Battle in the Trenches

Trench warfare brought about many problems for the health of the armies of WWI. While their were trench battles being fought throughout the globe, the western front was hit very hard by one problem in particular: trench foot. During WWI some key players that used trench warfare were Germany, Belgium, and Britain. Trench foot was a problem all throughout the war, but it became worse once the warm weather was replaced with cold and wet weather. Conditions in the trenches were very harsh. Soldiers reported to be standing in cold mud up to their ankles for hours, or even days. Their tight, wet, boots caused extreme damage to their feet. The wet plastered boots cut of circulation to their feet. It was known that soldiers would go weeks without taking off their boots and socks. This, in return, caused the soldiers feet to look very white and swollen and the soldiers would find the worst cases of rotting toes.
Trench Fever

Trench fever affected the armies in Flanders, Poland, France, and Italy. It was reported that from 1915 to 1918 between one-fifth and one-third of all British troops reported trench fever while about one-fifth of German and Austrian troops had the disease. This disease was classified as a five day to two-week problem. Symptoms were sudden and comprised of high fever, severe headache, pain on moving the eyeballs, soreness of the muscles of the legs and back, and frequently hyperaesthesia of the shins. Worse, the cause of trench fever was unknown. Later, it was discovered that body lice was the cause for the spread of this disease. A bite to a carrier would spread the disease. Then, the carrier would scratch open the wound and the disease would spread easily. This would typically start a rash, which could be noticed and treated.
On Wednesday March 21, 1917 The New York Times ran an article titled *End of Trench War, Say Berlin Critics. Germans Say Their Devastation of the Country is “the Allies Fault.”* This article mainly talks about how the Germans during world war one started to evacuate entrenched battle fields which cover the Somme front. They did this because they felt the entrenched land that was being used was useless to them. It would not be a problem for the Germans to give it up because it would be “effective work of destruction carried out before the occupied land was given back to the French and the British, so that it will avail them nothing as captured land.” (New York Times 1917) By giving up this land they could put an end to all their spring offensive plans. In this article it talks about how the trenches were difficult to maintain. The Germans decided to go with a more effective plan for warfare. The article finally talks about how Germans said that “Yet the destruction is not so great as the devastation inflicted by the British and the French on the Somme Battlefield, and when the Entente refused our peace proposal it took the responsibility of this destruction upon itself. It was a war measure.”¹ This also shows what type of feeling the Germans had towards the destruction of the land. During

World War One there were articles all over the headlines mentioning about the destruction of the land from entrenched warfare. Trench warfare during World War One brought about many problems for our health and environment.

If you think about our present day situations, there are many situations that have to do with war and destruction that has direct correlates with our environment and health. A great example would be September 11, 2001. The world trade center incident caused extreme amounts of smoke and rubble for three months across the lower Manhattan and Brooklyn region. We all would find out that this was an act of terrorism. I feel that this situation is very similar to the idea of entrenched warfare. Lastly I looked at some main problems entrenchment caused. I found in a study that there is a direct correlation between the beginning use of trench warfare and the cause of the disease’ that steamed from it. Two main problems would be Trench foot and Trench Fever. Like I mentioned before the World Centers incident would be most recent act of desecration to our environment and health.

On September 11, 2001 America witnessed all over national television one of the worst tragic events in human history. This is when a terrorist group flew two planes into the World Trade Centers in New York City. As the planes hit the Twin Towers more than 90,000 litres of jet fuel burned at temperatures above 1000oC. An atmospheric plume formed, consisting of toxic materials such as metals, furans, asbestos, dioxins, PAH, PCB and hydrochloric acid. Most of the materials were fibres from the structure of the building. For three months at the site of now ground zero huge piles of smoking rubble just sat there and burned creating extremely gaseous dust particle. These dust particles travelled all across lower Manhattan and Brooklyn. The way it

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effected the environment was health effects from inhaling dust included bronchial hyperreactivity, because of the high alkalinity of dust particles. Other possible health effects include coughs, an increased risk of asthma and a two-fold increase in the number of small-for-gestational-age baby’s among pregnant women present in or nearby the Twin Towers at the time of the attack. (Lenntech 1998-2008) I believe that this relates completely with the idea of trench war and its effects on the environment. While researching on the effects from trench war fare on the environment, I have found it a bit difficult to find books and papers on the topic. Many questions started arise about why historians have not done studies on the effects of war on the environment. My intentions of this paper are to analyze and comment on how other authors approached researching for environmental effects of wars. The First book I will analyze is titled Natural Enemy, Natural Ally: Toward an Environmental history of War, by Richard P. Tucker, Edmund Russell. I will then discuss different topic and themes that many different historians had in a conversation online. I want to first start with book, Natural Enemy, Natural Ally: Toward an Environmental history of War by Tucker and Russell.

This book consists of about eleven different article talking about different environmental effects from war. Before I started researching this topic I was sure there were a lot of studies done on effects of war and the environment. I would soon be proven wrong, there is not much research done. This book actually gives you a better insight on how the environment interacts with war. This book had different examples ranging from Africa all the way to the American civil war. I think this is strength because it gives you the broad picture of what really happens to the environment from war.

When you look throughout history warfare has always exploited the land in which it is fought on. A great example they gave in the book would be how during the World War II when
Japan was cut off from normal supplies of raw materials, they cut down their forests for fuel, logging fifteen percent of their forests in just four years. They even stripped the leaves and undergrowth from the forests in order to make compost for their fields because the raw materials formerly used to make chemical fertilizers were now needed to make munitions. (Swedin 2008) This is some examples of different effects from cutting a country off from natural resources during war time.

After reading this section I found a very interesting fact out about how because of fighting in different areas of the world men and woman had to invent different insecticides. This is because men and woman would get disease’s that were over in the other country and they would also bring back pests and disease such as ticks and cattle diseases. I found this book compelling because it gives you a lot of insight of the effects that happened. I hope that this book will spark more historians to want do more research on war and the environment. As I was researching I found an interesting cite in which historian posted blogs on certain topics and question. I found it helpful in explaining a lot of things historians talk about.

A historian by the name of Nikolas Kozloff from Oxford University, who posted on h-net.edu in regards to German submarine activity in the Caribbean during the war. He had gotten information on how in 1942 the Germans sunk a couple of Dutch oil tankers. (Kozloff 2000) He was not too sure how much oil was dumped in the water but he was wondering if anyone has put together any studies of twentieth century environmental military history. He also was interested in any legal moves made by countries against countries that hurt their environment from previous
Kozloff had many different people who replied to his inquiries. The first post back I came across was from a man named Dennis Williams from the University of Melbourne.

Williams agreed with Kozloff on the idea that there isn’t much done on the issue of war and the environment. He stresses that most histories and encyclopedias of war ignore the environment. As I read along a lady named Sherry Johnson who worked at Florida International University posted a comment. She gave him some insight on to who Kozloff could contact. She told him to get a hold of a retired professor who wrote a book about German u-boat activity in the Caribbean. I found this a good thing because it helps Kozloff out on his quest to find more information on this topic. The next post was from an Environmental history and policy professor from Michigan Technological University. He states the following “In the six months after Pearl Harbor, German subs sank 55 oil tankers carrying crude oil to refineries along the East Coast of the United States. Some of those tankers continued to release petroleum for years to come. One source of documentation for these sinking’s (and those that followed) would probably be the records of the U.S. Office of the Petroleum Coordinator for National Defense, which was run by Harold Ickes. The OPCND’s job was to keep the oil flowing--and in response to the tanker problem initiated construction of a 24" pipeline from Texas to Pennsylvania, which was in operation by early 1943.” (Gorman 2000) After reading the posted it seemed to me that Kozloff got a lot of leads onto were to find sources on his topic. In his reply to the conversation they were all having he changed his theme to Environmental war crimes. He now wants to know about if there were any studies done on that. Some strengths of this is that you can get information faster from someone who has did research on a certain topic.

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To return to the example about 911 in the beginning of the paper, I believe that there should be more studies done on environmental effects of war. As I was researching on the effects to the environment from war, I have found it a bit difficult to find books and papers on the topic. My intentions of this paper are to analyze and comment on how other authors approached researching for Environmental effects of Wars. I feel that I have gotten more insight on the topic of environmental history and its effects from war. I hope to see more studies being conducted on this topic in the future, since there is not many being done now. Like I mentioned in the introductions there was two main problems that came about from the use of entrenchments.

Trench warfare brought about many problems for our health and environment. I’m sure that the war strategic advisory was not expecting some of the disease and hardships the men would have to endure in fighting in this way. While researching the topic of diseases that was brought about from the use of entrenchment, I came across a great book called *World War I*, by Spencer tucker, Priscilla Mary Roberts. Some topics this covered were Trench foot and Trench fever, rats and other types of infestation. Another source I checked out was a book called *Eye-Deep in Hell: Trench Warfare in World War I*, by John Ellis. This book also goes into great details of what it’s like living in the trenches and the hardships they had to go through. In this study I found that there is a direct correlation between the beginning use of trench warfare and the cause of the disease’ that steamed from it. Trench foot was a major disease the directly came from entrenchment.

**Trench Foot**

The general definition of trench foot according to Merriam- Webster is “a painful foot disorder resembling frostbite and resulting from prolonged exposure to the cold and wet.” (Webster 2009) While battle’s fought with entrenchments happened all over the world, the
western front was hit very hard by it during World War 1. Some key players who used trench warfare would be Germany, Belgium and Britain. Trench foot would be a problem all throughout the war but it became an even bigger problem once the warm weather would go away and was replaced with cold and wet weather. Conditions in the trenches were very harsh. Soldiers were reported to be standing in cold mud up to their ankles for hour’s even days. (Spencer Tucker 2005) There tight wet boots would do extreme damage to their feet. The wet plastered boots would cut of circulation to their feet. It was known that soldiers would go weeks without taking their dirty wet, muddy boots and socks off to clean them or even change them. This in return this caused the soldiers feet to look very white and swollen when they took off their socks, the soldiers would also find the worst cases of rotting toes. Living conditions was not like staying at the Hilton hotel.

Soldiers would scoop out the backs of the trenches to make little shelters to sleep in. They would wrap themselves in groundsheet to protect themselves from shrapnel and the elements. They would sleep perpendicular to the trench with their feet sticking out in the open. (Ellis 1985) They would then try to catch a few minutes of sleep until something else happened. After reading this I hope a buzzer went off in your head as it did to me. While soldiers were even sleeping their feet was exposed to the elements. This would cause a lot of problems. There are many other reasons that added to the cause of trench foot. The general construction of the trench and the materials they used did not help at all.

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6 Spencer Tucker, Pricilla Mary Roberts. World War 1; Encyclopedia. ABC-CLIO, 2005.
During the warmer months the soldiers would use a form of parapet to enforce the construction and stability of the front of the trench. (Department n.d.) This parapet was made of rock, dirt, and logs. As soon as the weather would permit they would change the parapet to sand bags which help as well with reinforcing the foundation. They also choose sand because it reduced erosion. In the trenches they also had underground tunneling and little bunkers for food storage and medical help. The irony is that no were in the trench was safe for storing food and medical supplies. The trenches were even healthy for the soldiers to be in. John Ellis gives a great example in his book about what different tactics armies would choose to take knowing about the trench foot problem.

The British became aware of what trench foot was and how the soldiers would get it. Previously they started to mandate that soldiers would change their boots frequently and bring clean socks. In the winter of 1915-16 Ellis give the example of the first line in front of Serre. This line was in a sense unattainable because of the weather conditions. The Belgium’s had many problems because they were wearing tin socks that did not help them at all. The ending results of trench foot are that many soldier had their toes as many as it took and also the whole foot moved to save their lives. Men found themselves not able to walk and had to be helped to the back were the medical center was located. “By the winter of 1916 up to one fifth of some units were incapacitated by trench foot. Nurses in rear-area hospitals would massage the disease feet with warm oil, waiting to see if the feet would turn from white to pink. By the end of 1917 military surgeons noticed that trench foot carried an exceptional risk of associated tetanus, and

9 Spencer Tucker, Pricilla Mary Roberts. World War 1; Enclylopedia. ABC-CLIO, 2005.
sufferers were routinely vaccinated.”

Soldiers would be now made to carry clean dry socks and routinely clean their feet with whale oil daily. There was another major disease that came from entrenchment which is called trench fever.

**Trench Fever**

According to Merriam-Webster the general definition of trench fever is “a disease that is usually marked by fever and pain in muscles, bones, and joints and that is caused by bacterium transmitted by the human body louse.” (Webster 2009) Trench fever was a moderately serious disease transmitted by body lice. Trench fever would affect armies in Flanders, Poland, France, also Italy. (Milonakis 2006) It was reported that from 1915 to 1918 between one-fifth and one-third of all British troops reported ill had trench fever while about one-fifth of ill German and Austrian troops had the disease. (hill 1942) The disease was classified at a five day to two week problem. Symptoms are usually sudden with high fever, severe headache, pain on moving the eyeballs, soreness of the muscles of the legs and back, and frequently hyperaesthesia of the shins. In the beginning medical examiner was not too sure how they got it.

I read in *Trench fever: Report of Commission, Medical Research Committee, American Red Cross*, by the American Red Cross Commission. “Previous views held regarding the method of transmission of trench fever; views regarding the spread of the disease by mice or rats. Speculation regarding the spread of the disease by body louse; No adequate proof of the method of transmission of the trench fever prior to the present investigation.” As you can see they didn’t know what was spreading it. There were many rumors saying it came from rats and mice. I want to mention about why people may have thought that mice and rats were spreading it. In the

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10 ibid, Pg 1174
trenches rats were by the millions. There were mainly two kinds of rats a black one and a brown one. Men especially feared the brown rat because it could grow to the size of a cat. (Duffy 2000-09) These rats would feed of the remains of dead humans. Mice and rats was a big problem for the trench. Men have said that they could feel them running across their feet at night. The soldiers would try to get rid of them by beating them to death or even shooting them. Like I mention early rats and mice was a problem for the soldiers but was not the main cause of trench fever.

Body louse was the cause for the spread of this disease. Trench fever was spread by one louse biting a carrier. Then the carrier would scratch open the worn and from this it would be spread easily.\textsuperscript{11} This would typically start a rash, which could be noticed. After researching I came up with the conclusion that it was very close quarters that the soldiers were living in and it made it easier to spread to mass numbers. Trench fever accounted for one-fifth of illnesses on the German and Austrian armies. It would also account for one-third of illness for the British army from 1915-1918. There were many ending results for trench fever.

I mentioned earlier that trench fever was a disease that was surrounded by the spread of body lice from soldier to soldier. To remedy this problem the armies started to send soldiers to the rear more frequently to get showered and get their uniforms washed. This would help out a lot. Towards the end of the war they started to give vaccinations to help also.

To conclude about different problems that steamed from trench warfare. While researching I came across a lot of different sources. The two main ones I used was a great book called \textit{World War 1}, by Spencer tucker, Priscilla Mary Roberts. Some topics this covered were

\textsuperscript{11} ibid pg. 1174
Trench foot and Trench fever, rats and other types of infestation. Another source I checked out was a book called *Eye-Deep in Hell: Trench Warfare in World War 1*, by John Ellis. This book also goes into great details of what it’s like living in the trenches and the hardships they had to go through. Entrenchment had to negative effect on our health. It caused the ungodly painful trench foot and also trench fever. In this study I found that there is a direct correlation between the beginning use of trench warfare and the cause of the disease’ that steamed from it. Life in the trenches was not easy. Soldiers had to deal with unhealthy weather conditions all year around. Their feet would be exposed to the elements most of the time. They would also be working, fighting and living in almost frozen mud up to their ankles. Battle of entrenchment also caused trench fever. In the beginning there was a lot of confusion about how it was spread. Many doctors believe that it came from mice and rats. After tested experiments they found that to be false. The ending ruling was that it was spread by body louse. Trench Fever would essentially wreck your immune system. It would take a soldier through very bad rashes and fevers. It also brought about muscle and joint pain. I mention in the beginning that I’m sure that the war plan strategist at the time did not know or even expect to have these types of events to occur. Now we as people can learn from the mistakes made by using entrenchment tactics. We also can witness what types of problem that can occur when you hurt our environment.

To sum up some main idea of using entrenchment warfare has direct correlations to environmental problems that are caused from it. During War World War there were many newspaper articles that talked about entrenchment war plans. After reading a few I came up with the conclusion that Germany didn’t seem to care to much for the environment of their enemies and even some parts of their country. I found this interesting because when I read *The Conquest of Nature*, by David Blackbourn, he seems to give a different side of German attitude towards
nature. Blcakbourn seems to say that the Germans was very environmental aware, especially with the whole idea of rerouting the rivers in Germany. I had also mentioned about how World Trade Center situation was a present problem that we Americans had to face. With blowing up those building caused incredible damage to Lower Manhattan and Brooklyn region. The gaseous dust particle started to cause asthma and other harmful coughs to the residence. There is a lot of similarities between 911 and the idea of Entrenched warfare during World War One. Trench foot and Trench fever were two very serious health problems that came from the use of Trenches. Soldiers would have to get their toes and feet amputated most of the time because of the harsh environment they had to stay in during the war. Trench Fever was slightly different. Doctors at first had a hard time figuring out the cause of it. In the beginning many believed that trench rats that were living and feasting of dead soldiers in the trench was spreading it. After many experiments they would figure out that it was not rats but body louse. From there they were able to come up with cure for these problems. After reading this paper I hope it made you more aware of what kind a situations can happened when we the people degrade and change our environment. I hope to see in the near future more acts from our government and others to go green. I feel that if we are all environmentally friendly we can cohabit better with our environment.
Annotated Bibliography

Primary Sources

Felton, Hellen, interview by John Hannah Antuan. (March 2009).

- She gave us a very good brief overview of what women in shippensburg did during the war to contribute. Told us about how they were able to make the jackes and also what types of feeling women in that time period was going through.


- We choose three pictures from this book. The first picture is Women putting together and Airplane. The second picture is an Ad for women to find jobs. The third is The Molly Pitcher ads.

- I used this source as a primary source. It was helpful because it showed how the situations were portrayed in the newspapers at that time.

*Pictorial History Carlisle Area.* Carlisle: Cumberland County 250th anniversary Committee, 2000.

- We choose this reference because it showed what women did and looked like before they were called in for duty for work during the war. We also choose this to reference what the area looked like during the time.

"Rationing Stamps and Jacket." *Shippensburg Historical Society.* Shippensburg, Received March 11, 2009.

- We choose to use rationing stamps to show how people during the time were able to use them to shop. We choose the jacket to show how and what type of jackets they used to make for the war.


- This source was helpful because it depicts women in the process of working in the factory. It also showed what type of factory conditions they had to go through.


- We choose this source because it incorporated what women were actually doing in the factory. We also choose this because this source had great ads from the time.

- This movie was useful because it should us how propaganda made women feel obligated to work at the companies. It should how when the war ended men had to come back to work and they wanted women to go back into doing domestic work.

Secondary Sources

Bell, Whitefeild J. *Two Hundred Years in Cumberland County*. Carlisle, 1951.

- We choose this source because it gave us great insight on Cumberland County. It gives histories from Pre World War II all throughout Cumberland county.


- We choose to use this source because it gave us names and Photos of Cumberland County women who worked in Masland Factory. It also talks some of the duties the women did in the factory.


- This source was great because it told us all the companies in Cumberland county that help out for the war effort. It also goes into detail about the American Red-Cross and how women in this area helped with that cause.

- This source gave us different jobs done by the WAC and the WAVE. It also gave us statistical information on the jobs.


- This was a neat and interesting article on how men would go about hiring women at the time. It was a guide that showed to us the major social changes throughout the time.
Reflective Paper

Throughout these past four years attending Shippensburg, I have had a wide range of project, papers and presentation. At first I wasn’t too sure what I actually wanted to major. I remember leaving high school and saying I wanted to be something in the criminal justice field. In my freshman year I took and intro to criminal justice class. I would soon realize that criminal justice was not me. Next I went on to like accounting. Accounting was a not me either, so by mid sophomore year I decided to become a history major. History was always an interesting subject for me. I think that at that moment in life I wasn’t quite sure what I was in for with being a history major. While being a history major there were a lot of papers, research projects, and lastly presentation. My intentions of this paper are to analyze three main projects from being a history major that stood out to me the most. I will also be covering what I have learned throughout these past four years. The service learning project for Women history is the first project I want to analyze. The last two projects I will analyze are The Tulsa Race Riots research paper I completed for my theory and Practice history class and lastly my most recent the research paper on The Environmental Effects of Trench Warfare during World War One. This was for my capstone history class. In my opinion I feel that the service learning project was most fun.

The service learning project was this semester. It consisted of a group of three finding research on women in Cumberland County and their Contributions to World War Two. The group would then have to present it in a museum exhibit, which was held in the Cedia Union
Building. The group would then have to present it to a class of students. These were college students but elementary or even high school children. The group would also have to write a paper on the topic and have good sources. There were many things that I learned from this project.

This project was the first to introduce me to going to the historical societies in our area. Before this project I only ever been to a historical society once and this was when I was still in grade school. I got to learn in-depth, how the historical societies work. Examples would be learning how to research things in there catalogs and also what I was allowed to borrow and use. With this project I learned that you can procrastinate. These historical societies have unusual hours. This would make it difficult to find time to meet there with all of our group members. Our museum exhibits was very interesting. I enjoyed it because it was like a museum instead of a presentation. The other aspect was a little more challenging. We had to teach an eleventh grade class at Cumberland valley High School. This was challenging because the kids were not paying attention. We brought candy to give some incentive to listen and pay attention. This attempted worked for a bit. I also believe it had to do with the teacher because; it seemed that his class was a little rowdy. All in all, this project was to me the most interesting to do. The next two research papers were the most challenging.

The Tulsa Race Riots paper was my first extensive research paper I have completed this year. This paper was on how On May 31, 1921 a thriving black community of Tulsa Oklahoma was partaking in one of the most dangerous race riot in American history. It was started when a white lady working as an elevator operator accused a black man of assaulting her. My argument was comparing and contrasting how the riot was portrayed during the riot. I did this by comparing predominant newspaper during the time. I also want to focus on how it was portrayed
in the Oklahoma Commission to Study the Tulsa Race Riot of 1921. Like I mention earlier this was my first extensive research paper. I had no idea what I was doing. This also was my first primary sourced paper.

The second paper was titled, The Environmental Effects of Trench Warfare during World War One. This was also a primary based paper. This topic covered many environmental effects from using entrenchments. My argument for this paper was that trench warfare during World War One brought about many problems for our health and environment. My intentions of this paper are to analyze and comment on how other authors approached researching for environmental effects of wars. Some of the main problems that arise were Trench foot and Trench Fever. Lastly while writing this paper I found that there was direct correlation between 9/11 and the use of the trenches, having bad effects to our environment. Furthermore, I learned many different things about completing research papers.

With the first paper my main source of information came from our school library. This is where I figured out how to look up things on microfilm. With this project I learned that researching things is very time consuming. It also can be very difficult. The first paper was difficult because it wasn’t a highly published event. It also was during a time period in America where they had many bias in there writing because of racism. This first paper is where I first found I had a problem with sorting out primary and secondary sources. All though I thought I figured it out the problem in my first paper, it still carried over to the next semester with my second paper. With this second paper I have been working hard to figure out the problem.

I enjoyed the way we wrote this paper in sections. He had historiography section; also a case study then we tied it together. This actually was my first time writing both a historiography
and a case study. The historiography was most challenging for me because I didn’t have proper sources. I also really enjoyed that our professor was able to revise and correct our papers for revision. With that I was able to learn way more than ever about my writing skills. I also learned proper citations. This is key, because it’s bad to get accused of plagiarism. This last paper introduced me to going to the state archives to research. As with the service learning project time was a major factor.

To conclude things, about what I have learned thought out these four years being a History major at Shippensburg University. My intention of this paper is to analyze three main projects from being a history major that stood out to me the most. I also covered what I have learned throughout these past four years. The three projects that I remember most was the service learning project and both papers called The Tulsa Race Riots and The Environmental Effects of Trench Warfare during World War One. I learned many things from proper sourcing, citations and even research methods. I also learned how to read a book without having to read every single word. I can find the argument of the reading way faster than I used to be able. I will take everything I have learned and apply it to my life after school. I feel well prepared for the real world of being an historian.
Work Cited


Miller, A. “Women’s Contributions in Cumberland County Contributions to World War Two.” Shippensburg University, 2009.