organization can raise money and awareness.

Autumn Lights festival at the Gardens at Lake Merritt, last year with 189 Burning Man artists donating time and materials raised $100K.

Have to figure out how to tap into the tech world for funds.

Something like iNaturalist but more like a game (with GPS so still citizen science)

Some organizations have full time fundraisers.

There is money out there –we just have to convince people to put their dollars into this cause.

Storytelling, with pictures. Photographers will get the photos out everywhere.

Volunteers from big corporations, who will match time with money. Even executives will volunteer and it has a big impact on them. Chevron, Levi Strauss, etc.

Hands in the dirt is so important. Sharing that moment with people who don't usually do that. They have the ability to share their own story.

Money comes after big projects are done and publicized.

Emphasize the importance of gardening and what it can do for a person. Healing.

A communications team takes the stories to a general public. How to engage? How can we engage more media to get the story out?

Dr. Frankie's garden at the Urban Bee Lab at UC Berkeley is gone, lost funding. Trying to get Master Gardeners to help maintain it. This is an incredible resource to students, gardeners and beekeepers. Why can't some software company fund him? Why isn't UC Berkeley Information Office telling this story?

Public Habitat:
IPM, Integrated Pest Management techniques, use of less toxic alternatives
600 apartment complexes in SR – potential for efficient scaled approach for achieving best practices among HOAs
A pledge that spreads – get buy-in on better standard of grounds maintenance
"this is a demonstration garden---some plants may fail"

Private Habitat:
Publicize 6 plants that should never go in your garden for pollinators because they are invasive.

Need a "slow food movement" model for telling the story of bees.

Plant natives – over-simplified idea, i.e. tropical milkweed is not native to many areas and this is not well understood. It shouldn't be planted within 5 miles of overwintering sites for Monarchs, unless mowed/eliminated at end of season.

Coyote brush and Manzanita – late forage bloomers, and Eucalyptus – an important early season forage source; these species have evolved to survive fire, but are considered highly flammable – should they be eliminated in certain landscapes or is it enough to maintain against fire – clearing up the understory or replace with Monterey pine?

Forming new alternatives to sourcing pesticides.

Native Plants Gardeners need: correct habitat and growing requirements for plants. Sources without pesticide use. Diverse choices based on growing requirements and seasonality.

Conservation Messaging:

Lack of biodiversity is a direct result of uninformed urban planning. Need to build community focus on increasing consumer knowledge which will put pressure on planners and industry to change their

practices.

Integrated conservation: not being articulated well; what about packaging…need to create a "Brand" that can be marketed.

Combine pollinator message with other interests to do it in a thoughtful way.

A problem with people removing native plants and therefore not giving food to pollinators when they need it and instead insects are pollinating "invasive" plants.

Overwhelm – what can one person do? We must be the "freak of one" to ignite change – accomplish what committees can't. One person can affect his/her own interest group.

IPM, Integrated Pest Management techniques, use of less toxic alternatives.

We are responsible for translating science to the public. We are the field experiment. It's on us to communicate and ignite grassroots advocacy.

Messaging about honey bees vs native bees; Do they really compete? Are they sharing diseases? Are honey bees getting all the misplaced publicity and sentiment about "Saving the Bees"?

Education has its limitations; incentives and regulations have their place.

US Government education and support:

Hard political moment now for policy – how do we make social movements?

In US -- University-driven science occurs but is not taken as scientific evidence for USDA registration and labeling.

Europe is looking at other bee species – coordinating facilitators that maintain standards. Ring testing - 5 labs in 5 different countries reach consensus.

Local Government and support:

State and Local laws have preference for "lowest bid" development projects. Landscapes often get short changed and habitat can be destroyed.

Can generate revenue through training programs for Parks and Rec staff. Training for maintenance workers, land managers of public spaces.

Landscape architects are key, they are hungry for information. But, 90% of success of habitat is maintenance. Can't just throw things in the ground. And the Landscape Architects never go back and see the gardens after they've finished designing them.

Important to have conference for the public and for professionals in the industry. How to include maintenance workers? Cities have to make education mandatory for staff.

Bay Friendly (now ReScape) certification counts as "units" for City of Oakland groundskeepers. But then ReScape doesn't go back to see if they are actually doing what they learned. ReScape California will give ratings on various items, but mostly for design items, and not for maintenance. www.rescapeca.org

How to build in accountability. Contractors don't necessarily follow what has been designed by architect, will cut corners to save money and time. There should be follow up to see if it's being maintained properly.
Re: RFPs, use high requirements to weed out the worst bidders. Must accept the lowest bid; but can try to eliminate the lowest bidders. Put 5-year maintenance plan as a requirement in the bid.

Question: how is the education of the people coming out of the colleges and universities?
Mixed. People with Ag degrees are just learning about the business side of things. Sustainability is not part of the curriculum.

Landscape architect degrees – don't include enough information about plants.

Entomologists who advise farmers on pesticide use are not enlightened. Risks not being taught.

Ecology students do work in wild areas. Why not in urban creeks?

Seeing a shift but it's slow to change. State schools in the valley are not changing much yet.
USDA is improving; putting stricter regulations and checks on farmers. Testing. Regulations are the teeth that get them to do something.

Share success stories. Introduce nurseries to others who gave up neonics, so they see it's possible.

Resource Conservation District, under the USDA, does pre-emptive work with farmers. Gives them regulatory relief (from paperwork? Or financial incentives?) if they adopt certain practices. The farmer can avoid certain onerous tasks.

Federal Farm Bill – pollinators were addressed, but subsidies take up huge portion of budget.
We need people in political/policy work. Pesticide Action Network. The top down stuff really matters.

Healthy Soils Initiative. There is money out there for this; but need to get the word out about pockets of available money.

Natural Resources Conservation Service webinars. How to get money, even for private land.
Need a partnership between the regulatory agencies that ding farmers; and organizations that can help them find and fix the problems. How do we make it easier to do those things? They don't have time or energy or money to fix the problems, we need to help them figure out how to do it.

Third round-table topic:

Creating a Bay Area-Wide Initiative

The final discussion of the day encouraged participants to look at the needs in their own communities and think up strategies for moving forward to create habitat, raise awareness, and engage stakeholders.
Some thoughts:

Public Habitat
Find examples of Integrated Pest Management case history involving municipal parks & open space developed and documented policies and practices over years to eliminate pesticide use.

Fire Suppression and Pollinator Habitat
Create defensible space horizontally and vertically, while still using habitat-friendly plants that support wildlife year-round with food and shelter.
Start conversations with fire depts and cities that are creating wildfire prevention plans.
Provide a list of plants that are 'fire safe' and support pollinators.

Urban Planning
Signage to educate a "Best Practice" for a public garden. A "Don't mind our weeds" sign.

Promote pollinator tree habitat.

Hedgerows and pollinator plants tax write-offs for agriculture and landscapes.

Bay Area Pollinator Corridor Coalition. Large scale project connecting diverse communities is a common goal to create corridors of habitat. It could be a good education and beautification exercise in addition to the habitat benefits. This could include supporting wildlife and soil health; with the added support of more stakeholders.

Important to balance human needs with the ecosystem

Retail Education
Landscape education should be teaching about IPM.

Example given of two area hardware stores that regularly call beekeeper club members to get advice re: plants and pesticides.
Guerrilla retail – flash mob that plasters insecticide products with warning stickers at Big Box stores.

Public Education
Create a year-round calendar of dependencies between weather, flowerings, and clearance tasks

Home Gardeners can propagate and nurture flowering plants, then share them thru plant sales, swaps, and neighborhood parties.

Visible project statement – art, structure that raises awareness of pollinator/habitat issue. Community Art that can foster a movement: think Aids Quilt.
Education about importance of supporting pollinators and ecosystems to our common health

Potential Partners
Our Water Our World, Marin County Stormwater Pollution Protection Project (MCSTOPPP)

Reach out to Watershed organizations/activists; ie Friends of Sausal Creek.

CalTrans is largest user of pesticide and also larger buyer of native seed.

Chef described example of hotel that created partnerships with food sub-leasers i.e. Starbucks – this set off discussion dominated by one participant who objected strongly to routine/daily choices that are not healthy or ecologically sustainable -- both commodity food and excessive packaging – were examples of the very thing this particular group of bee-friendly people should not tolerate.

Pesticides
Pesticide reduction projects are already active; build on these. Neighbor notification could be a vehicle for change. Frame goals for pesticide use reduction.
Identify audience for greatest impact –

- parents of young kids and educators, as well as students in schools.
- agricultural community
- retail stores – Home Depot
- parks departments
- homeowners
- city governmentt
- consumers / taxpayers
- professional garden/landscape services
- Applicators

Pre-emption laws – no lower level of govt can enact laws that are more strict than state law – this is in effect. Pre-empt type law was proposed to be included in Farm Bill as Federal level regulation that would supersede state regulation – this failed. Try again?

BayNeighbor notification was not included in pre-emption law so pre-notification is still required for use of pesticide affecting more than 10' x 10' plot, user must tell all adjacent property holders 3 days in advance of application. This fosters neighbor dialog and puts pressure on user and can start conversation about need for education and change. i.e. better ways to handle weed control and awareness of health issues, awareness and empathy for persons with compromised immune systems.

Existing Efforts:
Neighbor notification
Citizen science – test kits that allows individuals to collect evidence
Pesticide-free zone prototype community: Fairfax
City governments in Oregon and Washington state – provided pest-free signage to those who signed pledge.

Municipal/Park IPM maintenance plans – educate, create prototype program.
In New Jersey –9 municipalities have adopted pesticide-free zones governing practices at all municipal properties.

What's Next?
Pesticide-free zone campaign to target homeowners.
Change our expectations of what a healthy garden looks like – new ways to think of purposeful landscape.
Create a Google Group for Bee Audacious participants.
Interface between politicians, fire departments and homeowners regarding fire suppression and pollinator needs.
Create an online toolbox that all interested parties can access: other websites, media writers and presenters, school groups, cities. Be specific about which pesticides are commonly used, discuss how to read labels, identify each chemical and how it is used and what its complete impact is. Suggest alternatives. Identify sources of more information.
Add biodiverse pollinator habitats to corporate outreach programs.
Write more articles, record videos that spread the message of pollinators.
Work on creating policy recommendations regarding pesticide use.
Commit to creating a coalition at Dominican to develop the Pollinator Corridor and have an education component.
Help the Native Bee Lab at UC Berkeley get funding to sustain the Pollinator Garden.

In Conclusion

The very first Bee Audacious conference brought together beekeepers from all over the world; owners of very large commercial concerns, regulatory agents, academics, teachers, enthusiasts, and small business owners. There were many different points of view that wanted to be heard, and sometimes these views were contradictory. The point was to hear these differing views, learn from them, and spread the word about honey bee health and industry sustainability. This second conference had different goals. We were a collection of educators, policy writers, government officials, gardeners, non-profit leaders and small business owners who came together to share and collaborate about how to improve our own small piece of California; so rich in habitat and natural beauty. We seek to preserve the initiatives and legacies of those who have gone before while designing new "best practices" and methods to carry on the duties of keeping the Bay Area, not only our home and playground but all of nature, for future generations.