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Alaska Winters Relationship To Domestic Violence and Alcohol Abuse

Jennifer Marie Read

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A Capstone Research Project Presented to the Faculty of the Graduate School of University of Denver, Colorado

By

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In Partial Fulfillment For the Degree of Master of Science in Geographic Information Science

June 2013

Anchorage, Alaska
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Abstract

Alaska is known for its long, dark, cold winter months. Daylight savings time exists to cope with months that have little sunlight, but that still leaves on average, five hours of daylight. Special light bulbs exist to help with the darkness by providing light that tricks the body into thinking it is getting more sun than it really is. As daylight decreases, the weather turns colder; depression, alcohol, and domestic violence begin to rise. Studies show alcohol related crime and domestic violence occur more during the winter months in Alaska. This research paper will analyze the data pertaining to alcohol and domestic violence crimes in Alaska to see if a relationship exists with the winters.
Introduction

Alaska is well known for its beautiful landscapes, scenery, wildlife, fishing, tourism, and much more. What people often forget is the long, dark, cold winter months that follow after the beautiful summer months. Often times, Alaskan's hear people outside of Alaska say, “I do not know how you live there during the winter, you are stronger than me.” Well this is actually a very true statement! It takes a very unique person to live in Alaska and stay sane during months of darkness and long stretches of cold snaps where the temperatures do not get above 0 degrees Fahrenheit.

Research Question

This research paper will analyze the data pertaining to alcohol and domestic violence crimes in Alaska to see if a relationship exists with the long, dark, cold winters. Data will also be collected from Vermont to show a comparison of another state that has similarities in population, climate, and crime. The research will examine the history of data pertaining to crime in Alaska, alcohol abuse in Alaska, and temperature in Alaska. With these findings, and side-by-side comparisons, a conclusion will be drawn on the data to show there is indeed a relationship that causes individuals that live in Alaska to abuse alcohol and act out violently to their partners or loved ones. The following questions will be addressed throughout this research paper:

- How do the long, dark, cold winters affect crime rate to include domestic violence and alcohol abuse?
- Is there a relationship with the long, dark, cold winter months and the crimes in Alaska?

- Is SAD higher in Alaska and related to the long, dark, cold winter months in Alaska?

**Background**

Alcohol has become a friend and an addiction to many Alaskans. Binge drinking, which is now considered consuming five or more alcoholic beverages for males or four or more for females in two hours. (National Institute on Alcohol Abuse & Alcoholism (NIAAA) 2013)

Continuous studies show, this type of drinking leads to a higher increase of domestic violence. The more alcohol an individual consumes, one may find their judgment becomes impaired, and the need to commit a shameful crime becomes more likely.

According to Anchorage Police Department’s definition of domestic violence, when APD officers respond to an incident, they code the police report as domestic violence if the incident is a crime against the person as defined under AS 11.41 offenses against the person and AS 18.66.990. The principal crime involved in the domestic violence incidents is assault. In addition, an officer will arrest a person if the officer has probable cause to believe the person has, either in or outside the presence of the officer, within the previous 12 hours, committed domestic violence, violated a protective order, or violated a related condition of release. (Marly Rivera 2008)

Another factor that causes one to act out violently due to depression from loss of sunlight and very common in Alaska because of little to no sunlight in the winter months is known as Seasonal Affective Disorder (SAD). Alaskans are 10 times more likely to be affected by this disorder than people living outside Alaska. This occurs when one is stuck inside and
unable to find the energy to go outside the home due to long winters and small amounts of sunlight. (Bohrer 2010)

**Literature Review**

**Alaska’s Geography**

Alaska is the largest state in the U.S., and equal to one-fifth of the continental U.S. Alaska is filled with mountains, beautiful glaciers, and lovely bodies of water, flat tundra landscapes, and an estimated population of 698,473. Alaska is broken up into 27 boroughs’ (counties), with Anchorage being the largest. The boroughs are unorganized and divided into 11 census areas beginning in the 1970’s. The closest state to Alaska is Washington, which has to be traveled by aircraft. Alaska is also one of two states not bordered by another state. Alaska is thus an exclave of the U.S. that is part of the continental U.S. but is not part of the contiguous U.S. (State of Alaska Department of Health and Social Services 2011)
When superimposed over the 48 contiguous states, Alaska overlaps Texas, Oklahoma, Kansas, New Mexico, and Colorado; Alaska’s westernmost to easternmost points would stretch from San Francisco, California, to Jacksonville, Florida.

![Size and Distance Comparison](image)

**Figure 2 - Size and Distance Comparison (Chris 2007)**

The road network in Alaska is not extensive most rural places in Alaska are only accessible by boat or airplane. Two-thirds of the communities have no road access to other communities or to the State’s limited highway network (2100 miles).

There are not many State Trooper stations around Alaska; many individuals are unable to maneuver around unless they have access to a boat or some type of aircraft. Resources such as food, medicine, and gas are shipped via boat or aircraft. The individuals in these remote areas like this life, but also find themselves holed up in their home drinking and fighting.
depression. Most stores are so small; you can only find what is necessary to survive to include lots of alcohol.

Below is a map of Alaska, the road network, and every state trooper station in Alaska, as you can see there are many, but most are located around larger cities or highways, but not around the remote areas. (State of Alaska Department of Public Safety 2013)

Figure 3 - Map of Road Network and State Troopers in Alaska

Alaska's Climate

During the month of December, there is approximately 5.26 hours of daylight. Sunlight is what keeps people feeling happy, without it people become sad and depressed and often times turn to things such as drinking or hurting themselves or others. SAD comes from little to no sunlight and so Alaskans are very aware of the man-made lights that give off enough light
that produces a happy feeling and gets them out of their depressive state. The graph below depicts the amount of sunlight in a year. (WeatherSparks 2013)

Weather during the winter can be as cold as -65 degrees Fahrenheit in Fairbanks, or -15 degrees Fahrenheit in Anchorage. Cold weather has an effect on the number of crimes committed in Alaska. Snowfall also seems to have an effect on specific crimes in Alaska. Some believe the more snowfall, the more likely it is for people to suffer from “cabin fever” and commit a crime. This is also not all based on facts, some people are just prone to committing a crime when bored and feel the need get into things that get them into trouble. We all know drinking alcohol also lowers your inhibitions and causes you to do things you shouldn’t do either. Lots of people gather at bars to drink and that is food for disaster when many individuals are gathered together drinking and are depressed.

The graph below displays only three solid months of summer and the rest is cold months followed by snow. This type of environment could lead a normal individual into a depressive state and the need to drink or act out violently. (WeatherSparks 2013)
Snow
The likelihood of snow falling is highest around December 25, occurring in 55% of days. The season in which it is relatively likely for snow to fall spans from October 9 to April 21.

Probability of Snow Fall Being Reported in a Given Day

Figure 5 - Probability of Snow Fall Being Reported in a Given Day

Below is a list of temperatures at specific locations. This is useful because it highlights the extreme temperatures which can cause little to no movement outside of the home. With temperatures that are -45 degrees Fahrenheit or colder, most vehicles won’t start, schools close and people cannot make it to work. The extremes are worse in the northern parts of Alaska versus the cities that are more inland like Anchorage, Wasilla, or Palmer. (Watts 2012)

US Records in Tabular Form

<table>
<thead>
<tr>
<th>State</th>
<th>Location</th>
<th>High Min</th>
<th>Low Min</th>
<th>Rainfall</th>
<th>Snowfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK</td>
<td>Barrow Wise Ap</td>
<td>Mon, 23 Jan 2012</td>
<td>-45</td>
<td>-45 in 1879</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Circle Hot Springs</td>
<td>Sun, 23 Jan 2012</td>
<td>-56</td>
<td>-52 in 1941</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Deadhorse</td>
<td>Mon, 23 Jan 2012</td>
<td>-80</td>
<td>-44 in 1967</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Deadhorse</td>
<td>Tue, 24 Jan 2012</td>
<td>-40</td>
<td>-47 in 1900</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Deadhorse</td>
<td>Wed, 25 Jan 2012</td>
<td>-51</td>
<td>-49 in 1965</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>King Salmon Ap</td>
<td>Thu, 26 Jan 2012</td>
<td>-39</td>
<td>-38 in 1979</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Kodiak Ap</td>
<td>Thu, 20 Jan 2012</td>
<td>-2</td>
<td>2 in 1944</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Kodiak Ap</td>
<td>Fri, 27 Jan 2012</td>
<td>-8</td>
<td>-4 in 1961</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>Kodiak Ap</td>
<td>Mon, 23 Jan 2012</td>
<td>-5</td>
<td>-5 in 1923</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>North Pole</td>
<td>Sat, 28 Jan 2012</td>
<td>-57</td>
<td>-53 in 1946</td>
<td></td>
</tr>
<tr>
<td>AK</td>
<td>St. Paul Island Ap</td>
<td>Thu, 20 Jan 2012</td>
<td>-4</td>
<td>-4 in 1962</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6 - Alaska’s 2012 Temperatures
Alaska’s Domestic Violence

Domestic violence is another huge issue in Alaska that seems to be related to the winter months. Sean Parnell stated in 2009, “But amidst our beautiful land and wonderful people, an epidemic of domestic violence and sexual assault rages. I’ve seen it in our cities and in our remote villages – in every corner of the state and in every demographic.

For women in the Last Frontier, 58 percent have experienced intimate partner or sexual violence. This statistic, and the lives it represents, is not an area we are proud to lead in. (Parnell 2012)

Compared to other states, domestic violence in Alaska is high compared to the population. Alaska is ranked as number 28 when it comes to violent crimes which also include domestic violence. If one takes into account the population, that is pretty high compared to the rest of the continental U.S.

Studies have shown darkness causes depression and many people do not handle depression properly. When you are cooped up in the house with your loved ones you are more likely to act out negatively towards them, and this is called domestic violence.

The following table displays a percentage of domestic violence cases by month. (Marly Rivera 2008) The percentages are pretty consistent except for the months of June and July, which are the warm months that were displayed in the graph above. This once again, verifies that during warm months, domestic violence decreases along with binge drinking, because individuals are able to get out and utilize their time in more productive ways.
These crimes can also be alcohol related, and include some form of domestic violence. “Studies suggest, one out of five Americans, a smaller fraction - mostly women and young adults - suffer from Seasonal Affective Disorder, a type of depression stemming from decreased daylight. Nearly 10 percent of Alaskans suffer from the disorder to some degree, according to a 1992 study published in the American Journal of Psychiatry”. (D’oro 2005)

The lack of sunlight causes a decrease in serotonin production and an increase in the level of melatonin in humans, which is known as the natural sleep drug. With these two factors combined, you get the affect known as SAD. Depression, caused by environment conditions unique to Alaska contributes to incidents of domestic violence.

Data pertaining to Alaska’s domestic violence and alcohol-related incidents are sparse. The data is often incomplete or nonexistent. Throughout the years, Alaska has noticed the lack of data and has tried to work on providing a database that is updated regularly. Studies have

<table>
<thead>
<tr>
<th>Table 1. Month of Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column percentages</td>
</tr>
<tr>
<td>Reports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>109</td>
<td>8.5%</td>
</tr>
<tr>
<td>February</td>
<td>100</td>
<td>7.8%</td>
</tr>
<tr>
<td>March</td>
<td>91</td>
<td>7.1%</td>
</tr>
<tr>
<td>April</td>
<td>106</td>
<td>8.3%</td>
</tr>
<tr>
<td>May</td>
<td>140</td>
<td>10.9%</td>
</tr>
<tr>
<td>June</td>
<td>95</td>
<td>7.4%</td>
</tr>
<tr>
<td>July</td>
<td>103</td>
<td>8.0%</td>
</tr>
<tr>
<td>August</td>
<td>111</td>
<td>8.7%</td>
</tr>
<tr>
<td>September</td>
<td>100</td>
<td>7.8%</td>
</tr>
<tr>
<td>October</td>
<td>109</td>
<td>8.5%</td>
</tr>
<tr>
<td>November</td>
<td>103</td>
<td>8.0%</td>
</tr>
<tr>
<td>December</td>
<td>114</td>
<td>8.9%</td>
</tr>
<tr>
<td>Total</td>
<td>1281</td>
<td></td>
</tr>
</tbody>
</table>

Source of data: AST data (2004)

Figure 7 - Domestic Violence Percentages Monthly Report
shown a relationship between the long winters in Alaska and the rise in domestic violence and alcohol-related incidences. The results are staggering and Alaska is noticing that most domestic violence cases have also had reports of alcohol consumption.

Below is a table of victims and suspects that the Anchorage Police Department responded to and collected data on back in 2004. (Marny Rivera 2008)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Victims</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1,047 69.6 %</td>
<td>1,047</td>
</tr>
<tr>
<td>Used alcohol</td>
<td>347 34.7</td>
<td>1,001</td>
</tr>
<tr>
<td>Used drugs</td>
<td>16 1.6</td>
<td>1,021</td>
</tr>
<tr>
<td>Present when AST arrived</td>
<td>998 96.9</td>
<td>1,030</td>
</tr>
<tr>
<td>Interviewed</td>
<td>985 94.1</td>
<td>1,047</td>
</tr>
<tr>
<td>Suspects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>319 23.6 %</td>
<td>319</td>
</tr>
<tr>
<td>Used alcohol</td>
<td>159 53.7</td>
<td>296</td>
</tr>
<tr>
<td>Used drugs</td>
<td>7 2.3</td>
<td>299</td>
</tr>
<tr>
<td>Present when AST arrived</td>
<td>259 86.0</td>
<td>301</td>
</tr>
<tr>
<td>Interviewed</td>
<td>269 88.8</td>
<td>303</td>
</tr>
</tbody>
</table>

Figure 8- Male/Female Victim & Suspect Characteristics

The numbers above show the high number of incidents of domestic violence that occurred, among a high number of alcohol users. In the beginning of winter, people tend to be happy and excited about the snowfall, but as winter persists and the days get shorter people tend to get depressed. This causes violence and alcohol consumption to rise. With the massive amounts of snowfall, people become stuck in their homes, with little to no travel around the state, and encounter diverse temperature changes. Often times the snow is piled so high, some cannot even see out of their windows. (Vann 2012)

Most of the alcohol-related and domestic violence crimes that occurred were during
times of little to no light. This would correlate with the long winter months, and would result in residents being stuck inside and in close contact with one another for an extended period of time. This naturally has a tendency to cause anger, frustration, and violence in the home.

Surveys have shown that people become highly depressed because of extreme cold.

The table below shows five states with a small sample of depressed individuals. Alaska numbers are high even though their sample number is lower than the rest of the states. (Morbidity and Mortality Weekly Report (MMWR) 2010)

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>No. in sample</th>
<th>Major depression</th>
<th>Other depression</th>
<th>Any current depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>2,758</td>
<td>4.1 (3.3–5.1)</td>
<td>8.9 (7.0–11.2)</td>
<td>13.0 (11.0–15.4)</td>
</tr>
<tr>
<td>Alaska</td>
<td>1,806</td>
<td>2.1 (1.6–3.2)</td>
<td>3.9 (2.9–5.3)</td>
<td>6.2 (5.0–7.7)</td>
</tr>
<tr>
<td>Arizona</td>
<td>5,314</td>
<td>3.6 (2.6–5.0)</td>
<td>6.7 (5.2–8.7)</td>
<td>10.3 (8.5–12.5)</td>
</tr>
<tr>
<td>Arkansas</td>
<td>4,809</td>
<td>4.9 (4.2–5.8)</td>
<td>7.0 (6.1–8.1)</td>
<td>11.9 (10.8–13.2)</td>
</tr>
<tr>
<td>California</td>
<td>5,177</td>
<td>3.7 (3.1–4.4)</td>
<td>5.4 (4.6–6.3)</td>
<td>9.1 (8.1–10.2)</td>
</tr>
</tbody>
</table>

Figure 9 - Depression by State/Territory 2006 & 2008

Other studies show a higher percentage of binge drinkers in Alaska versus the rest of the United States. Alaska has a high rate of alcoholism and domestic violence, with a large number of repeat offenders that have issues with depression and suicide. (Alaska Department of Health and Social Services 2011)
Studies show that men are more prone to binge drinking and violence than women. Studies show that men are prone to depression when there is little to no light, they are stuck in their homes, and they are unable to work and feel a sense of accomplishment.

Above the map shows the percentages of binge drinking in the nation and Alaska’s percentage is higher, which is also related to the longer winters. (United Health Foundation 2013)
SAD In Alaska

Coping with Alaska’s long winters can be rather hard depending on which area of the state you live in. In Anchorage, temperatures are less extreme than other areas of the state. People can go outside and do outdoor activities. Places like Fairbanks and Barrow have extreme cold temperatures, which may restrict people from leaving their home and enjoying outdoor activities. This leads to an increase in depression and domestic violence inside the home.

A number of studies have been done to find who is affected by SAD. SAD is most common in the Arctic regions. In Alaska, about 25 percent of people are affected, compared to about 15 percent of the population in the contiguous United States. Light plays an important role in happiness. As we move away from the equator we receive less light in winter because of shorter days, more clouds and rainy weather.

If you talk to people in Alaska they say it’s not the loss of light that affects them, it’s the loss of hours in a day they feel they lose. You wake up to darkness and then you come home to darkness so it gives you the feeling of getting nothing done in a day. It is the brain trying to cope with the loss of light and making excuses to deal with little to no light. If you look at the table below Alaska is affected by SAD than any other place that has less light. (Graef 2009)

Reading studies, they believe this could also be related to the amount of snow Alaska gets, the temperatures that can be so extreme that causes individuals to not be able to leave their house, and the amount of alcohol individuals consume in a day.
The table above states that locations with lower amounts of sunlight have higher rates of SAD. This leads to depression, domestic violence, and higher rates of alcohol-related crimes.

Throughout the years there have been many different ways to cope with the long winters. Keeping busy, taking walks and getting outside are ways to combat the effects of SAD. Also, buying SAD lights can keep your mind feeling happy and not closed in. People must reach out for help if they notice any signs of SAD, heavy drinking, or anger. Another thing that people in Alaska find relevant to their health is keeping close friends on speed dial. Avoid staying up late so you do not disrupt your internal sleeping clock.
Data Analysis

A study was done from 1999 to 2002 and a total of 42,196 domestic violence incidents were reported to the Anchorage Police Department during that time. In 49% of the reported cases, on-site police officers noted the involvement of alcohol. Nearly half (47%) of all incidents involving on-site officers occur between the dark hours of 8 p.m. and 4 a.m. (University of Anchorage Alaska 1999-2002)
The map above depicts a density plot that displays all the high risk areas around Anchorage. Nearly half (47%) of all incidents involving on-site officers occurred between the hours of 8 p.m. and 4 a.m. due to higher amounts of alcohol-related incidents in the same period of time. In the city of Anchorage alone, there are over 4,000 reported domestic violence cases a year, in 49% of the reported cases; on-site police officers noted the involvement of alcohol.

A comparable study was done in Vermont from 1995 through 1998, and the peak hours were between midnight and 7:59 A.M. The study also showed alcohol consumption was not a huge contributing factor in the domestic violence cases.

Figure 14 - Anchorage Density Map of Violent Crimes (Municipality of Anchorage 2013)
The map above displays crimes in Anchorage relating to violent crimes to include domestic violence. There is a higher concentration around Downtown, Mountain View, Midtown and the Tudor area, which are well known for being areas with higher drug use, homeless people, lower income families, and all around indecent people.

Figure 15 – Drug and Alcohol from October 2012 - April 2013

The map above, I created through the online crime mapping website as well as the next few maps. The data displayed is from October 01, 2012 through April 30, 2013. Any calls made to the Anchorage Police department (APD) for drug and alcohol requires an onsite visit and gets entered into the database immediately, there were a total of 197 events during these months.
When I did my database pulls, most of the drug and alcohol incidences were on Mondays, Thursdays, and Fridays. They disturbances were also between the hours of 8:00 pm through 0600 hours. This would make sense because people done with work, most likely drinking and possibly arguing with their loved ones, and causing enough noise that their neighbors call the APD.

Another map I created was from October 01, 2012 through April 30, 2013 relating to disturbing the peace. As you can see from the map above there are a plethora of icons on the map, 800+ to be exact. When I did a trend analysis on this particular event, Sunday, Monday, and Saturday had the highest counts. Disturbing the peace is definitely alcohol related and it
would make sense that it would have high numbers on Saturday, Sunday, and even Monday. Everyone wants to party on those days, or maybe they are just sitting at home angry from work and taking out their aggression on their loved ones so the APD is having high call numbers on those days.

Figure 17 - DUI October 2012 - April 2013

The map above displays all DUI's from October 01, 2012 through April 30, 2013. There were a total of 303 crimes reported and entered into the database. The days that were the highest were Saturday and Sunday. Everyone likes to go out and drink and not make wise choices, so they get behind the wheel drunk and end up getting a DUI. I chose to add this to my paper
because DUI's are an alcohol related crime and in just a few months, in one city, with a population that isn't extremely high, the DUI number is really high.

Figure 18 - Anchorage Assault October 2012 - April 2013

The map above displays all assaults in the Anchorage area that APD responded to and uploaded to the database. Saturday was off the chart with the most events and Sunday being the next highest. The weekdays were all around the same numbers. This would directly correlate with how an individual either drank too much or acted out violently towards another due to being stuck indoors, depression, or the long winter months. If the individual can get outside the home
and work, there is less violence because they are being productive members of society and getting a sense of accomplishment.

The 3D map below shows data pertaining to binge drinking in Alaska versus binge drinking in Vermont. Alaska is number 41 in the health ranking, whereas Vermont is number 27. The worst ranking is 24, which is Mississippi, and Alaska’s 20.8 is not far from being one of the worst states with a high number of binge drinkers. (United Health Foundation 2013)

Figure 19-Binge drinking Alaska vs. Vermont

The table below displays all domestic relationship incidents that were reported to the Vermont police that either resulted in an arrest or no arrest. (William H. Clements 2000)
The Not applicable data of 84.1% is possibly unreported data by the Vermont police which could potentially make the data accuracy low. The findings on drug and alcohol use are somewhat surprising given research that indicates a substantial number of domestic incidents involve alcohol or drugs, the former of which is rather prevalent among all offenders entering the justice system in Vermont, and particularly domestic offenders.

Another study was done on crimes rate per 100,000 people and Alaska ranked over Vermont in every area. Reference the side-by-side tables below. (The Disaster Center 1997-2000) As you can see there is a huge difference between the two states crime rates. Even though the population, weather, etc is similar, crime is horrible in Alaska.

It makes you wonder if Vermont has a better support system than Alaska and able to deal with crimes due to accessibility, location, and the type of people that choose to live in Vermont.
### Figure 21 - Alaska Crime Rate Per 100,000 04/05

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Population</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
<th>Rate per 100,000</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>2004</td>
<td>657,764</td>
<td>40</td>
<td>623.3</td>
<td>8</td>
<td>5.6</td>
<td>20</td>
<td>84.8</td>
<td>1</td>
<td>60.0</td>
<td>38</td>
<td>473.9</td>
<td>28</td>
<td>573.6</td>
<td>24</td>
</tr>
<tr>
<td>Alaska</td>
<td>2005</td>
<td>663,661</td>
<td>40</td>
<td>631.8</td>
<td>8</td>
<td>4.8</td>
<td>26</td>
<td>81.1</td>
<td>1</td>
<td>80.9</td>
<td>38</td>
<td>465.1</td>
<td>23</td>
<td>622.5</td>
<td>24</td>
</tr>
</tbody>
</table>

### Figure 22 - Vermont Crime Rate Per 100,000

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Population</th>
<th>Violent crime</th>
<th>Murder and nonnegligent manslaughter</th>
<th>Forcible rape</th>
<th>Robbery</th>
<th>Aggravated assault</th>
<th>Property crime</th>
<th>Burglary</th>
<th>Larceny-theft</th>
<th>Motor vehicle theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>2004</td>
<td>621,233</td>
<td>50</td>
<td>114.8</td>
<td>50</td>
<td>2.6</td>
<td>40</td>
<td>25.8</td>
<td>41</td>
<td>12.6</td>
<td>50</td>
</tr>
<tr>
<td>Vermont</td>
<td>2005</td>
<td>623,650</td>
<td>50</td>
<td>119.7</td>
<td>50</td>
<td>1.3</td>
<td>48</td>
<td>23.3</td>
<td>44</td>
<td>11.7</td>
<td>48</td>
</tr>
</tbody>
</table>

The 3D map below displays the violent ranking in Alaska versus the violent ranking in Vermont. Alaska’s is considerably higher than in Vermont. (United Health Foundation 2013)

### Figure 23 - Violent Crimes, Alaska vs. Vermont

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The table below provides the rank of each State’s reported rate of crime as compared to the 50 States and the District of Columbia. 1 = the highest reported crime rate and 51 = the lowest. Going from one year to the next a higher number means, that compared to other States, the relative crime rate is increasing and a lower number means that the relative level of crime is decreasing. The Index category represents the total number of crimes, and since most crimes involve property crime it is weighted towards these types of crime. (FBI Uniform Crime Reports 1997-2012)

<table>
<thead>
<tr>
<th>State</th>
<th>Year</th>
<th>Population</th>
<th>Index</th>
<th>Violent</th>
<th>Property</th>
<th>Murder</th>
<th>Forcible Rape</th>
<th>Robbery</th>
<th>Aggravated assault</th>
<th>Burglary</th>
<th>Larceny-Theft</th>
<th>Vehicle Theft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>2008</td>
<td>47</td>
<td>23</td>
<td>8</td>
<td>29</td>
<td>29</td>
<td>1</td>
<td>31</td>
<td>4</td>
<td>40</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>Alaska</td>
<td>2007</td>
<td>47</td>
<td>20</td>
<td>9</td>
<td>24</td>
<td>17</td>
<td>1</td>
<td>35</td>
<td>5</td>
<td>35</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td>Alaska</td>
<td>2006</td>
<td>47</td>
<td>17</td>
<td>7</td>
<td>20</td>
<td>23</td>
<td>1</td>
<td>32</td>
<td>4</td>
<td>30</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Alaska</td>
<td>2005</td>
<td>47</td>
<td>21</td>
<td>8</td>
<td>23</td>
<td>25</td>
<td>1</td>
<td>35</td>
<td>6</td>
<td>29</td>
<td>18</td>
<td>19</td>
</tr>
</tbody>
</table>

Figure 24 - Alaska Crime Index Rates Per 100,000 Inhabitants

In 2009, a study was done about alcohol consumption in Alaska compared to the rest of the United States. This study indicated that the prevalence of binge drinking was slightly higher in Alaska than in the U.S. as a whole. Being dissatisfied or very dissatisfied with your life, and binge drinking in the past 30 days, was associated with heavy drinking in 2009.

As you can see, Alaska rank’s pretty high among dissatisfied, heavy binge drinking, and just overall unhappiness among the residents of Alaska. You have to ask yourself, why people stay in the pretty state of Alaska. Is it location, or is it because it is the individuals just do not want to be around the people in the lower 48? I think that would take further study and an interesting find.
Figure 25 - Anchorage Annual Crime Data
Figure 26 - Fairbanks Annual Crime Data
The image below shows the link between depression, binge drinking, Seasonal affective disorder and how everything ties back into domestic violence. As discussed throughout this paper, all of these events are a problem in Alaska due to the long winter.

Figure 27 - Causes of Domestic Violence among Alaskan's
Conclusion

With the long, dark, cold winters in Alaska, feelings of depression can cause one to act out violently towards their loved ones or others they come in contact with. The long winters also provide a perfect environment for binge drinking and alcoholism. Many people fall prey to Seasonal Affective Disorder and have been known to act out violently. With the research provided and explained, there is a distinct relationship between Alaska’s winters, domestic violence, and higher alcohol-related crimes. Low sunlight causes negative effects on a human being’s life and the lives of others. Different ways to cope with Alaska’s winters are buying SAD lights that give off light comparable to direct sunlight, finding ways to keep yourself busy, and reaching out for help if there are feeling depression.
Works Cited


Parnell, Sean. Ram pant to Rare - Domestic Violence in Alaska. October 14, 2012. 


William H. Clemens, Ph.D., Lila Denton, M.A., Joan Owen, B.S. Linking Incident-Based Crime Data and Court Records; A Pilot Study of Domestic Relationship and Driving Under the Influence Incidents.

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