Wild or Farmed?
A discussion about how to sustain the options for your Dinner Table

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USC Wrigley Institute for Environmental Studies
In 2012, global production = 90.4 Mt
U.S. = 0.4 Mt (0.5 %)

The U.S. imports 91 percent of its seafood
Continental Areas Proportional to Aquaculture Production
Geography of U.S. Aquaculture Production
...92 Italians with CAD who eat 1190 g of salmon monthly would avoid death for every Italian that develops cancer.

The number of cancer deaths that could be prevented by the restrictive recommendation on farmed salmon use was estimated at 40 deaths per year (90% CI 2 to 110). However, the recommendation would worsen the net health effect (cancer and cardiac deaths combined) by 5200 deaths per year (90% CI 34 to 19,000).

Per 100,000 individuals, consumption of farmed vs wild salmon would result in 24 vs 8 excess cancer deaths, respectively, while consumption of either farmed or wild salmon would result in 7125 fewer CHD deaths (Mozaffarian & Rimm 2006 JAMA).
Lack of Seafood Kills

84,000 deaths!

U.S. Yields & Kinds of Corn

Civil War to 2013

Bushels per acre

Year

open-pollinated

double cross

single cross

b=0.02

b=1.04

b=1.84

Hybrid Vigor in Corn & Oysters

G. H. Shull, 1908. *Proc. ABA*  
Hedgecock et al., 1995. *Aquaculture*
Recognize this common fruit?

Photograph by Prof. Ivan W. Buddenhagen
Sterile Triploids Eliminate Interaction of Wild & Farmed
Sean J. O’Scannlain
President & CEO
Sean J. O’Scaanlain

• Founder, President & CEO
  • Early Career: Chicago Fish House, The Plitt Co.
• Chairman of the National Fisheries Institute
• Chairman of FishPAC
• Board Member of Ocean Stewards Institute
• Catalina Sea Ranch
• Global Aquaculture Alliance
Menu Trends

Local
- Rushing Waters
- AquaTerra Farms

Farm to Table (Aquaculture)
- Skuna Bay Salmon
- Oysters – Old 1871

Sustainable
- Shedd Aquarium Right Bite
- Kinmont in Chicago - Serving only Sustainable Seafood

Underutilized
- By-Catch
- “Trash Fish”
## American Seafood Spending: Top 10

<table>
<thead>
<tr>
<th>Pounds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shrimp</td>
<td>3.80</td>
</tr>
<tr>
<td>2. Canned Tuna</td>
<td>2.40</td>
</tr>
<tr>
<td>3. Salmon</td>
<td>2.02</td>
</tr>
<tr>
<td>4. Tilapia</td>
<td>1.48</td>
</tr>
<tr>
<td>5. Pollock</td>
<td>1.17</td>
</tr>
<tr>
<td>6. Pangasius</td>
<td>0.75</td>
</tr>
<tr>
<td>7. Crab</td>
<td>0.52</td>
</tr>
<tr>
<td>8. Cod</td>
<td>0.52</td>
</tr>
<tr>
<td>9. Catfish</td>
<td>0.50</td>
</tr>
<tr>
<td>10. Clams</td>
<td>0.38</td>
</tr>
<tr>
<td>*All Other</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Total All Species = 14.6 lbs

### Decline in Consumption
- 2012 = 14.6 lbs
- 2011 = 15.0 lbs
- 2010 = 15.8 lbs
- 2009 = 15.8 lbs
- 2008 = 16.0 lbs
- 2007 = 16.3 lbs

75% of total seafood in top 5 species. More than 90% in top 10
Seafood vs. Other Proteins

<table>
<thead>
<tr>
<th>Protein</th>
<th>Consumption (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry</td>
<td>97.8</td>
</tr>
<tr>
<td>Beef</td>
<td>57.4</td>
</tr>
<tr>
<td>Pork</td>
<td>45.9</td>
</tr>
<tr>
<td>Seafood</td>
<td>14.6</td>
</tr>
</tbody>
</table>

*2012 Figures

Seafood Consumption Around the World

- Maldives = 313.9 lbs
- Iceland = 200.5 lbs
- Japan = 129.3 lbs
- France = 76.7 lbs
- US = 53.3 lbs
- World Avg. = 37.3 lbs

* Pounds in Live Weight
1 in 5 Americans Follow USDA DGA: Eat Seafood 2X Week

Biggest Barrier to Eating Seafood
Lack of confidence in knowing: how to: select, buy, and eat seafood.

Source: Harvard
Consumer Needs

- Confidence
  - Comfortability
- Quality
- Convenience
- Less Confusion
  - Farmed vs Wild
- Education
The Next 1-3 Years

- Genetically Modified
  - Aquabounty Salmon (Frankenfish)
- Growing Middle Class
  - China became Net Importer of Seafood in 2011
  - China’s Middle Class 700 million by 2020
- Future is Aquaculture
  - Wild will not increase
  - US Domestic
- Disease
  - Shrimp (EMS)
  - Farmed Salmon (ISA)

- FSMA Compliance
  - Food Safety Modernization Act
- Increasing Domestic Consumption
  - Education
Thank You!
Wild or Farmed?

The Future of Food from the Sea
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