Social Media & Political Engagement:

Environmental Organizations, Social Media and Political Engagement

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By Tyler Cate

Abstract

Social media is becoming more important in today's digital society, but how effective is the use of social media when it comes to political engagement? How do environmental organizations use social media and is it effective in encouraging their "followers" to engage in online and/or offline political activity? I collected Facebook and Twitter data from ten environmental organizations to assess the effectiveness of each posting. I hypothesize that the groups making direct calls for action via social media receive a greater response – beyond "clicktivism" or "slacktivism" – than the groups that do not.

The data includes the number of "likes" and "shares" for each organization's Facebook and Twitter page, as well as the content of each individual posting and whether or not the organization made a direct call for some sort of action. Tentative results show that, for most organizations, follower interaction increases when the organization makes a direct call to action. However, the social media interaction between a specific environmental organization and its followers seems to vary widely from group to group. These tentative results indicate support for my hypothesis, but also provide other valuable information about the use of social media and its impact on political engagement.

Introduction

Social media has become a central part of today's society. It is becoming harder and harder to find a person that doesn't have at least one social media account whether it be on Facebook, Twitter, Instagram, or any of dozens of others. Social media platforms are used to inform, communicate, entertain, connect, and for a myriad of other purposes. The growth and popularity of sites like Facebook and Twitter mean that businesses, organizations, governments, and government personnel are remiss not to use at least one platform to communicate with others. An aspect of social media that seems to be becoming more and more visible is how it is used for political purposes.

As just stated, political organizations, politicians, governments, government organizations, and candidates are virtually required to have some sort of social media presence. Nearly all of the previously mentioned entities use their social media accounts to communicate with supporters, inform about policy, raise money, and encourage political engagement. Social media, and the Internet as a whole, have become an important outlet for political engagement. Political organizations, in particular, use the Internet and social media to encourage political engagement and political activity.

As early as the mid 1990's political organizations and advocacy groups used the Internet to organize for specific causes. In 1997, for example, the Preamble Collaborative created a website to inform and show opposition to the Multilateral Agreement on Investment (MIA) from the Organization for Economic Cooperation and Development (OECD)[1]. The Preamble Collaborative website contained a great deal of information to let opponents of the MIA stay informed and argue against the issue. The "Battle for Seattle" in 1999 saw political

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[1] Obar, Zube, Lampe

organizations and advocacy groups use the Internet to organize efforts against the World Trade

Organization's Ministerial Conference. The groups used e-mail, message boards, listservs, chat

rooms, and other Internet tools to coordinate massive demonstrations of the conference[2].

The twenty-first century has seen rapid growth in using the Internet, then social media, to

encourage political engagement. The advent of "Web 2.0," or an Internet more driven by user-

generated content, gave rise to social media platforms like MySpace, Facebook, and Twitter.

Political organizations and advocacy groups started to maintain listservs to e-mail information to

supporters and social media accounts were created for similar purposes. It became common

practice for organizations to maintain a traditional website while also having social media

accounts. The incredible growth of Facebook and Twitter made it almost necessary to maintain a

social media presence in addition to a traditional website.

The importance of social media and political engagement became much clearer in 2010

and 2011. During the "Arab Spring" uprisings, where multiple Middle Eastern nations saw

revolutions to overthrow oppressive regimes, social media showed its value. Protestors and

organizations used mobile technology and social media to quickly communicate with one

another, organize demonstrations, and spread their messages. In September of 2011, the United

States saw firsthand how social media could be used for political activism. The Occupy Wall

Street movement was very effective at using social media to stage protests, marches, and

organize rallies. In fact, the much of the Occupy Movement began in July of 2011 when a

Twitter user created a Tweet with the hash tag "#OccupyWallStreet."

While some may associate political engagement and social media as something used by

major issues organizations, governments, and candidates, environmental organizations also use

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[2] Obar, Zube, Lampe

social media for a number of purposes. In 2012, for example, 350.org used the Internet and social media to organize a large grassroots campaign to fight climate change – specifically, fighting against the Keystone XL pipeline[3]. In 2014, a trio of German researchers discovered that forests could be monitored using social media. The researchers even used metadata from multiple platforms to track oak tree progression in Germany[4]. An English organization named 38 Degrees was able to collect enough signatures on an online petition that the government withdrew a plan to sell forestland to developers[5].

Social media has established itself as an effective tool for encouraging political engagement both online and offline. While it might seem that environmental organizations, as seen above, use social media effectively – the examples given were those of a single-issue organization, a scientific research project, and a specific petition by a large wide-ranged-issues group. What about large, established, well-known environmental organizations? The following research will examine the Facebook and Twitter accounts of ten large, established, well-known environmental organizations to determine how those organizations use social media; and, whether or not those organizations use social media effectively – if it can be measured.

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[3] Vig & Kraft
[4] Daume, Albert, von Gadow
[5] Howard

Literature Review

Today, the Internet and social media are accepted as a valuable part of life. However, this was not always the case. Some scholars viewed the early Internet, "Web 1.0," as a somewhat useful tool, but one that was very limited. This view would begin to evolve as Web 2.0 emerged. After the advent of Web 2.0, scholars began to see the utility of the Internet and social media, but the early years of the user-driven content era were still uncertain. It was only recently that scholars began to accept the prominence of the Internet and social media in virtually all aspects of life. The focus has begun to shift from researching the basics of the Internet to analyzing the impact on aspects of day-to-day life, politics, and almost everything else.

Pre-"Web 2.0"

Scholars from the early 2000s were skeptical of the impact of Internet on political activism, and even contemporary scholars have their doubts. Some early research on the effects of the Internet on political participation show just how much the Internet has changed over the past 20 years. Bimber's 2001 piece "Information and Political Engagement in America: The Search for Effects of Information Technology at the Individual Level" in *Political Research Quarterly* sought to analyze the "offline versus online" aspect of political activism in the United States. Bimber's findings showed that, at the time, there was little correlation between "online" political activity and "offline" political activity, other than for the purposes of donating money[6].

Shortly after the window of Bimber's research (1996-1999), the Internet began to change to include user-created content, often referred to as "Web 2.0". This ability for individuals to share their ideas and creations soon led to a politicization of social media. Political scientists

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[6] Bimber

reacted to this politicization by researching the influence of social media on political campaigns, causes, and activities. L.A. Kutner (2000) was one of the earlier scholars to see the potential of social media. In an article found on the *Electronic Green Journal* entitled "Environmental Activism and the Internet" Kutner discusses the increased use of the Internet to disseminate information and provide more communication between individuals who support a specific cause[7].

B.S. Kruger (2002), writing in *American Politics Research*, came to similar conclusions as Kutner in his piece entitled "Assessing the Potential of Internet Political Participation in the United States: A Resource Approach." Kruger analyzed political participation and Internet usage from a socioeconomic level, as well as how to measure online and offline activity and the influence of the Internet on political activity. Kruger's conclusions, similar to Kutner's, were that the Internet would create an increase in political participation both online and offline, once access to the Internet had spread to more socioeconomic levels of society[8].

Growing Age of Social Media

The rise of social media sites, such as Facebook and Twitter, led political scientists to question whether online political activity translated into offline participation. In 2005 Gibson, Lusoli, and Ward used a 2002 National Opinion Poll (U.K.) survey to determine whether or not online political activity influenced people to participate in offline activity. The researchers targeted groups of people that were otherwise inactive, but were reachable through the Internet. Their goal was to show that a new approach and thought paradigm must be held when viewing

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[7] Kutner
[8] Kruger

how social media affects political participation[9]. They showed that the Internet and social media could be used to influence offline political activity, and also encourage participation in those who would otherwise not be politically active[10].

Boulianne, in 2009, sought to quantify whether or not online political activity translated to offline political participation in a *Political Communication* research article entitled "Does Internet Use Affect Engagement? A Meta-Analysis of Research". While initially hypothesizing that the Internet had a negative affect on civic and political participation, Boulianne disproves the hypothesis by analyzing 38 studies that measured 166 different effects on various forms of engagement. The findings show that the Internet has become another place for actual, tangible political engagement, but it is unclear whether or not the impact of online political activity had a significant impact on offline political engagement[11].

Work subsequent to Boulianne no longer doubts the impact of the Internet on political activity. This later research shows a shift to the belief that the Internet does have a significant impact on political engagement. Prior to 2009, the consensus from scholars was that the Internet only had a small impact on political engagement. After 2009, the shift to the belief that the Internet has a greater impact is more obvious. The question changes from *if* the Internet has an impact on political engagement to *how*, and to what extent, the Internet and social media impacts political engagement. A more specialized area of research also arises: determining whether or not Internet-caused political engagement is "slacktivism" (an online presence alone) or real-life activism (active participation in political activities away from the screen).

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[9] Gibson, Lusoli, Ward
[10] Gibson, Lusoli, Ward
[11] Boulianne

One aspect of the rise of social media has been the branch of so-called "new media" or blogs, citizen journalism, news aggregates, and other forms of news information. Blogs have become important resources for information and the passing of political ideas to the masses. In 2010 de Zuniga, Veenstra, Vraga, and Shah sought to analyze the effects of the "blogosphere" on political participation. In a detailed study surveying 3900 people and 40-some blogs, the authors show that online political participation *does* translate into offline political participation[12]. Once again, the use of the Internet and social media was determined to be an effective way of reaching people.

In 2011 Hirzalla and Zoonen further expanded on how online political activity became offline activity by surveying 808 Dutch youth from ages 15 to 25. Like similar research, Hirzalla and Zoonen's piece in *Social Science Computer Review* entitled "Beyond the Online/Offline Divide: How Youths Online and Offline Civic Activities Converge", showed that there is a positive correlation between online political activity and offline political activity[13]. Hirzalla and Zoonen's research show that the Internet is, in fact, playing a role in political engagement. However, the question still remains as to how that online political engagement translates, if it does, into offline political activism.

Online Political Activity vs. Offline Political Activity

In a 2013, Oser, Hooghe, and Marien sought to determine whether or not there is a difference between online and offline participation. The findings determined that the Internet and social media are effective in promoting offline political participation, as well as continuing

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[12] de Zuniga, Veenstra, Vraga, Shah
[13] Hirzalla, Zoonen

to increase online participation[14]. These findings, along with previous research, help establish that online political participation can and does, in fact, translate into offline political participation. Research shows that, while it does happen, "clicktivism" and "slacktivism" are only one part of the equation when it comes to translating online political participation to offline political activity. Some may choose to click the "Like" button for a cause and do little else, but many still choose to engage in offline political activities.

Advocacy groups have taken notice of the research of the effectiveness of social media on political activities. In a research article reflecting the "Web 2.0" aspect of the Internet, Obar, Zube, and Lampe (2012) researched how advocacy groups have adapted to the usage of social media – something they call "Advocacy 2.0". They found that social media strengthens outreach efforts, enables feedback loops, strengthens collective action efforts through speed of communication, and is a cost-effective tool allowing groups to do more for less. They show how advocacy groups, including environmental organizations, may further their causes by capitalizing on social media. They also, however, discuss the downside of social media, beyond "clicktivism" or "slacktivism": there can be generational and digital literacy gaps, a lack of a singular voice/message, and the creation of weak ties instead of strong ties to organizations and cause[15].

A more recent study of how social media – or, social networking sites (SNS) for the study – impact offline political activity was undertaken by the Pew Research Center in 2012. Pew found that 60% of American adults use social media (SNS) like Facebook and Twitter. The Pew study findings indicated that large numbers of American adults engage in online political

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[14] Oser, Hooghe, Marien
[15] Obar, Zube, Lampe

activity AND offline political activity. To quote the study, "Even as online platforms have grown more prominent in political affairs, Americans' day-to-day political conversations mostly occur offline"[16]. In other words, social media has, to some extent, expanded the political conversation in the United States by providing another outlet for political activity. The Pew study provides more support to the literature and research supporting the use of social media as an effected method for increasing political activity, both online and offline.

Using Social Media for Environmental Change

As stated before, the research from the early 2000's tended to view social media and the Internet as, at best, a slightly relevant tool for political activity. The advent of Web 2.0 and the incredible growth of social media have caused a shift in that belief. More recent literature and research shows that social media and the Internet are effective tools in advancing political causes. Recent research, as with that from Pew, indicates that social media has added an entirely new aspect to political conversation in the United States. That by itself creates a topic worth greater exploration. However, for the purposes of this research piece, the focus must narrow to focus on how environmental organizations use social media – and, whether or not it is effective.

One example of how effective social media usage can influence an environmental cause is discussed in a September 2014 article by Emma Howard found in The Guardian. In a part of England, a forest was being considered for privatization and development by a local government. An environmental group called 38 Degrees (mentioned earlier) responded to the privatization plan by creating an online petition and using social media to gather signatures. The response was so overwhelming that the local government reversed their course and did not privatize the

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[16] Smith (pg. 2)

forest[17]. The use of social media to gather those signatures was an example of how online political engagement can translate to offline activity (although, online petitions do exist and are considered the norm nowadays). This is a working example of how social media and the Internet can positively impact the environment.

Another example of how social media can be used for environmental benefits comes from a study undertaken in Germany in 2014 (also mentioned earlier). Changes in climate cause different species of vegetation to expand or contract their ranges. Trees may "move" towards more favorable climate conditions – a phenomenon known as procession. Using social media data mining, Daume, Albert, and von Gadow (2012) were able to track oak tree procession in Germany. Writing in *Forest & Ecology Management*, their study showed that data mining of social media sites, like Twitter, could actually be used as a form of forest monitoring[18]. This usage of social media to track oak tree procession could be expanded to any number of areas having to do with environmental monitoring (migrations, climate changes, etc.). Their study of oak tree progression by collecting social media data shows a new aspect of Internet usage that can be used to help the environment.

How Environmental Groups Use Social Media

As discussed and shown in the literature and research above, the growth and importance of social media has begun to have a significant impact on political activism. With the dawn of "Web 2.0" the average person can become involved in almost any cause, from any place. Today's campaigns and causes depend on social media for communication and information.

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[17] Howard
[18] Daume, Albert, von Gadow

Initially doubted, the Internet and social media's presence and influence on political activity have grown at an astonishing rate. Advocacy groups have learned to capitalize on the use of social media to influence public opinion, spur on debate, and spread awareness. More recently, social media has been used for the benefit of the environment.

The 2014 midterm election cycle in the United States showed how more and more groups are effectively using social media to reach constituents and spread their messages. Virtually every form of political communication will include a Facebook site, Twitter handle, Google+ account, and an Instagram page. Environmental organizations are no different as most own and operate several social media accounts. Environmental organizations like GreenpeaceUSA, the Natural Resources Defense Council, and the Sierra Club all maintain and active presence on social media to inform their followers of important news, relevant legislation, and to raise money for their causes.

Examples discussed earlier show that using the Internet and social media for political purposes can have great benefits. Single- or narrow-issue groups, like 350.org and 38 Degrees, have used the Internet and social media incredibly effectively. However, while those organizations may capitalize on using the Internet and social media to further their agendas, how larger multi-issue environmental organizations use the Internet and social media remains to be seen. How do large, established, and well-known environmental organizations use their social media accounts? Does their use of social media translate to political engagement and, perhaps more importantly, can the level of political engagement be measured?

Research: Methodology

To better understand how certain environmental organizations use their social media accounts, the following research will look at the Facebook and Twitter accounts for ten environmental organizations. The groups chosen for focus are, for the most part, leaders in policy, conservation, and environmental awareness in the United States. Each group has a significant following on both Facebook and Twitter. Also, each organization is somewhat well known outside of the environmental movement – most Americans would recognize several of the organizations (Appendix A).

As most of the selected organizations post to their Facebook and Twitter accounts daily, often more than once, it is necessary to condense the window of research. The data collected will come from the Facebook and Twitter accounts of each organization during the days in November and December 2014 on which Congress was in session. For Facebook, all information about the post will be included in the data set: organization name, date of post, type of post, target of post, subject of post, number of "likes," and number of "shares." For Twitter, the same information is recorded except that "shares" are "retweets." Please refer to Appendix A for further information about data collection.

Using SPSS, frequencies will be run on variables from the Facebook and Twitter data sets that will be created from the collected information. Next, a cross tabulation will compare the organization to the target, topic, and type of post for both Facebook and Twitter. The subsequent information will provide an answer as to how environmental organizations use Facebook and Twitter. Determining whether or not an environmental group is using social media effectively is more challenging than simply determining the "how." Cross tabulations will, possibly, show if there are any noticeable changes in the number of likes, shares, and/or

retweets that may indicate an increase in political engagement. This question forms the basis for the following hypothesis:

In a study of environmental organizations' Facebook and Twitter pages for days in which Congress was in session during November and December 2014, those organizations that requested their followers engage in some kind of online or offline political activity achieved a greater response than those that did not.

Further data collection descriptions in Appendix B: Variables & Descriptions

Coding data in Appendix C: Coding

Analysis: Frequencies & Crosstabs (SPSS)

Analysis: Facebook Frequencies

The first set of frequencies for Facebook shows the breakdown of how many posts each organization made during the time period reviewed. There were a total of 306 Facebook posts recorded. The organizations posted between 16 and 47 times representing from 5.2% to 15.4% of posts. The average number of posts was 30.6 with the National Wildlife Federation posting the fewest (16) and the Natural Resources Defense Fund posting the most (47). With few exceptions, usually for weekends or major holidays, each organization will posted something to their Facebook account once a day.

(Table 1 about here)

The second set of frequencies for Facebook shows the statistics for the target of the post. The intended target of a post is broken down into one of seven different categories: an agency, a business, an individual, Congress, the organization's social media page followers, the Senate, or an international group or organization. The target of a post is whom the particular post is aimed at and intended to impact, influence, or inform. As with the Twitter data, the majority of Facebook posts were aimed at a group's followers: 76.8% (235 of 306). However, unlike Twitter, the intended targets of the various Facebook postings were more even (slightly, and with the exception of posts aimed at followers). Agencies accounted for 8.8% (27 of 306) postings, individuals accounted for 4.9% (15 of 306) postings, the Senate accounted for 4.9% (15 of 306) postings, and Congress accounted for 3.6% (11 of 306) postings. Businesses and international targets accounted for less than 1% of postings – 0.3% (1 of 306) and 0.7% (2 of 306), respectively.

(Table 3 about here)

The third set of frequencies for Facebook shows the various topics of each organization's posts – broken down into the following sixteen categories: carbon limits, clean energy, the Clean Power Plan, clean water, climate change, conservation, donations, fossil fuels and/or pollution, the Keystone XL pipeline, the COP 20/Lima conference, methane emissions, miscellaneous topics, policy, recreational information, social justice, and sustainability and/or energy efficiency. The statistics indicate that the most-post topic was conservation at 26.1% (80 of 306) of posts. The second most-posted was "miscellaneous" at 52 of 306 posts, or 17.0%. The miscellaneous category encompasses a wide number of content including photographs, quotes, and entertainment. The third most-Tweeted topic is the Keystone XL pipeline at 12.1% (37 of 306) of posts. The time frame during which individual cases were recorded included the Congressional votes on the Keystone XL pipeline, which would account for some of the prominence of the topic. Recreational information accounted for 10.5% or 32 of 306 posts. The remaining topics accounted for between 1.3% and 5.2% of posts.

(Table 5 about here)

The fourth set of frequencies for Facebook shows the statistics for the type of post. The type of post was determined to be one of the following types: a donation, an e-mail action (request to send an e-mail or fill out an e-mail form), an informative post (providing information over a wide range of topics), a petition, a phone action (request to call a number), a protest, or a sign-up (usually for a listserv). The results show that the majority of posts are informative (69.3% or 212 of 306) – a post that informs the reader about a various topic, but does not call for any specific action. The second highest frequency was for E-mail actions at 19.6%, or 60 of 306 posts. Petitions and donation calls were the third and fourth highest frequencies at 4.6% (14 of

306) and 4.2% (13 of 306), respectively. Sign-ups, protest/gathering calls, and phone actions were the bottom three statistics (1.3%, 0.7%, and 0.3%).

(Table 7 about here)

Analysis – Twitter Frequencies

The first set of frequencies for Twitters shows the breakdown of how many posts each organization made during the time period reviewed. There was a total of 1059 Twitter posts, or "tweets," recorded. The organizations posted between 34 and 187 times representing from 3.2% to 17.7% of posts. The average number of posts was 105.9 with the Ocean Conservancy posting the fewest (34) and the Natural Resources Defense Fund posting the most (187). With few exceptions, usually for weekends or major holidays, each organization will posted something to their Twitter account twice a day.

(Table 2 about here)

The second set of frequencies for Twitter shows the statistics for the target of the post, or "tweet." As with Facebook, the intended target of a post is broken down into one of seven different categories: an agency, a business, an individual, Congress, the organization's social media page followers, the Senate, or an international group or organization. The target of a post is whom the particular post is aimed at and intended to impact, influence, or inform. As shown in the results, an organization's Twitter followers are intended target of 92.2% of posts (976 out of 1059 posts). An agency, or agencies, and the Senate are in a distant second with 2.7% of posts (29 of 1059 posts) each. This would indicate that the vast majority of each organization's intended target for their Tweets is their own follower.

(Table 4 about here)

The third set of frequencies for Twitter shows the various topics of each organization's Tweets – broken down into the following sixteen categories: carbon limits, clean energy, the Clean Power Plan, clean water, climate change, conservation, donations, fossil fuels and/or pollution, the Keystone XL pipeline, the COP 20/Lima conference, methane emissions, miscellaneous topics, policy, recreational information, social justice, and sustainability and/or energy efficiency. The statistics indicate that the most-Tweeted topic was conservation at 18.1% (192 of 1059) of posts. The second most-Tweeted post is "miscellaneous" at 172 of 1059 posts, or 16.2%. The miscellaneous category encompasses a wide number of content including photographs, quotes, and entertainment. The third most-Tweeted topic is the Keystone XL pipeline at 13.4% (142 of 1059) of posts. The time frame during which the individual cases were recorded included the Congressional votes on the Keystone XL pipeline, which would account for some of the prominence of the topic. The statistics, overall, indicate that conservation is the most important topic for the majority of the groups researched.

(Table 6 about here)

The fourth set of frequencies for Twitter shows the statistics for the type of post. The type of post is broken down into nine categories: a donation, an e-mail action (request to send an e-mail or fill out an e-mail form), an informative post (providing information over a wide range of topics), a petition, a phone action (request to call a number), a protest, a sign-up (usually for a listserv), a survey, or a Twitter action (request to direct-Tweet or take other action via Twitter). The results show that the vast majority of posts are informative (87.1% or 922 of 1059) – a post that informs the reader about a various topic, but does not call for any specific action. E-mail actions are the second highest statistic with 6.8%, or 72 of 1059 posts. Donation calls account

for 3.5% (37 of 1059) of the remaining posts. This data indicates that the vast majority of an organization's Twitter posts are informative and do not call for any kind of action.

<div align="center">(Table 8 about here)</div>

Analysis: Facebook Crosstabs

The first crosstab for Facebook shows the target of the post (dependent variable) against the organization (independent variable). The variables were chosen as such as to better show the percentage of postings aimed at a specific target per organization. For example: Ducks Unlimited, the Nature Conservancy, and the National Wildlife Federation targeted their followers in 100% of their Facebook posts during the time period recorded. On the other hand, the League of Conservation Voters only targeted its followers 12.9% (4 of 31 posts) of the time. The other LCV targets included agencies at 16.1% (5 of 31), individuals at 29.0% (9 of 31), Congress at 29.0% (9 of 31), and the Senate at 12.9% (4 of 31) of total posts.

<div align="center">(Table 9 about here)</div>

The crosstab of "Target x Organization" is an excellent illustration of how each of the ten organizations use their Facebook pages to aim their posts at specific targets. Every organization, except for LCV, aimed their posts at their followers 50% of the time, or more. This crosstab also illustrates the targets that each organization sees as worth targeting. For example: while posts aimed at agencies only account as a target for 8.8% (27 or 306) of all posts, the Environmental Defense Fund, Greenpeace USA, League of Conservation Voters, Natural Resources Defense Council, and Ocean Conservancy each targeted agencies in over 10% of their posts (25%, 20.8%, 16.1%, 12.8%, and 15.8%, respectively). Please see the Table 7 for more information.

Overall, the crosstab comparing the target of the post against the organization indicates that an organization's followers are the primary targets of Facebook posts. Several organizations, however, do use their Facebook accounts to attempt to reach out to other targets (agencies, businesses, individuals, Congress, the Senate, or international entities). This gives some indication that several environmental organizations see Facebook as a tool to reach out to others aside from their followers. The effectiveness of this outreach would need to be researched in a separate project to determine whether or not it has any actual influence.

The second crosstab for Facebook shows the topic of the post (dependent variable) against the organization (independent variable). The variables were chosen as such to better illustrate which topics that each organization considers important. For example: Ducks Unlimited, a hunting and wetlands conservation-based organization, posted about recreational information in 61.3% of the time (19 of 31). This helps to illustrate what Ducks Unlimited cares about and wants to discuss on their Facebook page – in this case, hunting information. Other organizations chose to use their Facebook accounts to talk about a wide range of topics.

(Table 11 about here)

Posts about conservation represent the largest percentage of topics discussed on all organizations' Facebook accounts at 26.1% (80 of 306). The second most discussed topic, while not an actual topic…in a way, was "miscellaneous" items at 17% (52 of 306). The miscellaneous posts include quotations, photographs of nature or animals, or any other information not identified elsewhere. The Keystone XL Pipeline was the third most-discussed topic at 12.1% (37 of 306). The time period researched included legislative action relating to Keystone XL, which might explain why the topic was discussed more than others.

Overall, the crosstab of topic against organization indicates that conservation is the primary topic discussed by the organizations researched. Other, miscellaneous, information makes up another large portion of the topics discussed. An interesting aspect of the crosstab is that it also shows somewhat of a relationship between current events and what environmental organizations post about on Facebook. Keystone XL, the COP 20 conference in Lima, and the EPA's Clean Power Plan were all in the news cycle during the time period researched and account for a total of 19.3% of posts (59 of 306). This would indicate that environmental organizations consider current events when reaching out to their followers and others.

The third crosstab for Facebook shows the type of post (dependent variable) against the organization (independent variable). The variables were chosen as such to show what types of online, or offline, political action each organization calls for. For example: Greenpeace USA posted requests for e-mail actions in 50% of its Facebook posts (12 of 24). This type of post would direct followers to an e-mail form that would be filled out and sent to a specific agency, person, or other entity. The majority of posts were informative at 69.3% (212 of 306). This type of post would have content meant to inform the followers about a specific topic.

(Table 13 about here)

As previously mentioned, e-mail action posts are a type of post requesting followers to fill out a form that will be e-mailed by the organization. E-mail action posts represented 19.6%, or 60 of 306, of posts. The crosstab shows that some organizations use e-mail action posts more than others: EDF, Greenpeace, LCV, NRDC, Oceans, Sierra Club, and Wilderness all used e-mail actions at some point; Ducks, Nature, and the NWF did not. Other types of posts – donation calls, petitions, phone actions, protest/gathering notices, and sign-ups – were used much

less than informative and e-mail actions (informative posts and e-mail action requests account for 88.9%, or 272 of 306, of all posts).

This crosstab shows environmental organizations, for the most part, use their Facebook accounts for informative purposes. Facebook is a platform that allows for the posting of articles, as well as numerous other media, and these organizations have chosen to take advantage of that ability. Requests to take some form of e-mail action are less common, but still used in about 1/5 of posts. This indicates that most environmental organizations do see Facebook as a platform for online political engagement, but some do not choose to do so.

Analysis: Twitter Crosstabs

The first crosstab for Twitter shows the target of the "tweet" (dependent variable) against the organization (independent variable). The variables were chosen as such to better show the percentage of postings aimed at a specific target per organization. For example: each organization studied aimed between 82.4% and 100.0% of their tweets at their followers creating a 92.2% average (976 of 1059). The next two most-targeted entities are agencies and the Senate, both at 2.7% (29 of 1059). Unlike Facebook, Twitter has a 140-character limit per post (Facebook's limit is several thousand). This limit might contribute to the narrowness of targets for tweets and shows that the majority of each organization's tweets are aimed at their followers.

(Table 10 about here)

The second crosstab for Twitter shows the topic of the tweet (dependent variable) against the organization (independent variable. The variables were chosen as such to better illustrate which topics that each organization considers important. Unlike Facebook, where conservation and "miscellaneous" items formed the largest portions of topics, the Twitter data is more varied.

The percentage of tweets per topic ranges from 1.9% for social justice to 18.1% for conservation. The Keystone XL pipeline was tweeted about 142 times and accounted for 13.4% of all recorded tweets. It is important to note, however, that they Keystone XL pipeline was being discussed by Congress during the time period reviewed.

(Table 12 about here)

As with Facebook posts, the variety of topics tweeted about by each environmental organization ranges from group-to-group. All groups discuss at least four topics with Greenpeace USA, the Natural Resources Defense Council, and the Sierra Club each discussing 13 of 16 topics. In a few instances, the priorities of a specific group are clearer, for example: Ducks Unlimited primarily tweets about Conservation (38.9%) or Recreational Information (52.8%). Organizations traditionally thought of as being more "liberal," like Greenpeace USA and the Sierra Club, each tweeted about social justice issues in addition to the more environmentally oriented topics.

Overall, the crosstab of "Topic x Organization" for Twitter gives some insight into what each organization finds important, such as Ducks Unlimited and Recreational Information. However, the wide range of topics also shows that most of the researched organizations are multiple-issue groups. A few organizations tend to concentrate on a few areas, but others, as noted above, discuss a wide variety of environmental issues. Again, as stated about the target of posts, Twitter's 140-character limit might have some influence as to the topics discussed by each organization.

The third crosstab for Twitter shows the type of post (dependent variable) against the organization (independent variable). The variables were chosen as such to show what types of online, or offline, political action each organization calls for – if any. For example: the Nature

Conservancy tweeted donation calls in 19.4%, or 28 of 144, of its posts. The majority type of post, as with Facebook, is informative at 87.1% (922 of 1059). This indicates that most organizations use twitter to inform their followers about something. E-mail action followed with 6.8%, or 72 of 1059, of posts.

(Table 14 about here)

Analysis: Effectiveness of Social Media Usage

Attempting to measure the effectiveness of the environmental organizations' social media usage proved to be quite difficult. The variable for likes, shares, and retweets were "visually binned" using SPSS to create categories of quantity. Some cross tabulations seemed promising, but several problems arose:

1. The number of likes, shares, and retweets per post changes from day-to-day. Any attempt at "nailing down" a specific measurement of response would prove flawed. Several reasons for the changes include closed accounts, un-following, un-liking, deleting shared posts or retweets, and several other possible reasons.

2. The quantity of likes, shares, and retweets on any given day is not reflective of the immediate social media response to the posting. For example: many groups called for e-mail actions to contact their Congressperson to request a "no" vote on the Keystone XL pipeline. The votes occurred in November 2016 – over 15 months from the last recorded numbers. A person might have liked or shared a posting during the relevant time period, but chose to remove that action following the failure of the Keystone XL bill in Congress.

3. The number of followers for the Facebook and Twitter accounts for all ten organizations changes daily. For example: the number of followers for the National Wildlife Federation's Facebook page, as seen in Appendix A: Methodology, is 1,034,000 (recorded March 1, 2016). As of the May 1, 2016, the number of NWF's Facebook followers had increased by 59,000 to 1,093,000. Any one of those 59,000 followers could have liked, shared, and commented on a post from 2014.

4. The number of followers for the Facebook and Twitter accounts of all ten organizations ranges 218,000 to 1,114,000 for Facebook and 14,000 and 503,000 for Twitter. The vast difference in numbers of followers skews any measures when attempting to determine the level of political engagement.

5. The political ideology and kind of person following each organization would determine whether or not that person chose to respond, whether online or offline, to a social media posting. A Ducks Unlimited follower, for example, located in a part of the nation that experiences high migration numbers might be more inclined to act on a request by Ducks Unlimited than a member that is only an occasional hunter.

6. Different organizations are more active with policy and political engagement than others. Greenpeace USA has a long history of activist activities to impede and prevent activities it believes will hurt the environment. The Environmental Defense Fund, on the other hand, is sometimes considered to be an "old guard" organization that is heavily involved in litigation and legislative action[19].

A further example of how it is incredibly difficult to measure the level of political engagement inspired by a social media post is Facebook case #245. On December 8, 2014, the

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[19] Vig, Kraft

Sierra Club posted to their Facebook page an anti-fracking video narrated by actor Edward James Olmos. The video was liked 8,647 times and shared 87,912 times – placing it far and away as the most shared item recorded in any data set. Another example would be the large spike in likes when the National Wildlife Federation posts any photograph of an animal – 10,000, or more, likes compared to 500 to 2,000 for a "regular" post.

The differences in content for a post can make a huge difference in how it is received by a group's followers. Comments, when someone responds to a post on Facebook, can be counted but their content can be anything from "tagging" (attaching another person to the post) to obscenities. While a person responding to a Facebook post in the comments section would indicate a level of engagement beyond mere "slacktivism," the measure of that engagement cannot be determined because of content. Some organizations *do* keep track of the number of responses received for e-mail action or petition campaigns but, again, many of those actions remain available to the public for months at a time. A person might simply stumble upon an e-mail action request or petition through means other than social media; or, a friend could bypass social media altogether and send another person straight to the website with the e-mail action or petition form.

The problems with attempting to measure the effectiveness of social media on online or offline political engagement will be discussed further, shortly.

Discussion

Analysis of frequencies and cross tabulations from the data sets indicate that the environmental organizations surveyed use their Facebook and Twitter accounts for primarily informative purposes. The ten organizations usually target their followers instead of others. This indicates that the surveyed organizations use their social media accounts to inform their followers about various topics (usually, conservation-related). Most organizations also use their Facebook and Twitter accounts to encourage followers to engage in e-mail action campaigns intended to influence change in some area of environmental policy. However, this only accounts for about 1/5 of Facebook posts (19.6%) and a small amount of Twitter tweets (6.8%).

Again, the primary use of both Facebook and Twitter for the ten environmental organizations is informative in nature. The topic of those posts; however, vary widely – with conservation accounting for the most at 26.1% for Facebook and 18.1% for Twitter. The topic of the post also correlates with issues in the current news cycle, such as Keystone XL. For Twitter, 13.4% of tweets were related to the Keystone XL pipeline (12.1% for Facebook). Since they Keystone XL debate, at the time, temporarily ceased being of importance (it was later revived in 2015) it would make sense to assume that subsequent months would feature fewer posts about Keystone XL. Other topics, such as those relating to recreational information, would most likely feature seasonal fluctuations. Ducks Unlimited, in particular, would most likely post more information during duck season than any other time of the year.

Attempting to analyze whether or not there is a measurable increase in political engagement in relation to a social media post is complicated. While initial, flawed, cross tabulations seemed to indicate that there was an increase in political engagement corresponding to an organization requesting some kind of political action, the results could not possibly be

accurate. Each organization, while all making conservation a main focus of their content, also maintains different levels of political engagement. Greenpeace USA, for example, is (generally) considered to be a more activist organization – staging rallies and protests. On the other end, organizations like the Nature Conservancy do not request actions aside from donations and for followers to join their listserv.

Conclusion

How Environmental Organizations Use Social Media

The ten large, established, and well-known environmental organizations researched all use Facebook and Twitter. The primary use for all organizations is to inform followers about a wide range of topics – though, usually conservation or miscellaneous information. Those topics, however, are dependent upon the current issues of the time and relevance to the organization. Almost all groups do request followers to engage in email actions that support various environmental policy platforms of individual organizations.

Further research, using greater resources, would create a more complete picture of how environmental organizations use their social media accounts. There are, in fact, numerous other platforms that were not part of the research discussed above: Instagram, tumblr, YouTube, Google+, and dozens of others. Several of the researched organizations maintain social media accounts on at least one photo-sharing platform (Instagram, tumbrl, etc.). The Sierra Club, for example, maintains social media accounts on Facebook and Twitter; but, also, Google+, Instagram, YouTube, and LinkedIn. The social media presence of some of the discussed organizations is massive and it would take a great deal of time, resources, and computing power to account for all aspects of each different account.

Do the Social Media Accounts of Environmental Organizations Influence Political Engagement?

Once again, this question is difficult – if not impossible – to answer. Scholars are still just beginning to attempt to research the more significant aspects of political engagement and social media. Further resources and time must be committed to researching whether or not environmental organizations, let alone political organizations, are able to measurably increase political engagement through their social media accounts. The data is all out there and available, but technology might need to catch up. For example, tracking the shares of a particular Facebook post would have to be an ongoing process. The numerous factors, mentioned earlier, that could change the number of shares from day-to-day would be extremely tedious to follow without the aid of a computer algorithm/program.

Personally, I believe that it would be possible to account for all of the fluctuations that could occur with an individual Facebook post, and allow that post to be compared with those of other organizations. Such an undertaking would need to include the following information:

1. An ability to track likes, shares, comments, and other information in real-time from the moment an organization posts on their account.

2. A formula that creates a ratio for comparing groups of different sizes.

3. Some ways to scan and track the comments associated with a particular post, and discard the pointless and/or obscene comments.

4. Access to organizations' information/databases that disclose how many followers engage in any given action online, or offline.

5. Surveys to determine which followers access different parts of the organizations' websites through social media accounts, and those that go straight to the website.

6. And, any number of other aspects not thought of in the above points.

As the Internet and social media continues to become a larger and larger part of the daily lives of Americans, and others around the world, it will be increasingly important to understand how the Internet and social media influence political engagement. There have already been several instances where the Internet and social media sites were used to bring people together for demonstrations, celebrations, and other political activities. However, the widespread use of social media by environmental organizations – specifically, those groups that work with more than one issue – needs further study.

References

Anduiza, E., M. Jensen, and L. Jorba, eds. (2012). *Digital Media and Political Engagement Worldwide: A Comparative Study.* New York: Cambridge University Press.

Bimber, B. (2001). "Information and Political Engagement in America: The Search for Effects of Information Technology at the Individual Level." *Political Research Quarterly* 54 (1): 53-67. Retrieved from http://search.proquest.com/docview/215317087?accountid=26406.

Boulianne, S. (2009). "Does Internet Use Affect Engagement? A Meta-Analysis of Research." *Political Communication* 26 (2): 193-211.

Daume, S., Albert, M., and von Gadow, K. (2014). "Forest Monitoring and Social Media – Complementary Data Sources for Ecosystem Surveillance?" *Forest & Ecology Management* 316 (March): 9-20.

de Zuniga, H. G., Veenstra, A., Vraga, E., & Shah, D. (2010). Digital Democracy: Reimagining Pathways to Political Participation. *Journal of Information Technology & Politics.* 7(1): 36-51. Doi: 10.1080/19331680903316742.

Gibson, R., & Cantijoch, M. (2013). Conceptualizing and Measuring Participation in the Age of the Internet: Is Online Political Engagement Really Different to Offline?. *Journal Of Politics*. 75(3). 701-716. doi: 10.1017/S0022381613000431.

Gibson, R. K., Lusoli, W., & Ward, S. (2005). Online Participation in the UK: Testing a 'Contextualized' Model of Internet Effects. *British Journal of Politics & International Relations*, 7(4): 561-583. doi:10.1111/j.1467-856X.205.00209.x.

Hirzalla, F. & Zoonen, L. v. (2011). Beyond the Online/Offline Divide: How Youth's Online and Offline Civic Activities Converge. *Social Science Computer Review*. 29(4). 481-498. doi: 10.1177/0894439310385538.

Howard, E. (2014, Sep 24). Society: How 'clicktivism' has changed the face of political campaigns: Organisations such as change.org and 38 degrees are putting online activism centre stage. but are they engagement-lite? *The Guardian* Retrieved from http://search.proquest.com/docview/1564396835?accountid=26406.

Jensen. M. J., Danziger, J. N., & Venkatesh, A. (2007). Civil Society and Cyber Society: The Role of the Internet in Community Associations and Democratic Politics. *Information Society*. 23(1). 39-50. doi: 10.1080/01972240601057528.

Kruger, B. S. (2002). Assessing the Potential of Internet Political Participation in the United States: A Resource Approach. *American Politics Research.* 30(5). 476.

Kutner, L. A. (2000). Environmental Activism and the Internet. *Electronic Green Journal.* N.PAG.

Obar, J. A., Zube, P., & Lampe, C. (2012). *Advocacy 2.0: An analysis of how advocacy groups in the united states perceive and use social media as tools for facilitating civic engagement and collective action*. Rochester: Social Science Research Network. doi:http://dx.doi.org/10.2139/ssrn.1956352.

Oser, J., Hooghe, M., & Marien, S. (2013). Is online participation distinct from offline participation? A latent class analysis of participation types and their stratification. *Political Research Quarterly, 66*(1), 91-101. Retrieved from http://search.proquest.com/docview/1445174636?accountid=26406.

Smith, Aaron. "Civic Engagement in the Digital Age." April 25, 2013. Pew Research Center. http://www.pewinternet.org/2013/04/25/civic-engagement-in-the-digital-age/.

Štětka, V., & Mazák (2014). Whither slacktivism? Political engagement and social media use in the 2013 Czech Parliamentary elections. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 8(3), article 7. doi: 10.5817/CP2014-3-7.

Vig, N.J., & Kraft, M.E. (2016. *Environmental Policy: New Directions for the Twenty-first Century* (9th ed.). Thousand Oaks, CA: CQ Press.

Tables

Table 1: Facebook Frequencies for Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
	Organization (Facebook)				
Valid	Ducks Unlimited	31	10.1	10.1	10.1
	EDF	32	10.5	10.5	20.6
	Greenpeace	24	7.8	7.8	28.4
	LCV	31	10.1	10.1	38.6
	Nature	37	12.1	12.1	50.7
	NRDC	47	15.4	15.4	66.0
	NWF	16	5.2	5.2	71.2
	Oceans	19	6.2	6.2	77.5
	Sierra Club	27	8.8	8.8	86.3
	Wilderness	42	13.7	13.7	100.0
	Total	306	100.0	100.0	

Table 2: Twitter Frequencies for Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
	Organization (Organization)				
Valid	Ducks Unlimited	36	3.4	3.4	3.4
	EDF	70	6.6	6.6	10.0
	Greenpeace	116	11.0	11.0	21.0
	LCV	57	5.4	5.4	26.3
	Nature	144	13.6	13.6	39.9
	NRDC	187	17.7	17.7	57.6
	NWF	96	9.1	9.1	66.7
	Oceans	34	3.2	3.2	69.9
	Sierra Club	173	16.3	16.3	86.2
	Wilderness	146	13.8	13.8	100.0
	Total	1059	100.0	100.0	

Table 3: Facebook Frequencies for Target

Target (Facebook)				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agencies	27	8.8	8.8	8.8
	Business	1	.3	.3	9.2
	Individual	15	4.9	4.9	14.1
	Congress	11	3.6	3.6	17.6
	Followers	235	76.8	76.8	94.4
	Senate	15	4.9	4.9	99.3
	International	2	.7	.7	100.0
	Total	306	100.0	100.0	

Table 4: Twitter Frequencies for Target

Target (Twitter)				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agency	29	2.7	2.7	2.7
	Business	6	.6	.6	3.3
	Individual	9	.8	.8	4.2
	Congress	5	.5	.5	4.6
	Followers	976	92.2	92.2	96.8
	Senate	29	2.7	2.7	99.5
	International	5	.5	.5	100.0
	Total	1059	100.0	100.0	

Table 5: Facebook Frequencies for Topic

		Frequency	Percent	Valid Percent	Cumulative Percent
	Topic (Facebook)				
Valid	Carbon Limits	9	2.9	2.9	2.9
	Clean Energy	7	2.3	2.3	5.2
	Clean Power Plan	16	5.2	5.2	10.5
	Clean Water	4	1.3	1.3	11.8
	Climate Change	13	4.2	4.2	16.0
	Conservation	80	26.1	26.1	42.2
	Donations	12	3.9	3.9	46.1
	Fossil Fuels/Pollution	12	3.9	3.9	50.0
	Keystone XL	37	12.1	12.1	62.1
	COP 20 - Lima	6	2.0	2.0	64.1
	Methane	6	2.0	2.0	66.0
	Miscellaneous	52	17.0	17.0	83.0
	Policy	4	1.3	1.3	84.3
	Recreational Info	32	10.5	10.5	94.8
	Social Justice	4	1.3	1.3	96.1
	Sustainability/EE	12	3.9	3.9	100.0
	Total	306	100.0	100.0	

Table 6: Twitter Frequencies for Topic

		Frequency	Percent	Valid Percent	Cumulative Percent
	Topic (Twitter)				
Valid	Carbon Limits	43	4.1	4.1	4.1
	Clean Energy	49	4.6	4.6	8.7
	Clean Power Plan	27	2.5	2.5	11.2
	Clean Water	40	3.8	3.8	15.0
	Climate Change	78	7.4	7.4	22.4
	Conservation	192	18.1	18.1	40.5
	Donations	38	3.6	3.6	44.1
	Fossil Fuels/Pollution	53	5.0	5.0	49.1
	Keystone XL	142	13.4	13.4	62.5
	COP 20 - Lima	47	4.4	4.4	66.9
	Methane	15	1.4	1.4	68.4
	Miscellaneous	172	16.2	16.2	84.6
	Policy	48	4.5	4.5	89.1
	Recreational Info	51	4.8	4.8	94.0
	Social Justice	20	1.9	1.9	95.8
	Sustainability/EE	44	4.2	4.2	100.0
	Total	1059	100.0	100.0	

Table 7: Facebook Frequencies for Type

Type (Facebook)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Donation	13	4.2	4.2	4.2
	E-mail Action	60	19.6	19.6	23.9
	Informative	212	69.3	69.3	93.1
	Petition	14	4.6	4.6	97.7
	Phone Action	1	.3	.3	98.0
	Protest	2	.7	.7	98.7
	Sign Up	4	1.3	1.3	100.0
	Total	306	100.0	100.0	

Table 8: Twitter Frequencies for Type

Type of Post					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Donation	37	3.5	3.5	3.5
	E-mail Action	72	6.8	6.8	10.3
	Informative	922	87.1	87.1	97.4
	Petition	7	.7	.7	98.0
	Phone Action	1	.1	.1	98.1
	Protest	3	.3	.3	98.4
	Sign Up	6	.6	.6	99.0
	Survey	1	.1	.1	99.1
	Twitter Action	10	.9	.9	100.0
	Total	1059	100.0	100.0	

Table 9: Facebook Crosstab of Target x Organization

Target x Organization Crosstab (Facebook)			Organization										Total
			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Oceans	Sierra Club	Wilderness	
Target	Agencies	N	0	8	5	5	0	6	0	3	0	0	27
		%	0.0%	25.0%	20.8%	16.1%	0.0%	12.8%	0.0%	15.8%	0.0%	0.0%	8.8%
	Business	N	0	0	1	0	0	0	0	0	0	0	1
		%	0.0%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
	Individual	N	0	0	5	9	0	0	0	0	1	0	15
		%	0.0%	0.0%	20.8%	29.0%	0.0%	0.0%	0.0%	0.0%	3.7%	0.0%	4.9%
	Congress	N	0	0	0	9	0	0	0	0	0	2	11
		%	0.0%	0.0%	0.0%	29.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	3.6%
	Followers	N	31	24	12	4	37	31	16	15	25	40	235
		%	100.0%	75.0%	50.0%	12.9%	100.0%	66.0%	100.0%	78.9%	92.6%	95.2%	76.8%
	Senate	N	0	0	1	4	0	9	0	0	1	0	15
		%	0.0%	0.0%	4.2%	12.9%	0.0%	19.1%	0.0%	0.0%	3.7%	0.0%	4.9%
	International	N	0	0	0	0	0	1	0	1	0	0	2
		%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%	5.3%	0.0%	0.0%	0.7%
Total		N	31	32	24	31	37	47	16	19	27	42	306
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 10: Twitter Crosstab of Target x Organization

Target x Organization Crosstab (Twitter)			Organization										Total
			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Oceans	Sierra Club	Wilderness	
Target	Agency	N	0	3	6	5	0	11	3	0	0	1	29
		%	0.0%	4.3%	5.2%	8.8%	0.0%	5.9%	3.1%	0.0%	0.0%	0.7%	2.7%
	Business	N	0	0	6	0	0	0	0	0	0	0	6
		%	0.0%	0.0%	5.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%
	Individual	N	0	0	2	0	1	4	0	0	2	0	9
		%	0.0%	0.0%	1.7%	0.0%	0.7%	2.1%	0.0%	0.0%	1.2%	0.0%	0.8%
	Congress	N	0	1	0	0	0	1	0	0	1	2	5
		%	0.0%	1.4%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.6%	1.4%	0.5%
	Followers	N	36	66	98	48	143	154	93	34	165	139	976
		%	100.0%	94.3%	84.5%	84.2%	99.3%	82.4%	96.9%	100.0%	95.4%	95.2%	92.2%
	Senate	N	0	0	1	4	0	15	0	0	5	4	29
		%	0.0%	0.0%	0.9%	7.0%	0.0%	8.0%	0.0%	0.0%	2.9%	2.7%	2.7%
	International	N	0	0	3	0	0	2	0	0	0	0	5
		%	0.0%	0.0%	2.6%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.5%
Total		N	36	70	116	57	144	187	96	34	173	146	1059
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 11: Facebook Crosstab of Topic x Organization

			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Ocean	Sierra Club	Wilderness	Total
			Topic x Organization Crosstab (Facebook)				Organization						
Topic	Carbon Limits	N	0	3	0	2	0	3	0	0	1	0	9
		%	0.0%	9.4%	0.0%	6.5%	0.0%	6.4%	0.0%	0.0%	3.7%	0.0%	2.9%
	Clean Energy	N	0	4	2	0	0	0	0	0	1	0	7
		%	0.0%	12.5%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%	0.0%	2.3%
	Clean Power Plan	N	0	5	0	4	0	7	0	0	0	0	16
		%	0.0%	15.6%	0.0%	12.9%	0.0%	14.9%	0.0%	0.0%	0.0%	0.0%	5.2%
	Clean Water	N	0	0	0	2	2	0	0	0	0	0	4
		%	0.0%	0.0%	0.0%	6.5%	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%
	Climate Change	N	0	6	1	1	1	1	0	0	3	0	13
		%	0.0%	18.8%	4.2%	3.2%	2.7%	2.1%	0.0%	0.0%	11.1%	0.0%	4.2%
	Conservation	N	8	2	13	3	16	6	11	6	2	13	80
		%	25.8%	6.3%	54.2%	9.7%	43.2%	12.8%	68.8%	31.6%	7.4%	31.0%	26.1%
	Donations	N	2	0	1	0	4	0	0	1	1	3	12
		%	6.5%	0.0%	4.2%	0.0%	10.8%	0.0%	0.0%	5.3%	3.7%	7.1%	3.9%
	Fossil Fuels/Pollution	N	0	4	0	0	0	1	0	3	3	1	12
		%	0.0%	12.5%	0.0%	0.0%	0.0%	2.1%	0.0%	15.8%	11.1%	2.4%	3.9%
	Keystone XL	N	0	0	3	15	0	13	0	0	6	0	37
		%	0.0%	0.0%	12.5%	48.4%	0.0%	27.7%	0.0%	0.0%	22.2%	0.0%	12.1%
	COP 20 - Lima	N	0	1	1	1	1	2	0	0	0	0	6
		%	0.0%	3.1%	4.2%	3.2%	2.7%	4.3%	0.0%	0.0%	0.0%	0.0%	2.0%
	Methane	N	0	6	0	0	0	0	0	0	0	0	6
		%	0.0%	18.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%
	Miscellaneous	N	2	0	0	2	11	7	4	7	7	12	52
		%	6.5%	0.0%	0.0%	6.5%	29.7%	14.9%	25.0%	36.8%	25.9%	28.6%	17.0%
	Policy	N	0	0	0	1	0	1	0	0	0	2	4
		%	0.0%	0.0%	0.0%	3.2%	0.0%	2.1%	0.0%	0.0%	0.0%	4.8%	1.3%
	Recreational Info	N	19	0	0	0	2	0	0	0	0	11	32
		%	61.3%	0.0%	0.0%	0.0%	5.4%	0.0%	0.0%	0.0%	0.0%	26.2%	10.5%
	Social Justice	N	0	0	1	0	0	1	0	0	2	0	4
		%	0.0%	0.0%	4.2%	0.0%	0.0%	2.1%	0.0%	0.0%	7.4%	0.0%	1.3%
	Sustainability/EE	N	0	1	2	0	0	5	1	2	1	0	12
		%	0.0%	3.1%	8.3%	0.0%	0.0%	10.6%	6.3%	10.5%	3.7%	0.0%	3.9%
Total		N	31	32	24	31	37	47	16	19	27	42	306
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 12: Facebook Crosstab of Topic x Organization

			Organization										Total
			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Oceans	Sierra Club	Wilderness	
Topic	Carbon Limits	N	0	8	2	7	0	19	1	1	5	0	43
		%	0.0%	11.4%	1.7%	12.3%	0.0%	10.2%	1.0%	2.9%	2.9%	0.0%	4.1%
	Clean Energy	N	0	5	9	0	1	4	0	0	30	0	49
		%	0.0%	7.1%	7.8%	0.0%	0.7%	2.1%	0.0%	0.0%	17.3%	0.0%	4.6%
	Clean Power Plan	N	0	5	0	3	0	10	1	0	8	0	27
		%	0.0%	7.1%	0.0%	5.3%	0.0%	5.3%	1.0%	0.0%	4.6%	0.0%	2.5%
	Clean Water	N	0	0	0	5	31	4	0	0	0	0	40
		%	0.0%	0.0%	0.0%	8.8%	21.5%	2.1%	0.0%	0.0%	0.0%	0.0%	3.8%
	Climate Change	N	0	7	22	4	4	17	5	5	9	5	78
		%	0.0%	10.0%	19.0%	7.0%	2.8%	9.1%	5.2%	14.7%	5.2%	3.4%	7.4%
	Conservation	N	14	7	17	11	25	22	51	8	12	25	192
		%	38.9%	10.0%	14.7%	19.3%	17.4%	11.8%	53.1%	23.5%	6.9%	17.1%	18.1%
	Donations	N	1	2	2	0	29	0	1	1	1	1	38
		%	2.8%	2.9%	1.7%	0.0%	20.1%	0.0%	1.0%	2.9%	0.6%	0.7%	3.6%
	Fossil Fuels/Pollution	N	0	2	4	1	0	17	1	3	24	1	53
		%	0.0%	2.9%	3.4%	1.8%	0.0%	9.1%	1.0%	8.8%	13.9%	0.7%	5.0%
	Keystone XL	N	0	2	8	23	0	48	2	0	59	0	142
		%	0.0%	2.9%	6.9%	40.4%	0.0%	25.7%	2.1%	0.0%	34.1%	0.0%	13.4%
	COP 20-Lima	N	0	4	1	0	24	15	0	0	3	0	47
		%	0.0%	5.7%	0.9%	0.0%	16.7%	8.0%	0.0%	0.0%	1.7%	0.0%	4.4%
	Methane	N	0	13	1	1	0	0	0	0	0	0	15
		%	0.0%	18.6%	0.9%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
	Miscellaneous	N	2	0	14	1	30	9	27	15	3	71	172
		%	5.6%	0.0%	12.1%	1.8%	20.8%	4.8%	28.1%	44.1%	1.7%	48.6%	16.2%
	Policy	N	0	8	2	1	0	12	4	1	9	11	48
		%	0.0%	11.4%	1.7%	1.8%	0.0%	6.4%	4.2%	2.9%	5.2%	7.5%	4.5%
	Recreational Info	N	19	0	0	0	0	0	0	0	0	32	51
		%	52.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.9%	4.8%
	Social Justice	N	0	0	7	0	0	6	0	0	7	0	20
		%	0.0%	0.0%	6.0%	0.0%	0.0%	3.2%	0.0%	0.0%	4.0%	0.0%	1.9%
	Sustainability/EE	N	0	7	27	0	0	4	3	0	3	0	44
		%	0.0%	10.0%	23.3%	0.0%	0.0%	2.1%	3.1%	0.0%	1.7%	0.0%	4.2%
Total		N	36	70	116	57	144	187	96	34	173	146	1059
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13: Facebook Crosstab of Type x Organization

Type x Organization Crosstab (Facebook)

			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Oceans	Sierra Club	Wilderness	Total
Type	Donation	N	2	0	1	1	4	0	0	1	1	3	13
		%	6.5%	0.0%	4.2%	3.2%	10.8%	0.0%	0.0%	5.3%	3.7%	7.1%	4.2%
	E-mail Action	N	0	8	12	23	0	10	0	3	2	2	60
		%	0.0%	25.0%	50.0%	74.2%	0.0%	21.3%	0.0%	15.8%	7.4%	4.8%	19.6%
	Informative	N	29	23	8	1	32	30	15	14	24	36	212
		%	93.5%	71.9%	33.3%	3.2%	86.5%	63.8%	93.8%	73.7%	88.9%	85.7%	69.3%
	Petition	N	0	0	1	5	0	6	1	1	0	0	14
		%	0.0%	0.0%	4.2%	16.1%	0.0%	12.8%	6.3%	5.3%	0.0%	0.0%	4.6%
	Phone Action	N	0	0	1	0	0	0	0	0	0	0	1
		%	0.0%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
	Protest/Gathering	N	0	0	1	0	0	0	0	0	0	1	2
		%	0.0%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.7%
	Sign Up	N	0	1	0	1	1	1	0	0	0	0	4
		%	0.0%	3.1%	0.0%	3.2%	2.7%	2.1%	0.0%	0.0%	0.0%	0.0%	1.3%
Total		N	31	32	24	31	37	47	16	19	27	42	306
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14: Twitter Crosstab of Type x Organization

Type x Organization Crosstab (Twitter)

			Ducks	EDF	Greenpeace	LCV	Nature	NRDC	NWF	Oceans	Sierra Club	Wilderness	Total
Type	Donation	N	1	2	2	0	28	0	1	1	1	1	37
		%	2.8%	2.9%	1.7%	0.0%	19.4%	0.0%	1.0%	2.9%	0.6%	0.7%	3.5%
	E-mail Action	N	0	5	17	5	1	27	3	0	7	7	72
		%	0.0%	7.1%	14.7%	8.8%	0.7%	14.4%	3.1%	0.0%	4.0%	4.8%	6.8%
	Informative	N	35	63	92	47	111	153	89	33	161	138	922
		%	97.2%	90.0%	79.3%	82.5%	77.1%	81.8%	92.7%	97.1%	93.1%	94.5%	87.1%
	Petition	N	0	0	0	5	0	2	0	0	0	0	7
		%	0.0%	0.0%	0.0%	8.8%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.7%
	Phone Action	N	0	0	1	0	0	0	0	0	0	0	1
		%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
	Protest	N	0	0	3	0	0	0	0	0	0	0	3
		%	0.0%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
	Sign Up	N	0	0	0	0	1	2	3	0	0	0	6
		%	0.0%	0.0%	0.0%	0.0%	0.7%	1.1%	3.1%	0.0%	0.0%	0.0%	0.6%
	Survey	N	0	0	0	0	1	0	0	0	0	0	1
		%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
	Twitter Action	N	0	0	1	0	2	3	0	0	4	0	10
		%	0.0%	0.0%	0.9%	0.0%	1.4%	1.6%	0.0%	0.0%	2.3%	0.0%	0.9%
Total		N	36	70	116	57	144	187	96	34	173	146	1059
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 15: Organizations Surveyed

Group	Facebook Followers	Twitter Followers
Ducks Unlimited	1,114,000	108,000
Environmental Defense Fund	218,000	117,000
Greenpeace USA	462,000	155,000
League of Conservation Voters	249,000	14,000
Natural Resources Defense Council	559,000	190,000
National Wildlife Federation	1,034,000	394,000
The Nature Conservancy	835,000	503,000
The Ocean Conservancy	656,000	162,000
Sierra Club	510,000	185,000
The Wilderness Society	468,000	73,000

(Followers rounded up or down to the nearest 1,000 and updated 3/1/16)

Table 16: Sample of Facebook Data Collection & Coding:

Group	Date	Content	Target	Likes	Shares	Comments	Other
Ducks Unlimited	12/16/14	Informative	Followers	1174	41	5	Gulf Coast Initiative
1	12/16/14	3	5	1174	41	5	N/A

(excluding case number)

Table 17: Sample of Twitter Data Collection & Coding:

Group	Date	Type	Target	Retweets	Likes	Topic	Other Info
Ducks Unlimited	12/16/14	Informative	Followers	14	10	Conservation	Electronic duck stamp bill to president for signature
1	12/16/14	3	5	14	10	6	N/A

(excluding case number)

Appendix A: Methodology

Unit of Analysis

The unit of analysis for my thesis is: "The postings by ten different environmental-related organizations on Facebook and Twitter during November and December of 2014 on dates in which Congress was in session." These dates include November 12-14, November 17-20, December 1-4, December 8-12, and December 16. I chose this short time span, a total of 17 days, to confine my research and data collection to a finite area; and, to limit the total number of postings to a manageable number (for example, many organizations post 2-3 times a day on Facebook and as many as 4-5 times a day on Twitter). I chose to review postings for days on which Congress was in session under the assumption that organizations would be more likely to make calls for political action of some kind if members of Congress were in their offices.

Groups of Focus

The groups chosen for focus are, for the most part, leaders in policy, conservation, and environmental awareness in the United States. Each group has a significant following on both Facebook and Twitter. One group, however, will stick out among the other groups: Ducks Unlimited. Ducks Unlimited (DU) is an organization that represents water foul hunters around the U.S., but also leads in the conservation of wetland areas and the education of its members on good custodianship of the environment.

(Table 15 about here)

Collection of Data – Twitter

For the collection of data related to Twitter postings, I used Twitter's "Advance Search" to identify "Tweets" occurring on the days being researched. I recorded the organization making the posting, the date of the posting, the type of post, the intended target of the post, the number of "retweets," the number of "likes," and the topic discussed. Initially, I recorded a short description of the content of the post to help me determine a topic at a later date. I recorded the previously listed aspects of 1,059 Tweets from the ten groups of focus before coding them accordingly.

An example of how a "Tweet" would be recorded into my data set for Twitter is as follows: The Nature Conservancy (group) "Tweeted" on 12/1/14 (date) information about how to donate to the organization (type) to its followers (target). The "Tweet" was "Retweeted" 17 times ("Retweets") and "Liked" by 11 followers ("Likes"). This tweet contained donation information (topic) and was the 645th post recorded in the data set (post).

(Table 16 about here)

Collection of Data – Facebook

For the collection of data related to Facebook postings, I went to each organization's Facebook page and then selected "2014" from the quasi-side bar on the right hand of the page. I then selected "All Stories" from the dropdown menu next to "2014" over the first post to show all postings, rather than the "Highlights" of the year. I recorded the organization making the posting, the date of the posting, the type of post, the intended target of the post, the number of "likes," the number of "shares," the number of "tags," and the topic discussed. As with the Twitter posts, I initially recorded a short description of the post to help me determine topic later on. I recorded the previously listed aspects of 306 Facebook posts from the ten groups of focus before coding them accordingly. Unlike Twitter, however, Facebook added two separate points of measure: comments and tags. Comments were recorded as the number of contents per posting, sometimes requiring an individual counting posts. Tags will be further defined later, but were the number of instances where another individual was "Tagged" by a commenter in the comment section.

An example of how a Facebook post would be recorded into my data set for Facebook is as follows: The Sierra Club (group) posted on 11/19/14 (date) a "Thank You" for the support (type) of its followers (target). The post was "Liked" by 2,473 times ("Likes"), shared 405 times (shares), commented upon 40 times (comments), and there were no tags (tags). The post contained a photograph and a simple "Thank You" to the followers (topic – miscellaneous) and was the 257th post recorded in the data set (post).

(Table 17 about here)

Appendix B: Variable Descriptions (Target, Topic, Type)

The following tables include descriptions of each aspect of the variables Target, Topic, and Type. Examples are given that reference the respective data set.

Description of Targets	
Target	**Description**
Agencies	The post's intended audience, beyond followers, was a government agency of some kind. Example: TW #5147 is an e-mail action request by the National Wildlife Federation for followers to fill out a pre-written from that would be e-mailed to the EPA (target) to request support for the Clean Power Plan.
Business	The post's intended audience, beyond followers, was a business of some kind. Example: TW #197 is a request for "Direct Tweets" by Greenpeace USA followers aimed at Amazon (target) to encourage Amazon to use sustainable business practices.
Individual	The post's intended audience, beyond followers, was an individual. Example: FB #264 is an e-mail action aimed at President Obama (target) by the Sierra Club thanking him for his environmental efforts.
Congress	The post's intended audience, beyond followers, is one or both houses of Congress. Example: TW #892 is a Sierra Club e-mail action request aimed at Congress (target) to tell them to stop fast-tracking TPP (the Trans-Pacific Partnership).
Followers	The post's intended audience is the group's followers. Example: TW #706 is a survey request by the Nature Conservancy asking the followers (target) to give feedback on Nature Conservancy projects.
Senate	The post's intended audience, beyond followers, is the U.S. Senate or an individual Senator. Example: FB #83 is a request for followers to call their Senators (target) and request a "No" vote on the Keystone XL pipeline by Greenpeace USA (Senate switchboard number included in post).
International	The post's intended audience, beyond followers, is an international government (government other than that of the United States) or international organization (such as Greenpeace Australia). Example: FB # 228 is a call by the Ocean Conservancy to its followers to sign a petition aimed at the government of Mexico (target) to protect the Vaquita Porpoise.

Description of Topics	
Topic	**Definition**
Carbon Limits	The post discussed carbon limits in one form or another.
Clean Energy	The post discussed clean energy such as solar, wind, geothermal, or hydroelectric.
Clean Power Plan	The post specifically referenced the EPA's Clean Power Plan.
Clean Water	The post discussed clean water and/or the Clean Water Act.
Climate Change	The post discussed climate change/global warming in one form or another with climate change/global warming and its consequences as the main point.
Conservation	The post discussed conservation in one form or another (protection of habitats, setting aside of lands, efforts to protect species, etc)
Donations	The post discussed donation calls.
Fossil Fuels/Pollution	The post discussed fossil fuels and or pollution in a somewhat broad sense (the dangers of fracking or the polluting the oceans).
Keystone XL	The post directly discussed the Keystone XL pipeline.

COP 20 – Lima	The post discussed events and aspects of the 2014 COP 20 conference in Lima, Peru.
Methane	The post discussed methane emissions.
Miscellaneous	The post discussed a topic otherwise not identified in by the other topic designations (photographs, quotes, etc.)
Policy	The post discussed aspects of national policy that were supported by the organization but not necessarily centered on one specific topic.
Recreational Info	The post contained recreational information for the group's followers.
Social Justice	The post discussed social justice in one form or another.
Sustainability/Energy Efficiency	The post discussed aspects of sustainability and/or energy efficiency. These postings were often centered on "green living" articles.

Description of Types	
Type	Description
Donation	The post made a request for some sort of donation to the group. Example: FB #75 is a donation call by Greenpeace USA for donations to honor a loved one.
E-mail Action	The post requested that followers click on a link that would take them to a pre-written form. This form would be sent via e-mail to a specific target as a request to undertake or forgo a specific action. Example: TW #5147 is an e-mail action request by the National Wildlife Federation for followers to fill out a pre-written from that would be e-mailed to the EPA (target) to request support for the Clean Power Plan.
Informative	The post informed followers of some kind of information that the group wished to pass on, but not necessarily take any action upon that information. Example: TW #771 is an informative video from the Sierra Club describing the dangers of Fracking entitled "Fracking 101."
Petition	The post requested that followers sign a petition aimed at a specific entity, such as Congress or an agency. Example: FB # 228 is a call by the Ocean Conservancy to its followers to sign a petition aimed at the government of Mexico to protect the Vaquita Porpoise.
Phone Action	The post requested that followers make a phone call to a specific organization or person (such as a Senator). Example: FB #83 is a request for followers to call their Senator and request a "No" vote on the Keystone XL pipeline by Greenpeace USA (Senate switchboard number included in post).
Protest	The post requested that followers attend protests and/or gatherings for a specific cause. Example: FB #72 is a request by Greenpeace USA for followers to attend protests in support of the Black Lives Matter movement on a specific date.
Sign Up	The post requested that followers sign up for a mailing list or some other cause related to the group or the group's mission. Example: TW #368 is an NRDC "Tweet" aimed at having followers sign up to receive free seeds native to the State of Illinois for conservation purposes.
Survey	(Twitter Data Set Only) The post requested followers to participate in an online survey. Example: TW #706 is a survey request by the Nature Conservancy asking the followers to give feedback on Nature Conservancy projects.
Twitter Action	(Twitter Data Set Only) The post requested followers to "Retweet" "@" a specific organization or business for a specific cause. Example: TW #197 is a request for "Direct Tweets" by Greenpeace USA followers aimed at Amazon to encourage Amazon to use sustainable business practices.

Appendix C: SPSS Coding

The following is the SPSS coding for the created data sets.

Group Name			
Item	**Code**	**Item**	**Code**
Ducks Unlimited	1	Natural Resources Defense Fund (NRDC)	6
Environmental Defense Fund (EDF)	2	National Wildlife Federation (NWF)	7
Greenpeace USA	3	Ocean Conservancy	8
League of Conservation Voters (LCV)	4	Sierra Club	9
Nature Conservancy	5	Wilderness Society	10

Type of Post			
Item	**Code**	**Item**	**Code**
Donation Call	1	Protest/Gathering	6
E-mail Action	2	Sign-Up	7
Informative	3	**Twitter Only**	
Petition	4	Survey	8
Phone Call Action	5	Twitter Action	9

Target of Post			
Item	**Code**	**Item**	**Code**
Agencies	1	Followers	5
Business	2	Senate	6
Individual	3	International	7
Congress	4		

Topic of Post			
Item	**Code**	**Item**	**Code**
Carbon Limits	1	Keystone XL Pipeline	9
Clean Energy	2	COP 20 – Lima	10
Clean Power Plan	3	Methane Emissions	11
Clean Water/CWA	4	Miscellaneous	12
Climate Change/Global Warming	5	Policy	13
Conservation	6	Recreational Information	14
Donations	7	Social Justice	15
Fossil Fuels/Pollution	8	Sustainability/Energy Efficiency	16