

Tony S. Vaught
ProAquaculture, Inc.

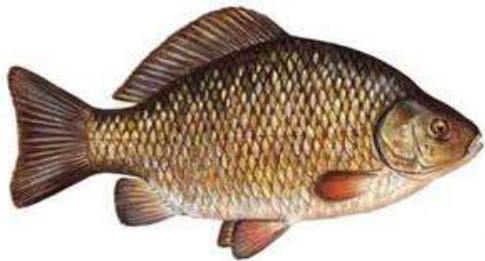
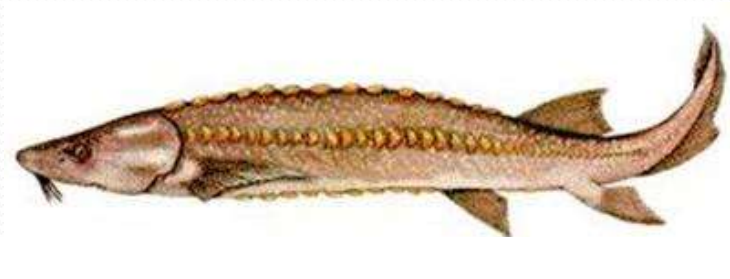
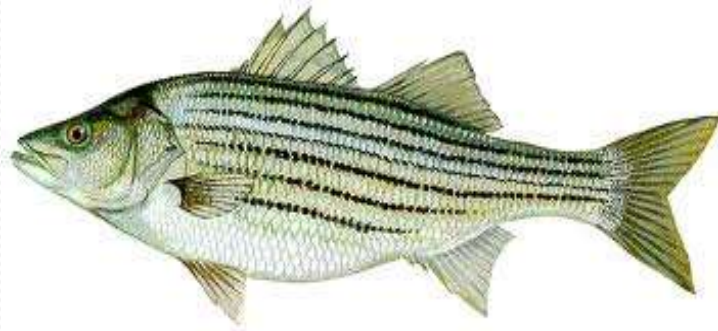


California Aquaculture: Freshwater Farms, Shellfish, Offshore Production, and Aquaponics

California has a long history in aquaculture.
Diverse due to its rich natural resources, climate and species.

1850	Oysters
1870's	Trout Salmon
1950's	Channel Catfish Bait fish Sunfish
1960's	Tilapia
1970's	Abalone
1980's	White Sea bass Striped Bass Mussels
1990's	White Sturgeon Hybrid Carp Largemouth Bass
2000's	California Yellowtail California Halibut
2017	Coming soon !!! Offshore Aquaculture

Inland Finfish



Private Fresh Water Fish Farms



Tilapia/ Sturgeon

Trout

Catfish/Sturgeon/bass/carp/bluegill

Largemouth
Bass

Trout

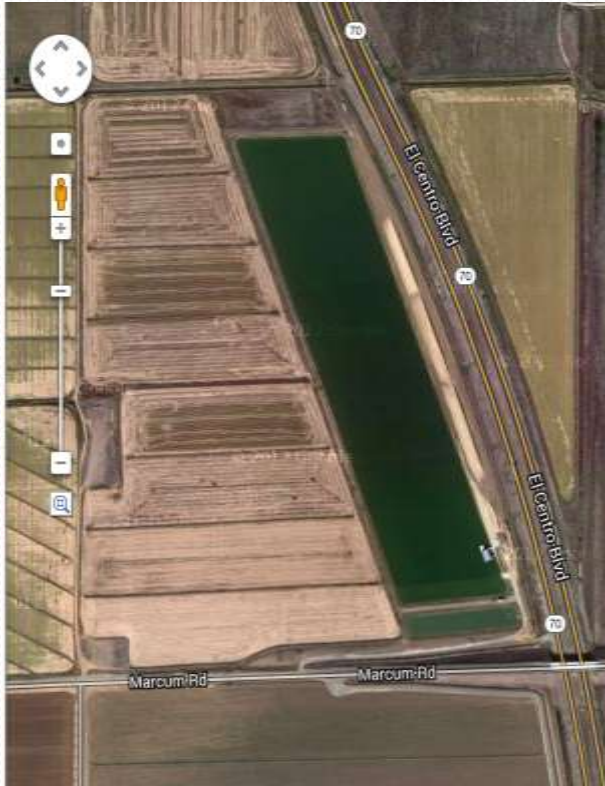
Channel
Catfish

Tilapia/Catfish/bass/carp/bluegill

CDFW Aquaculture Registrations (calendar years 2012 – 2016)

Year:	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Renewed Aquaculture Registrations	148	146	143	135	130
New Aquaculture Registrations	10	11	8	5	9
Surcharges (2nd tier)	66	66	68	63	60
Total Registered Aquaculturists	158	157	151	140	139

Agriculture Aquaculture Partnership



Water for aquaculture is used to grow row crops, rice, tree crops and feed for animals

Aquaponics



Ouroboros Farms | California



Working Waterfronts



Ventura Shellfish Enterprise



Promoting healthy oceans with sustainable shellfish aquaculture

<http://venturashellfishenterprise.com/>



Rendering of KZO Sea Farms' future open water shellfish farm. Photo courtesy of KZO Sea Farms.

Mediterranean Mussels

Rose Canyon



THE PROJECT

A commercial-scale, environmentally sustainable aquaculture project

- Designed to assess and demonstrate both economic and environmental sustainability
- Will scale up to 5,000 metric tons (5 million kilograms, or 11 million pounds) a year

Sited to meet multiple requirements and avoid conflicting uses

- In deep, clean, temperate water with good current and sandy bottom
- Outside coastal zone with potential conflicting uses
- Not in conflict with other offshore activities (fishing, shipping, military)
- Natural habitat for target species

Fingerling and Shellfish Seed Production



Feeds and Nutrition



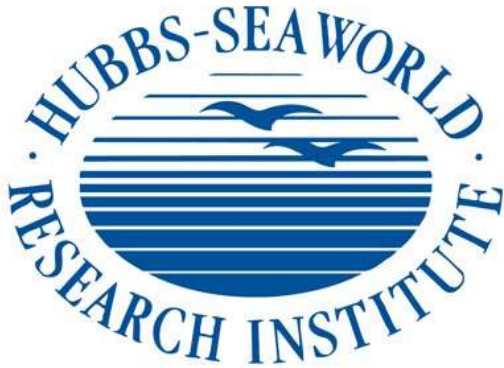
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Processing and Marketing



Research Private and Public



California Aquaculture

UNIVERSITY OF CALIFORNIA, DAVIS





Opportunities

- California has over two dozen species grown for food recreation and research.
- Research on new species is ongoing.
- California is poised to lead in aquaculture production and research.
- Aquaculture hatcheries and on shore support will grow to supply farms as production increases.
- Demand for seafood will see a steady rise.

What is Needed

- **Promote and protect aquaculture. Make sure aquaculture is considered when crafting agricultural and fishery policy.**
- **Help streamline the permit process and assist in dialogs between fish farmers and agencies. Permit processes that take cost hundreds of thousands of dollars discourage aquaculture growth.**
- **Insist that groups opposing aquaculture use sound science as a basis.**
- **Recognize the economic and environmental benefits of aquaculture**

Additional Sources of Information

- **California Department of Fish and Wildlife.**

www.wildlife.ca.gov/aquaculture

- **Aquaculture Matters web site.**

<https://aquaculturematters.ca.gov/>

- **California Aquaculture Association**

<http://caaquaculture.org/>

- **University of California Davis**

<http://aqua.ucdavis.edu/>

Thank You



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