

EFFECTS OF THE GULF OIL SPILL IN ESCAMBIA COUNTY, FLORIDA

By

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To my girls

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LIST OF TERMS

ANXIETY:	Negative affective state characterized by fear and somatic responses to fear (Lovibond & Lovibond, 1995).
CLAIM MONEY:	Money individuals and businesses could apply to receive to compensate for financial loss due to the Gulf Oil Spill (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011).
CONSERVATION OF RESOURCES THEORY:	Hobfoll's theory that individuals seek gain and avoid loss, and that if an individual loses (or is threatened with loss of) resources, that individual will experience psychological stress (Hobfoll 1988, 1989, 2012).
DEPRESSION:	Negative affective state characterized by loss of self-esteem and incentive (Lovibond & Lovibond, 1995).
ECONOMIC STRESSORS:	Negative financial and economic events, including job loss, unemployment, loss of one's business, an inability to pay one's bills, debt, loss of one's house, etc. (Hobfoll 1988, 1989, 2012).
ESCAMBIA COUNTY BUSINESS OWNERS:	Those respondents who self-identified as owning a business in Escambia County, Florida.
ESCAMBIA COUNTY RESIDENTS:	Those respondents who self-identified as living in Escambia County, Florida.
ESCAMBIA COUNTY WORKERS:	Those respondents who self-identified as working in Escambia County, Florida.
GULF OIL SPILL (GOS):	The oil spill beginning in the Gulf of Mexico with an explosion of the Deepwater Horizon oil drilling rig on April 20, 2010 and lasting until July 15, 2010 when the oil well was capped (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011).
NEGATIVE PSYCHOLOGICAL RESPONSE:	A reaction to events that is characterized by a range of responses, such as adjustment disorders, depression, anxiety, stress, Post-traumatic Stress Disorder, etc. (Lovibond & Lovibond, 1995).
RESILIENCE:	The positive adaptation to negative life events or stressors (Wagnild & Young, 1993).

RESILIENCY THEORY:	The theory that living a purposeful life, persevering, having a balanced view of life, being self-reliant, and being comfortable with yourself lead to positive reactions to negative life events or traumas (Wagnild & Young, 1993).
RESILIENT RESPONSE:	Responding to adversity in an adaptive, positive manner with limited disruption in functioning and that leads to personal growth (Wagnild & Young, 1993).
RESOURCES:	Objects, conditions, personal characteristics, and energies that individuals seek to obtain, retain, and avoid losing (Hobfoll 1988, 1989, 2012).
STRESS:	A persistent negative affective state characterized by persistent arousal and low tolerance of frustration (Lovibond & Lovibond, 1995).
TECHNOLOGICAL DISASTER:	A disaster caused by the actions of man, also referred to as a man-made disaster (Palinkas, 2012).

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The purpose of this study was to assess the impact of the British Petroleum Gulf Oil Spill on resource change, psychological stress, and resilience for business owners, residents, and workers in Escambia County, Florida. This study was based on Hobfoll's (1988, 1989) Conservation of Resources theory. All business owners, residents, and workers over the age of 18 in Escambia County, Florida were eligible to participate in the online survey. A total of 146 participants completed a survey using the 21-Item Depression Anxiety Stress Scales (DASS-21), the 14-Item Resilience Scale (RS-14), resource change scale, and demographic questionnaire.

Utilizing correlation, multiple regression, and analysis of variance (ANOVA), the findings indicated there were significant models predicting stress and resilience and significant differences between respondents by income group, claim status, and respondent type (business, resident, or worker). Results indicated resource change was a predictor for the DASS-21 total and subscale scores, income group predicted resilience, and claim status resulted in higher stress for those with a claim. Results of the study are presented, limitations addressed, and the implications for theory, practice, and future research are discussed.

CHAPTER 1 INTRODUCTION

The Gulf Oil Spill (GOS) began on April 20, 2010 when the Deepwater Horizon oil drilling rig exploded in the Gulf of Mexico approximately 49 miles south of Louisiana, instantly killing 11 men and starting a chain reaction of events. The initial explosion and the resultant oil spill led to environmental and economic devastation along the entire Gulf Coast and had national and international ramifications (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011).

The Deepwater Horizon rig burned for two days after the initial explosion and then sank to the floor of the Gulf of Mexico nearly a mile below. The sinking caused damage to the underwater well, allowing oil to flow at an unknown rate into the Gulf of Mexico for 87 days until engineers were able to cap the well. The GOS is now called “one of the largest environmental disasters in U.S. history” (Institute of Medicine, 2010, p.ix). The Gulf Coast, the United States, and the entire world watched as oil spread and began to come ashore.

The actual amount of oil spilled from this one disaster may never be known. Estimates are 57,000 barrels per day, or a total of 5,000,000 barrels of oil spilled between April 20 and July 15, 2010 when the well was finally capped. It was not officially declared dead until September 19, 2010 (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011). In addition to the oil, the well also released approximately 100 million standard cubic feet of natural gas every day, further damaging the Gulf’s ecosystem (Woods Hole Oceanographic Institute, 2011).

Immediately following the GOS, the process of assigning blame for the incident began. British Petroleum (BP), Transocean (the company operating the oil rig), and

Halliburton were implicated through their systemic failure of risk management (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011).

Almost immediately, calls for BP to pay for the damage they caused to the environment and economies of the Gulf Coast communities began. BP set up a compensation fund of \$20 billion and the claims process began in June of 2010 (Sole, 2011). Federal fines were also scheduled to be levied under the Resources and Ecosystems Sustainability, Tourism Opportunities and Revived Economies (RESTORE) Act (King & Berry, 2012), equating to millions of dollars set aside for local areas impacted by the spill.

In the past there have been other technical disasters including oil spills; however, man-made disasters of this scale are rare. The GOS is different because of its magnitude, duration, and the complexity involved in assessing the human and environmental impact (Institute of Medicine, 2010). More than two years after the disaster began, Gulf Coast papers continue to report submerged oil mats, BP claims fraud, and uncertainty about the safety of the water and the seafood (D'Souza, 2011; Gulf Coast Ecosystem Restoration Task Force, 2011; Jansen, 2010). The psychological impact of a technological disaster of this scale on the people of the Gulf Coast is unknown and has not been investigated.

Scope of the Study

A disaster on the scale of the GOS has potential to impact the global community, but it is the local people of the Gulf Coast region bearing the brunt of the impact. The Gulf Coast of the United States (U.S.) borders the Gulf of Mexico and consists of Florida, Alabama, Mississippi, Louisiana, and Texas. The Southern U.S. coastline also includes bays and wetlands adding up to approximately 16,000 miles of coast (U.S. Environmental Protection Agency, 2010). Florida alone accounts for approximately

5,095 miles of this Gulf Coast tidal shoreline (Gulf Coast Ecosystem Restoration Task Force, 2011).

The Gulf Coast produces more than one-third of the United States' seafood harvest, produces most of the domestic gas and oil for the country, and supports the tourist industry providing some 800,000 jobs (Gulf Coast Ecosystem Restoration Task Force, 2011). The entire United States is impacted by what happens in and around the Gulf of Mexico, but none more so than the people who choose to call the Gulf Coastal region home.

Escambia County, Florida is the western edge of the State of Florida, bordered by Alabama to the west and north, and by the Gulf of Mexico to the south. This area of Florida is known for its beautiful sugar white sand beaches driving the local economy through tourism (e.g. hotels, restaurants, and tourist attractions), charter and commercial fishing, and real estate industries. Other industries in the area including service industries are dependent on tourism, fishing, and real estate to stay in business.

Escambia County has a current unemployment rate of approximately 10%, higher than the current national unemployment rate of 8.3% (U.S. Bureau of Labor Statistics, 2012). Unfortunately the unemployment rate does not capture the underemployed or those no longer looking for gainful employment (U.S. Bureau of Labor and Statistics, 2012). Escambia County is unique due to its geographical location, natural environment, and population. The county has a diversified economy; however, a large part of the economy is driven by tourism specifically related to the Gulf of Mexico. The economy of Escambia County has been weakened in recent years with hurricane losses (Hurricane Ivan in 2004) followed by a weak real estate market.

Florida does not allow offshore drilling, nor does it benefit from the monetary resources offshore oil drilling brings, and yet the economy of this county was significantly impacted by the GOS drilling disaster.

The first tar balls from the GOS reached Escambia County's Pensacola Beach (Santa Rosa Island) on June 4, 2010, 47 days after the explosion of the Deepwater Horizon (Flemming, 2010). Until this point the residents of Northwest Florida had been living with the uncertainty of when the tar and oil would reach their shore, when their water ways would be closed to swimmers and boat traffic, and when the local fish would no longer be safe to eat. The environmental impact of the GOS was immediately apparent. However, the impact of the GOS on the lives of the residents of Escambia County is unknown, even two years after the oil flow was finally stopped. Local businesses have closed. Families have had to move. Unemployment rates are still high (U.S. Bureau of Labor and Statistics, 2012). The local economy is still struggling. The local coastal environment appears to be clean, but there is still uncertainty about how much oil is still hidden under the water of the Gulf of Mexico.

Theoretical Framework

This study on the effects of the GOS on the residents of Escambia County, Florida was developed using two theories, the Conservation of Resources Theory (COR) (Hobfoll, 1988, 1989) and the theory of resilience (Wagnild & Young, 2003). The COR Theory developed by Hobfoll addresses stress. It is based on the assumption people try to obtain, keep, and protect those things, termed resources, they value (Hobfoll, 1988, 1989; Hobfoll & Lilly, 1993). The COR theory posits if individuals strive to obtain, retain, and protect their resources, psychological stress will occur if: 1) an individual's resources are threatened with loss, 2) an individual's resources actually are

lost, and 3) if an individual fails to gain resources after investing other resources (Hobfoll & Lilly, 1993).

Resilience has been defined as a characteristic some people have helping them to moderate the negative effects of stress and allowing for change and growth (Wagnild & Young, 1993). Others have defined resilience as not just an absence of psychopathology in the face of negative events but as the ability to adapt and grow from these events (Bonanno, 2004 & 2005). Wagnild and Young (1993) identified five characteristics of resilience, forming the foundation of their Resilience Scale: a purposeful life, perseverance, equanimity, self-reliance, and existential aloneness. Resilience can be thought of as a “resource” to individuals.

Depression, anxiety and stress are negative affective conditions and have been studied for their theoretical and clinical importance (Lovibond & Lovibond, 1995). These negative affective conditions can have an impact on an individual’s ability to cope with life stressors and on society as a whole (Monroe, 2008). Depression, anxiety and stress often have similar symptoms or features; however, they are each a distinct state or “syndrome” and can be measured as such (Crawford & Henry, 2003).

Statement of the Problem

The psycho-social impact of an event as complicated and immense as the GOS is unknown; however, trauma research on other disasters has indicated there will be an impact on those living in Gulf Coastal communities ranging from mild adjustment disorders to major psychopathological disorders (Becker, 1997; Flynn & Norwood, 2004; Palinkas, 2012). Psychopathology or maladjustment to an event can lead to physical health problems, such as high blood pressure, heart disease and gastrointestinal issues (Bisgaier & Rhodes, 2011). Physical health problems resulting from exposure to the oil

can also lead to mental health problems including depression, anxiety, and stress (National Center for Disaster Preparedness, 2010). It is important to begin to understand the mental and physical health ramifications for coastal Florida residents and how the GOS has impacted their lives.

Need for the Study

The impact of the GOS on the environment was apparent from the birds covered with oil to the tar balls washing up on the beaches to the oil stained Gulf waters. The impact on the residents of the Gulf Coast was also apparent in lost livelihoods and damage to businesses and individuals. Shortly after the spill began there was speculation about the effects this disaster would have on the mental health of Gulf Coast residents (Kunzelman, 2010; London, 2010; Mulvihill, 2010; Navarro, 2010). Workshops were held to determine what research might be conducted and how to proceed. A meeting was convened for June 22-23, 2010 in New Orleans by the Institute of Medicine entitled, "Assessing the Human Health Effects of the Gulf of Mexico Oil Spill" (Institute of Medicine, 2010). Research is currently underway to investigate the long-term health effects on GOS cleanup workers, residents of Baldwin County, Alabama, and other local areas (National Institute of Environmental Health Science, 2010; Grattan, Roberts, Mahan, McLaughlin, Otwell, & Morris, 2011). However, researchers have neglected the Northwest Florida area in the mental health impact studies completed or proposed to this point. While the impact of the GOS was apparent for these residents, workers and business owners, the effects of the GOS have not been explored in Escambia County, Florida. The impact on this area of Florida was as profound as any other area and affected residents in different ways ensuring this study will add to the literature on the GOS.

Purpose of the Study

The purpose of this study was to assess the effect of the Gulf Oil Spill on business owners, residents and workers in Escambia County, Florida. The study assessed differences in outcomes for business owners, residents and workers as well as identified predictors of resilience, psychological stress, and resources. All residents of the county were eligible to complete an online survey designed to measure resource loss, resilience, and psychological stress. The information gathered may be useful in deciding what services may serve community members to decrease negative mental and physical health outcomes associated with technical disasters. The information can also be used as a tool to assist in allocating RESTORE Act (King & Berry, 2012) funds to projects that may help local residents the most.

Rationale for the Methodology

This study investigated the effects of the GOS on business owners, residents, and workers in Escambia County, Florida. The study used an online survey and employed quantitative data gathering and analysis consisting of a resource loss scale, the 21-Item Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995), the 14-Item Resiliency Scale (RS-14) (Wagnild, 2009) and demographic information. Because there has been no research conducted in the Escambia County, Florida area on the effect of the GOS, one open-ended question was also used to allow business owners, residents, and workers to express anything they wanted to on the subject of the GOS, resulting in qualitative analysis of the responses to that question.

Previous research on natural disasters, technological disasters, and other oil spills has addressed different areas. Some research has attempted to determine the impact on mental health of disasters using models and theories to assist communities

(Arata, Picou, Johnson, & McNally, 2000; Becker, 1997; Freedy, Shaw, Jarrell, & Masters, 1992). Previous disaster research has focused on those directly impacted by the disaster such as the fishermen in the *Exxon Valdez* oil spill or those losing their homes due to Hurricane Katrina (Arata et al., 2000; Picou & Gill, 1996; University of New Hampshire, 2011). While being directly impacted by a disaster is important to study, it is also important to research the larger community to assess how widespread the impact really is and how a disaster impacted the lives of more community members (Littleton, Kumpula, & Orcutt, 2011). Thus it was important for this study to include a broader spectrum of community members to assess how the GOS affected them.

Three groups of Escambia County, Florida residents were selected for this study to assess the impact of the GOS on economic, physical, or mental well-being: business owners, residents, and people who work in the county (workers). Residing in an area makes a person a stakeholder in the community. People tend to take pride in the place they call home and feel a sense of community. Working or being employed in an area also makes an individual a stakeholder in the community even if they live elsewhere. While a worker may not actually reside in the county, they none the less spend a considerable amount of time in the area earning their living. Business owners are invested in the community and may have selected the location of their business based on environmental and economic factors. The community in which a business owner operates provides the resources for the business venture (Byers, Kist, & Sutton, 1997). Despite the type of business, business owners are stakeholders in the community and depend upon the community to survive and stay in business. Each of these groups of stakeholders may have been affected in some way by the GOS disaster. The study

sought to determine how a disaster such as the GOS affected these different groups and in what ways.

The research questions presented below represent an exploration of the effects of the GOS on Escambia County, Florida business owners, residents and workers.

Research Questions

The following research questions were examined in the study:

- RQ₁:** Is there a relationship among resource change, psychological stress, and resilience?
- RQ₂:** Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the DASS-21 subscales and total?
- RQ₃:** Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age and resource change predict scores on the RS-14 subscales and total?
- RQ₄:** Are there differences in the responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total?
- RQ₅:** Are there differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?
- RQ₆:** Are there differences based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Overview of the Study

The remainder of the study is organized into four chapters. Chapter 2 provides a review of the relevant literature. Chapter 3 provides an overview of the methods used in the study. Chapter 4 provides the research results of the data analysis. The final chapter includes a discussion of the major findings, limitations, and implications of the results.

CHAPTER 2 REVIEW OF LITERATURE

The literature reviewed for this study addresses the Conservation of Resources Theory (COR) of psychological stress as it relates to the Gulf Oil Spill (GOS) and its effects on business owners, residents and workers of Escambia County, Florida. Literature describing the COR Theory is reviewed, as well as literature about other theories of psychological stress. Disasters, including natural and technical or man-made, the effects of disasters, and research on effects of disasters are also examined. The GOS and research completed or proposed is presented, as well as the claims process and its history. In addition, literature about psychological stress and resilience is presented and reviewed and related to disasters.

The GOS was a complex technical disaster impacting a large geographical area encompassing five states and the entire Gulf of Mexico. While there were similarities in the way regions were affected by the GOS, there were also differences. Five different states with different localities, geography and environments were directly impacted by the GOS. It was necessary to have different ways to help local communities, maximize gains, and minimize negative effects from the GOS. A large sum of money has and will be distributed to state and local governments impacted by the spill. If no one asks about who was impacted by the GOS there is the possibility of missing the opportunity to help people who may have never accessed mental health care before, and they may not know how to access the help available. There are millions of dollars at stake and one chance to help those in need. Difficult economic times make it necessary to turn this disaster into an opportunity to learn how to help those in physical, mental, and financial need. This study examined the effects of the GOS on business owners,

residents, and workers in Escambia County, Florida and how the GOS impacted their lives, earning a living, and quality of life.

Conservation of Resources Theory

Conservation of Resources (COR) theory (Hobfoll, 1988; 1989) is a theory of stress integrating environmental factors and internal processes (Hobfoll, 2001). COR theory addresses the concepts of human nature and the human condition in relationship to psychological stress (Hobfoll, 2001; Quick & Gavin, 2001). The basic concept of COR is individuals are motivated to obtain, retain, and protect resources in their lives (Hobfoll, 1988; 1989; 1998; 2001). Resources are divided into four categories: objects, conditions, personal characteristics, and energies (Hobfoll, 1989). Individuals experience psychological stress when their resources are threatened, lost, or they have failed to gain resources after an initial resource investment (Hobfoll, 1989; 2011; Hobfoll & Lilly, 1993).

COR theory's first principle is the primacy of resource loss (Hobfoll, 1989, 1998, 2001). Primacy of resource loss means resource loss outweighs resource gain and has a greater impact than resource gain (Hobfoll, 2001; 2012). The second principle of COR theory is people must make a resource investment to gain resources, protect themselves from resource loss, or to recover from a resource loss (Hobfoll, 2012). Those with more resources are less vulnerable to resource loss because they can use other resources to try and gain resources, and those with fewer resources are more vulnerable to resource loss because they have fewer resources to use to try and gain resources (Hobfoll, 2012).

Hobfoll developed the Conservation of Resources Evaluation (COR-E; Hobfoll, 2001) to assess the loss of resources and the impact of loss of resources. In the

original form, the COR-E is 74 items. Freedy, Shaw, Jarrell, and Masters (1992) and Littleton, Kumpula, and Orcutt (2011) successfully adapted the COR-E to measure resource loss for their own research purposes. The modification was necessary because the original scale was long and the researchers were looking to measure a specific kind of resource loss rather than all four categories of resource loss.

Originally applied to individuals, Hobfoll has also applied COR theory at the community level because communities can objectively identify and share threats to resources (Hobfoll, 2012). COR theory has been used at the individual and community levels to understand stress, trauma, disaster, burnout, and other psychological stressors better (Arata et al., 2000; Bonanno, Galea, Bucciarelli, & Vlahov, 2007; Curan, Totenhagen, & Serido, 2010; Freedy et al., 1992; Picou & Gill, 1996; Picou, Marshall, & Gill, 2004; Sattler, Preston, Kaiser, Olivera, Valdez, & Schlueter, 2002; Sumer, Karanci, Berument, & Gunes, 2005). The successful application of COR theory in different research studies across different fields adds to its credibility and usefulness.

Theories of stress, such as COR theory, are not new to the literature. Schwarzer (2001) delineated the response-based, stimulus-based, and cognitive-transactional paradigms of stress research. The cognitive-relational theory of stress developed by Lazarus (1966) falls into the cognitive-transactional paradigm and emphasized cognitive appraisal of stressful events (Schwarzer, 2001). There are similarities between COR theory and cognitive-relational theory, such as addressing resource loss as a cause of psychological stress. However, cognitive-relational theory views objective resources as antecedents and subjective resources as direct cause of stress (Lazarus, 1966; Schwarzer, 2001). COR theory places more emphasis on the objective resource status

and change of resource status. Negative change leads to stress. COR theory takes resources and context and builds a robust theory of stress allowing for the further development of coping modes (Quick & Gavin 2001; Schwarzer, 2001). It is for these reasons the COR theory was selected over cognitive-relational theory for this study.

Disasters

There are different types of disasters. A disaster is considered a large, negative event resulting in loss of life, damage, or severe hardship, all of which can be considered resources as defined by Hobfoll (1988). Disasters either derive from nature, man, or a combination of both. Natural disasters include hurricanes, tornados, earthquakes, and tsunamis and derive from nature. Technical or man-made disasters include terrorist attacks, mass shootings, the GOS or the *Exxon Valdez* oil spill. A natural disaster may also be complicated by man-made problems such as the failure of the levy system during Hurricane Katrina in New Orleans. A technical disaster can have an environmental impact but they are different in cause and often in scope.

Disasters can have devastating effects on people and entire communities and regions. Death is a possibility in any natural disaster and sometimes in technical disasters, too. Depending on many different factors, disasters can create a wide range of problems with varying degrees of impact and time frames. For example, an initial earthquake may be followed by aftershocks, leading to further destruction, injuries, or even deaths in a community. A disaster can have a limited impact in a compact geographical area such as a sinkhole damaging a single house or a disaster can have a wide impact over a vast geographical area such as the tsunami in 2005 displacing or affecting 4.35 million people and killing 176,685 people in Southeast Asia (Carbello, Heal, & Horbaty, 2006). Research studies have been conducted on natural and

technical disasters over time. A discussion of some disaster research is addressed in the following sections.

Natural Disasters

Carballo, Heal, and Horbay (2006) researched the tsunami that struck Southeast Asia on December 26, 2005. This tsunami was a large scale, multi-national disaster and is considered to be the most serious natural disaster in recorded history. The researchers found individuals impacted by the disaster were resilient, able to cope under extreme duress, and attempted to seek normalcy quickly after the tsunami. The researchers also noted there was little monitoring of the situation and tsunami data may not be representative of individuals affected by the tsunami due to the large geographical area and diverse populations. The authors suggested disaster response planning needed to be made more situation and culture specific, take into account what type of support or help people may need based on culture, and who should provide this support. The researchers also identified what they considered to be vulnerable populations, including children, the elderly, the disabled, and women. Health workers and other relief/aid workers were also identified as needing support and training to cope with burnout associated with giving aid post-disaster.

Sumer, Karanci, Berument, and Gunes (2005) examined the predictive power of personal resources, earthquake experience, coping, and self-efficacy on distress, intrusion, and avoidance symptoms of survivors of the 1999 Marmara earthquake in Turkey. This earthquake was considered devastating registering 7.4 on the Richter scale and killing an estimated 18,000 people. Of the survivors, many were displaced and forced to live in tent cities for extended periods of time because of the damage to infrastructure. The research found those people experiencing more material and human

loss, those threatened by the earthquake, and women were more vulnerable to general distress and symptoms of posttraumatic stress disorder (PTSD).

The coastal zones of the southern U. S. are very familiar with hurricanes. Hurricanes bring the potential for high winds, tornados, and flooding leading to the destruction of property and possible loss of life. Hurricane season is six months long and often results in multiple storms of varying strengths making landfall along the Gulf and Atlantic coasts. Freedy, Shaw, Jarrell, and Masters (1992) researched the short-term adjustment following Hurricane Hugo in South Carolina using the Conservation of Resources (COR) theory. The authors found the following: resource loss was positively related to psychological distress, resource loss was a better predictor of psychological distress than personal characteristics and coping behavior, and resource loss was a risk factor for developing clinically significant psychological distress.

Sattler, Preston, Kaiser, Olivera, Valdez, and Schlueter (2002) conducted a cross-national study examining preparedness, resource loss, and psychological distress in the United States Virgin Islands, Puerto Rico, Dominican Republic, and the United States (U.S.) after Hurricane Georges. They found in each location Acute Stress Disorder symptoms were associated with personal characteristic resource loss and low social support. The researchers also found object resource loss in the U.S. Virgin Islands and in the U. S. accounted for a significant portion of Acute Stress Disorder symptom variance, as did energy resource loss in Puerto Rico, basic resource loss in the Dominican Republic, and condition resource loss in the Dominican Republic and the U. S. The findings supported the COR theory of stress as well as previous research, and lend credibility to the idea of resource spirals. Resource spirals are described as

the continued loss of resources after a disaster and can be exacerbated by secondary stressors. Secondary stressors, such as additional stressful events, strains, and complications, can happen after disasters. Secondary stressors can deplete personal characteristic, energy, and condition resources, which can lead to further psychological stress.

On September 16, 2004, Hurricane Ivan made landfall in the vicinity of the Alabama-Florida state line as a Category 3 hurricane. The destruction caused by the storm was concentrated in Escambia, Santa Rosa, and Okaloosa counties in Florida (Bureau of Beaches and Coastal Systems of the Florida Department of Environmental Protection, 2004). Ivan claimed 14 lives in Florida and disrupted thousands of residents' lives by destroying homes, businesses and infrastructure, such as the Interstate 10 Bridge over Escambia Bay. It is estimated Ivan caused over 13 billion dollars in damages in the United States (NOAA Technical Memorandum NWS NHC-6, 2011). It took years for the Northwest Florida area to heal from the physical damage of Ivan and some residents still suffer negative psychological effects from the storm (NOAA Technical Memorandum NWS NHC-6, 2011; Ruggiero, Amstadter, Acierno, Kilpatrick, Resnick, Tracy, & Galea, 2009).

Ruggiero, Amstadter, Acierno, Kilpatrick, Resnick, Tracy, and Galea (2009) researched self-rated health in relation to disaster characteristics, social resources, and post-disaster outcomes in adults experiencing the 2004 Florida Hurricanes of Charley, Frances, Ivan, and Jeanne. The research was conducted in the 33 counties in the path of the hurricanes. The study found poor self-rated health was associated with older age, extreme fear during the storm, low social support, and depression. Social support

and depression are variables possibly mitigated by targeted interventions after disasters. Poor self-rated health is of concern because self-rated health status has been related to morbidity, mortality, and impairment in social and occupational functioning. The authors suggested targeting these modifiable variables post-disaster may allow for improved access to community resources and may reduce the long-term economic burden for the individual and society.

Technical/Man-made Disasters

Littleton, Kumpula, and Orcutt (2011) used the COR theory to examine whether psychological resource loss predicted posttraumatic stress disorder (PTSD) symptomology in college women following a campus shooting at Northern Illinois University (NIU). The researchers gathered data immediately following the shooting and then again 8 months later. The results supported resource loss as a predictor of PTSD symptomology in the immediate aftermath of the shooting and 8 months later. Of note in this study was the finding the whole community was affected by the trauma, not just those who witnessed the shooting or were fired upon. The researchers also found even after 8 months, 12% of the sample was still reporting PTSD symptomology. This suggests many individuals may need services many months following a disaster or trauma.

The *Exxon Valdez* oil spill (EVOS) in Alaska in March of 1989 released approximately 42 million liters of oil into Prince William Sound devastating local fisheries and contaminating the coastal ecosystem (Picou & Gill, 1996). Until the Gulf Oil Spill, the EVOS had been considered the largest and most damaging spill in North American history (Picou, Marshall & Gill, 2004). The environmental and social impact from the EVOS were immediate and long term. Several research studies were conducted on the

EVOS from different theoretical perspectives, including studies on the political context and management of the EVOS and social impact of the EVOS (Picou & Gill, 1996).

Picou and Gill (1996) applied the COR model to the EVOS and attempted to evaluate the long term psychological impact of the EVOS. The researchers used an ex post facto design and compared data gathered from three comparable communities; two in the impact zone of the EVOS and one outside of the impact zone. Data were collected via face to face interviews, telephone surveys and mail surveys. The focus of the research was on indicators of chronic stress, community type and occupational role. The Impact of Events Scale (IES) was used to measure levels of psychological distress. Community, occupational, and demographic comparisons were made. Using the Mann-Whitney U-statistic to test whether the comparison groups were selected from the same population, the researchers found that there were negative psychological impacts of the EVOS and elevated stress levels in the communities impacted by the EVOS.

Arata, Picou, Johnson, and McNally (2000) applied the COR model to the EVOS to measure mental health function six years post-disaster. They surveyed 125 commercial fishers in Cordova, Alaska anonymously via mail and attempted to measure economic and social impacts of the spill, as well as coping and psychological functioning. Using Pearson correlations and multiple regression, the researchers found although there was no loss of life or damage to personal possessions caused by the EVOS, there were higher levels of depression, anxiety and PTSD symptoms in those residents who were directly impacted by the EVOS as compared with study participants from another similar location, with no EVOS exposure. They also found empirical support for the relationship between resource loss and chronic psychological symptoms.

This research suggests that the GOS, the focus of this study, may have an effect on the residents and business owners of the Gulf Coast for many years to come.

Picou, Marshall, and Gill (2004), building on past research using the COR model, used structural equation modeling (SEM) to link litigation to chronic psychological stress of the EVOS. They found being a plaintiff in civil litigation increased psychological stress, and could lead to a large negative community impact. The results of their research suggests fighting for damages and payment from BP as a result of the GOS could possibly result in long term psychological distress for the residents and business owners of Northwest Florida.

Disasters, whether natural or man-made, are known to have a potential negative impact (physically, mentally, and financially) on individuals and communities. Individuals live and work in their communities. If individuals are suffering from symptoms of stress or PTSD, they are unable to perform socially or professionally to the best of their ability. The stress reactions have potential of spreading throughout families, businesses, and communities. According to COR theory, once resource loss starts it may continue into a spiral of loss, leading to more and more loss and compounding the impact of loss. The loss spiral can be on an individual level as well as a community level (Hobfoll, 1989, 2001).

The literature suggests psychological reaction to a natural disaster or a technological man-made disaster is different and technological disasters can have longer term mental health impact than natural disasters (Picou & Gill, 1996). Technological disasters are often characterized by prolonged uncertainty and litigation,

with chronic negative psychological impact on the communities affected by the disaster (Arata et al., 2000; Marald, 2001; Palinkas, 2012).

The Gulf Oil Spill (GOS)

The GOS is the largest accidental oceanic oil spill and the largest man-made disaster in American history (Bourne, 2010; Mulvihill, 2010; National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011). The GOS began April 20, 2010 and continued for 47 days when a cap was placed on the underwater well spewing an unknown amount of oil and gas into the Gulf of Mexico. Visible damage was apparent very early on the disaster and continued even as a massive cleanup effort was made by BP and local communities along the Gulf Coast. Two years after the well was capped, most of the beach cleaning effort has stopped because visible signs of the oil were gone on most of the beaches although not all. However, whenever a storm forms in the Gulf, oil and oil residue are churned up and brought ashore all along the Gulf Coast (Blair, 2012).

Even when the well was capped, the oil stopped spilling, and the cleanup was mostly complete, there were still on-going individual and class action lawsuits awaiting resolution in the court system (Sole, 2011). It is thought these lawsuits may be settled soon although what is considered soon varies from person to person. Billions of dollars are at stake and most of these dollars are intended for communities directly impacted by the GOS (King & Berry, 2012). Escambia County, Florida is one of these communities.

As the GOS began, the importance of mental health care for the local communities, especially fishermen and those in the tourist trade, were made (London, 2010). There was also an immediate need for research on mental health, and some research was conducted toward the beginning of the spill. Grattan, Roberts, Mahan, Jr.,

McLaughlin, Otwell, and Morris Jr. (2011) studied the early psychological impact of the GOS in a comparison study of Baldwin County, Alabama (direct exposure to oil) and Franklin County, Florida (no direct exposure to oil). The researchers attempted to determine the level of distress, mechanisms of coping, and perceived risk in counties directly and indirectly impacted by the GOS and sought to identify the extent of economic resource loss to explain these factors. The study found there were no significant differences in community groups for distress, adjustment, neurocognition, or environmental worry. Both communities had residents with clinically significant depression and anxiety. The researchers felt the psychological impact of the GOS might be much broader than just those areas directly on the water. They also pointed out income loss related to the GOS may have a greater psychological impact than the presence of oil on the shoreline.

The National Institute of Environmental Health Sciences (NIEHS; 2011) is conducting the Gulf Long-Term Follow-Up Study for Oil Spill Clean-Up Workers and Volunteers, or GuLF STUDY. The study is a long-term physical and mental health study of oil spill clean-up workers and volunteers helping with the clean-up after the GOS. There was simply not enough information about the physical and mental health ramifications of an oil spill of this size and the study is an effort to understand the health consequences faced by all exposed to the spill whether worker or resident. The GuLF STUDY began on February 28, 2011 and is expected to continue for ten years.

The GOS had an immediate impact on some areas and a slower impact in others. In Escambia County, Florida, the oil spill occurred in the middle of the spring break season just before the summer tourist season was about to begin. Businesses,

residents, and workers watched the news as the oil came closer and closer to Escambia County shores reaching them on June 4, 2010. Prior to the first tar balls arriving, hotels and rental agencies on Pensacola Beach and Perdido Key were already receiving cancellations for summer vacation rentals. These cancellations continued throughout the summer and into the fall (Dixon, Wolfgram, Dehart, & Devonshire, 2010).

Local waterways were blocked off with giant lengths of boom trying to prevent the oil and tar from entering the Intracoastal Waterway, Perdido Bay, Pensacola Bay, and Escambia Bay through the Pensacola Pass or the Perdido Pass. In spite of this effort, oil and tar did come in to the Pensacola and Escambia Bay areas, as well as other areas. The closing of the waterways meant that boats could not go in and out. This was not an issue for most fishermen because most local waters were already closed to fishing.

Early on in the disaster, BP set aside money to be dispersed to individuals and businesses with direct loss claims due to the GOS. Claims offices were set up in different locations to make the process more accessible. Individuals and businesses were told to bring in documentation (taxes, pay stubs, etc.) to document the difference in their income in 2010 from previous years (Sole, 2012). Individuals and businesses also had to have some sort of direct relation to the beach or shoreline, tourist industry or service industry to qualify for a claim, but sometimes they did not (Weaver, 2012). There were complaints almost immediately about fraudulent claims being paid, large sums of money being paid to restaurant and bar industry workers with little or no proof of previous income. Legitimate claims were being denied by overwhelming bureaucracy and paperwork required to file a claim (Elliot, 2012). The claims process was fraught

with difficulties and appeared to be unfair (Elliot, 2012; University of New Hampshire, 2011).

As mentioned before, there was great concern, too, about the physical and mental health of the local residents. Residents were told not to go into the water on certain days and not to touch the oil and tar balls washing up on the shore. Residents also complained of smelling petroleum fumes when they were close to the water and dead and dying wildlife washed up on shore (Bourne, 2010; Dixon et al., 2010; Mulvihill, 2010). Residents were told not to eat local seafood and they were told it was safe to eat the seafood again. There was a lot of uncertainty about what was safe and what was unsafe and very little reliable information available on which to base decisions (Casselmann, 2011; Goldstein, Osofsky, & Lichtveld, 2011).

Resilience

There are many definitions of resilience although many of them are similar (Wagnild, 2009). In this study, resilience refers to the ability of people to maintain a healthy psychological and physical functioning after being faced with an adverse or traumatic event (Bonanno, 2004). Resilience is a healthy reaction to a disturbing or stressful event (Flynn & Norwood, 2004). Wagnild (2009) stated resilience is made up of five characteristics, the Resilience Core (RC). The RC consists of a purposeful life, perseverance, equanimity, self-reliance, and existential aloneness. Meaning or a purposeful life is the realization a person has something to live for. Perseverance is the act of continuing to try in spite of adversity or discouragement. Equanimity is the ability to have a balanced perspective on life and experiences and to roll with the punches of life without having extreme responses to adversity. Self-reliance is the ability to depend on oneself and recognize personal strengths and weaknesses. Existential aloneness is

the realization we are all living our own unique lives and only we can live our life. These five characteristics constitute the subscales of the Resilience Scale and the 14-Item Resilience Scale (Wagnild & Young, 1993).

Bonanno (2005) reviewed research on resilience and found after a traumatic event, resilience is the most common outcome and there are multiple factors that may support a resilient outcome. The study also found there is a difference between adult resilience and childhood resilience. Adult resilience is usually in response to a single event though not always (Bonanno, 2005). Bonanno (2004) also distinguished between recovery and resilience, stating recovery implies a departure from normal functioning and then a return to normal functioning and resilience indicates the ability to maintain normal functioning after a traumatic event.

Bonanno, Galea, Bucciarelli, and Vlahov (2007) studied the association between resilience and socio-contextual factors (gender, age, race/ethnicity, education, level of trauma exposure, income change, social support, frequency of chronic disease, and recent and past life stressors) in New York City after the September 11, 2001 terrorist attack. The study found resilience was a mix of various factors including person-centered variables and socio-contextual variables as well as risk and protective factors.

Research on the concept of resilience is important because it can inform policy makers and responders about what the focus of interventions and assessments should be in order to support resilient reactions to traumatic events in individuals and throughout communities. Research has also found widespread psychological treatment following a traumatic event is not helpful and can actually cause more stress and is

harmful to some individuals (Bonanno et al., 2007). Assessments and treatment need to be tailored to the individual in order to support a resilient reaction.

Psychological Stress

Psychological stress is a negative reaction brought about by an event (or events) causing loss of resources, threatening loss of resources, or causing no resource gain after investment of resources (Hobfoll, 1989). As previously stated, there are theories of stress focusing on perception, cognition, and appraisal, as well as those focusing on stimulus definitions of stress (Hobfoll, 1989; Monroe, 2008). Psychological stress is an important phenomenon to understand because it can lead to mental and physical health problems including: major depression, anxiety, high blood pressure, and heart disease (Amstadter, Broman-Fulks, Zinzow, Ruggiero, & Cercone, 2009; Monroe & Reid, 2009).

Specific negative affective states such as depression, anxiety, and stress have been associated with trauma and disasters (Becker, 1997; Freedy et al., 1992; Littleton et al., 2011). A psychological response to a disaster is normal; however, some people who experience a disaster may exhibit higher levels of distress (Flynn & Norwood, 2004).

Lovibond and Lovibond (1995) developed the Depression Anxiety Stress Scales (DASS) to measure the specific negative affective states of depression, anxiety, and stress which are related and yet different from each other. Depression is defined as a loss of self-esteem and incentive, anxiety is defined as an enduring state of fear, and stress is defined as persistent tension and arousal (Lovibond & Lovibond, 1995; Lovibond, 1998). Without intervention, these negative affective states may worsen over time leading to clinical psychopathology such as major depression, generalized anxiety disorder, or even PTSD (Flynn & Norwood, 2004; McNally, Bryant, & Ehlers, 2003).

There has been discussion and debate over the assessment and treatment of psychological stress following a traumatic incident such as a disaster. Some researchers have suggested everyone exposed to a disaster should be treated with critical incident stress debriefing (CISD) (Phipps & Byrne, 2003) while others have suggested this is not necessary and may actually be harmful (Bonanno et al., 2007).

Research has been conducted on participation in trauma or disasters research and whether or not participation in research causes added stress or trauma to the participants. Griffin, Resick, Waldrop, and Mechanic (2003) studied the impact of trauma research participation on trauma survivors. They examined participant reactions to trauma assessment in domestic violence, rape, and physical assault cases. The results indicated trauma survivors were able to tolerate participation in the trauma research and some trauma survivors found participation in the research a valuable experience. Ferrier-Auerbach, Erbes, and Polusny (2009) also found participants in trauma-related research tolerated trauma-related questionnaires without being overwhelmed and stressed. They may even find they derive a benefit from participating in the research. These studies indicated participants in a survey about a stressful event such as the GOS should not experience further stress as a result of their participation in the research and they may derive a benefit.

Even with all of the previous research on disasters, and specifically on oil spills, the GOS is such a different phenomenon because of how it began, how long it lasted and its scale. The possibility exists that there may be other variables of interest in the context of the GOS to study, making the addition of a qualitative research question prudent (Wang, 2008). It is possible that the objective reality of the GOS for the people

of Escambia County, Florida is not discoverable, but in asking if they have anything else to say about the GOS, they are given the chance to voice their experience in their own words. The open-ended question option may provide further information about variables of interest for future research and it may also provide a healthy outlet for the people of Escambia County, Florida to let their thoughts and feelings about the GOS be known.

Summary

The review of the literature yielded several pertinent ideas including the lack of a study of this nature has not been conducted in the Northwest Florida community since the GOS began on April 20, 2010. The literature review also found the COR model has been applied to the impact of the EVOS in Alaska and to research about the impact of hurricanes and other natural disasters in various locations. Previously there has not been an incident such as the GOS to study.

Escambia County, Florida has a history of dealing with hurricanes. Relying on data gathered from previous research focusing on post-natural disaster mental health is insufficient to address the needs of the people impacted by the GOS. The GOS is considered a technological disaster because the root cause of the disaster was man-made (Mabus, 2010; National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011). There will be a prolonged uncertainty and litigation in the lives of residents, business owners, and workers related to the GOS that will last for years. Chapter 2 has presented the literature associated with and supporting the questions and hypotheses posed for this study. Chapter 3 will present the methodology to address the questions and hypotheses.

CHAPTER 3 METHODOLOGY

The purpose of this study was to examine the perceptions of Escambia County, Florida business owners, residents, and workers about the Gulf Oil Spill (GOS). More specifically, the study sought to identify how residents coped with resource change, psychological stress, and resilience. This chapter presents the methodology used in the study including the design of the study, study variables, study population and sampling procedures, instrumentation, data collection and data analysis procedures, research hypotheses, and methodological limitations.

Research Method and Design

A quantitative research method was chosen over a qualitative or mixed-method to meet the needs of the study. When attempting to identify predictors or differences between groups, numerical data and a quantitative method is an appropriate choice over qualitative (Cooper & Schindler, 2008). Cooper and Schindler identified a quantitative methodology as being beneficial when working with larger samples, removing potential researcher bias, and applying the results to larger populations.

Qualitative methodology using interview or observations might have benefits because residents' personal stories, reactions, and interpretations of the GOS might be useful. However, bias is always a possibility when researchers are in direct contact with the research participants as is required in qualitative research (Cooper & Schindler, 2008). It might also have been difficult to obtain the breadth of responses to the GOS through a limited number of interviews with individuals.

A mixed-method study might have allowed for the use of the best of quantitative and qualitative research methodologies. However, a mixed method study might not

allow variables to be measured accurately and findings of the study might not apply to other populations in disasters (Cooper & Schindler, 2008). A quantitative approach was deemed the most appropriate method to include all different groups of Escambia County residents involved in the GOS.

Research Design

The quantitative cross-sectional survey design selected for the study was appropriate, as the variables are measurable (Ary, Jacobs, & Razavieh, & Sorenson, 2009). Quantitative survey methods are appropriate for gathering information from a large number of participants about the GOS. In quantitative research, the research questions or hypotheses are specific to gather measurable and clear data on variables (Creswell, 2009).

The study investigated responses about the effects of the GOS using a cross-sectional survey design methodology utilizing electronic Internet technology. In cross-sectional research, data are obtained at one point in time from respondents of different ages or in different stages of development in their personal and professional lives and in this study reflected how the GOS had affected businesses, residents, and workers. Cross-sectional research is an alternative to longitudinal research or following participants for long periods of time. An advantage of cross-sectional research is that sample attrition is not an issue, as the data are collected at one point in time (Gall, Borg, & Gall, 1996). The cross-sectional approach was much less expensive given the short time span of the study (Salkind, 2003). The surveys were administered to a group of Escambia County, Florida residents.

The study was also descriptive by exploring and describing the effects of the GOS on the lives of Escambia County residents. While descriptive studies are simple in

design and execution, they can yield important data and information for informing policy and the direction of future research (Gall et al., 1996). Quantitative survey data was collected to investigate relationships among resilience, psychological stress, resource change, and demographic variables. Survey or questionnaire collection of data from a wide variety of sources in a timely and concise manner is relatively easy (Dillman, 2007). Various methods of survey data collection include personal interviews, telephone interviews, mailed questionnaires, and directly administered questionnaires (Ary et al., 2009). Regardless of the method chosen, the six basic steps involved in conducting survey design research are planning, defining the population, sampling, constructing the instrument, conducting the survey, and processing the data (Ary et al., 2009).

Numerous innovations in survey design, data collection, and methodology have emerged, beginning with the use of the telephone for data collection (Dillman, 2007). Other recent innovations have included the use of computers and the Internet. Using the Internet to conduct surveys has changed survey methodology. E-mail or Web surveys eliminate the costs associated with postage, paper, mailing, and data entry. The Internet makes it possible to overcome international boundaries, increase sample size, and significantly shorten the time required to collect data (Dillman, 2007). Learning the software necessary to construct an Internet system for collecting data used to be time consuming and difficult (Dillman, 2007). Currently there are a number of websites designed to make conducting surveys and collecting data online easier.

The www.surveymonkey.com website was used for this study and permitted the researcher to format a survey. The SurveyMonkey site provided the ability to collect both text and numerical data and return the data in a usable format. Respondents were

able to provide informed consent by clicking a box and since no names were used, all responses were confidential (<http://www.surveymonkey.com>). Respondents were also able to complete demographic data, such as age, gender, and other information. Internet surveys also give the researcher control over which items and the number of items a respondent can see at any time (Dillman, 2007).

Population and Sampling

The study surveyed adult residents (over the age of 18) in Escambia County, Florida. Participants had to be living or working in Escambia County at the time of the GOS (April 20, 2010) or since. The U.S. Census Bureau (2012) estimated the population of the county to be 299,144 in 2011 and the survey was open to any resident of the county over the age of 18 years of age. Since there was no exact list of residents, it was necessary to inform residents of the study and solicit their participation. Several methods were used to solicit participants for the study. Fliers were taken to local restaurants, bars, churches, and businesses across the county advertising the survey and asking for participation. A website was (www.gosproject.org) developed with information about the study and had a direct link to the survey. There was a page on www.facebook.com advertising the survey and directing respondents to the survey link. The Independent News, a local online and print newspaper, wrote a blog post to generate interest in the survey. Information and links to the survey were published on multiple listservs in the community, including the Pensacola Fishing Forum and www.northescambia.com. Repeated efforts were made by the researcher to solicit participation in the study. Cohen (1992) noted it would be necessary to solicit a participant pool of 102 participants for a 7 predictor multiple regression study with an $\alpha=.05$, a medium effect, and power = .80. The analysis of variance hypotheses

would require between 45 and 64 individuals per group with an alpha = .05, medium effect size, and power = .80. It was hoped approximately 300 individuals would volunteer to participate in the study.

Informed Consent

The study used a consent procedure to inform voluntary participants of the study. Participants were informed of the purpose of the research, the time involved, assessment of minimal risk and benefits to participants, contact for questions about the research, and contact information for questions about their rights as a research participant. This information was provided in the informed consent on the survey website and participants had to consent prior to being allowed to view the survey. When respondents linked to the electronic survey site, they were asked to check a box on the survey form indicating they have been provided informed consent to participate in the study (see Appendix A for a copy of the consent form). All participants were informed that their participation was voluntary.

Confidentiality

Every research participant in a study has a right to privacy and the expectation the data will be kept confidential at all times. The right to privacy and confidentiality was disclosed to research participants prior to the start of a study. Research participants have a right to expect respect for autonomy, trust, scientific integrity, and fidelity. Every research participant has the right to expect there will be no chance of being identified by name at any time, before, during, or after the study. No personally identifying information or data was collected and data was only reported in an aggregated format. Creswell (2009) suggested the fundamental role for ethical research is to do no harm, including physical, psychological, social, economic, or legal harm. Participants were

also informed they had the option not to complete the survey; however, their participation was appreciated and would make an addition to the study.

Internet surveys do not collect personally identifying information and it was impossible to identify any individual since identification numbers were randomly assigned as the surveys were completed through www.surveymonkey.com. The electronic surveys had no identifying information on them and were stored as an encrypted file. The encrypted file will be saved on a compact disc in a separate storage facility from the researcher's computer for a period of three years in the researcher's office. After a period of three years, the electronic disc containing the data will be shredded in a crosscut shredder.

Instrumentation

The survey consisted of the measure of resource change, the 21-Item Depression Anxiety Stress Scales (DASS-21), the 14-Item Resiliency Scale (RS-14), a demographic questionnaire, and one open-ended question. Each instrument used in the collection of data is presented separately. A complete copy of both types of the survey (business owner and resident/worker) can be found in Appendix B and C.

Resource Change

The measure of resource change used in this study was based on Hobfoll's (2001) COR-E and adaptations made to the COR-E used by other researchers (Freedy et al., 1992; Littleton et al., 2011), and conversations with individuals about adverse economic impact. The measure of resource change was the same for residents, businesses, and workers since the events or situations remained the same for someone living or working in Escambia County, Florida. The wording for businesses, residents, or workers was consistent depending upon the point of view of the respondent. One

item on the business resource change (*I had to fire employee(s)*) was omitted because it did not match the questions for residents and workers.

The resource change items ranged from *lost a job/business* to *defaulted on a loan, had to apply for government assistance/aid*. Items were both positive and negative or a measure of resource loss/gain. Using Hobfoll's (1989) COR theory, resource loss was primary to resource gain, and resource gain still required the investment of resources, thus making the listing of resource change a measure of change. It is not a valuation of resource loss or gain, whether objective or subjective. A resource change is an indicator a business owner, resident, or worker may have felt psychological stress according to COR theory. The resource change items were answered with a Yes (1) or No (0) and were summed to create a resource change score.

21-Item Depression Anxiety Stress Scales

The 21-Item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) consists of 3 subscales Depression (DASS-D), Anxiety (DASS-A) and Stress (DASS-S) and a total score. The DASS-21 has 21 items utilizing a response scale of None of the time (0), some of the time (1), most of the time (2), and all of the time (3). None of the items are reverse scored and the Cronbach alpha for the total score has been reported as $\alpha=.966$. The Depression subscale measures depression as a loss of self-esteem and incentive as well as the possibility of not attaining life goals and consists of 7 items. The reported Cronbach alpha is $\alpha=.947$. The Anxiety subscale emphasizes an acute response to fear and nervousness. There are 7 items in the Anxiety subscale with a Cronbach alpha of $\alpha=.879$. The Stress subscale also has 7 items and purports to measure tension and a low threshold for being upset and frustrated. The reported Cronbach alpha was $\alpha=.933$. The DASS-21 total score and

subscales were previously analyzed using factor analysis to lend validity to the scale and subscales (Lovibond & Lovibond, 1995).

14-Item Resilience Scale

The 14-Item Resilience Scale (RS-14; Wagnild & Young, 1993) was designed to assess the concept of resilience and the five characteristics of the Resilience Core. Resilience is thought to be a characteristic allowing individuals to overcome negative aspects of life such as stress. The characteristics or subscales include: living a purposeful life, perseverance, equanimity, self-reliance, and existential aloneness. Participants respond to the 14 statements using a 7-point Likert response scale of *Strongly disagree* (1) to *Strongly agree* (7). The RS-14 was developed as a shorter form of the original 25-item Resilience Scale (RS) developed by Wagnild and Young (1993). The RS was originally tested on 782 middle aged and older adults and had strong internal consistency ($\alpha=0.91$) as well as good concurrent validity. The RS-14 and the RS are strongly correlated and the internal consistency alpha for the RS-14 was 0.89 (Wagnild, 2009). Reliability was not reported for the characteristic subscales.

Demographic Questionnaire

A demographic questionnaire designed to gather information regarding individual characteristics of the study participants was included. The questionnaire collected information regarding age, sex, ethnic/cultural identification, marital status, completed level of education, living situation, type of residence, employment status, household income group, and hours worked per week. The demographic items can be found in the business or resident/worker survey in Appendix B and C. Respondents were also asked about their claim status for compensation from BP, including filing a claim, claim being denied, approved, joining a class action suit, satisfaction with amount from BP,

accepting payment, rejecting payment, involved in litigation, and no claim with BP. Each of these was answered as a check indicating they had some claim with BP.

Respondents were also asked to rate their physical health, mental health, finances, and relationships on a 8 point scale of No Problem (0) to Severe Problem (8) for both before and after the GOS.

Open-ended Question

An open-ended question was also included to allow respondents to make any comments about the GOS not addressed on the survey. The open-ended question, *Is there anything else you would like to tell us about the impact of the Gulf Oil Spill on your life?*, was included because no one had asked the people of Escambia County, Florida what the impact of the GOS has been on their lives. It was also an opportunity to learn about other factors impacting the lives of Escambia County residents.

Data Collection

Solicitation of study participants and data collection commenced after receiving permission to conduct the study from the University of Florida Internal Review Board. After permission was received, the researcher began contacting organizations, media, and set up a website to solicit study participants. There was no list of individuals to whom surveys could be sent necessitating using multiple means to solicit potential participants for the study. The process for participants involved hearing about the study, accessing a computer, and linking to the survey website. Cards and flyers were prepared and handed out at various organizations and places of business to inform potential participants and to provide the website address. When participants connected to the survey website, it was necessary for them to read and agree to the informed consent prior to being taken to the survey. Participants were asked to identify

themselves as a business owner, resident, or worker in order to send them to the correct survey. After that selection, they were asked their zip code to ensure they lived or worked in Escambia County. At this point participants were taken to the business, resident, or worker survey. Upon completion of the study the participant was thanked and the data recorded. After repeated attempts to increase sample size the survey was closed and the data downloaded for analysis.

Data Analysis

The data analysis for the study occurred in a series of steps. The first step was to inspect the data using descriptive statistics (mean, median, mode, and frequency) to gain a general understanding of the data. Cronbach Alpha Reliability Coefficients were calculated for each total and subscale scores of the three instruments. The factor structure of each of the scales was assessed using a principal components factor analysis with a varimax rotation. These psychometric properties had been determined previously but the instruments used in this study had not been administered to this particular population previously and reliability and validity can be person and situation specific (Ary et al., 2002). Once the preliminary data analysis had been completed and the subscales determined to be valid and reliable, a mean score for each viable subscale was calculated and used in further analysis. A statistically significant relationship was defined as $p=.05$ or less.

Research Question 1

The first research question and null hypothesis were as follows:

RQ₁: Is there a relationship among resource change, psychological stress, and resilience?

Ho₁: There will be no relationship among resource change, psychological stress, and resilience.

To address question 1, a Pearson Product Moment correlation was used to test for the strength of the relationships among the total resource change score, the total DASS-21 score and the total RS-14 score. A correlation is a measure of the strength of the relationship among variables and a correlation coefficient can range from -1.0 to 0 to $+1.0$. The closer to 1.0 the correlation coefficient is, the stronger the relationship. Correlations can be positive or negative. In a positive correlation, as one variable goes up the second variable also goes up and in a negative correlation as one variable goes up the second variable goes down (Ary, et al., 2009). Hopkins (2009) provided a useful means to evaluate the strength of a correlational relationship and it will be used in this study. The scaling of correlation coefficients is as follows:

Correlation Coefficient	Descriptor
0.0 - 0.1	trivial, very small insubstantial tiny, practically zero
0.1 - 0.3	small, low, minor
0.3 - 0.5	moderate, medium
0.5 - 0.7	large, high, major
0.7 - 0.9	very large, very high, huge
0.9 - 1.0	near, practically, or almost perfect, distinct, infinite

Research Questions 2 and 3

Multiple linear regression was used to test the null hypotheses posed for research questions 2 and 3. The research questions and null hypotheses are as follows:

RQ₂: Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the DASS-21 subscales and total?

Ho₂: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and the DASS-21 subscales and total.

RQ₃: Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the RS-14 subscales and total?

Ho₃: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and the RS-14 subscales and total.

Regression analysis is not causal in nature and its purpose is the development of an equation for predicting values on a Dependent Variable (DV). Research Questions 1 and 2 and their null hypotheses are predictive in nature. Simple linear regression involves a single Independent Variable (IV) and a single Dependent Variable (DV). The goal of simple regression is to create a linear equation that can predict the value of the DV if there is a value for the IV. In multiple regressions, a set of predictor Independent Variables are selected (IVs) as potential predictors of a DV as is the case in this study. Multiple regressions are an extension of simple linear regression involving more than one predictor variable. It is used to predict the value of a single DV from a weighted linear combination of IVs.

One problem with multiple regressions may be the existence of multi-collinearity. Multi-collinearity is a problem arising when there are moderate to high inter-correlations among predictor variables. The problem lies with the possibility there may be two or

more variables that are measuring essentially the same information (Mertler & Vanatta, 2005). Nothing is gained by adding variables to a regression analysis measuring the same thing but multi-collinearity can cause real problems with the analysis itself. Stevens (1992) pointed out three reasons why multi-collinearity can cause problems. They include: (a) multi-collinearity limits the size of the response since the IVs are going after much the same variability in the DV; (b) multi-collinearity can cause difficulty because individual effects are confounded when there is overlapping information; and (c) multi-collinearity tends to increase the variances of the regression coefficients resulting in unstable prediction equations. The simplest method of diagnosing multi-collinearity is to investigate high inter-correlations among the IV predictor variables. A second method is to inspect the Variance Inflation Factor (VIF), an indicator of the relationships among predictors (Stevens, 1992). Stevens also noted VIF values greater than 10 are generally cause for concern. The data for all regression analyses was checked to ensure multi-collinearity did not present a problem in the analysis. If multi-collinearity did exist, a variable may be deleted or variables may be combined to create a single construct.

The data for the regression analysis was also checked to ensure compliance with the assumptions of regression. The assumptions of regression include: (a) the independent variables are fixed (the same values would be found if the study were replicated), (b) the IVs are measured without error, (c) the relationship among the IVs and the DV is co-linear, (d) the mean of the residuals for each observation on the DV is zero, (e) errors on the DV are independent, (f) errors are not correlated with the IV, (g) variance across all values of the IV is constant, and (h) errors are normally distributed

(Mertler & Vanatta, 2005). The assumptions were inspected through examination of residual scatter plots, assessment of linearity, inspection of normality through skewness, kurtosis, and Kolmogorov–Smirnov statistics, and inspection of the Box’s test for homosecdasticity (Mertler & Vanatta, 2005). Multiple regressions were the statistical analysis to be used for Research Questions 2 and 3 and were appropriate for use in predictive studies.

A stepwise multiple regression method, often referred to as statistical multiple regression, was used. When there are multiple predictor variables, a statistical multiple regression may be used to determine which specific IVs contribute to the model (Mertler & Vanatta, 2005). Forward, stepwise, and backward are methods of entering and keeping variables in the model. In using a stepwise selection method, at each step tests are performed to determine the significance of each IV already in the equation. If a variable were entered into the analysis and is measuring much the same construct as another, a reassessment of the variables may conclude the first variable is no longer contributing anything to the analysis. In a stepwise selection procedure, the variable would then be dropped out of the analysis even though it might have been a good predictor at one time. The variable may not be found to provide a substantial contribution to the model (Mertler & Vanatta, 2005).

After ascertaining the data was appropriate for regression analysis and checking for multi-collinearity, the multiple regression procedure was completed using a probability level of $p=.05$ as the level of significance. A stepwise selection multiple regression procedure was used to develop the model for these questions and analysis.

Research Questions 4, 5, and 6

Research question 4, 5, and 6 used analysis of variance (ANOVA) as the analytical technique and were as follows:

RQ₄: Are there differences in responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales and RS-14 total?

Ho₄: There are no differences in responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales and RS-14 total.

RQ₅: Are there differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Ho₅: There will be no differences in based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

RQ₆: Are there differences in responses based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Ho₆: There will be no differences in responses based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

Analysis of variance (ANOVA) was used as the statistic to address hypotheses 4, 5, and 6. The data was assessed to ensure the data met the assumptions of ANOVA. The assumptions of ANOVA are: observations are independent of one another, a normal distribution occurs, and an equality of variance exists. Generally, ANOVA is robust with respect to violations of the assumptions (Field, 2009). The dependent variables will be mean response to the resource change scale, the total and subscale scores of the DASS-21, and the total and subscale scores of the RS-14 scale. A probability level of $p = .05$ was the criterion for failing to reject or rejecting the null hypotheses.

Methodological Limitations

In the study, quantitative research methods were used to address the research questions posed for the study. Quantitative methods were effective in gathering a large amount of data without affecting efficiency (Johnson & Turner, 2002). A limitation of the study was the method of sampling. Soliciting participants through various media may have limited access to a broader population had names and emails of county residents been available. Generalizing to other locations or disasters may be difficult given the procedures used in this study. A second limitation was the use of volunteers in the study. Volunteers tend to be different than non-volunteers (Ary, et al., 2009). Volunteers have a need for approval, may be highly educated, have an agenda they want to pursue, or may seek social approval (Ary et al., 2009). Care was taken in interpreting the findings of the study. The honesty of the study participants was also a limitation. The questions can always be asked as to whether survey respondents are as honest as possible or whether they replied with what they thought was a socially acceptable response.

Study Validity

In descriptive survey research with no treatment and control or comparison group, validity and reliability of results remain important. Study validity can be internal or external. External validity is the generalizability of the study results to another group of participants, in another place, or at another time. To what other populations, settings, or measurement variables could the findings of the study be generalized? Ary, Jacobs, Sorenson, and Razavieh (2009) identified three types of external validity: population, ecological, and external validity of operations. Population validity concerns identifying other populations to which the findings of a study are generalizable, and depends upon

how subjects were selected for a study. In the present study, the population was Escambia County, Florida residents, therefore generalizing to other populations in different areas would be difficult. No threat from interaction between subjects and treatment was present; however, using volunteers presents a problem. Volunteers may have characteristics not typical of the population and their motivation to participate is unknown. Why non-volunteers do not choose to participate and how they would have answered survey items is also unknown (Ary et al., 2009).

Ecological validity involves generalizing the study results to other situations. Careful consideration of the environment in which the research is done is necessary. In the present study, threats to ecological validity (pre-testing, novelty effect of a new treatment, or attitudes developed over the course of the study) did not present problems. Neither pre-testing nor treatments were conducted and the study was of a short enough duration not to affect the attitudes and perceptions of the participants. External validity of operations addresses how the study was conducted with specific operational definitions. Would the same results be expected with different investigators using different operational definitions or measurement procedures? The constructs for investigation are derived from the literature review and were pilot tested.

Campbell and Stanley (1963) defined internal validity as the extent to which extraneous variables are controlled by the researcher. Extraneous variables are those variables possibly affecting the outcomes of a study. Eight factors affecting internal validity are of concern in the present study: history, maturation, testing, instrumentation, statistical regression, differential selection, experimental mortality, and selection maturation interaction. History might present a problem, as outside events might

influence the views of participants. The occurrence of outside organizational, world, or natural events is beyond the control of the researcher, but any occurrence will be noted in the study if necessary. Maturation was assumed to have little influence due to the short time line of the study and the adult age of participants whose developmental sequence is not as rapid as in young children. Testing was not a problem as there was no pre-testing. The two instruments used in the study have been used previously with established and acceptable validity and reliability. With no repeated measures, statistical regression to the mean was not a problem nor was differential selection. Selection maturation interaction was not a problem as the study's participants were all adults and not likely to change over the short time of the study. Experimental mortality (subjects dropping out of the study) and a low response rate were problems in the present study.

The open ended question included in the survey was treated as qualitative data and modified content analysis was used as the analysis technique. Themes present in the writing were identified and reported. Themes were not determined prior to analysis but emerged from the responses of participants.

Summary

Chapter 3 has articulated the methodology used in addressing the research problem and questions stated for the study. The research method was described and why quantitative methods were selected for the study. The research design was a survey, the population was described, as well as the method of accessing and soliciting participants for the study. The instruments used to measure psychological stress, resilience, resource change, and descriptive variables were articulated, as well as the procedure for collecting the data. Data analysis to address the questions and

hypotheses posed for the study were described. The chapter closed with methodological limitations and study validity. Chapter 4 presents the results of the data collection and analysis.

CHAPTER 4 RESULTS

Chapter 4 presents the results of the analysis of the data collected for this study. The purpose of this study was to assess the consequences of the British Petroleum oil spill in 2010 on businesses, residents, and workers in Escambia County, Florida. The Gulf Oil Spill (GOS) survey was administered to volunteer business owners, residents, and workers in the county. The GOS survey assessed resource change, psychological distress, resilience, impact, and demographic variables. The participants in the survey are presented and described, followed by the psychometric properties of the instruments used in this study and the analyses of the research questions posed for this study. There were six research questions posed and they were as follows:

- RQ₁:** Is there a relationship among resource change, psychological stress, and resilience?
- RQ₂:** Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the DASS-21 subscales and total?
- RQ₃:** Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age and resource change predict scores on the RS-14 subscales and total?
- RQ₄:** Are there differences in the responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total?
- RQ₅:** Are there differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?
- RQ₆:** Are there differences based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Data for this study was collected electronically using the SurveyMonkey website (www.surveymonkey.com). The survey was open to any and all residents of Escambia

County, Florida and was publicized through interviews with the media, local listservs, networking, and access to other media resources. Data collection took longer than expected and yielded fewer respondents than desired. The plan was to have at least 300 participants if possible; however, after data collection started it became obvious recruiting survey participants was more difficult than expected. Lack of media coverage, newspapers not responding, and radio stations not being willing to make public service announcements made publicizing the survey difficult and limited the number of survey responses.

A local weekly paper ran an online article about the survey and published a link to the website with the survey. Local businesses were approached with flyers and business cards from the Alabama line on Perdido Key (the farthest point in the county to the southwest) to Pensacola Beach. Most people were receptive to the information about the survey and expressed interest; however, some people were hostile to the survey. The researcher was asked to leave a yacht sales shop without them even hearing about the survey.

Another issue encountered during data collection was that business owners, residents, and workers thought they had to have a loss from the GOS to participate in the survey. The researcher had to explain the purpose of the study was to measure the impact of the GOS and all responses were of interest and valuable. Other respondents expressed some paranoia about the survey process and how the data collected would be used and presented. Potential respondents thought the researcher was working for the government, BP, a law firm, or another entity involved in the oil spill to whom the information gathered from the survey would be presented.

It was necessary to constantly publicize the study and survey during the data collection process and when there were no more respondents the survey was closed and the data downloaded. There were a number of individuals connecting to the survey and completing the consent but not completing any of the survey items. Individuals not completing any items other than the consent were deleted from the study. There were also a number of places where respondents did not complete each and every item. When respondents missed items, the data cells were marked as missing and were not included in the data analysis. Missing was treated as missing data and no effort was made to impute values for the missing data as this was perceived to be putting words into the mouths of respondents. There was a reason why items were not completed although the reason is unknown. Thus, there may be a different number of responses for different scales, subscales, and variables.

Sample Demographics

A total of 151 people participated in the study. There were 23 business owners (15.8%), 86 residents (57.0%), and 37 workers (25.3%) in the group of respondents in Escambia County, Florida. Respondents not identifying whether they were a worker, resident, or business owner and not providing their zip code were not included in the analysis resulting in a total sample of 146 individuals. Participants ranged from 18-83 years of age ($M=46.06$, $SD=13.06$). The average age of business owners was 45.05 ($SD=12.34$, $n=21$), residents were on average 46.32 years of age ($SD=13.88$, $n=76$) and workers were 46.10 years of age ($SD=11.73$, $n=30$). Respondents consisted of males ($n=55$, 42.6%) and females ($n=74$, 57.4%). Table 4-1 presents the descriptive data for age by group and Table 4-2 present gender by group.

The participants in this study were nearly all Caucasian. This was true across the groups of business, resident, and worker. Table 4-3 illustrates the number and percentage for each group by ethnic group.

Most respondents had a high school diploma or GED as only 2 people indicated they had less than a high school education. Bachelor's level education was most common across business owners, residents and workers (n=42, 32.8%), followed by Master's degrees (n=29, 22.7%), High School diploma or GED (n=28, 21.9%), and finally Doctorate or Professional degrees (n=5, 3.9%). Table 4-4 illustrates the number and percentage for each group by education level.

Most people responding to the survey were employed in a full time job (n=85, 65.9%). Table 4-5 illustrates the number and percentage for each group by employment status.

There was a wide range of household income represented by the survey respondents. The majority of respondents' household income ranged from \$71,201 to \$110,000 (n=34, 27.0%). Table 4-6 illustrates the number and percentage for each group by household income.

Most respondents work 40 or more hours per week (n=44, 34.6%) or 40 or less hours per week (n=39, 30.7%). Table 4-7 illustrates the number and percentage for each group by hours worked per week.

Respondents were most frequently married or partnered (n=80, 62.0%), single (n=22, 17.1%) or divorced (n=19, 14.7%). Respondents described their living situation as "with spouse/partner" most frequently (n=45, 35.2%), followed by "with spouse/partner and children" (n=41, 32.0%), "alone" (n=26, 20.3%), "with children"

(n=10, 7.8%), and finally “with relatives” and “other” tied (n=3, 2.3%). “House” was the most frequent residence listed across all groups (n=110, 85.3%), followed by condominium/townhouse (n=10, 7.8%), rented apartment (n=8, 6.2%) and finally “other” (n=1, 0.8%).

Reliability and Validity of Instruments

Reliability can be person and situation specific (Ary et al., 2009) and it was important to assess the reliability of the scales used in this study for this particular group of respondents. The 21-Item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) and the 14-Item Resilience Scale (RS-14; Wagnild & Young, 1993) as well as the 18 item GOS measure of resource change scale were used in this study. Cronbach alpha reliability coefficients were calculated for the total scale or subscales for each instrument used in this study. Reliability was not available for the RS-14 subscales and reliability was not available for the GOS measure of resource change or the Before and After GOS scale as these were new scales developed and used in this study. Inspection of the reliability coefficients presented in Table 4-8 indicate the study alpha for the RS-14 total was slightly higher than previous reports and comparable with previously reported reliability coefficients for the DASS-21 total and subscales. The reliability for the GOS measure of resource change and the Before and After GOS were moderately high and acceptable.

The Before and After GOS scales were also compared using a paired t test to determine if the respondents indicated there were differences in their Before and After GOS physical health, mental health, finances, and relationships. Results of the paired t test indicated there were significant differences between the Before (M=.8320, SD=.9966) and After (M=1.6536, SD=1.804) GOS scores, $t(127) = -6.499, p < .001$.

Results

Prior to commencing the statistical analysis of the data collected for this study, it was necessary to code the data and create subscale scores. The instructions for the DASS-21 and the RS-14 were followed as articulated in Chapter 3. However, a change needed to be made to the measure of resource change. There were 19 items on the business owner version of the survey and 18 matching items on the resident and worker surveys. The extra item (*I had to lay off an employee(s)*) on the business survey was deleted from the analysis to answer the research questions. The extra item deletion on the business owners survey resulted in 18 matching items for the business owners, residents, and workers. The items in the resource scale with a yes response were summed to create a score for each individual and used in further analysis.

Research Question 1

The first research question and null hypothesis was as follows:

RQ₁: Is there a relationship among resource change, psychological stress, and resilience?

Ho₁: There will be no relationship among resource change, psychological stress, and resilience.

To test this hypothesis a Pearson product moment correlation was calculated for scores on the measure of resource change, the DASS-21, and the RS-14. Results indicate there was a significant negative relationship between the RS-14 and DASS-21; however, it was statistically very small, as was the negative relationship between the RS-14 and resource change. The strongest relationship was between resource change and the DASS-21 ($r=.513$). Table 4-9 presents the results of this analysis.

Research Question 2

Research question and null hypothesis 2 were as follows:

RQ₂: Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the DASS-21 subscales and total?

Ho₂: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and the DASS-21 subscales and total.

The DASS-21 consists of three subscales and a total scale score and each subscale and the total scale served as the dependent variable or predicted variable. The subscales include depression, anxiety, and stress. The predictor or independent variables were income group, employment status, hours worked per week, marital status, level of education, age, and resource change score. Each of the subscales is addressed followed by the DASS-21 total score. A stepwise multiple regression was used to address the subscales and total DASS-21 scale null hypothesis 2. Multicollinearity was assessed for each subscale and total scale and was not present in this analysis. The variance inflation factor (VIF) and tolerance were well within limits noted by Stevens (2009).

The first subscale to be tested was the depression subscale of the DASS-21. The results of this analysis indicated there was a statistically significant 2 step model developed, $R=.476$ $R^2=.227$, $R^2_{adj} = .213$, $F(1, 117) = 6.748$, $p<.011$. Resource change and employment status accounted for 22.7% of the variance in total resilience. Resource change accounted for 18.2% and employment status added 4.5% of the variance in the final model. The null hypothesis was rejected for resource change and employment status; however the study failed to reject the null hypothesis for income group, hours worked, marital status, level of education, and age. Table 4-10 presents the stepwise model summary and Table 4-11 presents the coefficients for this analysis.

The second DASS-21 subscale addressed was anxiety. Results of the stepwise regression analysis indicated there was a statistically significant two-step model developed for anxiety, $R=.478$, $R^2=.229$, $R^2_{adj} = .216$, $F(1, 117) = 10.865$, $p=.001$. The model accounted for 22.9% of the variance in anxiety with resource change accounting for 15.7% and employment status adding 7.2% to the total variance. The null hypothesis was rejected for resource change and employment status; however, the study failed to reject the null hypothesis for income group, hours worked, marital status, level of education, and age. Table 4-12 presents the stepwise model summary and Table 4-13 presents the coefficients for this analysis.

The third DASS-21 subscale addressed was stress. Results of the stepwise regression analysis indicated there was a statistically significant two-step model developed for stress, $R=.611$, $R^2=.373$, $R^2_{adj} = .362$, $F(1, 117) = 3.933$, $p<.050$. The model accounted for 37.3% of the variance in stress with resource change accounting for 35.2% of the variance and hours worked adding 2.1% of the variance. The null hypothesis was rejected for resource change and hours worked. The study failed to reject the null hypothesis for income group, employment status, marital status, level of education, and age. Table 4-14 presents the stepwise model summary and Table 4-15 presents the coefficients for this analysis.

The DASS-21 total scale scores were also tested to identify statistically significant predictors of the total scale score. Results of this analysis indicated there was a statistically significant two step model for predicting the DASS-21 total score, $R=.551$, $R^2=.303$, $R^2_{adj} = .291$, $F(1, 117) = 5.884$, $p<.017$. The two step model accounted for 30.3% of the variance in DASS-21 scores and resource change (26.8%)

and hours worked adding 3.5% of the variance in DASS-21 total scores. Table 4-16 presents the stepwise model summary and Table 4-17 presents the coefficients for this analysis.

The demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change were used to predict scores on the DASS-21 total and subscales of depression, anxiety, and stress. Statistically significant models were found for depression, anxiety, stress, and the total DASS-21 scale score. It is interesting to note resource change was a predictor in each model. Table 4-18 presents a summary of the predicted variable and the significant predictors for each model.

Research Question 3

The third research question and null hypothesis was as follows:

RQ₃: Do the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change predict scores on the RS-14 subscales and total?

Ho₃: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and RS-14 subscales and total.

The dependent or predicted variables were self-reliance, meaning, equanimity, perseverance, existential aloneness, and RS-14 total score. The independent variables were income group, employment status, hours worked per week, marital status, level of education, age, and resource change. A stepwise multiple regression was used to address the subscales and RS-14 total scale null hypothesis 2. Multi-collinearity was assessed for each subscale and total scale and was not present in this analysis. The variance inflation factor (VIF) and tolerance were well within limits noted by Stevens (2009).

The first subscale to be tested was the self-reliance subscale of the RS-14. The results of this analysis indicated there was a statistically significant 3 step model developed, $R=.370$, $R^2=.137$, $R^2_{adj} = .114$, $F(1, 116) = 3.931$, $p=.050$. Income, age, and marital status accounted for 13.7% of the variance in self-reliance. Income accounted for 6.4%, age added 4.4%, and marital status added 2.9% of the variance in the final model. The null hypothesis was rejected for income, age, and marital status; however, the study failed to reject the null hypothesis for income group, hours worked, employment status, level of education, and resource change. Table 4-19 presents the stepwise model summary and Table 4-20 presents the coefficients for this analysis.

The second subscale to be tested was the meaning subscale of the RS-14. The results of this analysis indicated there was a statistically significant 1 step model developed, $R=.326$, $R^2=.106$, $R^2_{adj} = .099$, $F(1, 118) = 14.022$, $p<.001$. Income accounted for 9.9% of the variance in meaning. The null hypothesis was rejected for income; however, the study failed to reject the null hypothesis for age, marital status, hours worked, employment status, level of education, and resource change. Table 4-21 presents the stepwise model summary and Table 4-22 presents the coefficients for this analysis.

The third subscale to be tested was the equanimity subscale of the RS-14. The results of this analysis indicated there was a statistically significant 1 step model developed, $R=.239$, $R^2=.057$, $R^2_{adj} = .049$, $F(1, 118) = 7.119$, $p=.009$. Income accounted for 5.7% of the variance in equanimity. The null hypothesis was rejected for income; however, the study failed to reject the null hypothesis for age, marital status, hours worked, employment status, level of education, and resource change. Table 4-23

presents the stepwise model summary and Table 4-24 presents the coefficients for this analysis.

The fourth subscale to be tested was the perseverance subscale of the RS-14. The results of this analysis indicated there was a statistically significant 1 step model developed, $R=.345$, $R^2=.119$, $R^2_{adj} = .112$, $F(1, 118) = 15.970$, $p<.001$. Income accounted for 11.9% of the variance in perseverance. The null hypothesis was rejected for income; however the study failed to reject the null hypothesis for age, marital status, hours worked, employment status, level of education, and resource change. Table 4-25 presents the stepwise model summary and Table 4-26 presents the coefficients for this analysis.

The fifth subscale to be tested was the existential aloneness subscale of the RS-14. The results of this analysis indicated there was a statistically significant 1 step model developed, $R= .336$, $R^2=.113$, $R^2_{adj} = .105$, $F(1, 118) = 15.006$, $p<.001$. Income accounted for 11.3% of the variance in existential aloneness. The null hypothesis was rejected for income; however, the study failed to reject the null hypothesis for age, marital status, hours worked, employment status, level of education, and resource change. Table 4-27 presents the stepwise model summary and Table 4-28 presents the coefficients for this analysis.

The sixth analysis was to test for predictors of the RS-14 total score. The results of this analysis indicated there was a statistically significant 1 step model developed, $R=.320$, $R^2=.102$, $R^2_{adj} = .095$, $F(1, 118) = 13.443$, $p<.001$. Income accounted for 10.2% of the variance in total RS-14. The null hypothesis was rejected for income; however, the study failed to reject the null hypothesis for age, marital status, hours worked,

employment status, level of education, and resource change. Table 4-29 presents the stepwise model summary and Table 4-30 presents the coefficients for this analysis.

The demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change were used to predict scores on the RS-14 total and subscales of self-reliance, meaning, equanimity, perseverance, and existential aloneness. Statistically significant models were found for self-reliance, meaning, equanimity, perseverance, and existential aloneness, and the total RS-14 score. It is interesting to note income was a predictor in each model. Table 4-31 presents a summary of the predicted variable and the significant predictors for each model.

Research Question 4

Research question and null hypothesis 4 were as follows:

RQ₄: Are there differences in responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales and RS-14 total?

Ho₄: There are no differences in responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, and RS-14 subscales and RS-14 total.

Research question four was addressed through the use of a univariate ANOVA. The independent variables were business owners, residents, or workers and the dependent variables were the three subscale scores of the DASS-21 (Depression, Anxiety, and Stress), the DASS-21 total score, the five subscale scores of the RS-14 (Self-reliance, Meaning, Equanimity, Perseverance, and Existential Aloneness), the RS-14 total score, and resource change.

Results of the ANOVA analysis of the total scale and subscales of the RS-14, DASS-21, and resource change indicated there were statistically significant differences

aming business owners, residents, and workers for the stress subscale of the DASS-21 scale, $F(2, 128) = 4.117, p = .018$ and resource change, $F(2, 134) = 10.611, p < .000$. Business owners had a higher mean score on stress ($M = 6.64, SD = 5.45$) than did residents ($M = 3.76, SD = 3.94$) or workers ($M = 5.03, SD = 4.15$). The Bonferroni post hoc test for stress indicated business owners differed significantly from residents ($p = .019$) but residents did not differ from workers ($p = .472$), and workers did not differ from business owners ($p = .524$). For resource change, the Bonferroni post hoc test indicated business owners differed significantly from residents ($p < .000$) and workers differed significantly from business owners ($p = .025$), but residents did not differ from workers ($p = .227$). The null hypothesis was rejected for DASS-21 stress and resource change; however, the study failed to reject the null hypothesis for DASS-21 total, depression, and anxiety. Table 4-32 presents the means and standard deviations for the statistically significant findings.

Research Question 5

Research question 5 and null hypothesis 5 were as follows:

RQ₅: Are there differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Ho₅: There will be no differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

Research question 5 asked about differences in Escambia County respondents by income group on the scales and subscales used in the study. The independent variable was income group and the dependent variables were depression, anxiety, stress, DASS-21 total score, self-reliance, meaning, equanimity, perseverance, existential aloneness, RS-14 total score, and resource change. Data collected for income was

grouped into 8 groups from \$0.00 to 230,001 or more dollars in income. There were too few individuals in the higher income groups, \$150,000-190,000 ($n=7$), \$190,001-230,000 ($n=3$), and \$230,001 ($n=4$), and these 3 groups were collapsed into one group of \$150,000 and higher ($n=14$) for this analysis resulting in 6 income groups.

Results of the ANOVA analysis of the scales and subscales of the DASS-21, RS-14, and resource change indicated there were statistically significant differences by income group for 4 of the subscales of the RS-14 (meaning, equanimity, perseverance, and existential aloneness), the RS-14 total score, resource change scale and the null hypothesis was rejected. There were no statistically significant differences for the self-reliance subscale, the DASS-21 total score, the depression, anxiety, or stress subscales, therefore the study failed to reject the null hypothesis for these variables. Table 4-33 summarizes the results of this analysis.

Income group 5 (\$110,001-150,000) had a higher mean score on meaning ($M=18.77$, $SD=3.34$) and income group 6 (\$150,001 and higher) had a higher mean score on meaning ($M=19.36$, $SD=1.60$) than did income group 1 (\$0-\$22,757; $M=14.30$, $SD=3.34$). Income groups 5 and 6 also had higher mean scores on equanimity, perseverance, and RS-14 total than did income group 1. Income groups 4, 5, and 6 had higher mean scores on existential aloneness than did income group 1. Table 4-34 presents the means and standard deviations for the statistically significant findings.

Table 4-35 illustrates the mean resource change for respondents by income group. It is interesting to note the lower income groups experienced more resource change as opposed to those with higher incomes. This finding indicates those with

lower incomes indicated they had more loss, loss of job, and loss of income than did those with higher incomes.

The Bonferroni post hoc test for meaning indicated that income group 5 ($p=.027$) and income group 6 ($p=.005$) differed significantly from income group 1, but there were no other significant differences among the income groups. For equanimity, the Bonferroni post hoc test indicated income group 5 ($p=.038$) and income group 6 ($p=.027$) differed significantly from income group 1. There were no other significant differences among income groups. For perseverance, income group 5 ($p=.040$) and income group 6 ($p=.032$) differed significantly from income group 1 with no other significant differences among income groups. For existential aloneness, income group 4 ($p=.029$), income group 5 ($p=.002$), and income group 6 ($p=.001$) differed significantly from income group 1 with no other significant differences among income groups. For the RS-14 total, income group 5 ($p=.039$) and income group 6 ($p=.018$) differed significantly from income group 1 with no other significant differences among groups.

Research Question 6

Research question 6 and the null hypothesis were as follows:

RQ₆: Are there differences based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County?

Ho₆: There will be no differences based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

Research question six asked if there were differences in the responses based on those making a claim and those not making a claim. There were 122 individuals making no claim (80.8%) and 29 individuals participating in this survey making a claim (19.2%). The data was analyzed using a univariate ANOVA. The independent variable was claim

or no claim and the dependent variables were the three subscale scores of the DASS-21 (depression, anxiety, and stress), the total DASS-21 score, the five subscale scores of the RS-14 (self-reliance, meaning, equanimity, perseverance, and existential aloneness), the total RS-14 score, and resource change.

Results of the ANOVA analysis of the scales and subscales of the DASS-21, RS-14, and resource change indicated there were statistically significant differences for those with and without a claim for the stress subscale, the DASS-21 total score, and resource change. The null hypothesis was rejected for DASS-21 stress subscale, DASS-21 total, and resource change. The study failed to reject the null hypothesis for all of the RS-14 subscales, RS-14 total, and the DASS-21 subscales of depression and anxiety. Table 4-36 summarizes these results.

Those submitting a claim had a higher mean score on the stress subscale of the DASS-21 ($M=7.10$, $SD=4.49$) than those with no claim ($M=3.84$, $SD=4.08$). Those with a claim also had a higher mean score for the DASS-21 total ($M=14.48$, $SD=10.99$) and resource change ($M=4.10$, $SD=2.77$) than those indicating no claim. Table 4-37 presents the mean and standard deviations for the statistically significant findings.

Open-Ended Question

The open-ended question was included because the measure of resource change, the DASS-21, and the RS-14 were very specific measures that may or may not have yielded information about the impact of the GOS on respondents, and the open-ended question allowed all respondents the opportunity to tell their story about the impact of the GOS on their lives. Sixty-four respondents chose to answer this question. Sixty-two (42.4% of the total respondents) respondents expressed concerns, fears, and frustrations about the oil spill, the clean-up process, the claims process, environmental

damage, health effects, and effects on children. Themes identified in the analysis are presented below.

One theme repeated throughout the responses to the open-ended question was “fear.” Fear was expressed about children’s health and safety, personal health, the future, seafood, and the water of the Gulf of Mexico. One respondent stated “The spill has effected every aspect of life living on the Gulf Coast, we can’t safely go to the beach, eat the seafood, or even breathe the air!” Anger was another theme present in the responses. Anger was expressed over the damage done to the environment, loss of life savings, and the claims process. One respondent stated, “I alienated my spouse, was very angry at everything.” There were a number of complaints mentioned in the responses of the 62 participants. There were physical health complaints (self and others; cancer; asthma; flu symptoms in children), environmental complaints (smelling fumes; seeing oiled wild life; use of oil dispersants), and loss of recreation complaints, such as being unable to swim, boat, or walk on the beaches.

There were a number of complaints about the claims process. One respondent wrote, “GCCF was and is a farce, solely looking out for the interests of BP and to pad Feinbergs bank account!” Respondents stated the GOS did not just impact the beach, but impacted the entire area. One respondent wrote, “The spill did not just effect people on the beach or who worked on the water (fishermen, charter boats Beach properties and rental management companies, etc.) it effected all businesses, no matter where they were located in Escambia or Santa Rosa County supplying businesses dependent on the water.” Frustration at the process and seemingly unfair payouts to certain people were also mentioned. Another respondent wrote “It appears individuals, such as

waiters and employees of impacted businesses had a much easier time of getting money from BP than the actual businesses that employed these people.”

In spite of the resource change measure being included in the survey, economic complaints were also mentioned repeatedly. These complaints included losing customers, not making enough money, homes losing value, not being able to fish and eat seafood, losing life savings, and losing business opportunities.

The clean-up process also brought about concerns. Some respondents stated they were hired as clean-up workers and one stated, “I feel the way BP handled the spill was dishonest and immoral.” Others thought clean-up workers were not actually working and clean-up workers were being told not to clean up hidden oil. Government and big business complaints were also prevalent including: trusting the government, losing faith in the government, and not trusting BP.

Summary

In this chapter, the results of a survey to assess the consequences of the BP oil spill in 2010 on businesses, residents, and workers in Escambia County, Florida were presented. The participants in the survey were presented and described, as were the psychometric properties of the instruments used in this study. The study’s research questions were answered by providing a detailed explanation of the results of the data analysis. In Chapter 5 the results will be discussed as well as the theoretical implications, practice implications, and study limitations. Additionally, recommendations for future research will be presented.

Table 4-1. Study Participants Mean Age by Group

	Business		Resident		Worker		Total	
	M	SD	M	SD	M	SD	M	SD
Age	45.05	12.33	46.32	13.87	46.10	11.72	46.06	13.06

Table 4-2. Study Participants by Gender

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
Male	18	81.8	27	35.5	10	32.3	55	42.6
Female	4	18.2	49	64.5	21	67.7	74	57.4

Table 4-3. Study Participants by Ethnic Group

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
Black	0	0.0	2	2.6	1	3.2	3	2.3
Asian	0	0.0	3	3.9	1	3.2	4	3.1
White	21	95.5	68	89.5	29	93.5	118	91.5
Hispanic	1	4.5	2	2.6	0	0.0	3	2.3
Other	0	0.0	1	1.3	0	0.0	1	.8

Table 4-4. Study Participants by Education Level

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
Less than High school	0	0.0	1	1.3	1	3.2	2	1.6
High School/GED	6	28.6	17	22.4	5	16.1	28	21.9
Associate's Degree	4	19.0	14	18.4	4	12.9	22	17.2
Bachelor's Degree	7	33.3	23	30.3	12	38.7	42	32.8
Master's Degree	3	14.3	20	26.3	6	19.4	29	22.7
Doctorate/ Professional Degree	1	4.8	1	1.3	3	9.7	5	3.9

Table 4-5. Study Participants by Employment Status

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
Full Time Job	21	95.5	40	52.6	24	77.4	85	65.9
Part Time Job	1	4.5	8	10.5	2	6.5	11	8.5
Multiple Part Time Jobs	0	0.0	2	2.6	1	3.2	3	2.3
Retired	0	0.0	8	10.5	1	3.2	9	7.0
Homemaker	0	0.0	8	10.5	0	0.0	8	6.2
Unemployed	0	0.0	6	7.9	3	9.7	9	7.0
Disabled	0	0.0	4	5.3	0	0.0	4	3.1

Table 4-6. Study Participants by Household Income

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
0-22,757	0	0.0	5	6.8	5	16.7	10	7.9
22,758-44,500	4	18.2	19	25.7	4	13.3	27	21.4
44,501-71,200	5	22.7	19	25.7	4	13.3	28	22.2
71,201-110,000	6	27.3	19	25.7	9	30.0	34	27.0
110,001-150,000	3	13.6	5	6.8	5	16.7	13	10.3
150,001-190,000	2	9.1	4	5.4	1	3.3	7	5.6
190,001-230,000	0	0.0	2	2.7	1	3.3	3	2.4
230,001 and above	2	9.1	1	1.4	1	3.3	4	3.2

Table 4-7. Study Participants by Hours Worked per Week

	Business		Resident		Worker		Total	
	N	%	N	%	N	%	N	%
20 hours or less	1	4.5	9	12.2	2	6.5	12	9.4
30 hours or less	1	4.5	7	9.5	1	3.2	9	7.1
40 hours or less	6	27.3	21	28.4	12	38.7	39	30.7
More than 40 hours	14	63.6	17	23.0	13	41.9	44	34.6
Not Applicable	0	0.0	20	27.0	3	9.7	23	18.1

Table 4-8. Reliability Coefficients for Study Scales

	No. items	Previous	Study	Study Mean	Study SD
RS-14 Total	14	.89	.955	81.17	14.746
Self-reliance	5	N/A	.880	29.78	5.299
Meaning	3	N/A	.859	12.11	3.480
Equanimity	2	N/A	.717	11.00	2.430
Perseverance	2	N/A	.777	11.37	2.510
Existential Aloneness	2	N/A	.825	11.39	2.592
DASS-21 Total	21	.966	.961	10.19	11.214
Anxiety	7	.879	.885	2.25	3.346
Depression	7	.947	.930	3.26	4.269
Stress	7	.933	.916	4.63	4.379
GOS Scale total	18	N/A	.780	1.19	2.012
Before GOS Scale	4	N/A	.756	3.33	3.986
After GOS Scale	4	N/A	.857	6.62	7.201

Table 4-9. Correlation Matrix

Variables	DASS-21 Total	RS-14 Total	Resource Change
DASS-21 Total	1.00		
RS-14 Total	-.181*	1.00	
Resource Change	.513**	-.115	1.00

* $p < .05$ (two tailed), ** $p < .01$ (two tailed).

Table 4-10. Model Summary for the DASS-21 Depression Subscale

Step	R	R^2	R_{2adj}	ΔR^2	F_{chg}	Df	P
1	.343	.182	.175	.182	26.256	1, 118	<.001
2	.476	.227	.213	.045	6.748	1, 117	.011

Table 4-11. Coefficients for DASS-21 Depression Subscale

	B	β	t	p	Bivariate r	Partial r
Resource Change	.668	.408	4.995	<.001	.427	.419
Employment status	.493	.212	2.598	.011	.248	.234

Table 4-12. Model Summary for the DASS-21 Anxiety Subscale

Step	R	R^2	R_{2adj}	ΔR^2	F_{chg}	Df	P
1	.397	.157	.158	.157	22.034	1,118	<.001
2	.478	.229	.216	.072	10.885	1,117	.001

Table 4-13. Coefficients for DASS-21 Anxiety Subscale

	B	β	t	p	Bivariate r	Partial r
Resource Change	.478	.379	4.574	<.001	.397	.389
Employment status	.489	.269	3.296	.001	.392	.292

Table 4-14. Model Summary for the DASS-21 Stress Subscale

Step	R	R^2	R_{2adj}	ΔR^2	F_{chg}	Df	P
1	.593	.352	.346	.352	34.002	1, 118	<.001
2	.611	.373	.362	.021	3.933	1, 117	.050

Table 4-15. Coefficients for DASS-21 Stress Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	Bivariate <i>r</i>	Partial <i>r</i>
Resource Change	.985	.584	7.967	<.001	.593	.583
Hours Worked	.562	.145	1.983	.050	.180	.145

Table 4-16. Model Summary for the DASS-21 Total Score

Step	<i>R</i>	R^2	R_{2adj}	ΔR^2	F_{chg}	<i>Df</i>	<i>P</i>
1	.518	.268	.262	.268	43.227	1,118	<.001
2	.551	.303	.291	.035	5.884	1,117	.017

Table 4-17. Coefficients for DASS-21 Total Score

	<i>B</i>	β	<i>t</i>	<i>p</i>	Bivariate <i>r</i>	Partial <i>r</i>
Resource Change	2.136	.501	6.467	<.001	.518	.513
Hours Worked	1.137	.188	2.426	.017	.233	.219

Table 4-18. Summary of Regression Analysis for DASS-21

Scale	Predictor	Predictor
Depression	Resource Change	Employment Status
Anxiety	Resource Change	Employment Status
Stress	Resource Change	Hours Worked
DASS-21 Total	Resource Change	Hours Worked

Table 4-19. Model Summary for the RS-14 – Self-Reliance Subscale

Step	<i>R</i>	R^2	R_{2adj}	ΔR^2	F_{chg}	<i>Df</i>	<i>P</i>
1	.253	.064	.056	.064	8.059	1, 118	.005
2	.328	.108	.092	.044	5.716	1, 117	.018
3	.370	.137	.114	.029	3.931	1, 116	.050

Table 4-20. Coefficients for RS-14 – Self-Reliance Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	Bivariate <i>r</i>	Partial <i>r</i>
Income	1.142	.333	3.692	<.001	.253	.324
Age	-.115	-2.78	-2.941	.004	-.137	-.254
Marital status	1.121	.181	1.983	.050	.081	.181

Table 4-21. Model Summary for the RS-14 – Meaning Subscale

Step	<i>R</i>	<i>R</i> ²	<i>R</i> _{2adj}	ΔR^2	<i>F</i> _{chg}	<i>Df</i>	<i>P</i>
1	.326	.106	.099	.106	14.022	1, 118	<.001

Table 4-22. Coefficients for RS-14 – Meaning Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>Bivariate r</i>	<i>Partial r</i>
Income	.725	.326	3.745	<.001	.326	.326

Table 4-23. Model Summary for the RS-14 – Equanimity Subscale

Step	<i>R</i>	<i>R</i> ²	<i>R</i> _{2adj}	ΔR^2	<i>F</i> _{chg}	<i>Df</i>	<i>P</i>
1	.239	.057	.049	.057	7.119	1, 118	.009

Table 4-24. Coefficients for RS-14 – Equanimity Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>Bivariate r</i>	<i>Partial r</i>
Income	.379	.239	2.668	.009	.239	.239

Table 4-25. Model Summary for the RS-14 – Perseverance Subscale

Step	<i>R</i>	<i>R</i> ²	<i>R</i> _{2adj}	ΔR^2	<i>F</i> _{chg}	<i>Df</i>	<i>P</i>
1	.345	.119	.112	.119	15.970	1,118	<.001

Table 4-26. Coefficients for RS-14 – Perseverance Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>Bivariate r</i>	<i>Partial r</i>
Income	.569	.345	3.996	<.001	.345	.345

Table 4-27. Model Summary for the RS-14 – Existential Aloneness Subscale

Step	<i>R</i>	<i>R</i> ²	<i>R</i> _{2adj}	ΔR^2	<i>F</i> _{chg}	<i>Df</i>	<i>P</i>
1	.336	.113	.105	.113	15.006	1,118	<.001

Table 4-28. Coefficients for RS-14 – Existential Aloneness Subscale

	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>Bivariate r</i>	<i>Partial r</i>
Income	.556	.336	3.874	<.001	.336	.336

Table 4-29. Model Summary for the Total RS-14

Step	<i>R</i>	<i>R</i> ²	<i>R</i> _{2adj}	ΔR^2	<i>F</i> _{chg}	<i>Df</i>	<i>P</i>
1	.320	.102	.095	.102	13.443	1,118	<.001

Table 4-30. Coefficients for Total RS-14

	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>Bivariate r</i>	<i>Partial r</i>
Income	3.096	.320	3.666	<.001	.320	.320

Table 4-31. Summary of Regression Analysis for RS-14

Scale	Predictor 1	Predictor 2	Predictor 3
Self-Reliance	Income	Age	Marital status
Meaning	Income		
Equanimity	Income		
Perseverance	Income		
Existential Aloneness	Income		
RS-14 Total	Income		

Table 4-32. Means and Standard Deviations for Stress and Resource Change

		Mean	Std Deviation
Stress	Business Owners	6.64	5.45
	Residents	3.76	3.94
	Workers	5.03	4.15
Resource Change	Business Owners	3.96	3.08
	Residents	1.35	2.13
	Worker	2.23	2.50

Table 4-33. Summary Analysis Question 5 Significant Results

Variable	<i>df</i>	<i>F</i>	<i>p</i>
Meaning	5, 120	3.506	.005
Equanimity	5, 120	3.041	.013
Perseverance	5, 120	4.014	.002
Existential Aloneness	5, 120	4.883	.000
RS-14 Total	5, 120	3.543	.005
Resource Change	5, 234	2.307	.049

Table 4-34. Means and Standard Deviations for Significant RS-14 Total and Subscales

	Income group	<i>N</i>	<i>Mean</i>	<i>Std Deviation</i>
Meaning	Grp 1 (\$0-22,757)	10	14.30	3.36
	Grp 2 (\$22,758-44,500)	27	17.03	3.01
	Grp 3 (\$44,501-71,200)	28	16.78	4.49
	Grp 4 (\$71,201-110,000)	34	17.82	3.21
	Grp 5 (\$110,001-150,000)	13	18.77	2.49
	Grp 6 (\$150,001 & up)	14	19.36	1.60
Equanimity	Grp 1 (\$0-22,757)	10	9.00	3.09
	Grp 2 (\$22,758-44,500)	27	10.88	1.78
	Grp 3 (\$44,501-71,200)	28	10.42	2.97
	Grp 4 (\$71,201-110,000)	34	10.58	2.51
	Grp 5 (\$110,001-150,000)	13	12.15	1.99
	Grp 6 (\$150,001 & up)	14	1.21	1.84
Perseverance	Grp 1 (\$0-22,757)	10	9.50	2.87
	Grp 2 (\$22,758-44,500)	27	10.51	2.42
	Grp 3 (\$44,501-71,200)	28	10.60	2.78
	Grp 4 (\$71,201-110,000)	34	11.76	2.60
	Grp 5 (\$110,001-150,000)	13	12.69	1.70
	Grp 6 (\$150,001 & up)	14	12.71	1.72
Existential Aloneness	Grp 1 (\$0-22,757)	10	8.80	3.25
	Grp 2 (\$22,758-44,500)	27	11.33	2.25
	Grp 3 (\$44,501-71,200)	28	10.53	2.99
	Grp 4 (\$71,201-110,000)	34	11.55	2.36
	Grp 5 (\$110,001-150,000)	13	12.76	1.36
	Grp 6 (\$150,001 & up)	14	12.85	1.40
RS-14 Total	Grp 1 (\$0-22,757)	10	69.60	14.63
	Grp 2 (\$22,758-44,500)	27	78.14	11.97
	Grp 3 (\$44,501-71,200)	28	76.67	19.61
	Grp 4 (\$71,201-110,000)	34	81.61	14.74.
	Grp 5 (\$110,001-150,000)	13	88.38	9.30
	Grp 6 (\$150,001 & up)	14	89.50	8.81

Table 4-35. Means and Standard Deviations for Resource Change

Group	<i>N</i>	<i>M</i>	<i>SD</i>
Grp 1 (\$0-22,757)	10	4.10	3.41
Grp2 (\$22,758-44,500)	27	2.52	3.30
Grp3 (\$44,501-71,200)	28	2.32	2.80
Grp4 (\$71,201-110,000)	33	1.45	1.75
Grp 5 (\$110,001-150,000)	13	1.38	1.98
Grp 6 (\$150,001 & up)	13	1.23	1.64

Table 4-36. ANOVA Results for Question 6 Significant Results

Variable	<i>df</i>	<i>F</i>	<i>p</i>
Stress	1, 129	13.772	<.000
DASS-21 Total	1, 130	6.829	.010
Resource Change	5, 135	29.384	<.000

Table 4-37. Mean and Standard Deviation for Significant Findings by Claim/No Claim

	Claim Status	Mean	Std Deviation
Stress	Claim	7.10	4.49
	No Claim	3.84	4.08
DASS-21 Total	Claim	14.48	10.99
	No Claim	8.58	10.67
Resource Change	Claim	4.10	2.77
	No Claim	1.45	2.21

CHAPTER 5 DISCUSSION

Technical disasters are nothing new; however the scale, geographical area impacted, and damage caused by the Gulf Oil Spill (GOS) makes it the worst technical disaster in American history (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 2011). Research conducted on previous technical disasters, including oil spills such as the *Exxon Valdez* in Alaska, identified Conservation of Resources theory as useful for understanding the psychological stress felt by people impacted (Picou et al., 2004; Picou & Gill, 1996). This study examined the relationships among resource loss, psychological stress, resilience, and demographic characteristics of residents of Escambia County, Florida after the GOS.

The study was designed to help identify who was impacted by the GOS in Escambia County, Florida in order to help those impacted seek and access tangible goods and services. The results of the study offer information about business owners, residents, and workers in Escambia County and may provide baseline data to understand the far-reaching effects of the GOS. The desired outcome of the study is for the information gathered to be used to inform public service initiatives, delivery of services, and policy making in the local area in order to better serve the population of Escambia County, FL.

Overview of the Chapter

Chapter five discusses the results of the study's descriptive data, instrumentation, and hypotheses along with the implications of each. Finally, chapter 5 describes the limitations of the study and makes recommendations for future research.

Discussion of the Descriptive Data

The study used a convenience sample to collect data by gathering information from business owners, residents, and workers in Escambia County, Florida. The demographic data collected was not entirely consistent with the demographic data describing Escambia County, Florida. The first major difference in Escambia County demographic data and the demographic data collected from the survey was the majority of respondents to the study were Caucasian (91.5%) whereas in the county, that number is 69.9% (US Census Bureau, 2012). Of particular note is the low number of Black survey respondents (2.3% of the total respondents) versus the 22.2% of Black people in the population of Escambia County. Females represented 57.4% of the study sample whereas they represent 50.5% of the population. Respondents had more education than the general population of the county, with 59.4% of respondents having a bachelor's degree or higher and only 23.4% of the county population having the same (US Census Bureau, 2012). Also of note is that respondents had a full time job (65.9%), made upwards of \$44,501 per year (70.7%) and were an average age of 46 years old.

The study relied on self-reported data and there is no way to verify all of the demographic data provided by respondents. It is important to note that study participants were volunteers. Volunteers may be different from non-volunteers in level of education, their inclination to add to a topic of study, they may be less authoritarian, and are less conforming (Gall et al., 2006).

The current convenience sample of Escambia County, Florida may have elicited the participation of those members of the community who felt they had something to say about the GOS and was not representative of the entire county. The convenience

sample may also have been limited to those with access to computers and the Internet, as well as those who heard about the study. Every attempt was made to spread word about the study through the use of social media, internet news sources, listservs, flyers, and business cards.

Discussion of Instrumentation

The study assessed resource change, psychological stress, and resilience in the aftermath of the GOS in Escambia County, Florida. The three instruments used were designed to gather responses pertinent to the research questions and hypotheses. The first instrument, the measure of resource change, was modeled after Hobfoll's (2001) COR-E, and was used to determine number of resources changed for respondents. The second instrument, the 21-Item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995), was used to determine levels of psychological stress in business owners, residents, and workers. The 14-Item Resilience Scale (RS-14; Wagnild & Young, 1993) was used to determine levels of resilience in the sample. The reliability of these instruments was moderately high and acceptable to this study, even though the measure of resource change was new and had never been tested before. These instruments represented the best assessments for measuring the constructs of interest for this study.

Discussion of Hypotheses

The six null hypotheses were designed to determine if there was a relationship among resource change, psychological stress, and resilience, if there was a predictive relationship among demographic variables (income group, employment status, hours worked per week, marital status, level of education, and age) and resource change, DASS-21 scale and subscale scores, and RS-14 scale and subscale scores, if there

was a difference among business owners, residents, and workers on the resource change measure, DASS-21 scale and subscales, and RS-14 scale and subscales, if there was a difference based on income group or claim status on the measure of resource change, the DASS-21 scale and subscales, and the RS-14 scale and subscales.

The first hypothesis sought to determine if there was a relationship among the measure of resource change, the DASS-21, and the RS-14. Hypothesis 2 used multiple regression to determine if there was a predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and the DASS-21 total and DASS-21 subscales. Hypothesis 3 used multiple regression to determine if there was a predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, resource change, total RS-14, and RS-14 subscales. Hypothesis 4 utilized a univariate ANOVA to determine if there was a difference in responses of business owners, residents, or workers on the resource change, DASS-21 subscales, DASS-21 total, and RS-14 subscales and RS-14 total. Hypothesis 5 utilized an ANOVA to determine if there were differences based on income group for the DASS-21 total scale and subscales, RS-14 total scale and subscales, and resource change scale for Escambia County. Hypothesis 6 utilized a univariate ANOVA to determine if there were differences based on claim status for the DASS-21 total scale and subscales, RS-14 total scale and subscales, and resource change scale for Escambia County.

Discussion of Hypothesis 1

Ho₁: There will be no relationship among resource change, psychological stress, and resilience.

As seen in Table 4-9 there was a significant negative association between psychological stress as measured by the DASS-21 total score and resilience as measured by the RS-14 total score and there was a significant positive association between psychological stress as measured by the DASS-21 and resource change. There was a non-significant negative association between resilience as measured by the RS-14 total and resource change. It makes sense that there would be a negative association between DASS-21 scores and RS-14 scores since the higher the rating of depression, anxiety, and stress a respondent was feeling, the lower their resilience would be. Likewise, the higher the resilience scores, the lower the scores would be on the measure of psychological stress. Study findings confirm Wagnild's (2009) contention that as RS-14 scores increased, reported depression decreased and overall health status increased.

Notably, when there was more resource change, there was more psychological stress (depression, anxiety, and stress) as measured by the DASS-21. These findings correspond to COR theory in that the more resource change (or resource loss, specifically), the more likely a person would feel psychological stress.

It was interesting to find that there was not a significant negative association between resilience and resource change, as one might think that the more resource change, the lower resilience may be. However, the results could be explained by the overall rates of resilience for the population or the fact those who responding to the survey were resilient.

Discussion of Hypothesis 2

Ho₂: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, and resource change and the DASS-21 subscales and total.

Resource change was a predictor for scores on the DASS-21 total and each of the subscales (depression, anxiety, and stress). Results indicated the relationship between resource change (and resource loss) and psychological stress. The more resource change, the more psychological stress. Employment status was a predictor for depression, anxiety, and DASS-21 total. This finding is important because it reaffirms financial circumstances, such as having a job, or not having one, impacts psychological stress (Bisgaier & Rhodes, 2011). Hours worked was a predictor only for stress. It is interesting the amount a person works, whether it is many hours or few, impacts their level of psychological stress. What may be a more important factor is the culture of the workplace, as the culture has a direct impact on employees' psychological stress (Hobfoll, 2011).

Income group, marital status, level of education and age were not predictors of psychological stress. Age has been identified in disaster literature as a demographic variable predicting coping ability; however age was not a significant predictor of coping in the study (Flynn & Norwood, 2004). Higher levels of income or having more resources was identified in the COR literature as being a protective factor against psychological stress (Hobfoll, 2001). Study findings do not appear to confirm these ideas possibly due to the variety of individuals participating in the study. Marital status, particularly having a partner, is thought to be a protective factor against depression, anxiety, and stress (Flynn & Norwood, 2004). Again, that does not seem to be the case

with the data on the GOS. Level of education, whether high or low, does not offer any predictive ability in relation to psychological stress in the GOS.

Discussion of Hypothesis 3

Ho3: There will be no predictive relationship among the demographic variables of income group, employment status, hours worked per week, marital status, level of education, age, resource change, and RS-14 subscales and total.

Income was a predictor of the RS-14 total and all five subscales of self-reliance, meaning, equanimity, perseverance, and existential aloneness. Age and marital status were also predictors of self-reliance. Wagnild (2009) found age was a predictor of resilience. There were no other predictive relationships among income group, employment status, hours worked per week, level of education, or resource change and the RS-14 or its subscales. Income appears to be an important factor in resilience. Income as an important factor in resilience is supported by research finding those experiencing income decline being less resilient than those who did not (Bonanno et al., 2007).

Discussion of Hypothesis 4

Ho4: There are no differences in responses of business owners, residents, or workers on resource change, DASS-21 subscales, DASS-21 total, and RS-14 subscales and RS-14 total.

Business owners had a higher stress subscale score of the DASS-21 than residents and workers. Business owners may be feeling more stress, corresponding with their responsibilities of running a business and having people depend on them in a social context (Byers et al., 1997). Business owners also had higher scores on the resource change measure than did residents or workers. Results indicated business owners had more resource change and potentially lost more when compared to residents and workers. There were no significant differences among business owners,

residents, and workers on the DASS-21 total, the depression subscale, or the anxiety subscale.

Discussion of Hypothesis 5

Ho₅: There will be no differences based on income group for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

In the analysis, income did make a significant difference in the subscales of meaning, equanimity, perseverance, and existential aloneness, the RS-14 total, and resource change. Specifically, those making \$110,001 and above scored higher on meaning, equanimity, perseverance, existential aloneness, the RS-14 total, and resource change than did those making \$0 to \$22,757. On existential aloneness, those making \$71,201 and above scored higher on existential aloneness than those in the lowest income group raising several interesting points. First, the analysis indicated those with the lowest incomes reported the highest resource change (or loss) than those with higher incomes. It also appears that compared with the lowest income group, the higher income groups have statistically significant higher levels of resilience as measured by the RS-14. These results corresponded with some of the literature about resilience and income (Bonanno et al., 2007). Income did not make a significant difference in the self-reliance subscale of the RS-14, the DASS-21 total, or the DASS-21 subscales of depression, anxiety, and stress.

Discussion of Hypothesis 6

Ho₆: There will be no differences based on claim status for resource change, DASS-21 subscales, DASS-21 total, RS-14 subscales, and RS-14 total for Escambia County.

Those making a claim against BP had higher scores for stress, higher scores on the DASS-21 total, and higher resource change scores than those who made no claim.

A claim has to be justified with documentation asserting resource loss attributable to the GOS. The finding of claimants having higher scores for stress and the overall DASS-21 coincides with previous research about litigation leading to corrosive community (Picou et al., 2004). There was no difference based on claim status for the depression and anxiety subscales of the DASS-21, or the RS-14 total and subscales.

Discussion of Open-ended Question

The final question of the survey was open-ended and asked “Is there anything else you would like to tell us about the impact of the Gulf Oil Spill on your life?” The question was included because the measure of resource change, the DASS-21, and the RS-14 were very specific measures that may or may not have yielded information about the impact of the GOS on respondents, and the open-ended question allowed all respondents the opportunity to tell their story about the impact of the GOS on their lives. Sixty-four respondents chose to answer the open-ended question. Sixty-two of these respondents expressed concerns, fears, and frustrations about the oil spill, the clean-up process, the claim process, environmental damage, health effects, and effects on children. Respondents were very open in their discussion about how the GOS impacted their lives. The information gathered from the open-ended question may be used to explore other aspects of the GOS that have not yet been researched.

Clinical Implications

Study results may be useful to mental health practitioners, public policy makers, and government officials in a position to help people dealing with the impacts of the GOS and other disasters. There was psychological stress experienced across all income groups participating in the study. It is important for there to be mental health outreach to all of the individuals in the community when there is a disaster. For mental

health counselors, it is important for them to make the association between resource change and psychological stress discussed in disaster research and also found in this study (Flynn & Norwood, 2004; Palinkas, 2012). The respondents to the GOS study indicated resource change increased symptoms of depression, anxiety and stress. Counselors may need to focus their work with impacted populations on adapting and adjusting to the changes a disaster has brought, as well as other clinical needs in the population.

The results of the study indicated business owners experienced more resource change and more stress than residents and workers. Mental health counselors might customize their services to business owners and help them manage their stress associated with the GOS. Mental health counselors may also help business owners through case management activities, such as being aware of available community resources and how to access those resources. Customizing services to the unique needs of business owners may help engage them in seeking services and make it easier for them to seek services. In turn, seeking and engaging in mental health services to reduce stress may reduce the physical manifestations of stress, such as heart disease and high blood pressure.

The number of people choosing to respond to the open-ended question at the end of the survey was of interest. Many of these people did not have measureable resource change and were not impacted directly by the GOS; however, many of the respondents expressed worry, fear, and anger about the spill and its aftermath. Comments suggested the entire community and not just those with beach or tourism

businesses or interests were impacted. It is important to understand who is in need of help in a disaster such as the GOS and not to make assumptions.

Theoretical Implications

The Conservation of Resources (COR) theory was the primary theory guiding the study. COR did predict an increase in psychological stress when resources were threatened or changed. Resource change was a predictor of depression, anxiety, and stress, as well as the overall 21-Item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) score. These findings add to the literature about COR.

Income was a predictor for resilience as measured by the 14-Item Resilience Scale (RS-14; Wagnild & Young, 1993) and its subscales. Income was an important study variable serving as a predictor of overall resilience and all five of the RS-14 subscales. The importance of income in dealing with a disaster might be addressed through economic initiatives proposed by policy makers to help the Gulf Coast region recover from the GOS. Economic recovery may increase resilience in this area.

Business owners experienced the most resource change and had higher levels of psychological stress compared to residents and workers in Escambia County. Business owners were distributed across all income groups in the study. They were not necessarily in the highest income group, nor were they in the lowest income group. COR theory may be especially applicable to the business owners.

Limitations

Study participants in this study were drawn from Escambia County, Florida through a convenience sample. The sample size was small compared to the population of Escambia County. The small sample size may be due to the fact respondents did not believe their information would remain anonymous, they did not trust the origin of the

survey, or they simply did not hear about the survey. The survey was only available online possibly limiting responses. The survey was also conducted nearly two years after the GOS began and interest in a survey may have waned. Whatever the case, because of the small sample size it is difficult to generalize the results of the survey to the population of Escambia County, Florida or anywhere else.

It is questionable whether all of the variables measured were due to the GOS or some other factor such as the general economic climate in the area or the collapse of the real estate market. Another limitation of the survey was the high representation of Caucasians in the group of respondents. The homogeneity of respondents may make generalization to other racial and ethnic groups difficult. Additionally, the resource change scale used in the study was developed by the researcher and validity has not yet been established. For these reasons, generalizations beyond the results of this study should be done with caution.

Recommendations for Future Studies

Future research should include expanding the sample size to allow for broader inquiry into the effects of the GOS on local populations along the entire Gulf Coast. For example, a study with a larger sample size and including more ethnic minorities in Escambia County, as well as the seven other Florida counties in Florida affected by the oil spill would add to the literature. A study focusing on what resources were lost by what employment sectors would add dimension to the research agenda. A qualitative study would add to the data on how people experience disasters as well as psychological stress, resilience and resource change. The situation in Escambia County, FL may actually be worse than the data indicated based on the sample size

and results. Further study of the impact of disasters on people and their lives is needed.

Conclusion

The goal of this study was to determine what effects, if any, the GOS had in Escambia County, Florida through the use of the Conservation of Resources theory of psychological stress proposed by Hobfoll (1988, 1989). Results indicated there were effects experienced in Escambia County, including resource loss and psychological stress. The study also found there was a predictive relationship between resource loss and psychological stress, and income was a predictor of resilience.

Also of note was the number of respondents who choosing to answer the final open-ended question asking for anything else they would like to have known about their experience with the GOS. Forty-four percent of the respondents answered the last question, and of those, 97% expressed fear, anger, distrust, and worry about the future.

The GOS has been a disaster unlike any other in its scope, breadth, and damage and continues to inflict damage on the Gulf Coast even two years later. It will take many years to fully understand all of the environmental, physical, and psychosocial impacts of the GOS disaster. The time to make a plan for understanding the impact of a disaster is now, when there is funding available to help those affected. The plan needs to take into account all of those impacted and attempt to provide the greatest help to the most people.

APPENDIX A
INFORMED CONSENT

Protocol Title: Effects of the Gulf Oil Spill in Escambia County, Florida

Please read this consent document carefully before you decide to participate in this study.

Inclusion criteria to participate in the study:

You must be over the age of 18 and you must have been a business owner, resident or an employee who worked in Escambia County, Florida on or after April 20, 2010 when the Gulf Oil Spill began.

Purpose of the research study:

The purpose of this study is to assess resource loss, psychological stress and resiliency in Escambia County, Florida after the Gulf Oil Spill.

What you will be asked to do in the study:

Your participation in this research includes choosing whether to answer the survey as a business owner, a resident, or an employee who works in Escambia County, Florida. You will then be asked to complete 3 questionnaires and fill out a brief questionnaire that provides background information. The final question allows you to tell us anything else you would like us to know about the impact of the Gulf Oil Spill on your life. You do not have to answer any items that you do not wish to answer.

Time required:

Approximately 15 minutes.

Risks and Benefits:

There are no anticipated risks. If you feel you need counseling or assistance due to the Gulf Oil Spill, please contact these local resources:

Lakeview Center, Inc.	432-1222
United Ministries	433-2333
Catholic Charities	436-6425

A potential benefit for participating in this study is helping to identify unmet needs in this community so that they may be addressed.

Compensation:

No monetary compensation will be given as a result of participation in this study.

Confidentiality:

Your identity will be unknown to us. You will not be asked to provide your name on any of the questionnaires. There is minimal risk that security of any online data may be breached, but since (1) no identifying information will be collected, (2) the online host (surveymonkey.com) uses encryption and firewalls, and (3) your data will be removed

from the server soon after you complete the study, it is highly unlikely that a security breach of the online data will result in any adverse consequence for you. If you have further questions or concerns, please refer to <http://www.surveymonkey.com/mp/policy/security/> for SurveyMonkey's security policy.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Legal Consideration:

Neither the researcher nor the supervisor have any interest in the outcome of lawsuits being persued by individuals or in class action lawsuits against British Petroleum (BP) or any of its subsidiaries. The information gathered from this research is for academic and informational purposes only.

Whom to contact if you have questions about the study:

Kelcey Killingsworth, Ed.S., Doctoral Candidate
1216 Norman Hall, PO Box 117046, Gainesville FL 32611
kelcey@GOSproject.org
(850) 206-8802

Peter Sherrard, Supervisor
1216 Norman Hall, PO Box 117046, Gainesville FL 32611
psherrard@coe.ufl.edu
(352) 273-4339

Whom to contact about your rights as a research participant in the study:

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; (352) 392-0433.

If you consent to participate in this research study, agree to the terms above, and meet the participation criteria, please click on the "I agree" button below. Please print this page for your records and/or bookmark it for future reference.

APPENDIX B
BUSINESS OWNER SURVEY

*Effects of the Gulf Oil Spill
in Escambia County, Florida*

The purpose of this survey is to find out how the **Gulf Oil Spill** of April 2010 has affected or impacted you and your life in Escambia County, Florida. Please answer each question - your honesty will be greatly appreciated. While the general economy has been bad, too, please answer each statement only about the impact of the **GULF OIL SPILL**. Thank you!

Please choose one of the following categories to apply to you. More than one category may apply but choose only one. Did you own a business, live, or work in Escambia County, Florida on or after April 20, 2010? Check only one.

BUSINESS RESIDENCE WORK

PLEASE ENTER THE ZIP CODE FOR YOUR BUSINESS _____

AFTER OR BECAUSE OF THE GULF OIL SPILL, I:

	YES	NO
1 Lost my business	<input type="checkbox"/>	<input type="checkbox"/>
2 Started a new business	<input type="checkbox"/>	<input type="checkbox"/>
3 Had to lay off an employee(s)	<input type="checkbox"/>	<input type="checkbox"/>
4 Worked fewer hours in my business	<input type="checkbox"/>	<input type="checkbox"/>
5 Had to work more hours in my business	<input type="checkbox"/>	<input type="checkbox"/>
6 Considered seeking government assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
7 Had to apply for government assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
8 Had to seek charitable assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
9 Made less money in my business	<input type="checkbox"/>	<input type="checkbox"/>
10 Had to move	<input type="checkbox"/>	<input type="checkbox"/>
11 Had to sell my house	<input type="checkbox"/>	<input type="checkbox"/>
12 Had to find a cheaper place to rent	<input type="checkbox"/>	<input type="checkbox"/>
13 Had/have trouble paying my bills	<input type="checkbox"/>	<input type="checkbox"/>
14 Defaulted on a loan	<input type="checkbox"/>	<input type="checkbox"/>
15 Borrowed from family/friends	<input type="checkbox"/>	<input type="checkbox"/>
16 Declared bankruptcy	<input type="checkbox"/>	<input type="checkbox"/>
17 Am under financial stress	<input type="checkbox"/>	<input type="checkbox"/>
18 Got a new loan	<input type="checkbox"/>	<input type="checkbox"/>
19 Made more money in my business	<input type="checkbox"/>	<input type="checkbox"/>

Please read each statement and mark the box which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

	None of the time	Some of the time	Most of the time	All of the time
20 I found it hard to wind down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21 I was aware of dryness in my mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22 I couldn't seem to experience any positive feeling at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23 I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 I found it difficult to work up the initiative to do things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25 I tended to over-react to situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 I experienced trembling (eg, in the hands)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27 I felt that I was using a lot of nervous energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28 I was worried about situations in which I might panic and make a fool of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29 I felt that I had nothing to look forward to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 I found myself getting agitated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31 I found it difficult to relax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32 I felt down-hearted and blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33 I was intolerant of anything that kept me from getting on with what I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34 I felt I was close to panic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35 I was unable to become enthusiastic about anything	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36 I felt I wasn't worth much as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37 I felt that I was rather touchy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38 I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39 I felt scared without any good reason	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40 I felt that life was meaningless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please read each statement and select the box to the right of each statement that best indicates your feelings about the statement. Respond to all statements.

	Strongly Disagree					Strongly Agree	
41 I usually manage one way or another.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42 I feel proud that I have accomplished things in life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43 I usually take things in stride.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44 I am friends with myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45 I feel that I can handle many things at a time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46 I am determined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47 I can get through difficult times because I've experienced difficulty before.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48 I have self-discipline.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49 I keep interested in things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50 I can usually find something to laugh about.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51 My belief in myself gets me through hard times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52 In an emergency, I'm someone people can generally rely on.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53 My life has meaning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54 When I'm in a difficult situation, I can usually find my way out of it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please share some information about yourself. Thank you.

Did you file a claim for compensation from BP funds (check all that apply)

- I filed a claim
- My claim was denied
- My claim was approved
- I joined a class action suit
- I was satisfied with the amount from BP
- I accepted payment
- I rejected payment
- I am involved in litigation with BP
- I had no claim

BEFORE the Gulf Oil Spill did you have problems with:

	No Problem							Severe Problem
Your physical health	<input type="checkbox"/>							
Your mental health	<input type="checkbox"/>							
Your finances	<input type="checkbox"/>							
Your relationships	<input type="checkbox"/>							

AFTER the Gulf Oil Spill did you have problems with:

	No Problem							Severe Problem
Your physical health	<input type="checkbox"/>							
Your mental health	<input type="checkbox"/>							
Your finances	<input type="checkbox"/>							
Your relationships	<input type="checkbox"/>							

Your gender Male Female

Your age in years: _____

What best describes your Cultural Identification

- | | |
|---|---|
| <input type="checkbox"/> Black/African American | <input type="checkbox"/> Asian/Pacific Islander |
| <input type="checkbox"/> White | <input type="checkbox"/> Hispanic |
| <input type="checkbox"/> American Indian | <input type="checkbox"/> Other |

Marital Status

- | | |
|--|-----------------------------------|
| <input type="checkbox"/> Single | <input type="checkbox"/> Divorced |
| <input type="checkbox"/> Married/partnered | <input type="checkbox"/> Widowed |
| <input type="checkbox"/> Separated | |

Your highest level of completed education

- | | |
|--|--|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Bachelor's degree |
| <input type="checkbox"/> High school/GED | <input type="checkbox"/> Master's degree |
| <input type="checkbox"/> Associate's degree | <input type="checkbox"/> Doctorate/Professional degree |

Your living situation

- | | |
|---|---|
| <input type="checkbox"/> Alone | <input type="checkbox"/> With Friends |
| <input type="checkbox"/> With Children | <input type="checkbox"/> With Relatives |
| <input type="checkbox"/> With Spouse/Partner | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> With Spouse/Partner/Children | |

Your residence

- | | |
|--|---|
| <input type="checkbox"/> House | <input type="checkbox"/> Rented Apartment |
| <input type="checkbox"/> Condominium/townhouse | <input type="checkbox"/> Assisted Living |
| <input type="checkbox"/> Retirement community | <input type="checkbox"/> Other _____ |

Your employment status

- | | |
|---|------------------------------------|
| <input type="checkbox"/> Full time job | <input type="checkbox"/> Homemaker |
| <input type="checkbox"/> Part time job | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Multiple Part Time job | <input type="checkbox"/> Disabled |
| <input type="checkbox"/> Unemployed | |

Your household income

- | | |
|---|--|
| <input type="checkbox"/> \$0-22,757 | <input type="checkbox"/> \$110,001-150,000 |
| <input type="checkbox"/> \$22,758-44,500 | <input type="checkbox"/> \$150,001-190,000 |
| <input type="checkbox"/> \$44,501-71,200 | <input type="checkbox"/> \$190,001-230,000 |
| <input type="checkbox"/> \$71,201-110,000 | <input type="checkbox"/> \$230,001 or more |

Hours worked per week

- | | |
|---|---|
| <input type="checkbox"/> 20 hours or less | <input type="checkbox"/> More than 40 hours |
| <input type="checkbox"/> 30 hours or less | <input type="checkbox"/> Not Applicable |
| <input type="checkbox"/> 40 hours or less | |

How did you hear about this survey?

Internet

Newspaper

Radio

Church

Other

Is there anything else you would like to tell us about the impact of the Gulf Oil Spill on your life?

APPENDIX C
RESIDENT/WORKER SURVEY

*Effects of the Gulf Oil Spill
in Escambia County, Florida*

The purpose of this survey is to find out how the **Gulf Oil Spill** of April 2010 has affected or impacted you and your life in Escambia County, Florida. Please answer each question - your honesty will be greatly appreciated. While the general economy has been bad, too, please answer each statement only about the impact of the **GULF OIL SPILL**. Thank you!

Please choose one of the following categories to apply to you. More than one category may apply but choose only one. Did you own a business, live, or work in Escambia County, Florida on or after April 20, 2010? Check only one.

BUSINESS RESIDENCE WORK

PLEASE ENTER THE ZIP CODE OF YOUR RESIDENCE/WORK_____

AFTER OR BECAUSE OF THE GULF OIL SPILL, I:

	YES	NO
1 Lost my job	<input type="checkbox"/>	<input type="checkbox"/>
2 Found a new job	<input type="checkbox"/>	<input type="checkbox"/>
3 Worked fewer hours	<input type="checkbox"/>	<input type="checkbox"/>
4 Had to work more hours	<input type="checkbox"/>	<input type="checkbox"/>
5 Considered seeking government assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
6 Had to apply for government assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
7 Had to seek charitable assistance/aid	<input type="checkbox"/>	<input type="checkbox"/>
8 Made less money	<input type="checkbox"/>	<input type="checkbox"/>
9 Had to move	<input type="checkbox"/>	<input type="checkbox"/>
10 Had to sell my house	<input type="checkbox"/>	<input type="checkbox"/>
11 Had to find a cheaper place to rent	<input type="checkbox"/>	<input type="checkbox"/>
12 Had/have trouble paying my bills	<input type="checkbox"/>	<input type="checkbox"/>
13 Defaulted on a loan	<input type="checkbox"/>	<input type="checkbox"/>
14 Borrowed from family/friends	<input type="checkbox"/>	<input type="checkbox"/>
15 Declared bankruptcy	<input type="checkbox"/>	<input type="checkbox"/>
16 Am under financial stress	<input type="checkbox"/>	<input type="checkbox"/>
17 Got a new loan	<input type="checkbox"/>	<input type="checkbox"/>
18 Made more money	<input type="checkbox"/>	<input type="checkbox"/>

Please read each statement and mark the box which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

	None of the time	Some of the time	Most of the time	All of the time
19 I found it hard to wind down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20 I was aware of dryness in my mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21 I couldn't seem to experience any positive feeling at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22 I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23 I found it difficult to work up the initiative to do things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 I tended to over-react to situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25 I experienced trembling (eg, in the hands)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 I felt that I was using a lot of nervous energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27 I was worried about situations in which I might panic and make a fool of myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28 I felt that I had nothing to look forward to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29 I found myself getting agitated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 I found it difficult to relax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31 I felt down-hearted and blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32 I was intolerant of anything that kept me from getting on with what I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33 I felt I was close to panic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34 I was unable to become enthusiastic about anything	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35 I felt I wasn't worth much as a person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36 I felt that I was rather touchy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37 I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38 I felt scared without any good reason	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39 I felt that life was meaningless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please read each statement and select the box to the right of each statement that best indicates your feelings about the statement. Respond to all statements.

	Strongly Disagree					Strongly Agree	
40 I usually manage one way or another.	<input type="checkbox"/>						
41 I feel proud that I have accomplished things in life.	<input type="checkbox"/>						
42 I usually take things in stride.	<input type="checkbox"/>						
43 I am friends with myself.	<input type="checkbox"/>						
44 I feel that I can handle many things at a time.	<input type="checkbox"/>						
45 I am determined.	<input type="checkbox"/>						
46 I can get through difficult times because I've experienced difficulty before.	<input type="checkbox"/>						
47 I have self-discipline.	<input type="checkbox"/>						
48 I keep interested in things.	<input type="checkbox"/>						
49 I can usually find something to laugh about.	<input type="checkbox"/>						
50 My belief in myself gets me through hard times.	<input type="checkbox"/>						
51 In an emergency, I'm someone people can generally rely on.	<input type="checkbox"/>						
52 My life has meaning.	<input type="checkbox"/>						
53 When I'm in a difficult situation, I can usually find my way out of it.	<input type="checkbox"/>						

Please share some information about yourself. Thank you.

Did you file a claim for compensation from BP funds (check all that apply)

- I filed a claim
- My claim was denied
- My claim was approved
- I joined a class action suit
- I was satisfied with the amount from BP
- I accepted payment
- I rejected payment
- I am involved in litigation with BP
- I had no claim

BEFORE the Gulf Oil Spill did you have problems with:

	No Problem							Severe Problem
Your physical health	<input type="checkbox"/>							
Your mental health	<input type="checkbox"/>							
Your finances	<input type="checkbox"/>							
Your relationships	<input type="checkbox"/>							

AFTER the Gulf Oil Spill did you have problems with:

	No Problem							Severe Problem
Your physical health	<input type="checkbox"/>							
Your mental health	<input type="checkbox"/>							
Your finances	<input type="checkbox"/>							
Your relationships	<input type="checkbox"/>							

Your gender Male Female

Your age in years: _____

What best describes your Cultural Identification

- | | |
|---|---|
| <input type="checkbox"/> Black/African American | <input type="checkbox"/> Asian/Pacific Islander |
| <input type="checkbox"/> White | <input type="checkbox"/> Hispanic |
| <input type="checkbox"/> American Indian | <input type="checkbox"/> Other |

Marital Status

- | | |
|--|-----------------------------------|
| <input type="checkbox"/> Single | <input type="checkbox"/> Divorced |
| <input type="checkbox"/> Married/partnered | <input type="checkbox"/> Widowed |
| <input type="checkbox"/> Separated | |

Your highest level of completed education

- | | |
|--|--|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Bachelor's degree |
| <input type="checkbox"/> High school/GED | <input type="checkbox"/> Master's degree |
| <input type="checkbox"/> Associate's degree | <input type="checkbox"/> Doctorate/Professional degree |

Your living situation

- | | |
|---|---|
| <input type="checkbox"/> Alone | <input type="checkbox"/> With Friends |
| <input type="checkbox"/> With Children | <input type="checkbox"/> With Relatives |
| <input type="checkbox"/> With Spouse/Partner | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> With Spouse/Partner/Children | |

Your residence

- | | |
|--|---|
| <input type="checkbox"/> House | <input type="checkbox"/> Rented Apartment |
| <input type="checkbox"/> Condominium/townhouse | <input type="checkbox"/> Assisted Living |
| <input type="checkbox"/> Retirement community | <input type="checkbox"/> Other _____ |

Your employment status

- | | |
|---|------------------------------------|
| <input type="checkbox"/> Full time job | <input type="checkbox"/> Homemaker |
| <input type="checkbox"/> Part time job | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Multiple Part Time job | <input type="checkbox"/> Disabled |
| <input type="checkbox"/> Unemployed | |

Your household income

- | | |
|---|--|
| <input type="checkbox"/> \$0-22,757 | <input type="checkbox"/> \$110,001-150,000 |
| <input type="checkbox"/> \$22,758-44,500 | <input type="checkbox"/> \$150,001-190,000 |
| <input type="checkbox"/> \$44,501-71,200 | <input type="checkbox"/> \$190,001-230,000 |
| <input type="checkbox"/> \$71,201-110,000 | <input type="checkbox"/> \$230,001 or more |

Hours worked per week

- | | |
|---|---|
| <input type="checkbox"/> 20 hours or less | <input type="checkbox"/> More than 40 hours |
| <input type="checkbox"/> 30 hours or less | <input type="checkbox"/> Not Applicable |
| <input type="checkbox"/> 40 hours or less | |

How did you hear about this survey?

Internet

Newspaper

Radio

Church

Other

Is there anything else you would like to tell us about the impact of the Gulf Oil Spill on your life?

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BIOGRAPHICAL SKETCH

Kelcey Ray Killingsworth was born in May 1973 to Ronnie and Judy Ray in Pensacola, Florida. She attended local schools and graduated from the International Baccalaureate Program at Pensacola High School in 1991. She attended Birmingham-Southern College for two years before transferring to the University of Florida in 1993. She earned her Bachelor of Arts in political science in 1994 and her Master of Arts in public administration in 1997. She worked for a few years and then returned to the University of Florida to study mental health counseling, earning her Master of Education and Specialist in Education degrees in mental health counseling in 2004. She married Cliff Killingsworth in 2005 and had two daughters, Cameron (2006) and Gillian (2007). She received her Doctor of Philosophy in mental health counseling in December 2012. After graduation, she will work in private practice in the Pensacola area.