

Tony S. Vaught
ProAquaculture, Inc.



PROFESSIONAL
AQUACULTURE
SERVICES

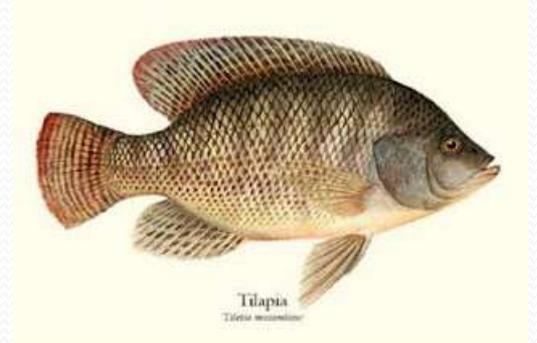
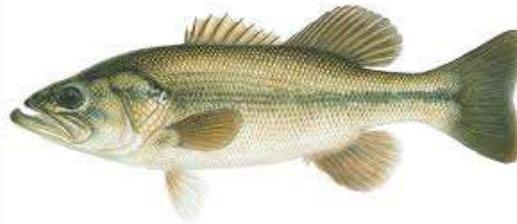
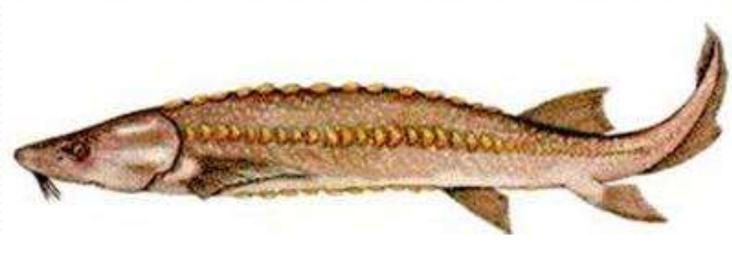
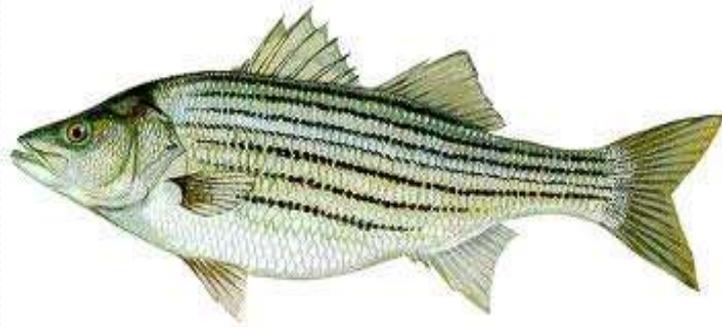
**California Aquaculture:
Freshwater Farms, Shellfish,
Offshore Production, and
Aquaponics**

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 |

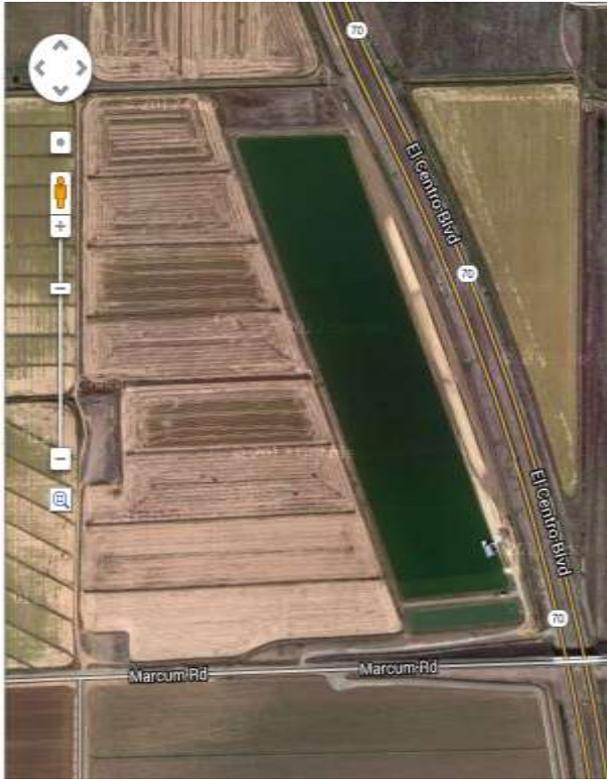
Inland Finfish



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



Star Milling Co.®

Altech[®]
...naturally

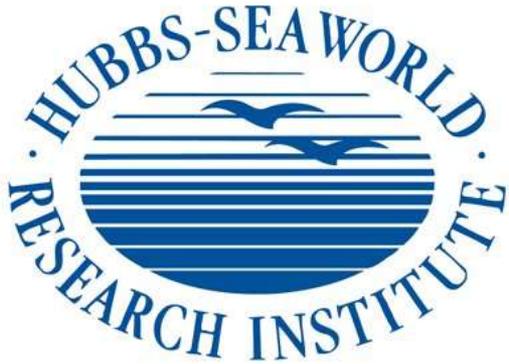
Medicines of Altech FREE World Equestrian Games 2010™



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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