Local Media Coverage of Environmental Conflict: The Klamath River Basin

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Abstract

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This is a study of a content analysis of newspaper coverage from the Klamath River Basin conflict over water allocation in 2001 and 2002. The conflict boiled down to the question of who had right to the limited water in the basin – the farmers or the fish? The print media plays a role in policy agenda-setting, and communication literature suggests community newspapers tend to reflect the structure and norms of the cities and towns in which they are based. I analyzed two newspapers in the communities most involved in the conflict: the *Herald and News* in Klamath Falls, Ore., an agricultural community; and the *Times-Standard* in Eureka, Calif., which covers the fishing and tribal communities along the lower Klamath River. Did the *Herald and News* use more pro-agriculture frames, reflecting the community in which it is based? Did the *Times-Standard* use more pro-salmon frames? A regional paper, *The Oregonian* in Portland, Ore., was also examined to see if its physical distance from either community meant it used more

neutral frames. The study examined articles written during the peak of the conflict, March-September 2001 and March-October 2002. Results suggest that there is a link between newspaper and frames, but it is most strongly seen in the *Times-Standard,* the lower river newspaper, which used almost twice as many pro-salmon frames as pro-agriculture frames as did the *Herald and News* or *The Oregonian*.

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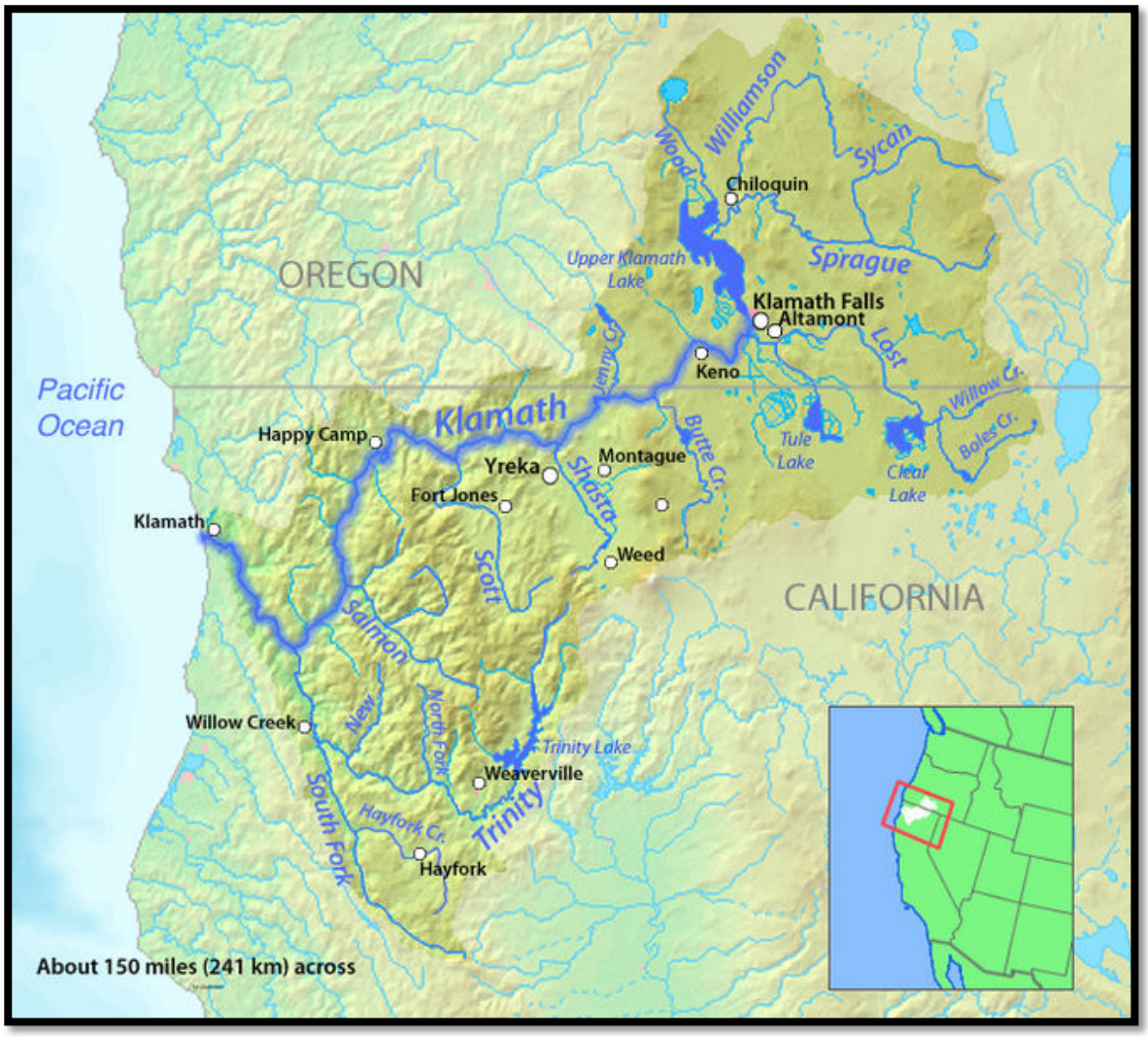
Chapter 1: Introduction and Background to the Agriculture-Fishery Conflict over Water

This is a content analysis of newspaper coverage from the conflict between agricultural interests and fishing interests over the limited water of the Klamath River Basin in the early 21st century. Past studies suggest that newspapers can affect the agenda of policymakers. Other studies indicate that a newspaper's coverage of events can be influenced by the community in which it is located. My overarching question is, did the location of three newspapers influence their coverage of the water conflict in the Klamath Basin?

The 263-mile Klamath River begins in the arid region east of the Cascade Mountains in Southern Oregon. It flows through the mountains and the temperate forests of Northwest California before emptying into the Pacific Ocean near the town of Klamath, Calif. The watershed drains 16,000 square miles, covering an area the size of Connecticut, Rhode Island and New Hampshire (Most 2006). It is typically divided into the Upper Klamath Basin (UKB) and the Lower Klamath Basin (LKB). The dividing point between the two regions is typically the Iron Gate Dam, just south of the Oregon-California border (Fig. 1).

Figure 1: The Klamath River watershed. Source: Wikimedia Commons/DEMIS Mapserver



The Klamath is often referred to as an "upside-down" watershed. Unlike the other major rivers of the West, the Klamath originates in the high desert then travels through mountain canyons before flowing into the Pacific Ocean. In contrast, typical watersheds are "steepest and wettest" near the source and flatter and drier near the mouth (Doremus and Tarlock 2008). This has led to an interesting dynamic – while the dams and reservoirs of major rivers often offset drought years for irrigators, the "reservoir" for

irrigators in the Klamath Basin is the shallow water of Upper Klamath Lake (Doremus and Tarlock 2008).

The UKB is primarily agricultural land, home to ranchers and farmers. Settlers began arriving in the late 19th and early 20th centuries, but finding arable land to farm was difficult. The earliest irrigation projects in the UKB were built for private use; however, the Reclamation Act of 1902 aided larger projects in the West. In 1905, the Klamath Project became the 12th project authorized under the Reclamation Act (Doremus and Tarlock 2008). The project was completed in the 1960s, and today diverts 1.3 million acre-feet to irrigate about 240,000 acres (Doremus and Tarlock 2008). Most of the irrigated crops in the UKB are hay, alfalfa and potatoes, while livestock pasture is also irrigated. Agriculture was a key part of the economy of the UKB; in 1997, there were 2,239 farms that accounted for 10% of jobs in the region (National Research Council 2004). The Klamath Project provided water to 63% of those farms. Another stakeholder in the UKB is the Klamath Tribe. The Lost River suckers in the UKB were a staple food for the Klamath Tribe; one estimate suggests the tribes once harvested 50 tons of suckers per year (National Research Council 2004).

The LKB is dominated by fishing and tribal interests. The Klamath's salmon runs are an important resource for the Karuk, Hoopa and Yurok tribes along the lower river (National Research Council 2004). A 2004 study showed that decreased access to salmon among the Karuk tribe led to a rise in heart disease and diabetes. Pre-contact estimates a Karuk tribal member ate about 450 pounds of salmon per year; today, that number is less than five pounds per year (Norgaard 2004). The Hoopa and Yurok also depend on salmon for both culture and sustenance.

The commercial and recreational fishing industries in the LKB and coastal Northern California also rely on the Klamath's salmon runs, and both are part of the economy of the downstream communities. The Klamath River was once the third-largest salmon-producing river on the Pacific Coast, although the fishery has been in decline in recent years. The commercial fishing industry had a value of $12.4 million in 2001, with the catch of Chinook salmon contributing $0.2 million. Recreational fishing on the river cannot be easily determined, but contributes to the region's overall tourism sector (National Research Council 2004)

Salmon historically were found in the upper tributaries of the Klamath River, but fish passage was blocked in 1918 with the construction of Copco1 dam (Gosnell and Kelly 2010). Of the other three large dams on the mainstem of the river – Copco2, built in 1925; JC Boyle, built in 1957; and Iron Gate, built in 1962 – only JC Boyle has fish passage, although it does not meet federal standards. A hatchery at the Iron Gate dam, which is the farthest downriver, was established to help mitigate fish loss (Gosnell and Kelly 2010). The dams' main purpose is to provide hydroelectric power.

In 1988, U.S. Fish and Wildlife (USFW) listed the Lost River sucker fish and the short-nose sucker fish of Upper Klamath Lake as endangered under the Endangered Species Act (53 Fed. Reg. 27130, 18 July 1998). Nine years later, National Marine Fisheries Service (NMFS) listed the Klamath's coho salmon as threatened (62 Fed. Reg. 24588, 6 May 1997). These listings ultimately brought the people of the UKB and the people of the LKB into conflict – there just was not enough water for both the farms and fish.

In 2001, USFW and NMFS issued biological opinions that required the Bureau of Reclamation (BoR) to maintain high water levels in Upper Klamath Lake for the suckers and higher flows in the lower river for the salmon (Gosnell and Kelly 2010). In response to those opinions – and to a major drought that had hit the West Coast – BoR did not deliver water to the irrigators. It was the first time in the Klamath Project's near 100-year history that the irrigators did not receive water, and the cutoff sparked a protest among local farmers, politicians and out-of-area activists. Farmers and their supporters called for reform of the Endangered Species Act, asked that the Endangered Species Committee (the "God Squad") exempt the fish from the ESA and criticized a government that would put fish ahead of people (Most 2006). In May 2001, protesters in a "Bucket Brigade" lined Main Street in Klamath Falls, Ore. – the heart of the agricultural community – and passed water from Lake Ewauna bucket-by-bucket to the A Canal, the largest irrigation canal in the Klamath Project (Most 2006). Later that summer, farm supporters illegally opened the project's headgates, allowing water to flow into the A Canal. Although federal agents closed the headgates, the protests continued; they ended only in September 2001. The cutoff and loss of water cost the agricultural community an estimated $35-$57 million in lost crop revenue (Gosnell and Kelly 2010). Fishermen in the LKB praised the decision; a spokesman for the Pacific Coast Federation of Fishermen's Associations said the increased water for salmon would "help restore a devastated lower basin economy" (Driscoll 2001).

Interior Secretary Gale Norton asked for a review of the biological opinions released by USFW and NMFS. The National Research Council found that the science in the opinion was incomplete and that there was no scientific support for the recommendations

that called for higher water levels in the lake and higher water flows in the river (National Research Council 2004). In spring 2002, Norton, Agriculture Secretary Ann Veneman and Oregon Sen. Gordon Smith opened the headgates to the A Canal, claiming there was sufficient water for both fish and irrigators (Doremus and Tarlock 2008). Tribes, fishermen and environmentalists asked for more water to be delivered to the lower river, claiming the salmon needed the water below the Iron Gate dam. An above average run of salmon was expected in the fall, and the water was needed to avoid overcrowding in the Klamath River.

Their request was denied, and in September 2002, low water flows and low water quality contributed to a fish kill. The low quality and crowded conditions led to outbreaks of columnaris and Ichthyophthirius multifiliis, also known as white spot disease (Guillen 2003). A USFW survey estimated 34,056 fish died during the fish kill; approximately 96% of those were fall-run Chinook salmon and 1% were threatened coho salmon. USFW admits the count is likely conservative; among other reasons, California Department of Fish and Game staff "estimated that some shoreline counts, when compared to boat surveys, underestimated the actual count by a factor of four" (Guillen 2003). In response, the Lower Basin tribes protested outside the BoR office in Klamath Falls (Driscoll Oct. 12 2002). U.S. Rep. Mike Thompson, the Congressional representative for the LKB, also delivered rotting salmon carcasses to the Department of Interior in Washington D.C. (Driscoll Oct. 3 2002).

The Native American tribes were not the only ones affected by the fish kill; commercial fishermen in California and Oregon suffered as well. In 2006, four years after the fish kill, 700 miles of the Pacific Coast were closed to commercial fishing

because of the depleted Klamath fish stock. The closure caused approximately $100 million in lost income (Leslie 2010).

The complex nature of water allocation the basin is further complicated by the region's two national wildlife refuges – the Upper Klamath Lake NWR and the Lower Klamath Lake NWR. Lower Klamath Lake is an important layover spot for migrating birds on the Pacific Flyway. The lake was drained by BOR in 1917, but farming on the lakebed never became viable due to the alkaline soil. In the 1930s, the lake – and the refuge – were restored, but as part of the irrigated landscape (Wilson 2010). Just like the farmers, the refuges are allocated water by the BoR – when the irrigators were cut off in 2001, the refuges were cut off as well (Bragg 2001).

The events of the early 20th century – the formation of the Klamath Project and the draining of Lower Klamath Lake – continued to impact the Klamath Basin into the early 21st century (Table 1).

TIMELINE	
March 2001	NMFS and USFW issue biological opinions requiring higher water levels in Upper Klamath Lake and higher flows in the Klamath River
April 2001	Dept. of Interior announces no irrigation water will be released
May 2001	"Bucket Brigade" lines Main Street in Klamath Falls to protest irrigation cutoff
July 2001	Canal headgates opened by protesters
September 2001	Farmers' protest ends
April 2002	Sec. of Interior Gale Norton and Sec. of Agriculture Ann Veneman release water to irrigators
September 2002	Thousands of migrating salmon die in the Klamath River
October 2002	Government officials, fishermen and tribal leaders respond to the fishkill

Table 1: Timeline of Events. Source: *Herald and News* and the *Times-Standard*

Chapter 2: Literature Review

Framing

Journalists traditionally use several characteristics to determine whether or not an event is "newsworthy." Chief among these is proximity, or how close an event happens to the newspaper market; readers are more interested in stories about their own communities than what happens hundreds of miles away (Fedler et al. 2001). In the Klamath River Basin, the journalists of the UKB would be expected to focus on the events surrounding the water cutoff to the irrigators; the LKB journalists would be expected to focus their attention on the impacts of the lack of water in the lower river and the fish kill.

The content of a newspaper often "reflects the diversity of potential sources of social power in a newspaper's market" (Mercer and Prisbey 2004). This concept of structural pluralism shows that community newspapers tend to mirror the local power structure's agenda and will support local community norms (Hindman 1996). This is in contrast to newspapers in larger, more diverse markets, where the newspaper is less interdependent with the local power structure. Both the UKB and LKB paper represent smaller communities with less diverse sources of social power and thus can be expected to support community social norms. In the case of the Klamath River conflict, the LKB paper would be expected to focus on the impacts of water use on the salmon because of the local tribes' and local fishermen's dependence on fishing. Conversely, the UKB paper would be expected to focus on irrigation because of the strong agricultural presence in the region.

Journalists shape the messages that reach the public through the newspaper through the process of framing (Bennett 2009). Frames are used to "represent a set of ideas that

interpret, define and give meaning to social and cultural phenomenon" (Baylor 1996). The media uses frames as a type of story line to give "coherence to otherwise discrete pieces of information" (Nelson et al. 1997). It is important to consider framing in news coverage because how a story is framed can affect how readers understand an issue. It can also potentially affect the opinions that readers form based on that understanding (Nelson et al. 1997). Newspapers play a valuable role in informing readers about decisions and issues that will impact them. Frank Allen, former environmental editor for the Wall Street Journal, said the media need to explain difficult issues in order for communities to make thoughtful decisions (Rogers 2002).

Source selection is a key aspect of how a story is framed. The sources used in a story can highlight facts that are salient to one side's frame or the other side's frame (Bendix and Liebler 1999). Additionally, journalists tend to use a "greater variety of sources for local stories" than for stories outside their market; for non-local stories, journalists are more dependent on "high-visibility" sources such as government officials (Bendix and Liebler 1999). This reflects that reporters will cover local issues with a greater depth because of the deeper pool of sources available to them locally, sources with whom reporters have established a connection. It is when reporters reach farther afield and cover stories outside their traditional markets that they have to rely on higher profile sources.

Media influence on agenda-setting

The media has the ability to influence policy makers. Weaver and Elliott (1985) found that the media filters topics, choosing to emphasize certain issues over others. This emphasis also serves to raise public awareness of an issue. McCombs and Shaw's (1972) study found there is a strong relationship between what the media reports and what voters

think is important. This strongly suggests the media can influence the policy agenda. The media – including newspapers – cannot tell the public and policy makers what to think, but they can potentially tell them what to think about.

Related studies

There have been studies that looked at how different newspapers in different regions covered the same event. Mercer and Prisbey (2004) looked at framing of risks from environmental disasters, specifically the wildfire at the Hanford nuclear reservation in Washington state in 2000. Their analysis of local, state and national newspapers found that their reporting reflected their markets' power structures: local papers reported "an overwhelmingly uniform (in the sense of not contested) presentation of risks," while the Seattle papers presented more alternative viewpoints.

Harry (2001) studied use of sources used by a small-town paper and a big city newspaper in covering environmental conflict; in this study, the conflict was the siting of a waste-incinerating plant. One variable measured "quoted space" given to sources, including how many times per article a particular source was quoted. Ultimately, the study found that the small town "local" paper used sources opposing the plant 45% of the time in the articles reviewed; pro sources were used 27% of the time; and neutral sources used 28%. The big city paper also used more "against" sources, but was overall more balanced.

Taylor, Lee and Davie (2000) studied media coverage of a conflict between environmentalists and a company burning hazardous waste in Louisiana. They found that local press supported local industry by using positive framing throughout the 10-year controversy.

Results of these three studies suggest there may be a similar pattern seen in the Klamath River Basin newspapers. Media based in the agriculture-dominated UKB would reflect the interests of and use more sources from the farming community. Similarly, the fishing-dominated LKB media would reflect the interests of and use more sources from the tribal and fishing communities. A regional, "big city" newspaper would be more neutral in its approach to the conflict and use more neutral sources.

Chapter 3: Questions and Hypotheses

In newspapers that focus heavily on the local community – like the newspapers of the UKB and LKB – there is less opportunity to develop sources outside the paper's coverage area. When covering an issue that affects the entire watershed, it follows that the UKB paper would have more sources closer to home and less sources in the lower river communities, while the opposite would be true for the LKB paper. Community newspapers tend to play up the issues that are important to their residents. With that in mind, I studied how local newspapers covered the conflict between farming interests and fishing interests in Klamath Falls, Ore., and Eureka, Calif. The Klamath Falls *Herald and News* serves the UKB. It has a daily circulation of about 17,000 newspapers (Access World News). The Eureka *Times-Standard* is the largest paper in the LKB. It has a daily circulation of about 20,000 (Access World News). *The Oregonian*, the regional newspaper, has a daily circulation of about 342,000 (Access World News). I selected *The Oregonian* as the regional newspaper for this study because it is based in Oregon and covers the Klamath Falls community, but its readership is largely drawn from the environmentally conscious city of Portland, Ore. (Sheppard 2007).

Q1: Did the Lower Klamath Basin media use salmon (pro-salmon) frames in covering the conflict?

H1: The Lower Klamath Basin media – the *Times-Standard* – will primarily use salmon frames. The salmon are important to the area's Indian tribes and the commercial fishermen, each of whom live in the newspaper's coverage areas and presumably subscribe. Sources used by the *Times-Standard* staff will draw heavily from these groups, which includes (but is not limited to) the Pacific Coast Federation of Fishermen's Associations and the Yurok Tribe. "Salmon" frames include stories that focus more on the environmental and economic impact the loss of the salmon had on the local community. Pro-salmon does not mean that a story will not mention agriculture or irrigation, but that the predominant focus of the article is on salmon. This can also be measured by the type of sources used in the article. There will be neutral sources, mostly government agencies and officials who have no personal commitment to either side of the controversy. Agriculture sources will likely be quoted as well, but their viewpoints will be less central to the article and cited less often than those of the fishing and tribal sources.

Q2: Did the Upper Klamath Basin media use agriculture (pro-irrigation) frames in covering the conflict?

H2: The Upper Klamath Basin media – the Klamath Falls *Herald and News* – would be expected to primarily use agriculture or pro-irrigation frames. The UKB is an agricultural community that is heavily dependent on irrigation. The newspaper will draw from local

sources, including the Klamath Water Users Association, local farmers and ranchers, and others when covering the controversy. "Agriculture" frames will be measured by whether the story presents news relating to irrigation and agriculture interests, as well as which sources were used. Similar to H1, neutral sources will be government agencies, officials and people who do not have a stake in the outcome of the controversy. Fishing and tribal sources will likely be quoted as well, but their viewpoints will be less central to the article and cited less often than agricultural sources.

Q3: Did the regional media use neutral frames in covering the conflict?

H2: The regional media – *The Oregonian* – would be expected to primarily use neutral frames. *The Oregonian* is based in Portland, Ore., a large city with a diverse economy. The newspaper will not focus predominantly on either agriculture or fish, instead using neutral frames that take both agriculture and fish into account. Sources use will either be neutral or will be balanced throughout the article.

Chapter 4: Methodology

Content analysis is frequently used in communication research to describe trends in communication content (Weber 1990). It is an unobtrusive technique, and allows researchers to analyze data (in the case of this study, articles in newspapers) in its original context and setting (Krippendorf 1980). Content analysis is in the discovery paradigm of communications research, where the "nature of the message is discovered…through precise, systematic, repetitive observation" (Merrigan and Huston 2009).

The observations in this study were the repeated coding of newspaper articles from six sets of data:

1) The (Klamath Falls) *Herald and News*, March-September 2001;
2) The (Eureka) *Times-Standard*, March-September 2001;
3) The (Portland) *Oregonian*, March-September 2001;
4) The (Klamath Falls) *Herald and News*, March-October 2002;
5) The (Eureka) *Times-Standard*, March-October 2002; and
6) The (Portland) *Oregonian*, March-October 2002.

These dates correspond to key events in the conflict between agriculture and fish (Table 1): BoR announced the water cutoff to irrigators at the beginning of April 2001; irrigators protested throughout the summer of 2001, stepping down in September of that year; the federal government released the water to irrigators in April 2002; and the fish kill occurred in late September 2002. Because the fish kill happened at the end of September, the search was extended one month to October 2002 to include some coverage of the incident. These articles are the population set for the study and are relevant to answering the research questions.

All articles from *The Oregonian* and the *Herald and News*, and the 2002 articles from the *Times-Standard* were collected from the Access World News database (http://www.newsbank.com) using keyword searches. Keywords used were: Klamath, drought and water flow, with the majority of articles discovered using the keyword "Klamath." Keywords used in the coding scheme (see below) were not included to avoid a selection of articles biased toward the coding scheme. For example, articles found by using "agriculture" in the keyword search would return a higher number of agriculture-centered articles, potentially skewing the results toward agriculture frames. Articles from the *Times-Standard* in 2001 were collected and printed from microfilm archives at the

Humboldt County Library in Eureka, Calif. These articles were then converted into digital form for analysis.

Data coded were limited to hard news articles only. "Hard news" is defined as "serious and timely stories about important topics" (Fedler et al. 2001). This excludes short items announcing meetings and non-news items such as fishing reports. Articles were further limited to those regarding legal, political and legislative action taken in response to the crisis, as well as actions of civil disobedience (for example, the breaking open of the project's headgates) performed by the irrigators and fishermen. Other elements of the newspaper – "soft news" articles, editorials, opinion pieces, letters to the editor, political cartoons and advertisements – were not included. Feature-type "soft news" articles are generally more one-sided in their nature and do not move the story forward. Editorials state the newspaper's official stance on issues, while opinion pieces and letters to the editor are statements of opinion from members of the public. These differ from hard news articles, which are supposed to be unbiased pieces of news (Fedler et al. 2001). The search results returned 1,688 articles. After filtering out the non-hard news stories, the data set totaled 267 articles from all three newspapers (Table 2).

Newspaper	**Articles**
Herald and News	131
Oregonian	71
Times-Standard	65
Total	**267**

Table 2: Number of articles per newspaper. Source: Atlas.ti/Microsoft Excel

Content analysis is used to sort data into categories and compare the frequencies these categories occur (Merrigan and Huston 2009). I did this through coding the collected

articles. I used Atlas.ti Qualitative Data Analysis software for coding the documents; this software is frequently used for content analysis studies (ATLAS.ti). The initial list of codes used was meant to highlight the key aspects of the controversy. The initial coding scheme included: ESA positive (mentions of the ESA that were positive), ESA negative (mentions of the ESA that were negative), tribes, irrigation, salmon, sucker fish, farm, ranch and fish. The first round of coding was inductive; the initial coding scheme was used, but grew as each article was read. The list of codes evolved to 222, including sources. Descriptive coding, which summarizes passages using a short word or phrase (Saldaña 2009), was used in this first cycle of coding. Atlas.ti allowed me to highlight and record paragraphs in each article with the codes listed above.

The list of 222 codes was used to develop a set of 10 categories with 3 different subsets to categorize articles into pro-salmon, pro-agriculture and neutral frames. This meant an article could be coded using 30 possible frames:

Agriculture
- Agriculture
- Neutral
- Salmon

Civil Disobedience
- Agriculture
- Neutral
- Salmon

Dams
- Agriculture
- Neutral
- Salmon

Economy
- Agriculture
- Neutral
- Salmon

ESA
- Agriculture
- Neutral

Fish
- Agriculture
- Neutral
- Salmon

Water Allocation
- Agriculture
- Neutral
- Salmon

Water levels
- Agriculture
- Neutral
- Salmon

Water rights
- Agriculture
- Neutral
- Salmon

Wildlife refuges
- Agriculture
- Neutral

Salmon Salmon

Articles were re-coded with the evolved coding scheme, using the 10 different categories and 30 possible frames. This second cycle of coding was done to further refine codes and ensure their placement in the correct categories. The three subcategories – agriculture (pro-irrigation), neutral and salmon (pro-salmon) – correspond to the frames from the research questions.

Examples of statements coded with the Economy frame are as follows:

> **Econ-Ag:** "Dickerson, a Siskiyou County Republican, said the entire north state's economy would be adversely-affected by the 200,000 acres of farmland that would be out of production." – *Herald and News*, June 5, 2001
>
> **Econ-S:** "If the court doesn't throw out the case, the intervening Pacific Coast Federation of Fishermen's Associations will present evidence of the devastating economic impacts to the fishing industry caused by the Klamath project." – *Times-Standard*, April 17, 2001
>
> **Econ-N:** "Rather, he said, it's between the economic interests of farmers, commercial salmon fishermen, Indian tribes and businesses associated with the migrating waterfowl that stop at local refuges." – *Times-Standard*, August 24, 2001

Examples of statements coded with the Water Allocation frame are as follows:

> **Wat_Alloc_Ag**: "Federal officials today announced that no water will be available from Upper Klamath Lake to supply farmers of the Klamath Reclamation Project." – *Herald and News*, April 6, 2001
>
> **Wat_Alloc_S**: "Government officials said Wednesday that water releases from Upper Klamath Lake for dying salmon cannot be sustained indefinitely because the water needs to be held for endangered sucker fish, not because the water is being used for agricultural purposes." – *Herald and News*, October 5, 2002
>
> **Wat_Alloc_N**: "The Bureau of Reclamation is negotiating with federal biologists in Washington, D.C., and with White House officials to come up with a way to supply water for salmon in the Klamath River, endangered fish in Upper Klamath Lake and about 6,000 farmers who depend on water from the Klamath Project." – *The Oregonian*, April 5, 2001

Categories were not mutually exclusive. Although an article could cover multiple topics – economy, ESA, water allocation, etc. – each topic was coded only from the perspective of agriculture, fish or neutral interests. An article could be coded both Economy-agriculture and ESA-agriculture, but not Economy-agriculture and Economy-neutral. Each source was only counted once, unless their quotes were broken up by other sources. For example, if a politician were cited, followed by a quote from an environmentalist, followed by another quote from the politician, that politician would be counted twice.

The selection of sources used in a news article can have an impact on its frame. I tracked the number of times a source is mentioned in each article. Sources were given one of three codes in Atlas.ti: neutral, salmon and agriculture. Neutral sources include government departments such as the Department of Interior and Department of Commerce. Salmon sources include the Pacific Coast Federation of Fisherman's Associations, the Karuk, Hoopa, Yurok and Klamath tribes, activist groups and some Congressional representatives. Agriculture sources include the Klamath Water Users Association, activist groups and some Congressional representatives. Citizens not affiliated with a particular organization were coded based on how the reporter identified them; for example, as an environmentalist or farm supporter.

The coding scheme with 10 different categories was designed to be roughly balanced between pro-salmon and pro-agriculture frames, either within a single category or between categories. The Civil Disobedience frame was not included in the final analysis. Civil Disobedience would have skewed results too far toward agriculture; most articles

coded with this theme were referring to the farmers protest and very few were about protests by the tribes, fishermen or environmentalists.

A third-party coder tested a random sampling of 10% of the data set – approximately 26 articles – to ensure research replicability. The overall intercoder reliability score was 90% (ReCal2 0.1 alpha).

Chapter 5: Results

There were 267 articles coded. Of those, the *Herald and News* accounted for 131 articles or 49%; *The Oregonian* for 75 articles or 28%; and the *Times-Standard* for 61 or 23% of articles. Across all three newspapers, there were 464 frames used in 267 articles, for an average of 1.8 frames per article.

	Herald & News	**Oregonian**	**Times-Standard**
Number of articles	**131**	**75**	**61**
Agriculture frames *% of articles*	102 *77.86%*	57 *76%*	47 *77.05%*
Neutral frames *% of articles*	23 *17.56%*	17 *22.67%*	12 *19.67%*
Salmon frames *% of articles*	62 *47.33%*	70 *93.33%*	94 *154.10%*

Table 3: Percentage of articles using agriculture, neutral and salmon frames. Source: Atlas.ti/Microsoft Excel

Overall, neutral and agriculture frames were used consistently across all three newspapers. Neutral frames were used in about 18% of articles in the *Herald and News*, about 23% of articles in *The Oregonian*, and about 20% in the *Times-Standard*. Agriculture frames were used even more consistently, slightly more than 75% of the time in the three newspapers: about 78% of articles in the *Herald and News* used agriculture frames, 76% in *The Oregonian* did and 77% of articles in the *Times-Standard* used agriculture frames.

The biggest variation is in the use of salmon frames. The *Herald and News* used salmon frames in 47% of its articles and *The Oregonian* used salmon frames in 93% of its articles. However, the *Times-Standard*, the LKB newspaper, used salmon frames in 154% of its articles. This means that multiple articles in the lower river newspaper used more than one salmon frame when referring to the conflict.

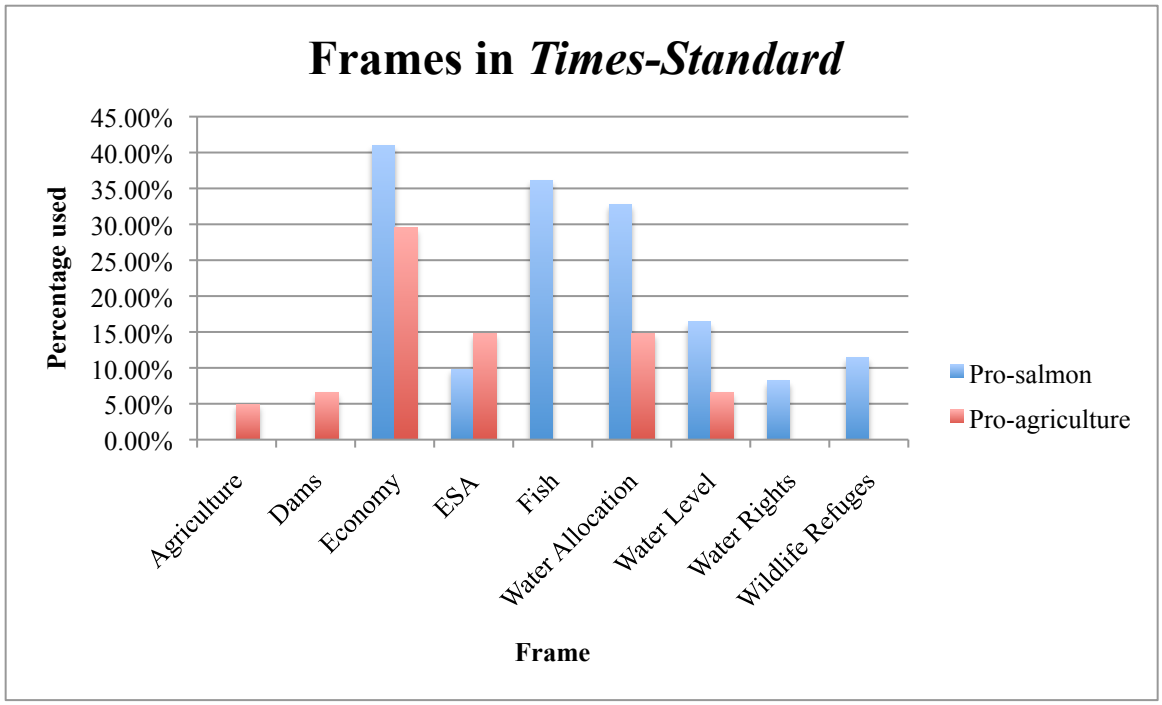
Looking at use of specific frames across all 267 articles, the Economy and Water Allocation frames were the dominant topics in terms of either agriculture, salmon or neutral frames (Table 4). Water Allocation frames were most common, with 40% of articles focusing on that topic. Economy frames were used in 38% of all articles discussing the conflict; the Economy-Agriculture frame was the single most dominant frame, appearing in 26% of articles. The other most common frames were Fish-Salmon, Water Level-Salmon and ESA-Agriculture.

Agriculture	**Dams**	**Economy**
Agriculture - 5.99%	Agriculture - 3.37%	Agriculture - 26.22%
Neutral - 0.75%	Neutral - 0.37%	Neutral - 0.37%
Salmon - 3.75%	Salmon - 3.37%	Salmon - 11.24%
ESA	**Fish**	**Water Allocation**
Agriculture - 11.61%	Agriculture - 2.62%	Agriculture - 14.61%
Neutral - 1.50%	Neutral - 1.50%	Neutral - 9.36%
Salmon - 4.49%	Salmon - 17.60%	Salmon - 16.10%
Water levels	**Water rights**	**Wildlife refuges**
Agriculture - 5.99%	Agriculture - 3.00%	Agriculture - 3.75%
Neutral - 3.00%	Neutral - 1.87%	Neutral - 0.75%
Salmon - 15.73%	Salmon - 5.24%	Salmon - 7.49%

Table 4: Percentage of articles using specific frames. Source: Atlas.ti/Microsoft Excel

The Times-Standard

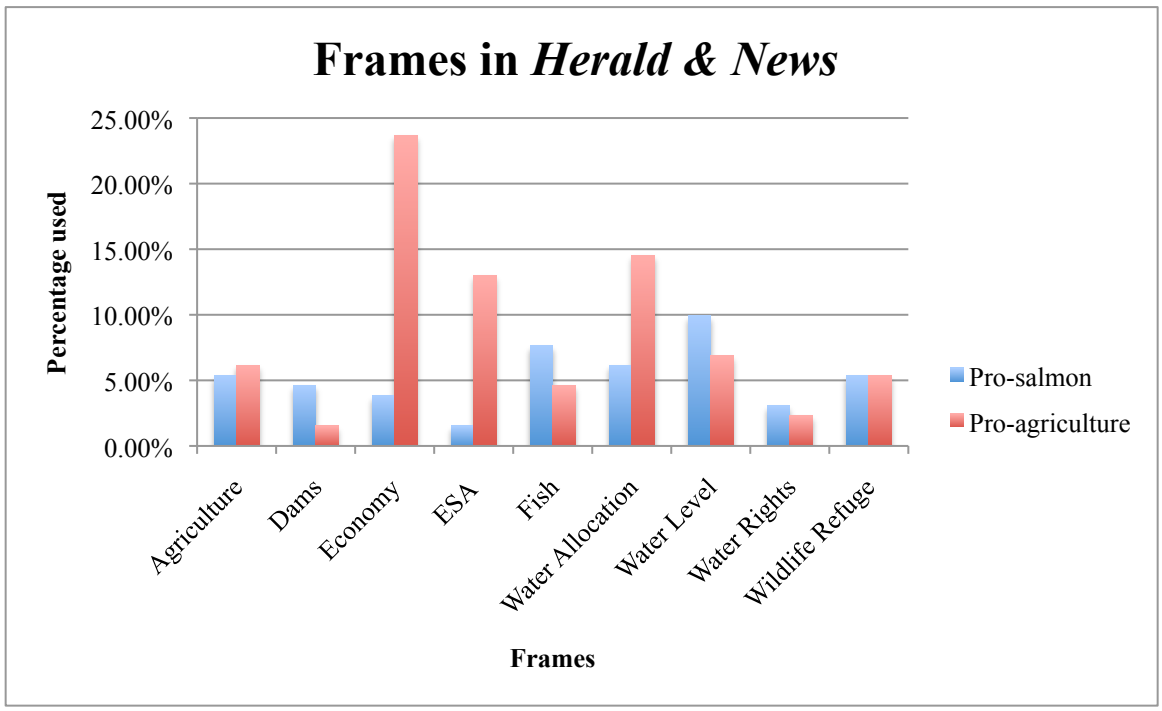
Figure 2: Frames used in the *Times-Standard*. Source: Atlas.ti/Microsoft Excel



The Times-Standard showed the strongest correlation between its location and the use of frames (Fig. 2). Salmon frames dominated in six of the nine framing categories, including the most common themes of Economy, Fish and Water Allocation. Agriculture frames were only dominant in three categories: Agriculture, Dams and ESA. Agriculture was likely more prevalent in the ESA category because of the farmers' protests in the summer of 2001 and the talk of reforming the ESA.

The Herald and News

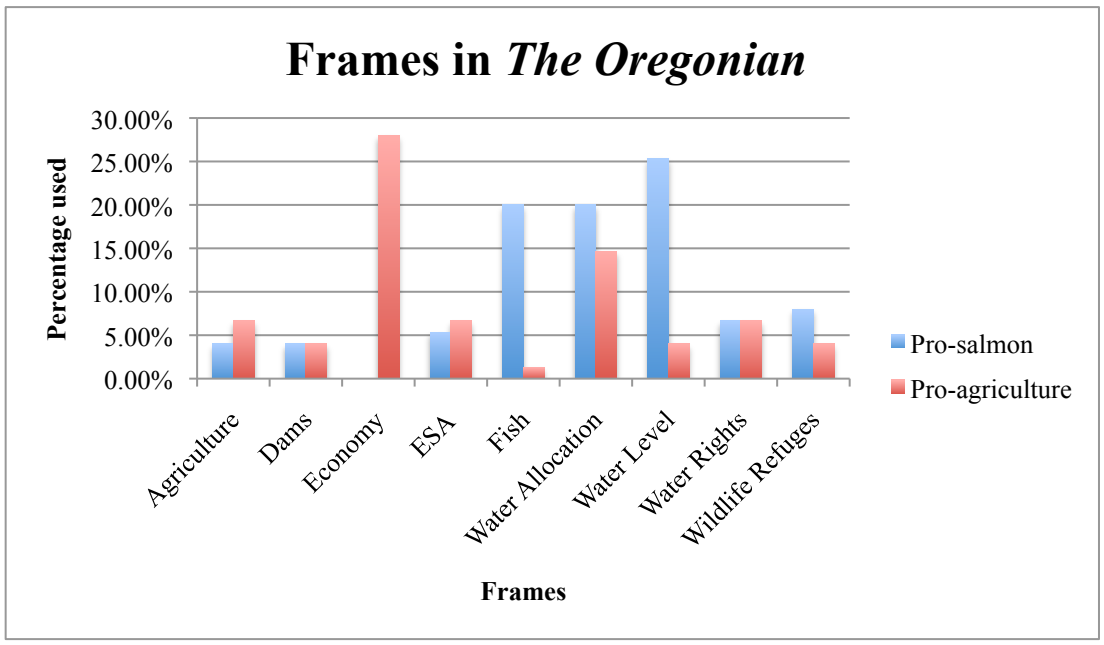
Figure 3: Frames used in the *Herald and News*. Source: Atlas.ti/Microsoft Excel



Agriculture frames in *The Herald and News* were dominant in three of the nine categories: Economy, ESA and Water Allocation (Fig. 3). Three categories were roughly balanced. Salmon themes were used more in the categories of Dams, Fish and Water Level. It is likely that Water Level was more focused on fish because of the biological opinions' demand for more water in Upper Klamath Lake for the endangered sucker species.

The Oregonian

Figure 4: Frames used in *The Oregonian*. Source: Atlas.ti/Microsoft Excel



The Oregonian was mostly equal in its use of salmon and agriculture frames. Agriculture frames dominated the Economy theme; in fact, *The Oregonian* did not use the Economy-Salmon theme in any of the 71 articles coded. Salmon frames were most common in the Fish theme and the Water Level theme. The newspaper's heavy use of salmon frames when writing about Water Level is likely because of the focus on the endangered sucker species in Upper Klamath Lake and their need for more water in the lake.

Chapter 6: Conclusions

Location of publication did not influence either the *Herald and News* or *The Oregonian*'s coverage of the Klamath River conflict. While the *Herald and News* did use

more agriculture frames, it is not by enough of a margin to definitively say that the agriculture community influenced the newspaper's stories. *The Oregonian* did not use more neutral frames – in fact, use of neutral frames was relatively rare in all three newspapers – but its coverage of the controversy was mostly balanced between agriculture and salmon frames.

It can be said that there is a strong link between location and coverage when it comes to the *Times-Standard.* Here the data support the expectation that the lower river newspaper would use more salmon frames. The *Times-Standard*'s focus was primarily on the Economy, Fish and Water Allocation. It is interesting to note that the *Times-Standard* was the only newspaper to use Economy-Salmon frame. The *Herald and News* only used the Economy-Salmon frame in a few articles and *The Oregonian* did not use the frame at all. Jobs and the economy are important to a community's success, so it is not surprising that the LKB newspaper would focus more on the fishing economy – but it is surprising there was no mention of the fishing economy in *The Oregonian.*

There are factors that limit this study. I did not look at other factors that could have influenced the newspapers' coverage of the Klamath conflict. These factors include changes in leadership at the paper and changes in the writing staff. Would a new writer bring a fresh perspective to the controversy? It is also possible that the issues themselves drove coverage. Would there be more agriculture frames in 2001 because the focus of all three newspapers was on the irrigation cutoff? Would there be more salmon frames in 2002 because they were focused on the fish kill and its impact on the LKB? I also did not talk to the reporters most involved with the issue; their perspective on how the issue was covered would add another angle to the story.

The issue of water rights in the basin is ongoing. More than a decade after the events described above, Oregon's adjudication process gave the Klamath Tribe the senior water rights in the UKB. They exercised that right in 2013, another dry year, and reserved the water for the fish. In April 2014, the tribe and the irrigators signed the Upper Klamath Basin Comprehensive Agreement, a pact agreeing to share water in the basin. There is also a bill in Congress calling for the removal of the four dams from the mainstem of the Klamath River, which could open up more habitat for the salmon (Associated Press 2014). It would be interesting to see how the media has continued to cover the issue of water allocation in the Klamath Basin.

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Works Cited

Associated Press. "Tribes, Ranchers Sign Deal to Share Scarce Upper Klamath Basin Water." *OregonLive.com*. The Oregonian, 18 Apr. 2014. Web. 20 May 2014.

ATLAS.ti: The Qualitative Data Analysis & Research Software. N.p., n.d. Web. 20 June 2014.

Baylor, Tim. "Media Framing of Movement Protest: The Case of American Indian Protest." *Social Science Journal* 33.3 (1996): 241-55.

Bendix, Jacob, and Carol M. Liebler. "Place, Distance, and Environmental News: Geographic Variation in Newspaper Coverage of the Spotted Owl Conflict." *Annals of the Association of American Geographers* 89.4 (1999): 658-76. Print.

Bennett, W. Lance. *News: The Politics of Illusion*. 8th ed. N.p.: Pearson Education, 2009.

Bragg, John. "Selective Preservation of Wetlands." *The Herald and News* [Klamath Falls, Ore] 9 Apr. 2001: n. pag. Print.

Doremus, Holly D., and A. Dan Tarlock. *Water War in the Klamath Basin: Macho Law, Combat Biology, and Dirty Politics*. Washington DC: Island, 2008.

Driscoll, John. "As Loss Sets In, Klamath People Speak out." *The Times-Standard* [Eureka, Calif.] 12 Oct. 2002: n. pag. Print.

Driscoll, John. "No Water for Farms on Upper Klamath." *The Times-Standard* [Eureka, Calif.] 7 Apr. 2001: n. pag. Print.

Driscoll, John. "Thompson Dumps Dead Salmon at Interior Department." *The Times-Standard* [Eureka, Calif.] 3 Oct. 2002: n. pag. Print.

Fedler, Fred, John R. Bender, Lucinda Davenport, and Michael W. Drager. *Reporting for the Media*. 7th ed. New York: Oxford Univ., 2001. Print.

Gosnell, Hannah, and Erin C. Kelly. "Peace on the River? Social-ecological Restoration and Large Dam Removal in the Klamath Basin USA." *Water Alternatives* 3.2 (2010): 361-83.

Guillen, George. *Klamath River Fish Die-off September 2002: Report on Estimate of Mortality*. Rep. no. AFWO-01-03. Arcata, California: US Fish and Wildlife Service, 2003.

Harry, Joseph C. "Covering Conflict: A Structural-Pluralist Analysis of How a Small-Town and a Big-City Newspaper Reported an Environmental Controversy." *Journalism & Mass Communication Quarterly* 78.3 (2001): 419-36. Print.

"The Herald and News." *Access World News*. News Bank, n.d. Web. 19 June 2014.

Hindman, Douglas B. "Community Newspapers, Community Structural Pluralism, and Local Conflict with Nonlocal Groups." *Journalism and Mass Communication Quarterly* 73.3 (1996): 708-21. Print.

Krippendorff, Klaus. *Content Analysis: An Introduction to Its Methodology*. Beverly Hills: Sage Publications, 1980. Print.

Leslie, Jacques. *Rough Waters*. Rep. N.p.: Earth Island Institute, 2010. Print.

McCombs, Maxwell E., and Donald L. Shaw. "The Agenda-Setting Function of Mass Media." *Public Opinion Quarterly* 36.2 (1972): 176. Print.

Mercer, Douglas, and Donna Prisbrey. "Vigilant Geography: Newspaper Coverage of a Wildfire at the Hanford Nuclear Site." *Environmental Practice* 6.03 (2004): 247-56. Print.

Merrigan, Gerianne, and Carole Logan Huston. *Communication Research Methods*. 2nd ed. New York: Oxford UP, 2009. Print.

Most, Stephen. *River of Renewal: Myth and History in the Klamath Basin*. Portland: Oregon Historical Society in Association with University of Washington, Seattle & London, 2006.

National Research Council Committee on Endangered and Threatend Fishes in the Klamath River Basin. *Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery*. Washington, D.C.: National Academies, 2004. Print.

Nelson, Thomas E., Rosalee A. Clawson, and Zoe M. Oxley. "Media Framing of a Civil Liberties Conflict and Its Effect on Tolerance." *American Political Science Review* 91.3 (1997): 567-83.

Norgaard, Kari M. *The Effects of Altered Diet on the Health of the Karuk People: A Preliminary Report*. Rep. N.p.: Karuk Tribe, 2004.

"The Oregonian." *Access World News*. News Bank, n.d. Web. 19 June 2014.

"ReCal2 0.1 (alpha)." *ReCal2 0.1 (alpha)*. N.p., n.d. Web. 16 May 2014.

Rogers, Paul. "Complexity in Environment Reporting Is Critical to Public Decision-Making." *Nieman Reports* Winter (2002): 32-34. Print.

Saldaña, Johnny. *The Coding Manual for Qualitative Researchers*. London: Sage, 2009. Print.

Sheppard, Kate. "15 Green Cities." *Grist*. Grist.org, 20 July 2007. Web. 20 May 2014.

Taylor, Claire E., Jung-Sook Lee, and William R. Davie. "Local Press Coverage of Environmental Conflict." *Journalism & Mass Communication Quarterly* 77.1 (2000): 175-92. Print.

"Times-Standard." *Access World News*. News Bank, n.d. Web. 19 June 2014.

Weaver, David, and Swanzey N. Elliott. "Who Sets the Agenda for the Media? a Study of Local Agenda-Building." *Journalism & Mass Communication Quarterly* 62.1 (1985): 87-94. Print.

Weber, Robert Philip. *Basic Content Analysis*. 2nd ed. Newbury Park, CA: Sage Publications, 1990. Print.

Wilson, Robert M. *Seeking Refuge: Birds and Landscapes of the Pacific Flyway*. Seattle: U of Washington, 2010. Print.