Rebuttal Report

In the Matter of Distribution of Water

Right Nos. 36-02551 and 36-07694

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Review of Mr. John Church's Report

At the request of Ms. Robyn Brody of Brody Law Offices, PLLC I have reviewed the economic analysis of Mr. John S. Church "In the Matter of Distribution of Water Right Nos. 36-02551 and 36-07694." My opinion of Mr. Church's analysis is that his analysis is incomplete and inaccurate. Mr. Church provides a table of data hoping it tells the story of an industry that is in decline, hurting from the recession of 2007-2009, suffering from increased competition, or doesn't know its own business well enough to implement the most efficient technology or capital. I believe the analysis derived from Mr. Church's tables tell a very different economic story.

In Idaho trout farming is not a small business. Mr. Church's numerical output on page 5 of his report, despite its numerical errors, demonstrates this fact. During the years 1992 – 2011 Idaho's share of total U.S. trout harvested is at a minimum 68% of U.S. total trout production. Thus, over 68% of farm grown fish 12" or longer harvested in the U. S. originate in Idaho. The second largest trout producing state produces roughly $1/6^{th}$ of Idaho's output as measured by number of fish. Another measure of Idaho's relevance to the U.S. trout farming industry is Idaho's value of total sales as a percent of U.S. total sales. This measure shows that Idaho has averaged 51% of the U.S. total value of trout farming sales across the years 1992 to 2011. The average value of trout output in Idaho has been just over $34 million dollars per year between 1992 and 2011. Thus, we can establish the following facts. In Idaho farm raised trout is a multi-million dollar business. In Idaho trout production capacity is a substantial portion of the U.S. total trout production.

On page three second paragraph from the bottom Mr. Church makes the following claim; "...the U.S. recession took hold in 2008 trout production..." According to the numerical values presented by Mr. Church, see page 5, there was in fact a 32.3% decline in the number of trout harvested in the U.S. between the years 2007 and 2008. Thus, Mr. Church is claiming that a reduction in household income and a reduction in trout production are occurring at the same time. This claim, assuming fish are a normal good, suggests a reduction in demand, resulting in a decrease in price and output of trout.[1] However, during 2007 - 2008 there is also a price increase of 20%, the largest single price change in Mr. Church's table. Thus, something is wrong with Mr. Church's assumptions. We know output declined. This is shown in Mr. Church's table, but there was no decline in price suggesting that the claimed *income effect* never happened; *i.e.,* the demand curve never shifted. By comparison the combination of reduction in output and increase in price, both shown in Mr. Church's table, is indicative of a supply side shift; *i.e.,* a decrease in supply leads to an increase in price and a decrease in output as shown in Figure 1.

[1] The word Normal and Inferior are economic terms used to describe a demand response to a change in income. If a good is a normal good a decrease in income will decrease demand (shift demand to the left). If a good is an inferior good a decrease in income will increase demand (shift demand to the right).

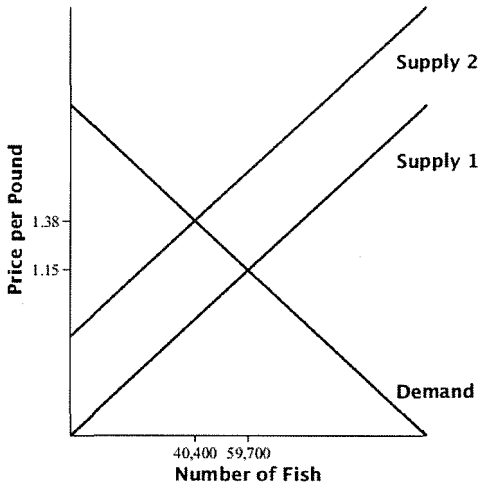

Figure 1: The impacts of a reduction in Supply

Mr. Church provides a second table of data on page 6 of his report summarizing trout imports and exports. Exports have declined steadily since 2008 and the average export price per pound has increased. This combination of events again suggests a reduction in supply. The quantity of imports between 2008 and 2011 has increased on average while the import price has also increased. This suggests an increase in the demand for foreign trout. But why would U.S. consumers of trout pay three times more for a foreign trout than an Idaho trout? I would suggest that consumers' are paying more for foreign trout because they cannot get enough domestic trout. A reasonable question for trout farmers would be why were you unable to maintain historical production levels between 2007 and 2008?

The point to be made is that Mr. Church's cause and effect statement on page 3 second to last paragraph is either incorrect or incomplete. A recession is almost always caused by a reduction in aggregate demand, consumers consuming less of most goods.[2] However, the numbers in Mr. Church's table on page 5 of his report are consistent with a reduction in number of trout begin supplied, as shown in Figure 1. For some reason U.S. production of trout declined and the amount of exports also declined. This inability of domestic producers to meet domestic demand lead to an increase in the importation of trout, even though imported trout were nearly 3 times the price of Idaho trout. I am comfortable stating that the decline in 2008 trout production is partially due to the recession of that same year, but, given the increase in price, I believe there are additional reasons, other than the U.S. recession, that explain why the U.S.'s supply of trout declined. These other reasons are associated with supply curve shifts, changes in technology, increased in resource costs, decline in available resources, etc. These other reasons do not appear in Mr. Church's report.

Mr. Church's statement in the last paragraph of page 6 is also wrong. The statement "...Idaho's trout industry faces an increasingly competitive industry" is not tenable. Competition implies an increase in

[2] I say most goods because at the aggregate level of demand there needs only be a reduction in average consumption. Thus, the consumption of some goods may actually increase during a recession, but on average the consumption of goods declines and the rate of inflation also slows or declines.

the number of producers, an increase in the amount of output, and a decline in the market price of output. Instead the data show a decline in the number of U.S. producers, a high of 525 in 2008 to a low of 283 in 2011. A decline in the amount of output, 59,700 trout in 2007 to 38,400 in 2011, and an increase in the average U.S. price from $1.15 per/lb. in 2007 to $1.53 per/lb in 2011. All of these impacts are indicative of a reduction in supply. At the most basic level of economics the causes of a reduction in supply are related to an increase in input costs, or a decrease in available resources usable in production. Another explanation that explains the reduction in the number of producers would be that the industry was consolidating. Firms within an industry consolidate if there are economies of scale in trout production; the idea is that it is cheaper to produce if you exhaust the economies of scale. This explanation suggests that new firms in the industry would build production facilities that were the same physical size, varying from the factilities built by older firms within the industry. The question is do we see this behavior? Overall my conclusion is that this industry knows well the impacts of competition and that increased competition from abroad does not mean domestic consumers buying more expensive imports, the idea is counterintuitive. Thus, Mr. Church's statement that Idaho trout farmers face more competition is not tenable.

Mr. Church's data was extracted from http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1172 . The State by State data found at this web site shows clearly that Idaho is the low price producer of trout. This suggests at least one alternative market theory, not related to increased competition, faced by Idaho trout growers. Idaho may not be in the same market niche as the producers in other states or abroad. For example, in 2010 trout from Colorado, California, Utah, (regional producers) or imported from abroad were sold for $3 per lbs., or more, while trout from Idaho were sold for $1.03 per lb.[3] Fish can be packed in ice and shipped great distances so a reasonable assumption would be that if Idaho's fish and Colorado, California, Utah and foreign fish are the same product then pack some Idaho fish on ice and sell them in the high priced market. This is called arbitrage, the adage buy low and sell high applies here. If no arbitrage is occurring then the explanation must be that Idaho trout, or a very large proportion of them, fill a different market niche than do trout from other states or from abroad.

Mr. Church wants us to believe that the U.S. producers of trout are in a decline or "...being squeezed by the increased cost of the inputs for trout feed."[4] This explanation is a supply side explanation. That is, increasing costs lead to a reduction in supply. For a business to make a profit the revenue per unit, the selling price per pound, must be greater than the cost per unit, the cost per lb, spent in production. If this condition is not met, then a business is not making a profit and will eventually go out of business. This statement is true for a perfectly competitive business, a monopoly, or every type of business structure between these two extremes. Generally speaking if costs are rising part of that expense can be passed forward to consumers in the form of a higher price. Passing higher costs forward to the consumers of Idaho trout seems reasonable as Idaho is by far the low cost producer of trout. Thus, at this point in time the statement that Idaho trout production is in decline because of increased feed

[3] The price of trout from Washington State, $1.07, was similar to the price of Idaho trout.
[4] See page 6 last paragraph.

prices does not seem logical, Idaho's price per pound is much less than the price per pound received by other state's that produce trout.

Another of Mr. Church's statements in the last paragraph of page 6 is also wrong. The statement "The national recession provided proof that sales of food sized trout is sensitive to economic conditions, particularly changes in household incomes." Where is that proof? The data provided by Mr. Church supports the very different argument that a decrease in supply has occurred, as was shown above in Figure 1.

Finally, prior to leaving the arguments that requires the data from Mr. Church's Table on page 5 I would point out that the entries in this table do not correspond exactly with the entries found at the data source. Some of the differences are small enough that perhaps revisions of the data were not incorporated into his table. Some of the data appears to be recorded in the wrong year. However, the data values in the column titled "Value of Fish Sales (x $1,000)" under the heading "U.S. Trout Producers: Statistics for Fish 12'' +" is just wrong. This column suggests that trout sales in the U.S. were smaller than sales from the State of Idaho. So this column of numbers is either wrong or the decimal is not being placed in the correct position. My extraction of this data from the original source suggests that in every instance the decimal is in the wrong position and in some instances it is the wrong data.

To the remainder of Mr. Church's report I have one broad question; do water rights matter? There is a market for water rights, suggesting a price can be placed on the value of the rights and that water rights can be bought and sold. Here is my question framed in a different context; do mineral rights matter? With oil fracking technology drilling is no longer just a straight line from the earth's surface to the oil deposit far below the surface. A single well can contain vertical and horizontal segments between the surface and the oil deposit. If I own the mineral rights lying over top of a large oil deposit should an oil company be able to extract oil from my deposit by drilling horizontally? When my deposit begins to dry up long before it should am I supposed to just say, well I guess the other oil producers get my oil? Or should I be told, use your own money and fix the problem caused by the other oil producer, and please make sure you don't damage the bottom line of these other oil producing companies with your solution either. To me this analogy sounds just as ridiculous as the last two and a half pages of Mr. Church's report.

Mr. Church's arguments about reasonable efforts begin made by Rangen seem very one-sided.

On page 7 the paragraph beginning "In June 2005..." states that Rangen applied for three grants "under the Eastern Snake Plain Aquifer Assistance Grants program." Rangen received one of the three grants, but did not use the funds

As a faculty member at Idaho State University (ISU) I served on three distinct committees that evaluated grant proposals and awarded grants. These committees were the Humanities and Social Science Research Committee; I served as a member, vice chairman, and chairman of this committee. The faculty research committee, I served as a member and as vice chairman of this committee. I served several years on the undergraduate research committee; I served as a member, as vice chairman and chairman. In my experience serving on these committees when a grant is turned down it is likely that the money

from the grant is inadequate to complete the project, or a detail of the project changed making it no longer feasible. Grantors require an accounting of the money received through a grant and a statement assuring them that the grant money was used in accordance with the original grant application. In Mr. Wayne Courtney's deposition he states that the grant was not used because it required communication and cooperative agreements with "IGWA". Communication was initiated by Rangen but phone calls were never returned to Rangen by IGWA and the necessary agreements could not be obtained.[5]

The paragraph of page 7 that begins "The out of pocket..." states that Rangen could increase water flow by 1cfs for an increase in costs of nearly zero. This statement implies that Rangen doesn't know a good opportunity when they see one, and that Rangen's running of a successful business for over 50 years is really based on luck.[6] I would suggest that Rangen is well aware of their business, both their revenues and their costs, and that their decisions to turn down a project that would increase water flow by 1 cfs means that the costs of this project exceed the benefits. If this is not the case Mr. Church needs more data to support his claim than I've found in his report. Similar arguments apply to page 8 of Mr. Church's report. Mr. Church states that the technology and capital utilized by other hatcheries could be used to increase water flow to Rangen's operation. Perhaps this is true, perhaps it is not. Capital and technology is not always transferable from one physical location to another, especially when a natural resource such as water is a key ingredient to the production process. To support Mr. Church's claims would require more analysis than was presented in his report.

The remainder of Mr. Church's argument moves toward the statement that enforcing Rangen property rights would be so expensive that their rights should be ignored in favor of the common good. It also suggests that Rangen should be responsible for all of the expenses associated with solving their water issues. Ronald Coase, a Nobel Prize winning economist, suggests the person's imposing an externality, ground water farmers, on other property owners, Rangen, can and should compensate the damaged party, Rangen. Thus, it appears to me that at the very least Rangen should be compensated for the water that they are not receiving but have rights to.

[5] See page 45 – 46 of Mr. Courtney's deposition.
[6] It is my understanding that Rangen's Aquaculture division has existed since the 1950s.

References

[1] Church, John. December 21, 2012. "Expert Witness Report by John S. Church."

[2] Deposition of Wayne Courtney, September 10, 2012.

[3] http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1172