

IDEAS FOR A BETTER YOU

FRESH

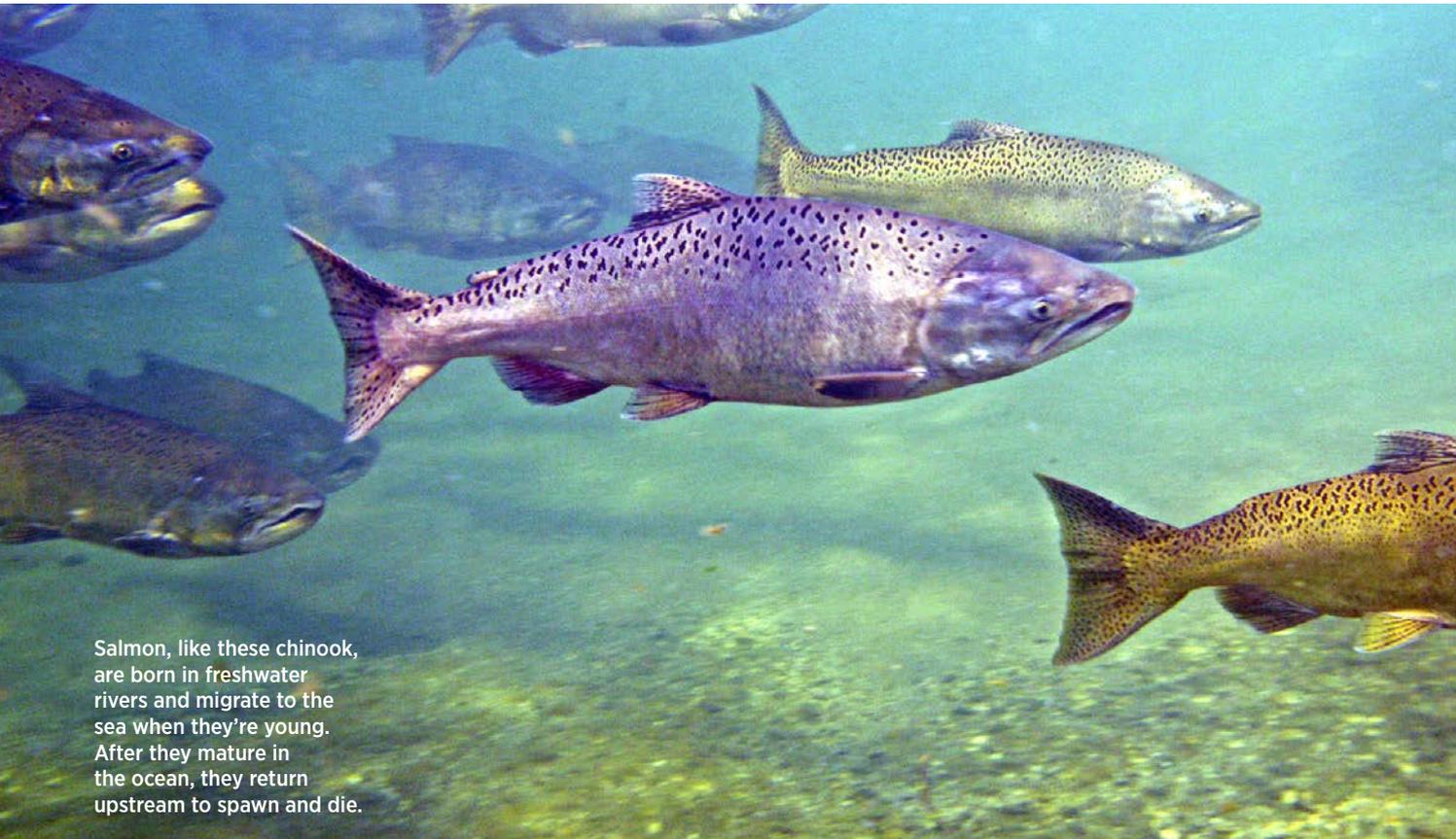
There's Something Fishy Here

In California's Central Valley, rice farmers are using their off-season to help endangered fish flourish

By LUCY M. CASALE

It's hard to exaggerate the abundance and subsequent plummet of chinook salmon in California. Before 1915, about 600,000 of them annually swam the Sacramento River, with some estimates reaching 1 million. Fast forward, and spawning runs in this river tanked to as low as 70,000 in 2009.

How did this plentiful fish population wind up so meager? Look to the land for part of the answer. The Sacramento River watershed—the largest in California—flows into the Sacramento Valley, which used to be covered in wetlands. This was critical habitat for the juvenile salmon as they migrated from the river to the ocean. But



Salmon, like these chinook, are born in freshwater rivers and migrate to the sea when they're young. After they mature in the ocean, they return upstream to spawn and die.

today, more than 95 percent of these wetlands have been lost—leveed and drained for flood control or converted for agricultural use. But there's a solution happening on rice farms that neighbor the river: farmers are flooding over 300,000 acres of fallow winter fields, providing surrogate fish habitat after the rice has been harvested.

This conservation endeavor began as a research experiment (dubbed the Nigiri Project, for its sushi-like pairing of rice and salmon) in 2012, pioneered by Carson Jeffres, field and lab director at the University of California, Davis, and then-doctoral student Jacob Katz (now, a senior scientist at the nonprofit California Trout).

The study, says Katz, started, "in the corner of a flooded rice field. A 5-acre mud

puddle about shin deep." But the results were astounding: salmon in the flooded rice fields grew larger and faster than fish in the river because the decomposing rice stalks attracted a feast of critters for the baby fish to eat. This is crucial because bigger fish are more likely to return from the ocean to the river to spawn as adults.

Because of this success, the California Rice Commission has included fish conservation in its wildlife-friendly practices. And today, Katz, Jeffres and others are working to expand the project ("We're calling it 'Operation Fat Fish,'" says Katz) to other areas that don't have direct access to the river.

INSIDE THE NUMBERS



Floodplain



River

These salmon started out the same size—about 2 grams. Three weeks later, the floodplain-raised fish (left) weighed in at 5.5 grams compared to only 2.3 grams for the Sacramento River fish (right). This makes sense: the flooded fields have nearly 150 times more food than the river.

PET HEALTH

Does my dog need probiotics?

Probiotic products for pets have flooded the market as the importance of "good" gut bacteria becomes clearer. The strongest evidence for these supplements so far in pets is for gastrointestinal conditions, diarrhea in particular. (There isn't much evidence yet on probiotic benefits

for other conditions or general well-being.) Studies in dogs show that probiotics can help rebalance gut bacteria and reduce diarrhea caused by stress, as well as shorten recovery time. Promising research is ongoing in animals for more serious gastrointestinal issues, such as inflammatory bowel disease.

Probiotics are typically safe for animals, but check with your vet first to make sure that your pet's condition doesn't require more care. If probiotics are

recommended, keep in mind that not all supplements have the same dose or strains of bacteria—both of which can dramatically alter the efficacy of the product. And because quality control is a known issue (many products don't have the bacteria in the amounts their labels suggest), ask your vet to suggest products that have been tested and confirmed to meet their label claims.

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