



# Future of Fish Feed

## Background

Aquaculture now provides over 50% of the world's seafood, and continues to grow. However, aquaculture faces a supply-chain bottleneck - fishmeal and fish oil derived from forage fish to feed farmed fish. Heavy reliance on forage fish threatens food security worldwide as well as the future of ocean wildlife such as seabirds and marine mammals like whales, seals, and dolphins. To feed the ever-increasing global populations and protect the health of our oceans, the aquaculture industry must innovate sustainable fish-free substitutes for fishmeal and fish oil.

## Challenges Save Fish!

### Fish-Free Feed Challenge (2015-2017)

To sell fish-free aquafeeds using innovative formulations of proteins and lipids.

Winner: Guangdong Evergreen Feed Industry Co.

Impact: 350 million forage fish saved

### Fish Oil Challenge (2017-2019)

To create fish oil replacements that contain essential fatty acids in ratios that mimic the average fish oil.

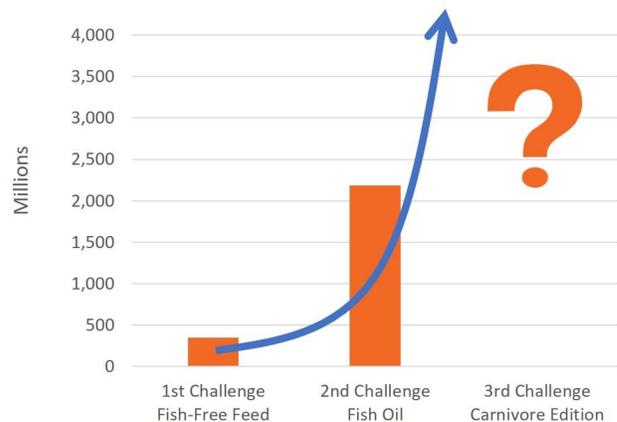
Winner: Veramaris

Impact: 2 billion forage fish saved

### F3 Challenge - Carnivore Edition (Present)

To create fish-free feeds for the biggest consumers of forage fish (3 categories): salmonids, shrimp, or other carnivorous species.

F3 Challenges: Estimated Forage Fish Savings



## Meetings

To facilitate networking and collaboration between ingredient suppliers, feed companies, farmers, and investors to accelerate the adoption of fish-free feeds in aquaculture. These meetings give F3 Challenge contestants the opportunity to connect with the rest of the supply chain and showcase their products.

## Feed Research and Demonstration Trials

### Research Trials

To push the envelope and develop feeds demonstrating substitutes for fishmeal and fish oil succeed in growth and survival. Our focus is the largest-consuming, popular aquacultured species.

- Species: California Yellowtail, Kampachi Yellowtail, Whiteleg Shrimp, Florida Pompano, Largemouth Bass, Rabbitfish, Rudderfish
- Publications in press and review in major aquaculture journals

### Feed Innovation Network (FIN)

To encourage sustainable innovations in aquafeeds by sharing experimental protocols, open feed formulas, resources for purchasing and testing ingredients, and access to experts in fish nutrition. For more information, visit [f3fin.org](http://f3fin.org)