2016
May

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AQUABENCH® Análisis & Asesorías

# NEWS Letter

## SALMON INDUSTRY BALANCE TO APRIL 2016:

# High Mortality and Low Harvest Impacts Productivity Negatively

**During February and March 2016, Algae Bloom episodes and the low harvest in sea sites and low process in Chiloe processing plants due artisanal fishermen crisis, generated an increase of mortality and decreased of harvested biomass between january and april 2016.**

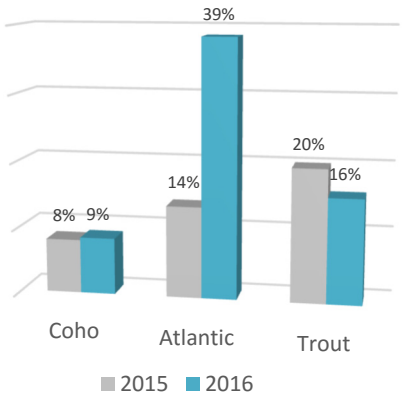
## Mortality

**Atlantic Salmon** had a 38.5% of accumulated mortality during the first four-month period. It is one of the three species that suffered the strongest effects produced by the Algae Bloom, which impacted the salmon industry results during the first three months of the year. In the case of **Rainbow Trout**, mortality reached 15.8% and in **Coho Salmon,** it was 8.5%.

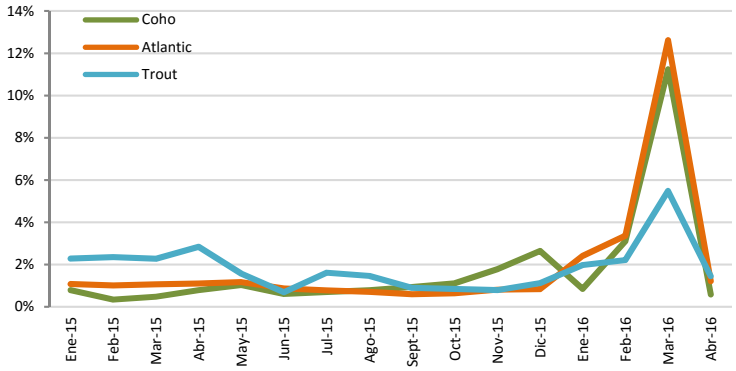
The analysis shows that, just in March, **Atlantic Salmon** mortality was 12.62% and that of **Coho Salmon** was 10.95%. **Rainbow Trout** also had a high mortality, reaching 5.52% in March.

Therefore, the productivity balance shows a total amount of dead fish equivalent to 38.2 million in the first four-month of the year. Per species, 31.0 million corresponds to **Atlantic Salmon**, 4.2 to the new generation of **Coho Salmon** of the harvest season 2016/2017, and 2.9 million to **Rainbow Trout,** meaning an increase of 292% for Atlantic Salmon, 390% for Coho salmon and a decrease of 28% for Trout compared with similar period in 2015.

**Accumulated Mortality**
**2015 vs 2016**
**(Jan-Apr)**




**Monthly Mortality**
**2015 - 2016**



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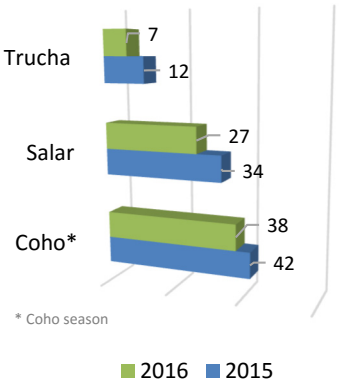
**Smolt stocking**
**Jan - Apr 2015 vs 2016**
(million smolt per species)




## Smolt stocking

At the end of april 2016, there was an average decrease of 20.7% in smolt stocking, in relation to the same period last year (jan-apr 2015). This sharp reduction affected the three species, reaching a total amount of 72.5 million smolt transferred to the sea compared with 91.5 recorded during the same period in 2015.

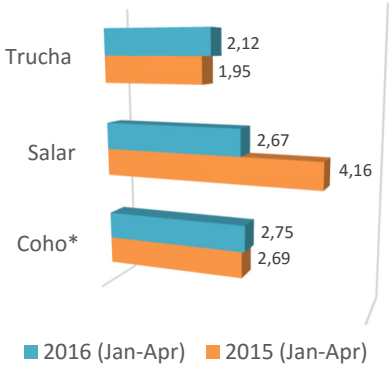
Per species, the numbers for the first three months of the year show reductions of 19.4% in **Atlantic Salmon**, 42.9 % in **Rainbow Trout** and 15.9% in **Coho Salmon**.

These reductions are partially due to the stop of smolt stocking in the areas affected by the Algae Bloom and the last month artisanal fishermen mobilization.

## Biomass and the Number of Fish

The report shows that the Algae Bloom plus the lower smolt transfer to sea water due the artisanal fishermen conflict, produced a reduction of 30% of the number of live fish of the three species at the end of the four-month period (jan-apr) in relation to the same period last year, with an estimation of a total of 176.9 million fish. This negative variation can be greatly explained by the reduction of **Rainbow Trout**, which showed a decrease of 41% in the number of live fish in April 2016, compared with the same month last year. The reduction of 25% in **Coho Salmon** also influenced, which only had 33.6 million live fish at the end of April this year, and 28% in **Atlantic Salmon**, which reached 122.8 million fish.

**Productivity of the Industry**
(kg harvested / smolt)




Regarding living biomass during the growout stage, the analysis reveals a reduction of 32% in relation to April 2015, with a total of 295,001 tons at the end of the four-month period (jan-apr). Per species, **Atlantic Salmon** –that represents 85% of the total living biomass- showed a reduction of 30% in April 2016, in relation to the same month last year, reaching 253,790 tons at the end of the month. Likewise, the biomass of **Rainbow Trout** and **Coho Salmon** decreased 47.0% and 38.4%, respectively.

## Productivity

The effect of the Algae Bloom was also reflected in the productivity of **Atlantic Salmon,** which reduced to **2.67 kilos (closed cycles in jan-apr 2016)** harvested / smolt transferred to the sea, amount that is 36% lower than the amount registered during the same period in 2015. In the case of **Rainbow Trout,** an improvement in productivity of 9% was observed, reaching **2.12 kilos** harvested / smolt, whereas for **Coho Salmon,** it increased 2%, reaching **2.75 kilos** harvested / smolt (as a season).

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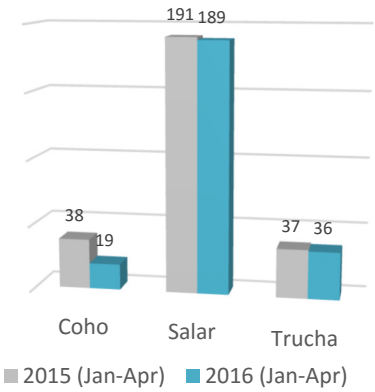
**Harvest of the Industry**
**Jan - Apr 2015 vs 2016**
(thousand tons WFE)




## Harvest

The total biomass harvested by the whole industry for the three species between January and April 2016 reached 244 thousand tons (WFE*), amount 8% lower than the same period in 2015. Per species, the accumulated harvested volumes (WFE) at the end of the first four month of this year reached **188 thousand** tons for **Atlantic Salmon**, **36 thousand** tons for **Rainbow Trout** and **19 thousand** tons for **Coho Salmon**. These numbers represent a reduction in harvest in first four-month of 18 thousand tons for Coho Salmon, 2 thousand tons for Atlantic Salmon and of 728 tons for Rainbow Trout.

The lower harvest weight for **Atlantic Salmon** in the period was in march 2016, with 4.3 kilos. This is the lowest amount registered since August 2013, with 4.2 kilos.

WFE = Whole Fish Equivalent: Unit used to measure the raw material, it corresponds to round bled live weight
% Accumulated Mortality = Total N° of dead fish / initial N° of fish transferred
Biomass Produced = Dead biomass + Harvested biomass + Living biomass at the end of a period
% Dead Biomass = Kg of dead biomass / Kg of biomass produced
°Smolt Stocking: transfer of fish (called smolts at this stage of their life cycle) to sea water farming sites to begin the growout stage

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The numbers mentioned in this document correspond to those obtained directly from our own Databases (BD). To extrapolate to 100% of the industry, it is necessary to use the estimated database representativeness, which is 95.1% in average (Coho Salmon: 100%; Atlantic Salmon: 92.6% and Rainbow Trout: 98,6%).