

## Economic Impact Analysis

Amend Sections 163 and 164  
Title 14, California Code of Regulations  
Re: Harvest of Herring and Harvesting of Herring Eggs

### Creation or Elimination of Jobs within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The Department is providing the Commission analyses on three potential 2013-2014 quota options for San Francisco Bay ranging from zero to 10 percent of the 10-year average biomass estimate of 46,000 tons. Depending on which regulatory option the Commission chooses, the potential incremental changes to total State economic output for the three quota options: zero, 2,300, or 4,600 tons, are \$(3,784,000), \$(659,000), and \$2,473,000, respectively, relative to 2012-2013 season's 2,854 ton quota and the ex-vessel price/ton.

2013-2014 Herring Quota Regulatory Options	
Quota Options (tons)	Impacts To State Total Economic Output (2012\$)
Zero (0)	\$(3,784,000)
2,300	\$(659,000)
4,600	\$2,473,000

Thus any quota over 2,854 tons could potentially generate incremental increases in ex-vessel landing revenues to the fishermen and increases to total economic output for the State. Conversely, an allowable quota less than 2,854 tons could result in adverse incremental impacts to Statewide economic output of \$3,784,000 and \$659,000 (in 2012 dollars), for zero and 2,300 ton 2013-2014 quotas, respectively. This is based on a total economic output multiplier of 1.899 used in calculating total State economic output effects (direct, indirect, and induced) from California commercial herring fishery activity. There is a relationship between fishing quota and economic impact which can be calculated for any quota amount by using the following formula:

$$[(\text{Proposed Quota } \$) - (\text{Prior Quota } \$)] \times 1.8996 = \text{“total economic output impact in \$”}$$

No adverse incremental economic impacts to businesses in California would occur under a quota allocation of 2,854 tons or more. Moreover, given the overriding market conditions for herring roe (declining demand overseas and lower prices), an allocation of 2,854 tons or more is not expected to affect the ability of California businesses to compete with businesses in other states.

No commercial herring fishing activity has taken place in Tomales Bay since 2007, in Humboldt Bay since 2005 and in Crescent City Harbor since 2002; thus no adverse incremental economic impacts to businesses would occur under a quota allocation of zero (0) to 30 tons, zero (0) to 60 tons, and zero (0) to 350 tons for Crescent City Harbor, Humboldt Bay, and Tomales Bay, respectively.

No adverse incremental economic impacts to fresh fish businesses in California would occur with a change to existing fresh fish regulations for herring.

Any quota option over 2,854 tons will result in positive incremental contributions to employment for the State: for example, an increase of about 35 jobs for a quota of 4,600 tons. Conversely, a zero or 2,300 ton allowable quota could adversely impact as many as 243 or 9 jobs in the fishing industry and related industries. This is based on an employment multiplier of 26.7 jobs per each million dollar change in direct output from herring fishing activities, and a fleet of about 190 permittees for San Francisco Bay.

## Analysis

As expenditures originating with the herring fishery circulate through the economy there is an additive effect within the economy; these are the accumulation of the Direct, Indirect, and Induced effects and are usually presented as “economic multipliers”.

Using commercial economics modeling software, IMPLAN, for the affected herring industry on a statewide level, we derived economic multipliers for each economic index: Employment, Total Labor Income, Total Value Added, Taxes, and Total Economic Output, below.

**Herring Fishery - Statewide Multipliers For Each Of Five Economic Indices**

<b>Economic Impact Index</b>	<b>Output</b>	<b>Employment (divide 1mill)</b>	<b>Labor Income</b>	<b>Total Value Added</b>	<b>State &amp; Local Taxes</b>
Direct Effect	1.0000	21.6	0.4564	0.6697	0.0414
Indirect Effect	0.3382	1.3	0.0828	0.1357	0.0140
Induced Effect	0.5614	3.7	0.1842	0.3326	0.0405
<b>Total Effect</b>	<b>1.8996</b>	<b>26.7</b>	<b>0.7235</b>	<b>1.1381</b>	<b>0.0959</b>

Using the above multipliers we calculated the total economic output, employment, labor income, value added and State and local tax impacts, for each of the commercial herring harvest quota options (shown below).

## Herring Fishery Statewide - Incremental Economic Impact Projections

	Harvest Quota Option (ton)	Incremental Change From Last Season Quota (ton)	Incremental Change In Harvest Quota Ex-Vessel Value	Total Economic Output	Total Employment	Total Labor Income	Total Value Added	Local & State Taxes
Zero Quota	-	(2,854)	(\$1,992,000)	(\$3,784,000)	(243)	(\$1,441,000)	(\$2,267,000)	(\$191,000)
5% (46kton) Quota	2,300	(554)	(\$347,000)	(\$659,000)	(9)	(\$251,000)	(\$395,000)	(\$33,000)
10% (46kton) Quota	4,600	1,746	\$1,302,000	\$2,473,000	35	\$942,000	\$1,482,000	\$125,000

### Impacts to Small Business

The Commission has determined that the amendments to sections 163 and 164, which establish a fishing quota from zero to 10 percent of the 10-year average biomass, will affect small businesses which are legally required to comply with the regulation and will possibly incur a detriment from the enforcement of the regulation.

### Benefits to the Environment

The Commission anticipates benefits to the State's environment. The proposed regulation changes are being made in order to effectively manage the herring fishery and maintain its sustainability.

### Health and Welfare of California Residents and Workers Safety

The proposed regulation changes will provide for a means of preserving a sustainable herring fishery providing nutrition and health benefits to California residents.

The Commission does not anticipate any measurable change in worker safety as a result of the proposed regulation.