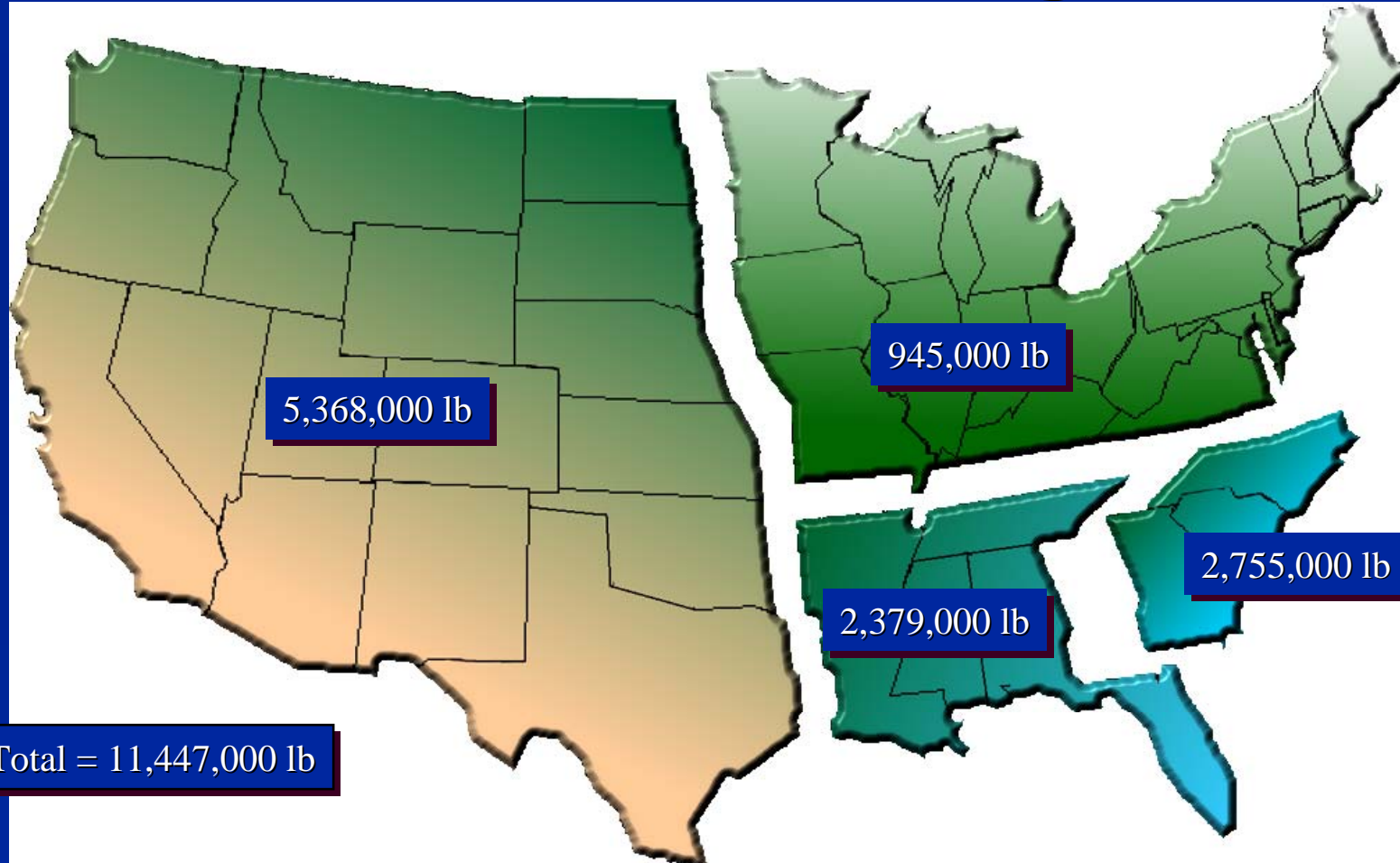


# U.S. Production and Sales of Hybrid Striped Bass (1987-2003)

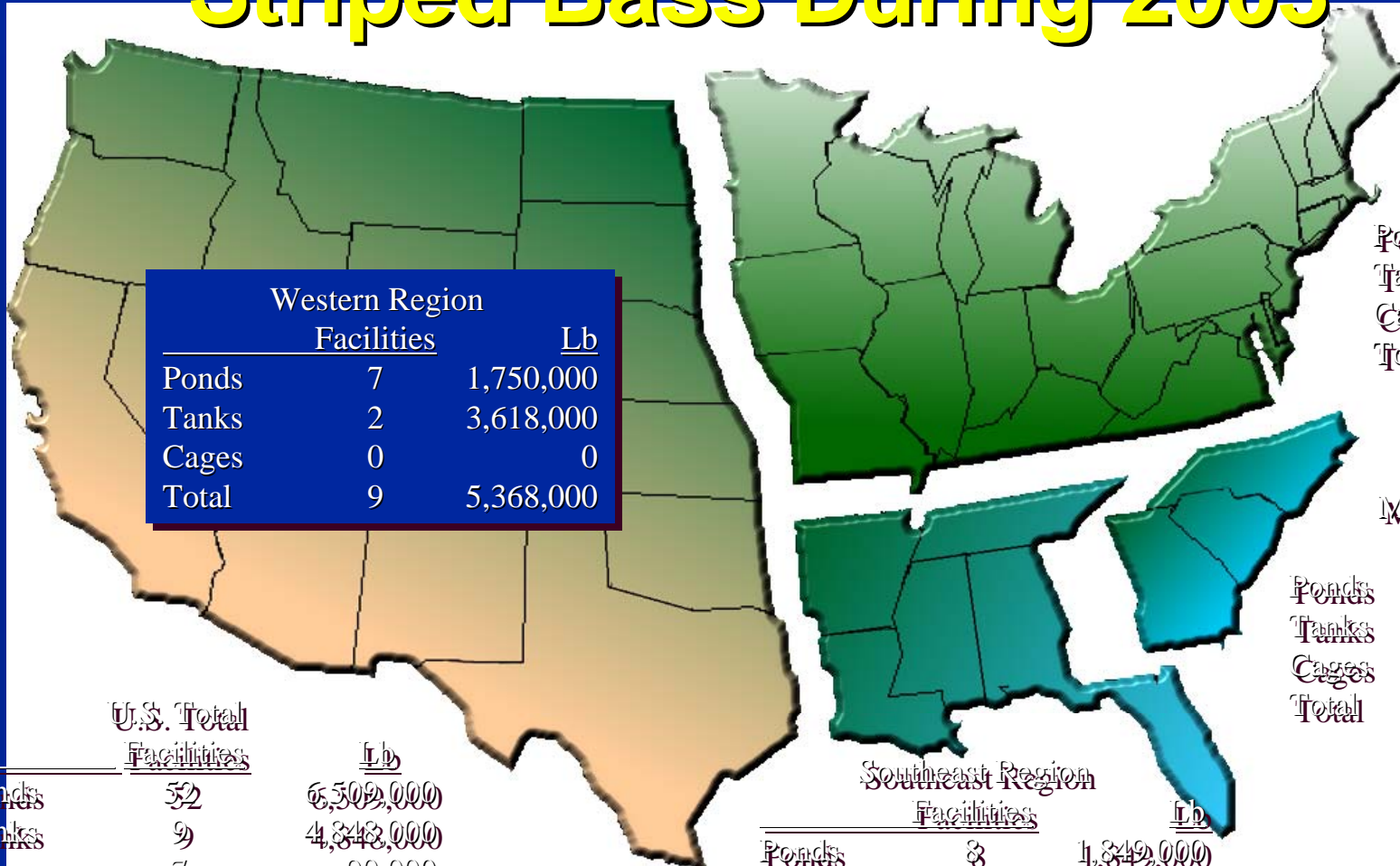


By Jim Carlberg, President, and Jack Van Olst, Director of Research  
Kent SeaTech Corporation

# U. S. Production of Hybrid Striped Bass During 2003



# U. S. Production of Hybrid Striped Bass During 2003



Western Region		
	<u>Facilities</u>	<u>Lb</u>
Ponds	7	1,750,000
Tanks	2	3,618,000
Cages	0	0
Total	9	5,368,000

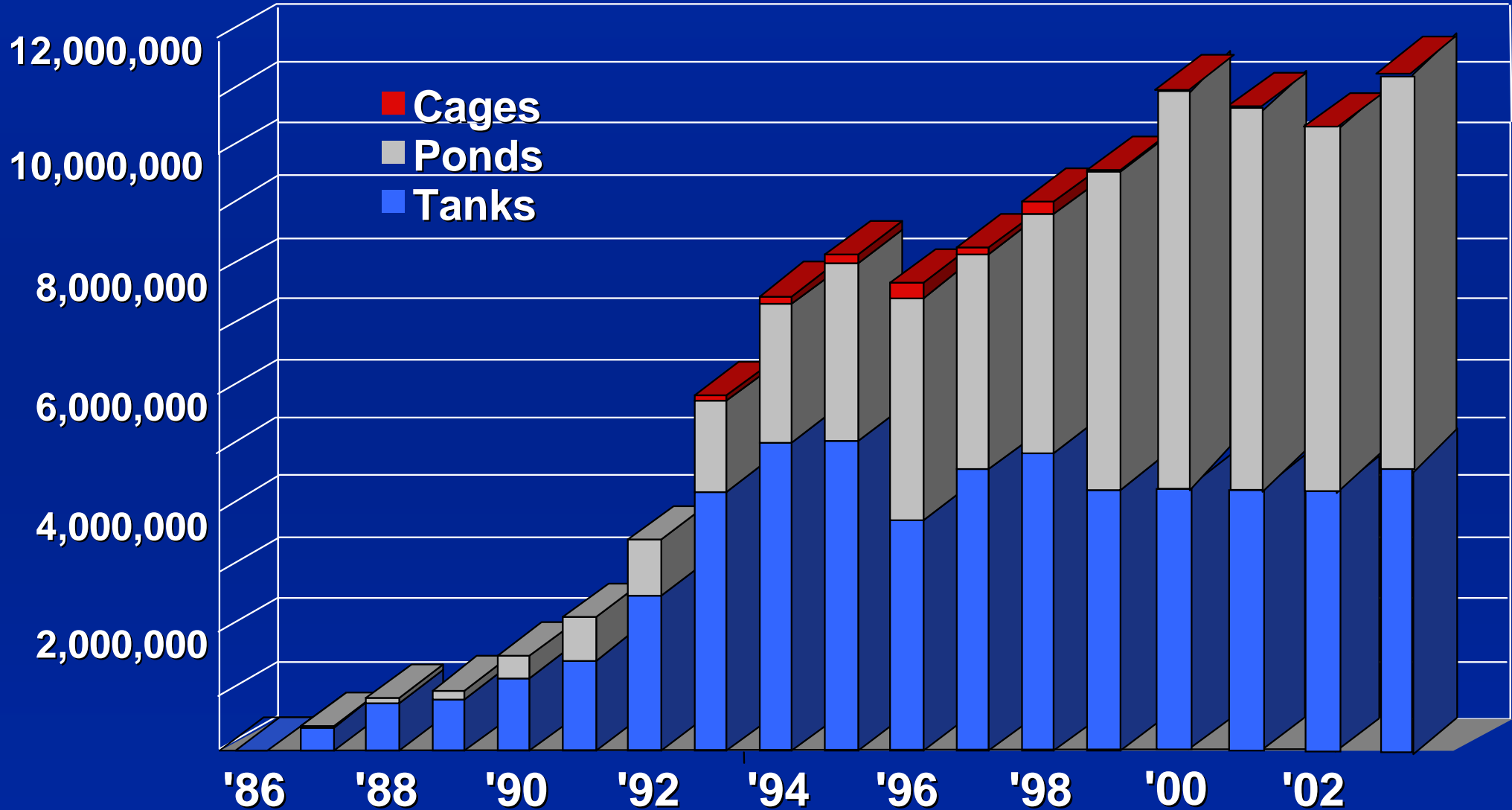
Northeast Region		
	<u>Facilities</u>	<u>Lb</u>
Ponds	12	155,000
Tanks	4	700,000
Cages	7	90,000
Total	23	945,000

Mid-Atlantic Region		
	<u>Facilities</u>	<u>Lb</u>
Ponds	25	2,755,000
Tanks	0	0
Cages	0	0
Total	25	2,755,000

Southeast Region		
	<u>Facilities</u>	<u>Lb</u>
Ponds	3	1,349,000
Tanks	3	530,000
Cages	0	0
Total	11	2,379,000

U.S. Total		
	<u>Facilities</u>	<u>Lb</u>
Ponds	52	6,509,000
Tanks	9	4,848,000
Cages	7	90,000
Total	68	11,477,000

# Production of Hybrid Striped Bass (lb)



Data from state Aquaculture Extension Programs and a survey of major producers

Kent SeaTech Corporation

# Production of Hybrid Striped Bass (lb)

	1987	1988	1989	1990	1991	1992
Tanks	395,000	800,000	870,000	1,220,000	1,520,000	1,520,000
Ponds	10,000	80,000	150,000	370,000	730,000	730,000
Cages	-	-	-	-	-	-
<b>Total</b>	<b>405,000</b>	<b>880,000</b>	<b>1,020,000</b>	<b>1,590,000</b>	<b>2,250,000</b>	<b>2,250,000</b>
	1993	1994	1995	1996	1997	1998
Tanks	2,600,000	4,350,000	5,175,000	3,870,000	4,722,000	4,260,000
Ponds	950,000	1,525,000	2,325,000	3,730,000	3,615,000	5,075,000
Cages	-	75,000	125,000	250,000	100,000	50,000
<b>Total</b>	<b>3,550,000</b>	<b>5,950,000</b>	<b>7,625,000</b>	<b>7,850,000</b>	<b>8,437,000</b>	<b>9,385,000</b>
	1999	2000	2001	2002	2003	
Tanks	4,378,000	4,364,000	4,383,000	4,479,000	4,848,000	
Ponds	5,317,750	6,822,000	6,500,000	5,988,000	6,509,000	
Cages	38,000	51,000	20,000	22,500	90,000	
<b>Total</b>	<b>9,733,750</b>	<b>11,237,000</b>	<b>10,903,000</b>	<b>10,489,500</b>	<b>11,447,000</b>	

# Changes in Production Methods for Hybrid Striped Bass

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	
<b>Tanks</b>	98	91	85	77	68	73	73	68	
<b>Ponds</b>	2	9	15	23	32	27	26	30	
<b>Cages</b>	0	0	0	0	0	0	1	2	
<b>Total</b>	100%	100%	100%	100%	100%	100%	100%	100%	

	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
<b>Tanks</b>	62	49	56	45	45	39	40	43	42
<b>Ponds</b>	36	48	43	54	54	61	60	57	57
<b>Cages</b>	2	3	1	1	1	0	0	0	1
<b>Total</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%

# Regional Production and Sales of Hybrid Striped Bass (2003)

	<u>Northeast</u>	<u>Mid-Atlantic</u>	<u>Southeast</u>	<u>West</u>	<u>Total</u>
<b>Fresh (lb)</b>	<b>395,000</b>	<b>1,755,000</b>	<b>2,290,000</b>	<b>5,063,000</b>	<b>9,503,000</b>
<b>Live (lb)</b>	<b>550,000</b>	<b>1,000,000</b>	<b>89,000</b>	<b>305,000</b>	<b>1,944,000</b>
<b>Total (lb)</b>	<b>945,000</b>	<b>2,755,000</b>	<b>2,379,000</b>	<b>5,368,000</b>	<b>11,447,000</b>
<b>Fresh (% of US market)</b>	<b>4%</b>	<b>19%</b>	<b>24%</b>	<b>53%</b>	<b>100%</b>
<b>Live (% of US market)</b>	<b>28%</b>	<b>51%</b>	<b>5%</b>	<b>16%</b>	<b>100%</b>
<b>Total (% of US market)</b>	<b>8%</b>	<b>24%</b>	<b>21%</b>	<b>47%</b>	<b>100%</b>
<b>Fresh:Live Sales Ratio (within production region)</b>	<b>42:58</b>	<b>64:36</b>	<b>96:4</b>	<b>94:6</b>	<b>83:17</b>

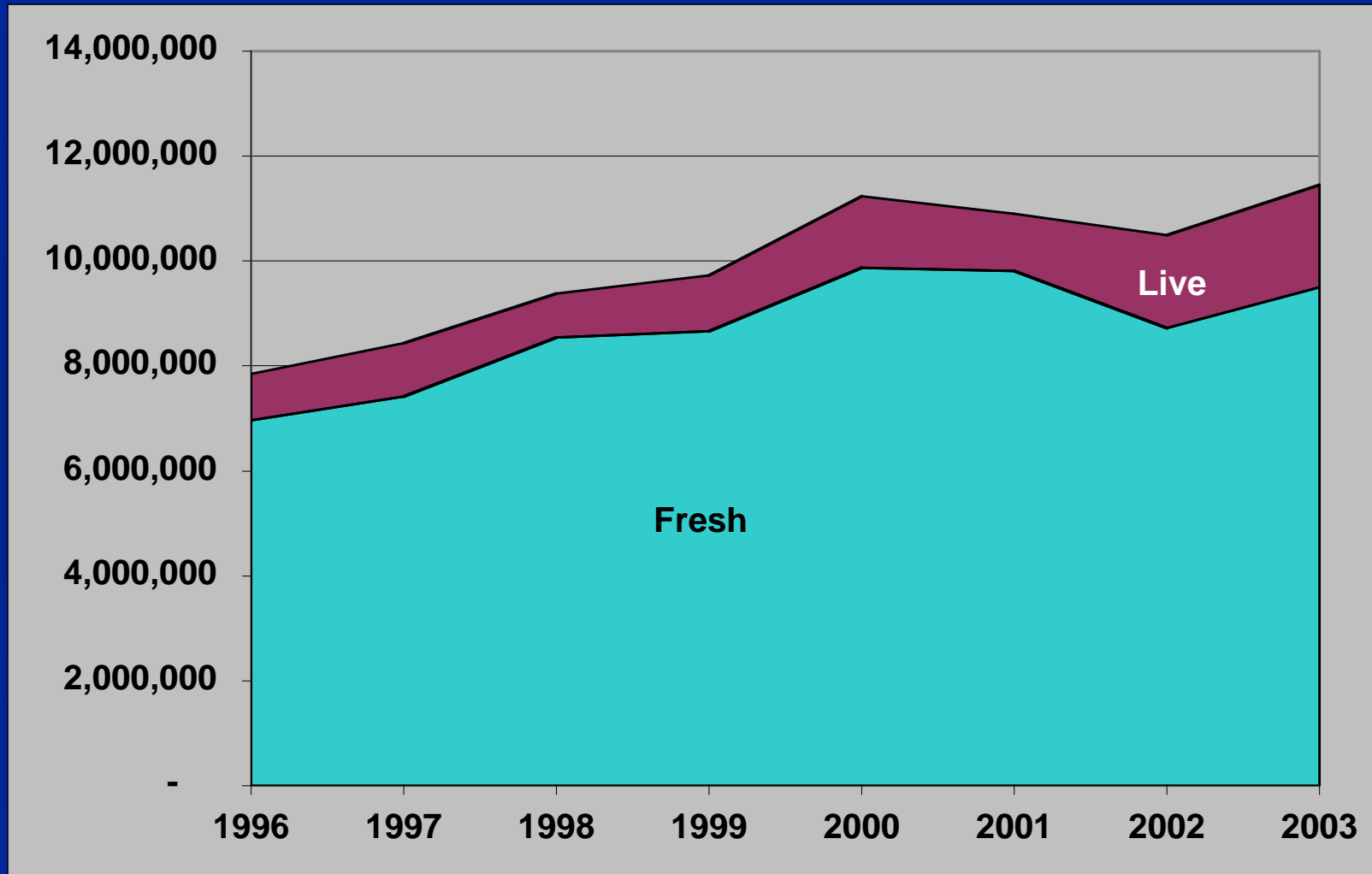
# Changes in Regional Production and Sales of Hybrid Striped Bass

	<u>Northeast</u>	<u>Mid-Atlantic</u>	<u>Southeast</u>	<u>West</u>	<u>Total</u>
<u>2002</u>					
Fresh (lb)	590,000	1,692,500	2,119,000	4,317,000	8,718,500
Live (lb)	454,000	960,000	8,000	349,000	1,771,000
Total (lb)	1,044,000	2,652,500	2,127,000	4,666,000	10,489,500
<u>2003</u>					
Fresh (lb)	395,000	1,755,000	2,290,000	5,063,000	9,503,000
Live (lb)	550,000	1,000,000	89,000	305,000	1,944,000
Total (lb)	945,000	2,755,000	2,379,000	5,368,000	11,447,000
<u>Change</u>					
Fresh (lb)	-195,000	62,500	171,000	746,000	784,500
Live (lb)	96,000	40,000	81,000	-44,000	173,000
Total (lb)	-99,000	102,500	252,000	702,000	957,500
	-9%	+4%	+12%	+15%	+9%

 Increase  
 Decrease



# Changes in Sales of Hybrid Striped Bass During 1996-2003 (pounds/year)





# Recent Developments in Hybrid Striped Bass Production

- Shift in species at two major recirculating closed system facilities in the Northeast
- Interest in yellow perch and marine fish production in intensive closed systems
- Increasing production from ponds and cages in coal mine lakes in upper Midwest
- Increasing raceway production in Florida
- Some renewed interest in cage and farm pond production in Maryland, Virginia, Kentucky
- Steady expansion of pond production in North Carolina and some in South Carolina
- Increased hatchery production in North Carolina
- Shift from marine shrimp to HSB production in ponds in Texas
- Interest in HSB culture by marine shrimp farmers in Ecuador
- Interest by Israeli companies in marine cage culture off Baja California

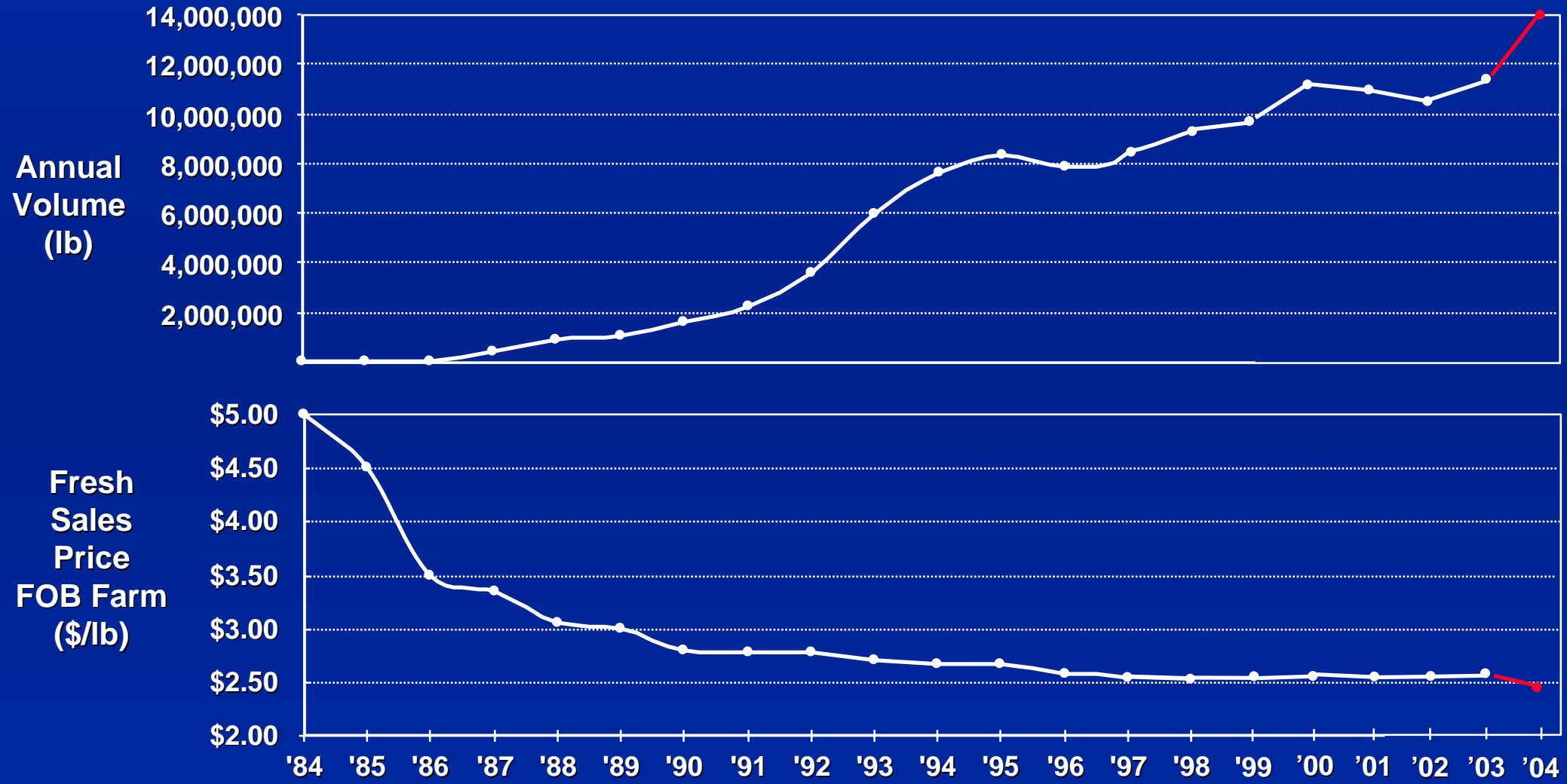
# Changes in Wholesale Prices of Farmed Hybrid Striped Bass (2002-2003)

Farm Location	Northeast	Mid-Atlantic	Southeast	West	Average
Fresh (FOB Farm)	\$2.48/2.44 - .04	\$2.65/2.54 - .11	\$2.57/2.67 + .10	\$2.56/2.60 + .04	\$2.57/2.60 + .03
Fresh (Delivered)	\$2.67/2.58 - .09	\$2.80/2.69 - .11	\$2.75/2.85 + .10	\$2.70/2.73 + .03	\$2.73/2.74 + .01
Live (FOB Farm)	\$3.46/3.19 - .27	\$2.85/2.80 - .05	\$2.75/\$2.80 + .05	\$3.26/3.00 - .26	\$3.09/2.94 - .15
Live (Delivered)	\$3.70/3.79 + .09	\$3.25/3.70 + .45	\$3.00/\$3.25 + .25	\$3.51/3.79 + .28	\$3.42/3.72 + .30

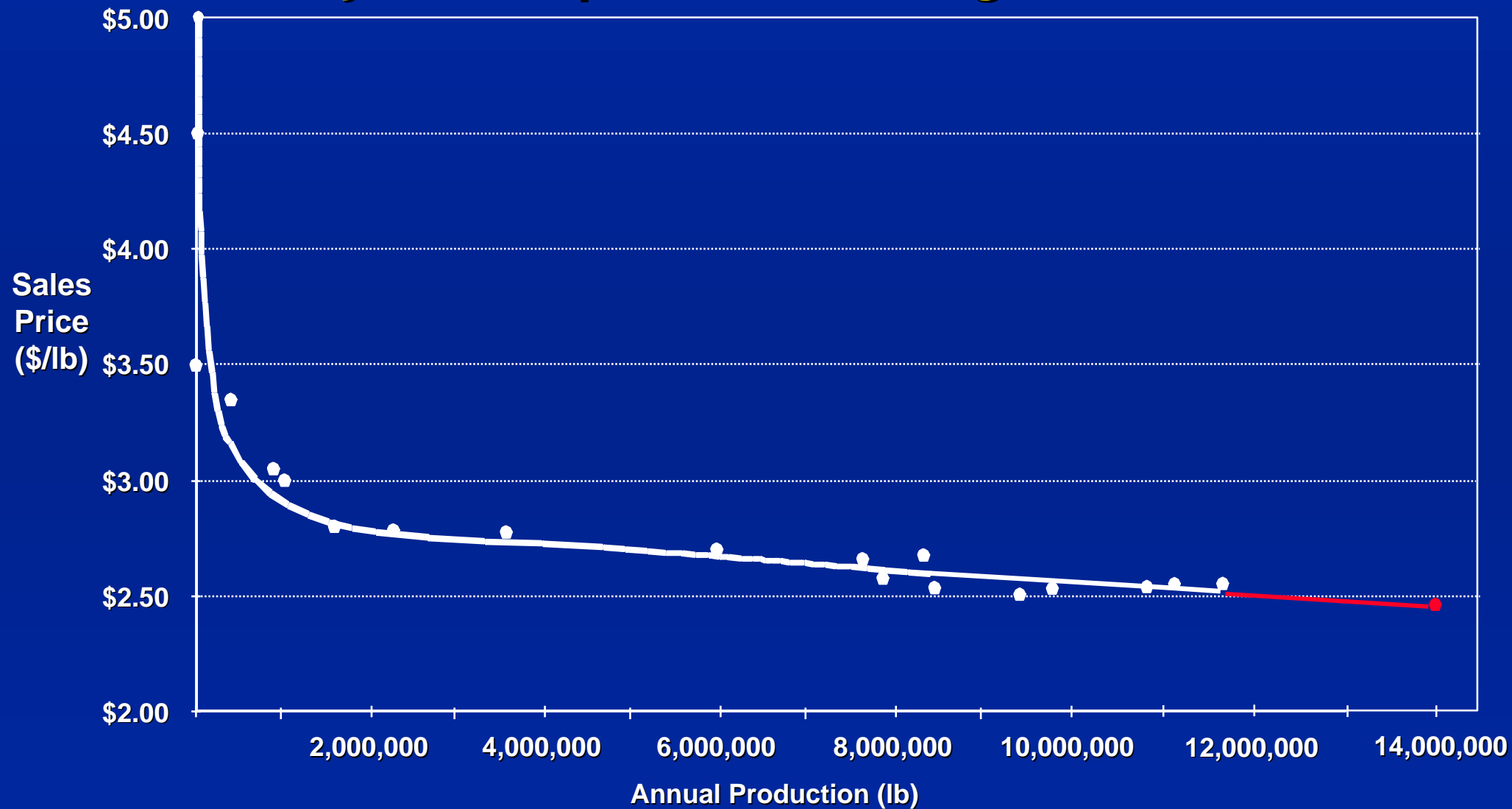
 2002  
 2003

 Price increase between 2002 and 2003  
 Price decrease between 2002 and 2003

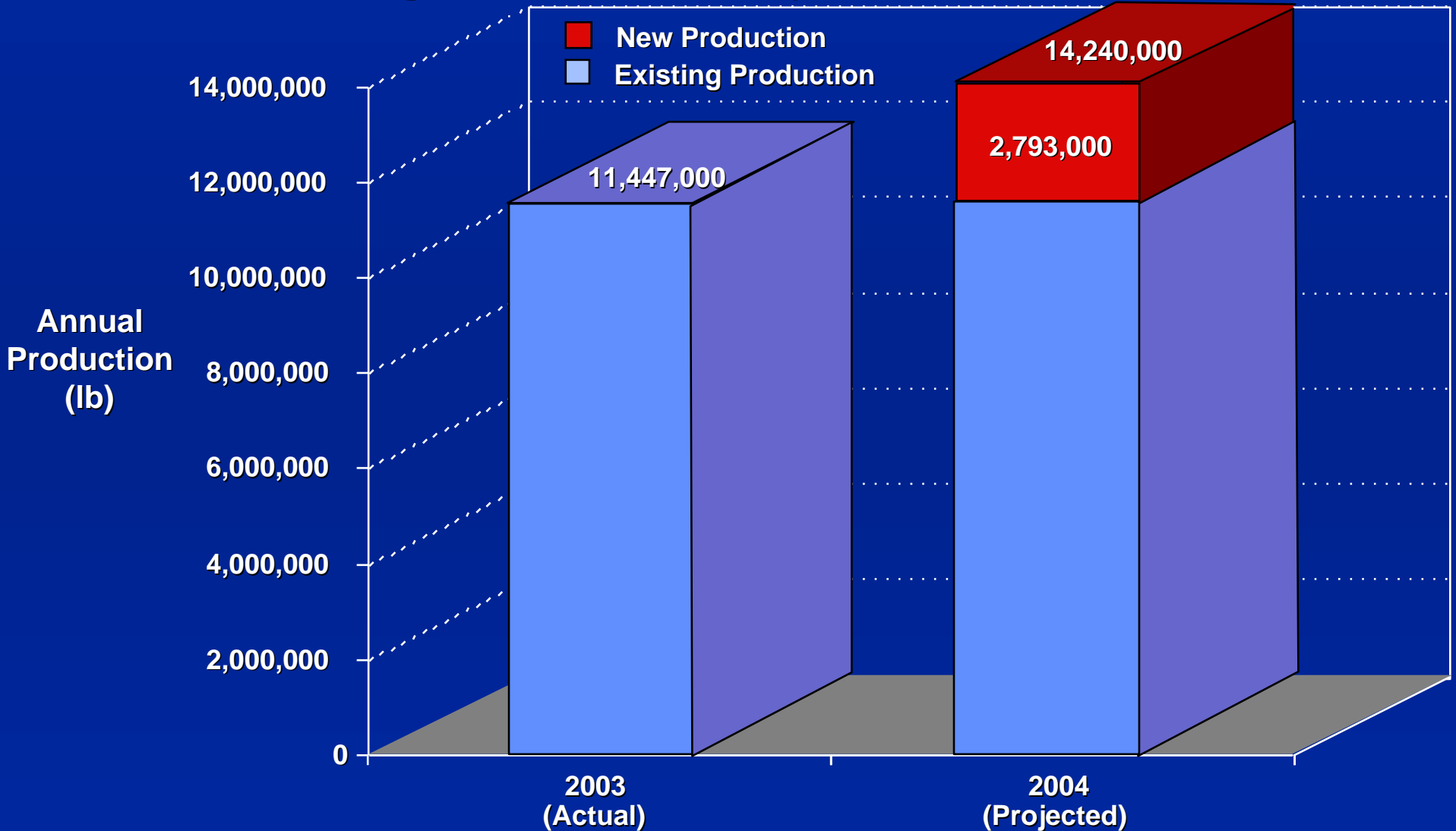
# Price-volume Relationship for Farmed Hybrid Striped Bass During 1984-2004



# Price-Volume Relationship for Farmed Hybrid Striped Bass During 1984-2004



# U. S. Production of Hybrid Striped Bass During 2003 and Projections for 2004



# Recent Developments in Hybrid Striped Bass Marketing

- **Rising cost for inputs and static pricing still limits demand for fresh, whole fish**
- **Growing demand for live product in New York and Toronto**
- **Development of Marketing Cooperatives in North Carolina and Illinois**
- **Expanding production in Europe (Israel, Italy, and Spain) and Asia (Taiwan)**
- **Potential for expanded imports of fresh and frozen product from Asia**

# Industry Status and Market Outlook

- **Food commodity with a fixed price and increasing production costs**
- **High capital risks and relatively low, marginal return**
- **Innovation to lower production costs to become more price competitive**
- **Promotion – advertising, trade shows, chef events, etc.**