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# Social Implications of the Eruption of Mount Saint Helens

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The Social Implications of the Eruption  
Of Mount Saint Helens

By

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Senior Seminar: Hst 499  
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Beginning in March 1980, a multitude of earthquakes began occurring throughout the Gifford National Forest. Mount Saint Helens a volcano in the Pacific Northwest and part of the Cascade Range had awakened. The frequent earthquakes occurred continuously for a two month span. This activity then continued with the emission of gasses, the formation of a new crater, and the creation of a bulge. Then, on May 18<sup>th</sup>, with no warning, a 5.1 magnitude earthquake occurred which caused the north slope of the mountain to break and slide down, leaving a massive hole in the mountain. This was not the only catastrophic event that occurred with the eruption. Additionally, a lateral blast also occurred during which the mountain lost its north face. The blast flattened everything extending 19 miles away from the volcano. Fifty-seven people were known to have been killed on the day of the eruption. The eruption of Mount Saint Helens was one of the biggest geological and environmental events to happen in the 20<sup>th</sup> century and still has significance even today.

This paper looks at how the environment was damaged from the eruption and how this damage initially hurt the identities of Washington and Oregon. The identities will be defined by examining the high value products that Washington and Oregon are known for such as their crops, animal products, and tourism. Just as the environment recovered, so did the identity of Washington and Oregon. Because of the way the eruption of Mount Saint Helens occurred, the identity of Washington and Oregon actually became stronger.

This paper will use a few types of sources. The main secondary source is a book by Blong who was the former director of Risk Frontiers and was a professor at Macquarie University in Sydney. Blong's book was written in 1984 and is titled *Volcanic Hazards: A*

*Sourcebook on the effects of Eruption.*<sup>1</sup> In this book Blong looks at fifteen different eruptions and the effects these eruptions had on society and the environment. Blong's focus in this work is to present a sourcebook that shows how interdisciplinary volcanic eruptions can be and what the direct effects of volcanic eruptions are. The problem with this secondary source is that a lot the information in Blong's work consists of scientific fact and require an interdisciplinary skillset. The interdisciplinary skillset makes some stories hard to interpret historically because of all the terms and professions involved. The other sources will be primarily newspapers from various communities. This essay draws from newspapers from Seattle, Ellensburg, Spokane, and Yakima. The problem with newspapers as a source is that many of them are subject to biases and opinions. They can also contain misinformation but provide great statistics and monetary values of the destruction that occurred after the eruption such as in *Business Week*. Scientific articles are another source used in this paper to look at the effects that certain aspects of the eruption had on the environment. Sources such as "Mount St. Helens Eruptions of 1980: Atmospheric Effects and Potential Climatic Impact: A Workshop Report".<sup>2</sup> Again, the problem with these sources is much like Blong's book in that a lot of the source consist of scientific fact and are hard to interpret historically. A final source type is a trade commission report that was commissioned by the United States senate that was written in 1980 and focuses mainly on the costs that the eruption inflicted on two states of Washington and Oregon.<sup>3</sup>

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<sup>1</sup> R. J. Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions*. (Orlando, Florida: Academic Press 1984). 246.

<sup>2</sup> Reginald Newell, "Mount St. Helens Eruptions of 1980: Atmospheric Effects and Potential Climatic Impact : A Workshop Report". (Washington, DC: Scientific and Technical Information Branch, National Aeronautics and Space Administration, 1982).

<sup>3</sup> Stephen Burket, Edward Furlow, Paul Golding, Lowell Grant, William Lipovsky, and Thomas Lopp. "THE ECONOMIC EFFECTS OF THE ERUPTIONS OF MT. ST. HELENS." September 1, 1980. Accessed May 23, 2015. 20.

The work of other scholars can be divided into a few categories which are damages in the immediate blast zone and damages that occur away from the blast zone. One of the terms that will be used in this essay is the blast zone. The “blast zone” in this essay refers to a section of three areas around Mount Saint Helens. The first section is about the first eight miles from volcano in which everything was obliterated or carried away by flows. The middle zone, often called the tree-down zone, extended to nineteen miles away from the volcano where everything was flattened such as trees and grass. The final zone is often called the “seared zone” and is the outer most fringe of the impacted area where trees are left standing but were killed by the gasses emitted from the eruption.<sup>4</sup> The environment of the blast zone is another concept that needs explained. The environment refers to the changes that occurred in the blast zone. For instance crops were destroyed around the blast zone, animal populations were decimated, and bodies of water such as Spirit Lake were destroyed and reformed under new conditions.

A variety of terms will be used to describe some of the volcanic events and their consequences that can happen due to an eruption. Tephra is fragmented materials that are formed from volcanic eruptions when rock fragments are ejected into the atmosphere. There are three distinctions of tephra: the first is ash or particles smaller than two millimeters in diameter, the second is Lapilli which range from 2- 64 mm in diameter, and third is volcanic rock and bombs that are considered larger than 64mm in diameter.<sup>5</sup> “Lahars” are a mixture of water and rock fragments that flow down slopes of volcanoes and river valleys.<sup>6</sup> “Turbidity” is the measure of how clear the water is and is a test for the quality of water; an increase in turbidity usually means a decrease in water quality which can be bad for humans to ingest. If the water has a high

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<sup>4</sup> Robert Tilling, Lyn Topinka, and Donald Swanson, “Eruptions of Mount Saint Helens: Past Present and Future”. Geological Survey (Special Interest Publication) 1993.

<sup>5</sup> Edward Tarbuck, and Frederick Lutgens. *Earth: An Introduction to physical geology*. (Pearson prentice hall, 2008).

<sup>6</sup> Tarbuck, *Earth: An Introduction to physical geology*. 125.

turbidity the passage of light through the water will decrease because of all of the minerals this can range from clay to microbes.<sup>7</sup> “Pyroclastic flows” are a mass of hot ash, lava, and gasses that is ejected from a volcano and usually travels downslope at great speeds.<sup>8</sup> These terms are a few of the problems that volcanic eruptions cause and will be used to describe how the eruption of Mount Saint Helens destroyed the identity of Oregon and Washington.

### Historiography

The eruption of volcanoes is a very interdisciplinary process. Volcanologists usually focus on the bigger picture of eruptions such as the history of the volcano, and are less specific about the research aspects like scholars are. The accounts from Volcanologists usually tend to read like textbooks and are very educational about the basics. The main focus for Volcanologists is usually looking at the destructive power of volcanoes and why these eruptions occurred the way they did. These are not the only topics that Volcanologists focused on. Alwyn Scarth studied a number of volcanoes and examined their past in his work titled, *Vulcan's Fury*.<sup>9</sup> When focusing on Mount Saint Helens, he examined how the native people viewed the mountain and how the mountain was incorporated into the Native American belief system. In other examples Scarth studies one of the most prominent eruption stories such as the eruption of Mount Vesuvius. Mount Vesuvius' eruption is famous for the destruction of Pompeii. Scarth recounts the devastation and the troubles the people in 79AD would have faced such as fist sized tephra raining down on the people who failed to flee and remained in the city.<sup>10</sup> One of the problems with Volcanology is that its ties with environmental history are still relatively new and each eruption is different and as has different results; so most of the studies that are done are focused

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<sup>7</sup> Ibid, 125.

<sup>8</sup> Ibid, 423.

<sup>9</sup> Alwyn Scarth, *Vulcan's Fury: Man against the Volcano*. (New Haven: Yale University Press, 1999).

<sup>10</sup> Alwyn Scarth, *Vulcan's Fury: Man against the Volcano*.

on the overall geological and biological aspects of a specific eruption and the immediate zones that were affected by it.

Other scholars are more focused than Volcanologists and tend to focus on the effects on the environment away from the immediate blast zone which usually deal with water, fauna, and flora. In his article Douglas Martian studies habitats in the Toutle River after the eruption, and the effects that the debris from the eruption had on salmon and different habitats.<sup>11</sup> Reginald Newell studied the effects that the eruption of Mount Saint Helens had on the atmosphere and climate and how other eruptions similar to Mount Saint Helens in the future will affect climate and weather.<sup>12</sup> Patricia Lauber is another one of these scholars. She leads her readers through a photographic essay on the events that led to the eruption, and aimed to show how resilient the environment was after this natural disaster.<sup>13</sup> Through her examination Lauber brought more interest to geographical areas which were not normally studied due to direct impact. Another book that focuses on the blast zone is, *In the Blast Zone: Catastrophe and Renewal on Mount St. Helens*, by Charles Goodrich.<sup>14</sup> This book documents a trip that takes place 25 years after the eruption. The trip included twenty scientists, writers, and poets who camped out on Mount Saint Helens. This book records the reactions and observations, made by these people during this camp out, of how the environment had recovered since the eruption. This book includes stories of the Northern pocket gopher and prairie lupine, two species that survived and spread rapidly after the

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<sup>11</sup> Martin Douglas, "Effects of Mount St. Helens Eruption on Salmon Populations and Habitat in the Toutle River." (Technical Completion Report Seattle, Wash: University of Washington, School of Fisheries, Fisheries Research Institute, 1984).

<sup>12</sup>Reginald Newell, "Mount St. Helens Eruptions of 1980: Atmospheric Effects and Potential Climatic Impact : A Workshop Report." (Washington, DC: Scientific and Technical Information Branch, National Aeronautics and Space Administration, 1982).

<sup>13</sup> Patricia Lauber, *Volcano: The Eruption and Healing of Mount St. Helens*. (New York, Bradbury Press, 1986).

<sup>14</sup> Charles Goodrich, *In the Blast Zone: Catastrophe and Renewal on Mount St. Helens* (Corvallis, Oregon State University Press, 2008).

blast.<sup>15</sup> The work of these scholars is important in determining the initial identities of both Washington and Oregon. Goodrich's book reminds the reader what the mountain was like before the eruption and how the survival of animals like the Northern pocket gopher and prairie lupine gave scholars studying the mountain hope for a recovery.

The other type of scholars that often studied Mount Saint Helens are those that examined the social aspects such as the deaths of the fifty-seven people who were killed during the eruption. Some people are studied more than others. Harry Truman is the most reported person related to the eruption of Mount St. Helens. Mary Ann Woosley studied Harry Truman and provided facts and pictures about his life.<sup>16</sup> Truman has become notorious as a significant figure during the eruption. Harry Truman was an 83- year- old man who came to Spirit Lake in 1928, and eventually built his lodge a year later. Truman was known for refusing to leave his lodge prior to the eruption. He had lived on the mountain for many years and rebuilt his lodge multiple times due to bad weather. When told of the impending eruption he refused to leave, becoming a folk hero. Spirit Lake was engulfed by a pyroclastic flow and covered in about one hundred and fifty feet of debris and it is assumed that Truman died at his lodge.<sup>17</sup>

### The Identities of Washington and Oregon

This paper will take and expand the work of the above scholars by looking at how the environment was damaged from the eruption and how this damage initially hurt the identities of Washington and Oregon. The identities will be defined by examining the high value products that Washington and Oregon are known for such as their crops, animal products, and tourism.

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<sup>15</sup> Goodrich, *In the Blast Zone: Catastrophe and Renewal on Mount St. Helens*.

<sup>16</sup> Mary Ann Woosley, *The Legend of Harry Truman: The Man and the Mountain He Loved, 1896-1980*. (Lubbock, Texas: C.F. Boone Publishers, 1980).

<sup>17</sup> Woosley, *The Legend of Harry Truman: The Man and the Mountain He Loved, 1896-1980*



Crops and other agricultural products are important to the identity of Oregon because it's something Oregon is known for. Due to the eruption crops suffered from a lack of water as well as the ash that fell on them. Tourism was especially affected because people didn't want to travel to places where the natural beauty was presumed to be affected in a negative way. Just as the environment recovered, so did the identity of Washington and Oregon. Most of the immediate effects were what caused a decline in the identities of Washington and Oregon. The eruption of Mount Saint Helens caused the identities of Washington and Oregon to become stronger especially once things returned to normal; The way ash eventually affected the soil, the new attraction of the volcano, and eventually when agriculture and perception of the area returned to normal are how the identities were strengthened to what they are today.

To understand why and how the identities of Washington and Oregon were damaged, one first has to look at the damages the eruption caused to flora, fauna, water supplies, water systems, and the misinformation that was spread among the media. The main culprits of most of the damage were tephra and lahars that traveled down the mountain and ended up in rivers. The tephra plume of the 1980 eruption lasted about eight hours and ranged from fourteen to eighteen kilometers high.<sup>18</sup> This plume had huge effects on communities up to three hundred and seventy miles away.<sup>19</sup> The plume eventually dispersed tephra across several states. The lahars traveled down the mountain picking up everything they could and deposited it all into rivers, which resulted in damaged water systems.

Volcanic eruptions often affect water systems because of the destructive effects of tephra and lahars. One example of water systems being damaged is when tephra enters the water supply

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<sup>18</sup> Scarth, *Vulcan's Fury*: 214-15.

<sup>19</sup> *Ibid*, 214-15.

and increases the turbidity. After the 1980 eruption tephra entered the water supply and people drinking the affected water were advised to boil it before drinking.<sup>20</sup> The problems caused by tephra were often minor and were often treated by buffering and diluting the water. This buffering was done until the turbidity of the affected water returned to normal and the materials had a chance to settle. The real challenge occurred due to the lahars after the eruption. A number of water supply systems existed along the Toutle and Cowlitz rivers, many of which were swept away in the lahar flows or damaged due to the high turbidity of the water.<sup>21</sup> In one case, the town of Castle Rock's intake supply was damaged but was able to function with limited power from existing wells until new wells were rapidly drilled. Another example was in the town of Longview. Longview's system was buried in five meters of sediment and was only able to supply 7.3 mega liters of water (1 million liters), which was twenty- five percent of what it was supposed to produce.<sup>22</sup> This lowered production caused restrictions on the use of water until May, 25.<sup>23</sup> An article in the Seattle Post-Intelligencer described the restrictions put into place, "The restrictions often were odd and evens rationing systems based on house numbers and dates".<sup>24</sup> The rationing of water in some areas could have been prevented by having people avoid trying to clean their possessions such as their cars. In Ellensburg the usage of water skyrocketed because of cleanup operations.

As a result of water systems being damaged or being abused by cleanup projects the identity of Washington and Oregon suffered. Tourism suffered due to water and food being scarce and this was because stores, restaurants and most tourist attractions were closed. Oregon and Washington are known for their natural beauty and destinations like the Cascade Mountain

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<sup>20</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions*. 246.

<sup>21</sup> Blong, *Volcanic Hazards*: 246.

<sup>22</sup> Ibid, 246.

<sup>23</sup> Ibid, 246.

<sup>24</sup> Seattle Post-Intelligencer, May 29:A11

Range, the Columbia River Gorge, Puget Sound, and their many vast forests. Washington is even called the Evergreen State, known for its nature. According to the *Oregon Forest Literacy Program* the forest sector is one of the largest economic sectors because it not only provides tourism opportunities but is also used as an economic livelihood for Oregonians since forests provide a renewable resource and commodities.<sup>25</sup> Oregon is known for its diverse forms of nature and terrain. This natural beauty is what people travel there to experience. Agriculture suffered alongside tourism. Water was not readily available and had to be rationed meaning that agricultural products suffered because farmers were not always able to obtain the required water needed for their crops. These are important because without tourism and agricultural products the states lose large portions of their revenue.<sup>26</sup> Oregon State is known for its agriculture. One of the oldest colleges, Oregon State University, was founded based on agriculture and Oregon is considered one of the most diverse producers of agriculture products.<sup>27</sup> This diversity of the products is also coupled with successful production which puts Oregon as the leading producer of many crops.

Other than clean water systems used for agriculture, another type of water system that suffered damage were waste systems. Waste systems can also be damaged by a tephra fall during and after eruptions. This can happen when large amounts of tephra fall and eventually wash into storm drains and other collection lines. The main problem occurs when there is one network for both sewage and storm water collections, which was often the case in many of the cities affected by the Mount Saint Helens ash fall. The effects of the tephra were less detrimental in 1980 than they could have been. San Jose experienced similar problems with ash in the 1964 eruption of

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<sup>25</sup> *The Oregon Forest Literacy Program*, (Oregon Forest Resources Institute, 2011).

<sup>26</sup> "Oregon Impressive in National Agriculture Rankings," (States News Service, June 16, 2010.)

<sup>27</sup> "Oregon Impressive in National Agriculture Rankings."

Irazú. It was worse because ash clogged their sewage system which led to flooding.<sup>28</sup> The main problem for the sewage system after the 1980 eruption was the damage the ash afflicted to plumbing due to wear on the pipes and other systems. For instance, Ellensburg had to spend \$37,450 on their system.<sup>29</sup> The most damage occurred in Yakima where the tephra resulted in the indefinite closure of sewage plant three days after the eruption.<sup>30</sup> The sewage plant in Yakima was closed for four days after the eruption due to the ash and this caused extra sewage build up.<sup>31</sup> The city voted to put the excess untreated sewage into the Yakima River and the excess sewage in the river resulted in many debates because of how controversial the issue was. Dumping waste into the river was apparently not a new idea because before the environmental cleanup Yakima had been dumping sewage into the river for decades. The city focused a lot of resources on sending community health staff from door to door to prevent waterborne illnesses. The reason the river was selected as a dump was the fact that there was no way to deal with about 5000 gallons of waste per minute.<sup>32</sup> The waste being dumped into the river resulted in media coverage being negative that in turn resulted in a decline in tourism.

While the effects on utilities can be catastrophic the effects of tephra and other dangers produced by a volcanic eruption on agriculture can be just as devastating to the environment and human society. There are numerous examples of historic eruptions such as Mount Vesuvius or Mount Etna in which deaths of both crops and animals occurred as a result of ash fall and tephra. This loss of crops and livestock in turn affected societies due to the destruction of resources on which the public relied. There are a number of destructive forces from eruptions that can

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<sup>28</sup> D.E Clark and Le, H., "Ceniza-arena cleanup in San Jose, Costa Rica: Operational aspects as related to nuclear weapon fallout decontamination." (Stanford Research Institute, 1965). 22.

<sup>29</sup> Blong, *Volcanic Hazards*, 249.

<sup>30</sup> Dick Zais, "May 19, 1980: the Day the Sky fell: Managing the Mt. St. Helens Volcanic Ashfall on Yakima, Washington, U.S.A." (2001).

<sup>31</sup> Blong, *Volcanic Hazards*: 250.

<sup>32</sup> *Ibid*, 250.

damage agriculture including tephra, pyroclastic flows, lahars, acid rains, lightning strikes, and gases.

In the immediate eruption zone of Mount Saint Helens lightning strikes were a problem. The lightning strikes were caused by pyroclastic flows and the tephra cloud. They resulted in the damaging of trees and the beginning of around 50-100 forest fires which were ended by the falling ash.<sup>33</sup> The initial blast of the mountain caused the destruction of surrounding forests and the introduction of a lot of new timber, into the area because of the trees that were knocked down from the eruptions blast. Only 20% of the timber was destroyed by the initial blast of the mountain.<sup>34</sup> 80% of the timber was salvaged and its collection was really important in decreasing unemployment rate after the eruption.<sup>35</sup> Moving further away from the blast zone, young trees were most at risk and were likely to be destroyed if ash was thicker than 100mm.<sup>36</sup> For mature trees there is little risk unless ash fall exceeds >500mm.<sup>37</sup> Forests add to the beauty of tourism and this type of nature is what Washington is known for. Washington is called the Evergreen State so the destruction of forests was important to the identity of Washington. It's important to Oregon because Oregon is known for its diverse forms of nature and terrain.

The major crops that were affected happen to be one of Washington's and Oregon's main crops: hay. In terms of cash crops, hay is Oregon's second and Washington's fourth most profitable. In the case of the Mount Saint Helens' eruption, hay was the main crop that was

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<sup>33</sup> Ibid, 313.

<sup>34</sup> Ibid, 313.

<sup>35</sup> *Raniner National Bank*, Economic Report, No 1, June 1980: 2

<sup>36</sup> Neild, J, O'Flaherty, P, Hedley, P, Underwood, R., Johnston, D, Christenson, B, and Brown, P., "Agriculture recovery from a volcanic eruption." (MAF Technical paper 1998). 39

<sup>37</sup> Neild, "Agriculture recovery from a volcanic eruption."39

damaged. Much of the first hay cutting was ready for harvest on May 18 when the eruption occurred. Losses were estimated at thirty five million dollars for Washington.<sup>38</sup> The first cut usually accounts for forty percent of the total crop.<sup>39</sup> Another other issue with the hay was that the taste was ruined for livestock which caused an increase in operating costs of farmers as they had to buy hay from areas unaffected by the eruption to mix with the ash hay so the animals would eat it.<sup>40</sup> Hay and livestock are some of the key agricultural components to the identities of Washington and Oregon. Even though losses occurred the eruption gave nutrients to the soil so future growing of hay increased.

There are other crops besides hay that suffered and included fruit trees. The damage to fruit trees due to the eruption and ash fall effects was estimated at 25 million dollars.<sup>41</sup> The main fruit tree that suffered was apples which are the top cash crop for Washington.<sup>42</sup> This is a hard subject to look at though because there are other factors that could have come into play such as the weather conditions but ash played a major role in the decline of the apples in 1980 due to the fact that scientists didn't know how to clean the trees that were covered in ash. The misinformation played a role here since scientists didn't know at the time if cleaning the tree with water was a good idea and some even recommended shaking the ash off the tree.<sup>43</sup> Despite the problems the ash caused for fruit trees a lot of the problems were fixed once the ash was removed and most of the times growth increased due to the ash giving nutrients to the soil.

Wildlife and livestock, suffered just as much as humans did. It is estimated that the casualties in the immediate blast area of Mount Saint Helens was "11,000 hares, 6000 black

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<sup>38</sup> Burket, "THE ECONOMIC EFFECTS." 20.

<sup>39</sup> Ibid,20

<sup>40</sup> Ibid,20

<sup>41</sup> Ibid, 20.

<sup>42</sup> Ibid, 20.

<sup>43</sup> Blong, *Volcanic Hazards* 158.

tailed deer, 5200 elk, 1400 coyotes, 300 bobcats, 200 black bears, and 15 mountain lions.”<sup>44</sup> This raised the question on how wildlife would recover and in the long run how this would affect the ecosystem. The other issue was that the livestock in the area took longer to gain weight and to get ready to be put in the market. This was due to the ash causing the animals to be reluctant to eat the hay and the poor quality of grazing in the pastures. There was minimal livestock loss due to the eruption. Most deaths of livestock occurred due to the flooding along the Toutle and Cowlitz rivers where animals were swept away and drowned.<sup>45</sup> Despite the deaths of the many animals some survived the blast zone while others were reintroduced such as marmots.

Aquatic life was drastically changed in the area around Mount Saint Helens because of the eruption. The eruption changed the landscape of rivers and lakes and damaged a lot of aquatic ecosystems. One of the major ways aquatic life suffered was due to the high temperatures of the mudflows that entered that Cowlitz and Toutle Rivers. On May 19 the lower Cowlitz River was 33 degrees Celsius which is too hot for fish to even survive, this resulted in many fish deaths.<sup>46</sup> In total more than 240 km of trout stream and fifty lakes were affected in the eruption.<sup>47</sup> It is estimated that the destruction of Spirit Lake led to the death of 126,000 trout.<sup>48</sup> Research shows that for the 26 lakes that were affected by the eruption 11 million fish were killed.<sup>49</sup> The problem with studying the fish and the effects the eruption had on them is that there are a lot of different variables. It is hard to determine what exactly killed the fish. The death of fish could have been due to the fact that as much as 30mm of ash fell in some areas or the fact

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<sup>44</sup> Del Moral, "Life Returns to Mount St. Helens." Accessed May 1, 2015.

[http://faculty.washington.edu/moral/publications/1981\\_RDM\\_NH\\_small.pdf](http://faculty.washington.edu/moral/publications/1981_RDM_NH_small.pdf).

<sup>45</sup> Burket, "THE ECONOMIC EFFECTS OF THE ERUPTIONS OF MT. ST. HELENS." 20.

<sup>46</sup> Blong, *Volcanic Hazards*: 336.

<sup>47</sup> *Ibid*, 336.

<sup>48</sup> *Ibid*, 336.

<sup>49</sup> Everett Herald and Western Sun, 1980, Mount St. Helen erupts. Daily Herald Co., Everett, WA.

that there was an increase in the pH of the river.<sup>50</sup> Douglas B. Lee looks at the effects on all water affected by the eruption and comes to the conclusion that the eruption had different levels of change on different lakes.<sup>51</sup> Aquatic life plays a very important role in the identity of both Oregon and Washington because of how these two states are represented in travel ads. One of the big tourist attractions is fishing and boating.<sup>52</sup> The identity of the bodies of water around Mount Saint Helens was changed forever because of the eruption. The old Spirit Lake tourist attraction was no more; it was reshaped into something entirely new. It is now a new lake that people associate with the recovered identity of the region, much like how the cratered face of the mountain is what people picture when they think of Mount Saint Helens instead of the old pristine and unharmed summit that it used to be.

In the rural areas away from the immediate blast zone, one of the main consequences of the eruption was not the death of livestock but the products they produced such, as milk. Milk producers were especially vulnerable and they had to dump a lot of their product. Their problems came from a couple different sources, one of which is that there were some cases where the delivery trucks couldn't reach their destinations due to the ash blocking roads. Another problem for the producers was storage space. The holding tanks that were used for storage had a lot of damaged and clogged filters from the ash; this resulted in a lack of good space to store their milk.<sup>53</sup> It is estimated that 38 million dollars was lost due to the fact that farmers could not deliver these products to market.<sup>54</sup> Dairy products are ranked in the top five for agriculture

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<sup>50</sup> Blong, *Volcanic Hazards* 338.

<sup>51</sup> Douglas Lee, *Effect of the eruption of Mount St. Helens on Physical, Chemical, and Biological Characteristics of Surface Water, Ground Water, and Precipitation in the Western United States* (United States Government Printing Office: 1996.)

<sup>52</sup> "Washington's State Tourism-Share Your Washington," YouTube video, 2:01, posted by "GreenRubino"

<sup>53</sup> Burket, "THE ECONOMIC EFFECTS OF THE ERUPTIONS OF MT. ST. HELENS." 20.

<sup>54</sup> *Ibid.*



revenue and are second only to apples in Washington. The effects of ash on these types of agricultural products really hurt the identities of Washington and Oregon.

All of the damages inflicted caused problems for the identities for Oregon and Washington. The water systems, waste systems, and destruction of forests help to show the problems that these states faced after the eruption. Without water and waste systems functioning efficiently, crops were going to have a lower priority to receive water than people, because people are going to need the water to survive. At the same time tourism is going to be heavily affected if waste is being dumped into the river and misinformation is constantly being created and deterring people from coming to visit Oregon and Washington.

Tourism is often a doubled edge sword when it comes to volcanic eruptions. Before the eruption tourism increased but when the eruption occurred in May tourism plummeted. Between March 20 and May 18, 1980 tourism skyrocketed as people sought to get as close as they could to the mountain to possibly observe some kind activity.<sup>55</sup> Partially due to the media, all visitors thought that ash was knee deep after the eruption of May 18<sup>th</sup> and venturing anywhere in Washington would lead to silicosis from the ash build up.<sup>56</sup> Chehalis and Seattle did not receive any ash from the May 18<sup>th</sup> eruption but suffered from the lack of tourism due to such misinformation. Chehalis, which usually sees about 40,000-60,000 people on weekends, in 1980 saw a drop to only 10,000 tourists.<sup>57</sup> Seattle's total business saw a decline in revenues by about ten percent. This decline in business in Seattle was even seen at the space needle restaurant

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<sup>55</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 366.

<sup>56</sup> *Ibid*, 366.

<sup>57</sup> *Seattle Post-Intelligencer* June 12 1980

where revenue was down 19%.<sup>58</sup> Tourism is a major part of Oregon and Washington so this decline in tourists shows the devastation that occurred to the identity these two states.

Areas that got covered by ash fall suffered a similar fate to the cities that got little- to- no ash. Before the eruption, in early May, Spokane received a huge influx in visitors which was quickly dissolved when the eruption occurred. Seven conventions were canceled and many hotels reported that business was down by 50%.<sup>59</sup> Yakima experienced a similar fate. The projected loss for Yakima was estimated to be eleven million dollars.<sup>60</sup> About 55% of the revenue loss was due to hotel room rentals being canceled and 33% of the loss was associated with food and banquets for events that were canceled.<sup>61</sup> During Memorial Day weekend the occupancy of hotels in Yakima was 0-13% down from about 70%, which is the normal total occupancy for that holiday weekend.<sup>62</sup> Even though it is hard to estimate, it is believed that revenues from Washington were down \$200-300 million for 1980.<sup>63</sup>

The fall in revenue resulted in multiple campaigns attempting to attract business and convince people to visit Washington and Oregon. Portland tried to attract tourists by starting a campaign that used the slogan “the only Portland ash left is in California gift shops.”<sup>64</sup> This campaign ended badly right after it launched because the mountain had a minor eruption and gave Portland three millimeters of ash which eventually turned to muck because of the rain Portland received right after the ash deposit.<sup>65</sup> Yakima started their own “clean and green” campaign, and some Yakima motel owners tried to get tourists to come and stay by offering two

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<sup>58</sup> *Business Week*, July 21 1980 9

<sup>59</sup> *Business Week* July 21 1980 9

<sup>60</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 366.

<sup>61</sup> *Ibid*, 336.

<sup>62</sup> *Ibid*, 336.

<sup>63</sup> *Rainier National bank*, Report No,3 June 27, 1980 3

<sup>64</sup> "They Should Have Known Better." *Ellensburg Daily Record*. June 12<sup>th</sup> 1980

<sup>65</sup> "They Should Have Known Better." *Ellensburg Daily Record*. June 12<sup>th</sup> 1980

rooms for the price of one.<sup>66</sup> The one event that helped Yakima bring tourism back was the National High School Rodeo.<sup>67</sup> Yakima wanted to host the event to help show that their city was a clean and fun place to visit. Yakima had to bring two board members from the National High School Rodeo board to the city so that they could see that it was “clean and green” and was a good place to host the event. The board members eventually approved the city. Seattle also sought help to convince people that Mount Saint Helens was not right across the street and a danger to tourists. They did this by having a media campaign produced. United Air Lines even flew in eighty journalists to Washington and Oregon to demonstrate that most of the Northwest was unaffected by the eruption to try and promote tourists to come back.<sup>68</sup> The lengths that cities and businesses went to in order to get tourists to come back shows the importance of tourism in both Washington cities and Oregon cities. These two states were so desperate to bring people to the Pacific Northwest that they were trying almost everything to get tourists to come back.

The eruption of 1980 presented a major social issue for the people that were trying to figure out what to do to stay safe from the effects of the eruption. After the eruption of Mount Saint Helens there was “misinformation created.”<sup>69</sup> Misinformation was spread because the eruption of Mount Saint Helens was one of the biggest eruptions that happened in the United States, and because it was monitored while being reported everywhere misinformation was easily spread. The media was partly to blame for the misinformation but the biggest part of the blame rested on the scientists who were given the opportunity to voice their opinions; they knew very little about volcanic eruptions or the long and short term effects of them.<sup>70</sup> *The Spokane Review* May 21, 1980 contained a table of questions that were answered with contradictions. Some of the

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<sup>66</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 367.

<sup>67</sup> *Business Week*, July 21, 1980: 9.

<sup>68</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 367.

<sup>69</sup> *Ibid.* 156.

<sup>70</sup> *Ibid.*, 156.

questions were, “is the ash a health risk”, or “how do I protect my lungs?”<sup>71</sup> The answers varied vastly for the first question and consisted of “no”, “maybe,” “perhaps”, “get out of town”, or my personal favorite “none of the above”.<sup>72</sup> For the second question the answers were “use a damp cloth” while others answered “use a dry cloth only because the moisture of the cloth will mix with the ash and produce an acidic based chemical that will then be inhaled into lungs and cause harm.”<sup>73</sup> The misinformation played an important role in the lack of tourism mainly because hazards that didn’t exist were being reported on and the misinformation caused anxiety that ultimately discouraged tourism. Ash being knee deep was an example of this. No one wanted to go to an area where they were knee deep in ash especially when reporters and scientists were not sure if ash was dangerous to an individual’s health.

Commercial activity was also desperate to bring consumers back to their businesses. Some businesses reported to be down as much as 80% in sales.<sup>74</sup> However, the stores that remained open had quite an increase in sales. The Jantzen Beach Shopping Centre remained open and experienced a high demand of shoppers who sought out essential items such as bread, milk, eggs, and other emergency supplies because people feared the mountain would erupt again.<sup>75</sup> The eruption sparked a lot of advertisements that tried to get consumers back into the public to buy things. Real estate advertisements as well as retail sales in Yakima consisted of headings such as, “Volcanic Sales,” “St Helens Blow out Sale”, and “Mount St. Helens Ash Sundae.”<sup>76</sup> In the penny press a Nutritional food store ran this ad:

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<sup>71</sup> *The Spokesman Review*, May 21,1980: C1-C2

<sup>72</sup> *The Spokesman Review*, May 21,1980: C1-C2

<sup>73</sup> *The Spokesman Review* may 21 1980 C1-C2

<sup>74</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 369

<sup>75</sup> *Ibid*, 369.

<sup>76</sup> *Ibid*, 369.

Be prepared when...Disaster Strikes

Mount St. Helens Stopped Transportation

Cut Food Supplies and More!

Are you prepared? Neo-Life offers a nutritionally complete line of food storage

Items and vitamins supplements...<sup>77</sup>

Some of the companies that benefited from the eruption were Kentucky Fried Chicken and Olympus Cameras. Kentucky Fried Chicken gathered 22 tons of tephra from its business around Yakama and sent it to Nevada and California where if the customer bought a bucket of chicken they got 100g of tephra free.<sup>78</sup> If a person just wanted a sample they had to pay 50 cents.<sup>79</sup> The KFC in Palo Alto had run out of its supply of tephra in a few days. Olympus Cameras was another company that benefited from the eruption. They used pictures of the eruption to promote their camera and used the slogan: "When the world around you is exploding, there's one camera you can trust not to blow the shot."<sup>80</sup> With these unique and opportunistic types of advertising, people were trying to reinforce old and new aspects of the identities of Oregon and Washington.

The eruption of Mount Saint Helens caused many short terms problems that plagued the identities of Washington and Oregon and included the hindrance of agricultural products, aquatic life, and tourism. The identity of Washington and Oregon were actually strengthened despite these short term affects. Crops may have been damaged that were growing near the time of the eruption but the ash gave nutrients to the soil providing better growing seasons and in some cases resulting in an increase in production for the following years. The plants that survived or

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<sup>77</sup> *Penny press*, Yakima. June 10, 1980

<sup>78</sup> Blong, *Volcanic Hazards: A Sourcebook on the effects of Eruptions* 370.

<sup>79</sup> *Ibid.*370.

<sup>80</sup> *Ibid.*370.

were in the early stage of development actually benefited from the short term effects almost immediately, an example of this occurred in June after the eruption when researchers were examining if ash fall was responsible for the larger than normal apples.<sup>81</sup> Animals and nature returned to the mountains blast zone some of them new species that had never been seen in the area before. Aquatic life also recovered. Fish returned to the rivers and new ecosystems were formed that could lead to new studies such as the one done at Spirit Lake. Despite so much destruction the environment eventually recovered and exceeded what it used to be. With the recovery of nature tourism returned to normal and in some cases was increased due to the new volcanic national monument.

Tephra fall thickness (mm)	Effects of Crops
>2000	All vegetation killed
1000-1500	Most vegetation killed some recovery
200	Rice paddy destroyed
50	Bananas plants damaged "forced ripening of some plants
40	50% loss of lentils/ 15-30% loss of wheat, spring barley, peas, hay
30	Some cherry damage/ some plants unable to push through tephra
25	Damage to sweet potatoes, yams, tannia
20	30% loss of lentils/5-15% loss of winter wheat. Barley, peas, grass seed, mandarin oranges, mulberry tree crop and vegetables considerably damaged
15	Loss of first alfalfa cutting; grass hay windowed before tephra fall not useable
10	20-40% scarring on blueberries, bananas, spring wheat, mulberry, tobacco/ vegetable crops somewhat damaged/ hay crop loss 25-30%
<10	Strawberry plants flattened/ minor damage to corn and hay

Source: Blong, Pg. 319.

<sup>81</sup> Burket, "THE ECONOMIC EFFECTS OF THE ERUPTIONS OF MT. ST. HELENS." 20.

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