AIRPORT ABUZZ

Flight Path's airport apiaries project takes off at Terminal Bee.

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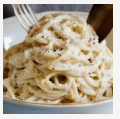
High above the tarmac during a descent into Seattle-Tacoma International Airport in 2011, Bob Redmond noticed a surprising amount of underutilized greenspace at ground level. While fellow passengers returned their seat backs and tray tables to upright positions, an idea was taking root — one that would improve local ecosystems and boost biodiversity by creating habitat for native pollinator species. He's been working to bring that idea to fruition ever since.

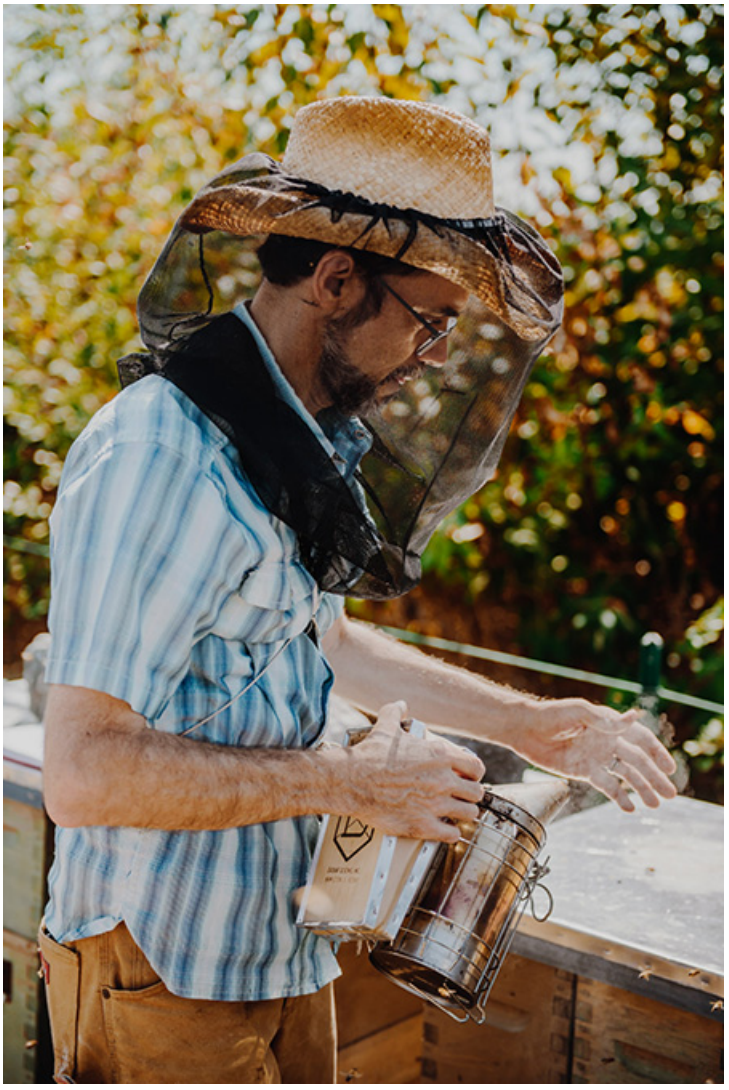
Bob's appreciation for local bees and pollinators started a few years prior to that watershed moment inside a plane. In the early-2000s, he was the writer-in-residence at Hugo House, a community writing center in Seattle. As part of that program, he lived in a historic cottage beside the Belltown neighborhood's P-Patch. When he wasn't arranging haikus, Bob liked to observe the garden's bees as they buzzed between colorful blooms.

"Their patient and constant movement among the flowers fascinated me," he says. "The more I watched, the more questions I had: How do bees make honey from nectar? What happens to the pollen? What's a day in the



life of a bee?"

Bob's growing fondness coincided with some of the earliest reports of colony collapse disorder, a phenomenon that occurs when the majority of worker bees in a colony disappear, leaving behind the queen, plenty of food, and a few nurse bees to care for the remaining immature bees and the queen.



"Reading about colony collapse disorder stoked my curiosity and brought an urgent relevance to bees," Bob says. "We depended on them, and they were in trouble. I was alarmed, and I wanted to do something."

Bob founded Seattle's Urban Bee Company in 2009 to maintain healthy hives around town, design and install pollinator-friendly gardens, and serve as a space for knowledge exchange among beekeepers. He and his family run a honey manufacturing operation in their Burien home, too, and deliver the sweet end product to customers via bike.

Sitting in that hollow tube with wings in 2011, Bob pondered a recent project that had installed an apiary on unused acreage at Chicago's O'Hare International Airport. It was the first major installation of its kind in the U.S., and beekeepers there harvested 1,200 pounds of honey during the first year. Since then, O'Hare has housed as many as a million individual bees in 75 hives. Looking at Sea-Tac's underutilized lands below, Bob knew what he wanted to do next. "The work at O'Hare flipped a switch for me," he says, "and the whole scope of the project lit up at once."

European honeybees (*Apis mellifera*) arrived in North America with British colonists in the 1600s. They're the managed species that commercial beekeepers raise and harvest more than 150 million pounds of honey from each year in the U.S. But these bees — the species' unequivocal mascot — aren't the only pollinators that do important work in our society.

"A big chunk of the planet's land plants benefit from animal pollination," says Paige Embry, the Seattle-based author of *Our Native Bees*. "Wild bees and pollinators help create the base of the food web. They play a big role in making the fruits and seeds that feed and sustain other insects, birds, and mammals."

Around the world, there are at least 20,000 bee species and an estimated 200,000 types of pollinators. But Embry says bees do it best. "Of all the pollinators, including an array of flies, bats, birds, and animals, bees are the premier pollinators. The others pollinate by chance, but bees are built for it."

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Widespread threats to native pollinators include pesticides, climate change, parasites, and disease. An additional concern, one that's particularly relevant to local bee experts, is the loss and fragmentation of bee habitat in ever-growing cities.

"Nearly 80 percent of our local species nest in the ground," says Allison Rinard, executive director of The Common Acre. "The rapid development of paved, mulched, and turfed areas imperils our bees — they need dirt." The Common Acre, also founded by Bob, combines ecological restoration, community-building, and art.

Bob envisioned more than an operational apiary like O'Hare's. Instead, he wanted to develop a strategy for municipal land management that promoted wild bees, too — something that could be replicated elsewhere to build out a network of pollinator-friendly habitats across the map. So he assembled an A-team to help him get the job done. The project, called Flight Path, included partners from The Common Acre and Port of Seattle to start. Over time, they pulled in additional expertise from groups like the Wild Bee Foundation and Urban Bee Company, plus earned the support of nearly 200 Flight Path backers on Kickstarter.

Eventually, their efforts coalesced around a shuttered golf course on the airport's south end. They hoped to convert it into an ecological hub by setting up colonies of honeybees for research and education and installing habitat for native bees and pollinators. The research and education component presents an exciting opportunity to breed honeybees better suited for survival, but habitat installation is Flight Path's bread and butter. In a note to supporters in 2014, Bob said that the biggest difference Flight Path could make is to change the land and support the creatures on it.

Flight Path is officially off the ground now, and, in recent years, they've made serious headway toward their goals. The team has installed nearly ten acres of pollinator habitat at Sea-Tac and expanded the original project scope to include restoration sites under transmission lines in south Seattle and at Boeing's facility in Everett. Additionally, they have supported the Port of Seattle in choosing pollinator-friendly plants for greenspaces elsewhere around the airport. So far, Flight Path's bee survey crew has identified nearly 100 native bee species across its sites.

"Spending time at the Sea-Tac, the history reveals itself — waterways, habitat, flora, and fauna. It's like a wildlife preserve," Bob says. He vividly recalls spotting a coyote and her pups while tending the bees early one morning. "This project reminds me how wild this place is, even amid such growth. I've learned that 'wild' is all around us; we just need to look."

The Flight Path project is one of just two purveyors in the Pacific Northwest that's breeding local honeybee queens — a years-long process involving daily management, as well as substantial research and selective work. Flight Path has three Northwest honeybee apiaries, each with 10 to 18 colonies, and the Northwest honeybees they rear at Sea-Tac are thought to be more tolerant of Seattle's cool temperatures and more disease-resistant. They've successfully bred an average of 20 new queen bees each year, which are used to repopulate their own apiaries and distributed to other beekeepers. Located on the old golf course and south of the runways, Flight Path's apiaries are a closed-loop system that sustains itself with honey sales.

Another important aspect of Flight Path's work was commissioned and installed in 2014: an art exhibit to raise awareness for the plight of the pollinators. For about a year, the exhibit showcased the pollinator-themed works of 25 artists, just outside of Concourse B. An estimated two million people viewed the pieces.

"Working with the airport has been intense, and it's sometimes hard to get our little bees prioritized amidst huge operational urgencies," Bob says. "It took time, but the airport has embraced this work."

The ambitious and evolving Flight Path project hasn't been without challenges, though.

Since its earliest days, the collaboration has kept its key players scrambling to address unforeseen obstacles as they arise. For example, 20 acres of plantings from 2015, including thousands of plants and plant-starts meant to attract pollinators and spur biodiversity, failed due to poor weather. At around the same time, Flight Path's anticipated 50-acre allotment for habitat improvements at the old golf course — now called Tyee Meadows — got slashed to 20 acres.

"The ground changes underneath us from year to year," Bob says, "and planning ahead is difficult to do on a changing landscape."

To fight for more sustainable land-management practices, the team hopes to show that their habitat restoration efforts are working. To do that, they need to build a reference collection of bee specimens at their Seattle sites. Little research has been done on wild bees in western Washington, so there is no baseline data for comparison. It'll be a few years before stats collected by the project's bee survey team will determine whether their efforts are paying off in terms of species abundance and richness.

But no setback will prevent the team from deploying strategies they know should work, and no lack of data points will keep them from looking to the future. Moving forward, a priority for Bob and the Flight Path team is figuring out the piece of the puzzle that allows other agencies and policy-makers to adopt similar practices

through an easy-to-replicate protocol.

"When people see maps of airplane routes and all the dots at the end of each route," Bob says, "I want them to see those as oases for bees."

Kelly Knickerbocker is a Seattle-based writer with Texas roots. She enjoys exploring the city on two wheels, listening to NPR podcasts, and making travel plans (*almost* as much as actually traveling).

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