

prayed to the alley that they would come home alive. I want to tell about the house that's going down, how it has decorative glass beads embedded in the lawn, how my daughters used to pry them out and pocket them, because they were jewels.

Cecily Parks is the author of the poetry collections Field Folly Snow and O'Nights, and editor of The Echoing Green: Poems of Fields, Meadows, and Grasses. She teaches at Texas State University.

How to Save a Pupfish

CEAL KLINGLER

FIFTY YEARS AGO, fishery biologist Phil Pister carried Earth's last remaining Owens pupfish in two buckets across a lumpy marsh as the pond they'd lived in dried up behind him. A mature pupfish weighs little more than a gumdrop; some invasive fish eat them like popcorn. But eight hundred or so Owens pupfish—the last eight hundred—must've weighed worlds.

"I remember mumbling something like: 'Please don't let me stumble,'" Phil wrote later.

I think of Phil one night as I crutch across that same slough, trailing my husband and Steve Parmenter, an aquatic conservation biologist with the California Department of Fish and Wildlife. My husband carries a sleek white experimental drone. Steve carries a three-foot-long JBL 38 Special speargun. Earlier today, he replaced the thick black rubber bands that drive the spear, a short, cruel-looking stainless-steel trident on a tether. The industrial gray crutches carry me, wearing a mundane headlamp.

We stop at a spring pool. Steve fades into the rushes. My husband slips the drone into the water and pilots from shore. The drone slurps at the surface as algae clogs its thrusters. Minutes later, a green largemouth bass shimmers in the drone's headlights. My husband gently herds the bass toward Steve's last known location. When the fish breaks away from the drone, I rake the water with light, searching for gleams from the bass's pupils. Red swamp crayfish jet backward out of the silt, startling everyone.

"Stay where you are," we tell Steve. "No . . . wait. Come back to this side."

Just as a river of migratory birds once flowed across Owens Valley skies, a river of Owens pupfish—millions of them—once flowed through the valley's waters. They crowded more than eighty miles of the lower Owens River, wriggled through marshes, and silvered Paiute agricultural canals below the eastern Sierra Nevada mountains. Then new settlers introduced largemouth bass and other fish who, lacking food from their old homes, ate the inhabitants of their new ones. The city of Los Angeles diverted the Owens River into an aqueduct, siphoning water hundreds of miles south. Groundwater pumping transformed springs into sumps.

After more than 2 million years of eluding extinction, Owens pupfish now brighten only five small separate pools and marshes, less than a quarter acre in all. The healthiest site, the pool we're prowling, hosted thousands of pupfish until the bass's unannounced arrival.

Steve hasn't asked—he's barely said a word—but we'll stay until the bass dies.

THE DESERTS of Eastern California host rare animal escape artists who've dodged or endured drought, floods, heat, lava, and isolation: silt-black toads who overwinter underground, emerge in spring sun, and turn nocturnal as temperatures rise; tiny

voles who abide in the green hearts of marshes; and desert fishes—all residents of small islands of water, marsh, or plants separated by sand, stone, heat, and dry.

Geographically separate groups of animals dodge extinction best when they function as metapopulations, exchanging genes with other groups of the same species when individuals travel to distant sites during floods or flukes. It takes only a small disaster to separate a group of animals from a metapopulation, and skill and luck to nudge them back together.

These desert haunts also host conservation biologists. Magicians don't share secrets, but conservation biologists share whatever works: guns for invasive bullfrogs; shuffling techniques for pupfish with limited suites of genes; plumbing tricks to maintain water levels for voles; volunteers to trim bulrushes for toads. Think of conservation biologists as metapopulations of experts, ideas, and climate-controlled buckets.

I'm no magician myself, only a pedestrian volunteer from the audience. I grew up in piñon-juniper woodlands without much surface water; the privilege of seeing desert fishes, amphibians, and other wildlife still startles me. On weekends before my injury, I jogged a thirteen-mile route to the healthiest pupfish pool, cleaned a gate that keeps downstream predators out, and watched twilight blue male pupfish raise sails for sand-colored females before I moved on to visit round-bellied horned lizards and jewel-eyed tiger beetles.

Last fall, while I helped a friend survey desert salamanders, boulders fell from a canyon wall and drove my tibia into my ankle, tearing ligaments and breaking bones. I stewed, thinking of tiny animal Houdinis whose performances I couldn't attend, whose disappearances I might miss. There are myriad species, infinite threats, and only

so many conservation biologists bearing buckets. Sometimes volunteers from the audience can lend a hand.

By then we knew pupfish at the healthiest pool were disappearing, but not why. As thousands of Owens pupfish evaporated, my ire shifted to unshipped tools: Years earlier, my exuberant husband had preordered an in-development underwater drone. It had yet to be delivered, so I begged the inventors for an experimental model. Shortly before the drone arrived, someone glimpsed a bass at the pool: our piscine Grendel.

WE HERD the bass around, lose her in shadow, find her with the headlamp. Finally she swims within Steve's range. A spear hurtles past the drone's camera. Silt and crayfish billow across the pool. When the clouds clear, we see the bass drifting vertically, motionless.

Steve and my husband whoop and give each other high fives. I give them anemic fist bumps. Who dumped her? I think. How long until the next threat drops? How do I ditch these crutches?

Days later, we'll find a dozen pupfish huddled at the other end of the pool, enough, we hope, to save this population with help from pupfish imported from remaining sites. The next year, after Phil's ninetieth birthday party, tiny pupfish will emerge from algae like translucent exclamation points. Right now, as Steve holds up the bass in the light from my headlamp, we stare down her throat. Her round gape is more than two inches in diameter, just wide enough for a small native fish to swim into a lesser or greater version of the future.

Ceal Klingler has published nonfiction in High Country News, Backpacker, and The Sun, among other places. In 2016, she received a grant for writing on water from the Ellen Meloy Fund for Desert Writers.