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Assessing Sustainability at CCU

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Assessing Sustainability at CCU

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Abstract

Climate change is one of the biggest threats to the earth and to our current way of life. Globally, the earth has increased in temperature and continues to get warmer. The effects of this warmth can be felt all over the world from the melting of the polar ice caps and the sea-level rising to droughts and wildfires and everything in-between. Now more than ever comprehensive change needs to be implemented to mitigate the effects of climate change. Sustainability is vital in implementing that change and college campuses are one of the best places to introduce young people to sustainable ideas and practices that invoke positive changes in their daily lives and on the environment. In my paper I will discuss what climate change is including its causes and impacts at the global and state level. I will then discuss why sustainability is important to mitigate and adapt to climate change at the federal, state, and local level including at institutions of higher education. Coastal Carolina University has many sustainable initiatives currently in place but they are missing a culture of sustainability at their campus. I suggest that Coastal Carolina University should improve their sustainability effort by assessing, tracking, and creating goals for future sustainability projects. They should renew their STARS assessment, conduct a campus wide survey to assess their sustainability, and get back into compliance with the Second Nature Pledge.

Climate Change and South Carolina:

Climate change refers to the long-term variations in the temperature and typical weather patterns of a given region. The Earth goes through natural climate changing cycles due to small variations in the Earth's orbit that changes the amount of radiation it receives from the sun

("Climate Change Evidence"). The recent rate of change and warming that has been observed is occurring at a much faster rate. Scientific consensus has shown that climate change and the current warming of the Earth is directly related to increases in emissions of greenhouse gases (GHG) due to human activities (Amini).

Anthropogenic climate change is caused by the greenhouse effect. The greenhouse effect refers to heat energy from the sun being trapped in the atmosphere by greenhouse gases resulting in warming of the planet. Half of the energy that radiates from the sun passes through Earth's atmosphere. From there it is typically absorbed by Earth's surface and then radiated toward space in the form of infrared radiation ("Causes of Climate Change"). Greenhouse gases alter this process by stopping the infrared radiation from reaching space and instead it is absorbed by the gases and trapped in the atmosphere. This heat radiates back toward the surface of the Earth and results in the warming that contributes to climate change.

The major greenhouse gases are carbon dioxide, methane, and nitrous oxide. Carbon dioxide emissions come as a result of the burning of trees, solid waste, and fossil fuels from coal, oil, and natural gas ("Overview of Greenhouse Gases"). Methane enters the atmosphere through livestock, flooded farmlands, leaking gas pipelines, and landfills (McConnel). Nitrous oxide emissions predominantly come from agricultural use of fertilizers as well as through industrial activities, the treatment of wastewater, and combustion of fossil fuels and solid waste ("Overview of Greenhouse Gases"). According to the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC), carbon dioxide accounts for 76 percent of total greenhouse gas emissions with 65 percent coming from fossil fuel and industrial processes and 11 percent coming from forestry and other land use. Of the remaining gases methane makes up 16 percent and nitrous oxide makes up 6 percent (IPCC, 2014).

Prior to the Industrial Revolution these GHG would enter the atmosphere and be absorbed through natural sink processes such as sequestration by plants. Due to the rapid increase in GHG emissions caused by human activities these natural processes are being overburdened and cannot absorb all of the emissions being produced and results in warming of the planet. This warming has impacts all over the globe, with the major impacts being warming and acidification of oceans, changes in the global water cycle, reductions of snow and ice, and sea level rise (IPCC, 2014). While the effects of climate change are beginning to be felt all over the world—devastating wildfires in Australia, increasing hurricanes from the Atlantic Ocean hitting land, the melting of the polar ice caps—they are going to get more intense and frequent if we continue to produce emissions are the rate that we do.

In response to climate change, governments can adopt two types of strategies: mitigation or adaptation. Mitigation strategies involve making changes to lower greenhouse gas emissions. The actions taken to implement these lower greenhouse gas emissions can take on many forms. Some examples are switching to clean energy and renewables, enhancing carbon sinks to absorb excess carbon dioxide, putting caps on emissions produced by industries, and making changes to the efficiency of the energy we use so there is less demand. Adaptation strategies involve making changes to adjust to the current and future impacts of climate change. Some adaptation measures include raising houses to protect against rising sea levels, buying out homes in areas prone to flooding, and installing air conditioners to manage the increased level of heat. The Paris Agreement is a commitment by 189 nations to limit global temperature rise to below 1.5 degrees Celsius. The agreement has both mitigation and adaptive measures. Mitigation can be seen as countries committed to lowering their emissions and to review their commitments every five

years. Adaptation is seen as developed countries are committed to finance developing nation's climate commitments ("The Paris Agreement").

Climate change is a complex issue and as such it encompasses many different factors including politics, economics, science, geography, social issues, and environmental issues. Due to these factors being different in each country and region of the world, climate change, including its impacts and solutions, will differ depending on where you live. How well a country or community can prepare and respond to climate change depends on their climate vulnerability. According to Conservation International climate vulnerability refers to how much a community will be affected by climate change depending on their climate sensitivity, climate exposure, and adaptive capacity. Climate exposure describes how likely a community will be harmed by impacts of climate change such as droughts, flooding, or hurricanes. Climate sensitivity is how severely the climate impact will harm the community such as harm to natural resources, livelihoods, or infrastructure. Adaptive capacity is the ability of a community to cope with the impacts of climate change and prepare for future impacts (Conservation International). When creating and implementing mitigation and adaptation strategies it is important for a country or community to understand their climate vulnerability and incorporate that into their plans.

Understanding South Carolina's climate vulnerability will aid in their response to climate change. South Carolina is expected to be exposed to extreme heat, flooding, sea level rise, storm surges, beach erosion, and increases in storm intensity due to climate change. According to the EPA, climate change will likely decrease tree diversity, reduce crop yields, and increase hurricane wind speeds and rainfall rates. Climate change is expected to cause the sea level to rise at an alarming rate and will likely cause dry lands to become tidal wetlands or open water, causing many species of birds, fish, and shellfish to lose their habitats (What Climate Change).

Extreme heat can make it dangerous for people to work and be outside and increasingly affects already vulnerable populations including the elderly and low income communities. Extreme heat also threatens the animals living in South Carolina.

Sea level rise, beach erosion, and stronger storm surges contribute to the climate sensitivity of communities along South Carolina's coast as it threatens to destroy coastal homes as well as disrupt habitats and contaminate waterways. Coastal settlements can put a burden on coastal ecosystems and due to this burden can make the coastal population more susceptible to the impacts of climate change (McGranaham). The coast is home to high urban and low-income populations and as such they are the ones directly affected by natural disasters and the increased risk of flooding that comes with climate change. In 2018, Hurricane Florence killed nine people in South Carolina, caused $607 million in damages, damaged 11,386 homes, and caused 455,000 people to be evacuated (Armstrong). Although Hurricane Florence was only a category one hurricane, it brought record rainfall that caused increased flooding and had lasting effects on the economy, residents, and environment of South Carolina. These are just some of the ways that South Carolina has already begun to be affected and will continue to be affected by climate change. Strategies and policies need to be implemented to mitigate and adapt to the changing climate and sustainability is important in achieving that.

Implementing smart surfaces into cities is one way to increase climate resilience in South Carolina. Non reflective surfaces on roofs, parking lots, and roads absorb heat from the sun which causes the city air to heat up. This makes temperatures hotter in cities and as climate change gets worse the temperatures in cities are going to increase. Hotter cities increase the risk of heat related illnesses and deaths and requires increased use of air conditions that increases emissions from fossil fuels. Non porous surfaces increase flooding when it rains because the

water cannot seep through the surface and into the ground and instead stays on the surface. By implementing smart surfaces including reflective roofs and pavements, porous pavements, green roofs, solar panels, and trees this would lower extreme temperatures and flooding ("Smart Surfaces"). This is just one example of ways the South Carolina could increase climate resilience others include: switching to renewable energy, decreasing urban sprawl, increasing access to public transportation, and making biking and walking safer and more accessible.

Sustainability and the Importance of Universities:

Sustainability invokes a broad range of thoughts, actions, insights, and disciplines. According to Our Common Future, sustainability is development that "meets the need of the present without compromising the ability of future generations to meet their own needs" (United Nations). It recognizes our societal need to continue to develop but at the same time the need to protect the environment and the planet. Sustainability encompasses three pillars: environmental, social, and economic. Environmental sustainability involves protecting the environment by preserving species diversity, lowering greenhouse gas emissions, and natural resource management of air, water, land, and waste. Social development in sustainability aims at protecting people by increasing the standard of living, increasing education, meeting people's basic needs, and providing everyone with equal opportunities. Economic sustainability involves growth of the economy and making a profit without compromising social development or environmental protections.

Sustainability operates on both a macro and a mirco level. The macro level refers to the global response to climate change such as countries signing the Paris Agreement. From there the levels get smaller starting with global and going to countries responses, states, cities, and then the micro responses at the community and individual level. Sustainable decisions at every level

have an impact on the whole system. Universities are a part of the community level but they greatly influence the individual level. Colleges and universities give students and the community a model of what sustainability looks like at the institutional level while simultaneously enabling them to acquire knowledge and to incorporate sustainability into their daily lives.

The United States accounts for roughly 15 percent of the global greenhouse gas emissions while only making up five percent of the global population (Global Greenhouse Gas). As a developed nation the United States has a greater responsibility to curb their emissions as they have already industrialized and now are less dependent on heavy industry for economic growth. They do not need to emit large amounts of greenhouse gases to increase their economy yet they continue to create high emissions. The US is the second highest emitter of carbon dioxide following China who is the highest ("Global Greenhous Gas"). The US continues to emit more greenhouse gases than any other nation except China but expects lesser developed nations to lower their emissions and slow down their growth even though the poorest 3.5 billion people in the world only account for ten percent of the global greenhouse gas emissions while living in countries with the highest climate vulnerability ("Extreme Carbon Inequality"). As the nation that creates the highest lifestyle emissions, the US has a responsibility to lower their emissions.

The majority of greenhouse gas emissions in the United States come from the transportation and electricity sectors and account for 28 and 27 percent, respectfully ("Global Greenhouse Gas"). As such the most impactful way for the US to mitigate climate change is to reduce greenhouse gas emissions is in these sectors but this has proven to be difficult. Many of the policies that have been put in place to mitigate climate change are no longer in place as each new president overturns the previous president's climate effort. The first nationwide effort to lower carbon dioxide emissions came through the Clean Power Plan. The plan was implemented

during the Obama administration and it aimed to reduce carbon emissions from power plants while suppling customers with reliable and affordable energy ("Fact Sheet"). The EPA believed carbon dioxide emissions would drop 32 percent below 2005 levels by 2030 under the Clean Power Plan. Unfortunately, we do not know if it would have achieved that reduction in emissions because it was repealed and replaced under the Trump administration with the Affordable Clean Energy rule (ACE). This rule was created to be less overreaching than CPP as it "establishes emission guidelines for states to use when developing plans to limit carbon dioxide (CO2) at their coal-fired electric generating units (EGUs)." ("Affordable Clean Energy Rule") This rule prioritized efficiency of power plants as a way to lower emissions but this is impossible. By making power plants more efficient they are burning more fossil fuel thus creating more emissions. The ACE rule would have done more harm than good but luckily it was vacated by the D.C. circuit court and remanded to the EPA (Gilmer). Because of this the Biden administration has more opportunity for implementing climate action.

President Biden announced his commitment to reduce greenhouse gas emission by 50-52 percent below 2005 levels by 2030 at the Earth day Climate Summit (Macaya). While Biden was running for office and since he has been in office he has continuously stated he wants to enact bold strategies to help the United States mitigate and adapt to climate change. One of the first things he did when he got into office was rejoin the Paris Agreement and highlight the US Climate Alliance to create a state-federal partnership to combat climate change ("US Climate Alliance"). Besides his bold emissions reductions he also want to get the country to be a 100 percent clean energy economy that is making net zero emissions by 2050 at the latest ("Plan for Climate Change"). As mentioned in that same climate plan he wants to rebuild the nation by investing in sustainable infrastructure to buildings, water, energy, and transportation to all

withstand the impacts of climate change. He wants to implement nationwide sustainable change that aims at protecting the environment and citizen's health while making jobs and building the economy. While it is reassuring to hear President Biden wanting to make system wide change to combat climate change, especially after President Trump spent much of his term denying climate change and rolling back policies, there is no way of knowing what he will accomplish during his term. Currently, his administration has not published a plan laying out exactly what he wants to accomplish and how he will do it. As well there is no way of knowing what he will be able to pass through congress and make into laws.

At the national level there are little to no laws, polices, or treaties aimed at mitigating climate change but at the state level they are making effective change. Twenty-four states and two territories have signed and joined the United States Climate Alliance. According to the US Climate Alliance fact sheet, the alliance came together when President Trump withdrew from the Paris Agreement in 2017. When governors sign the agreement they commit to reduce collective greenhouse has emission by 50-52 percent below 2005 level by 2030 as well as track and report progress and enact policies to reduce carbon emissions and promote clean energy ("States United for Climate Action"). Being at the state level they have more power to implement bills to create positive climate action. For example, Nevada passed a bill to get 50 percent of their energy from renewable source by 2030, Virginia plans to limit methane leaks from their landfill sites, and North Carolina released a greenhouse gas inventory to track emissions (Green). While more progress needs to be made to limit greenhouse gas emissions in the United States, the Climate Alliance shows that states want to lower their emissions and as President Biden has recognized the Alliance hopefully more state and federal action is taken to address climate change.

The state level is implementing policies to limit their greenhouse gas emissions and colleges and universities can play an important role at both the state and community level in implementing sustainable practices. Institutions of higher education work as mini-communities within their state which presents them with a unique opportunity to make changes that affect their state as well as the individuals that make up their institution. Individuals within an institution have the power to make change to their institution and these changes can and should be environmental changes. The sustainable practices that institutions implement can have lifestyle impacts to the individuals in the institution as well as in the community and eventually the state.

College-educated students, especially in the United States, might be more environmentally aware but they are unwilling to make environmental changes if they are inconvenient (Economic and Social Research Council). Currently, there are more than 18.9 million students enrolled in college in the US (Census). Those 18.9 million individuals find themselves in a unique position as they have the power to reduce their environmental harms and begin to make better choices to lessen their impact on the environment. The higher education system is key to creating more environmentally conscious students in allowing students to learn a wide range of sustainable practices throughout their curriculum, research, campus and public engagement, their operations, and planning and administration.

Current Sustainability Initiatives:

Currently Coastal Carolina University has many sustainable practices in place the cover much of the campus. From dining halls, to offices, to dorm rooms and everything in-between there are sustainability initiatives that work toward creating a sustainable campus at CCU. Here are some of the programs currently in place at CCU:

In 2006 Santee Cooper (South Carolina's state-owned electric and water utility company) partnered with CCU to install solar panels on the roof of the bus stops. These solar panels provide 16 kilowatts of energy to the main power grid (Rashid). While the energy is not used on Coastal's campus this was the first solar PV project to be installed in a public university in the state as well as the first Green power site. Green Power is electricity from renewable resources such as wind, solar, and landfill gas. CCU is a Green Power Partner meaning they purchase Green Power energy blocks from Santee Cooper to use instead of energy from non-renewable sources (Green). In 2016, CCU purchased 595 blocks of green power which is equal to 1,428 MWh (megawatt hours). For some of their football games CCU partners with Santee Cooper to have the game be powered by 100% Green Power. These partnerships with Santee Cooper are good but Coastal continues to use nonrenewable sources of energy to power their campus and does little to conserve energy or encourage students to conserve energy.

Coastal Carolina University has many LEED-certified buildings across campus. LEED stands for the Leadership in Energy and Environmental Design which is a green building rating system. It is a nationwide green building standard that aims at creating buildings that are sustainable in site planning, water management, energy management, materials used, indoor air quality, and innovation and design. At CCU 6 buildings have received gold certification: Norma Field House, HTC Center, Clay D. Brittian, Jr. Hall, Science Annex II, Student Union Annex, and Atheneum Hall Renovation. Fiver buildings have received silver certifications: Kimbel Library, Kenneth E. Swain Hall, Student housing phase I and II, and Singleton Building Renovation (CCU's). At this point, it is required for new buildings to be LEED-certified. In the future, Coastal should begin to retrofit old buildings to make them more energy-efficient and LEED certified such as in Ingle and Eaglin.

There are four dining halls at CCU: Hicks, Chauncey's Choice, University Place, and CINO grille as well as two cafes (Einstein Bros. Bagels and Starbucks), Pie by Night, and four P.O.D Express markets. In the dining halls, they try to purchase local and seasonal products when possible, and they value waste minimization, efficient operations, and transport management to reduce fuel usage (Sustainability). They work with Horry County Solid Waste Authority (SWA) to compost in all of their dining halls except CINO grille. During select 'Zero Waste' football games they work with SWA to compost and recycle as many materials as they can. During the 2017-2018 school year, CCU diverted 200 tons of food and organic waste from landfills (Rohr). Coastal should incorporate composting in CINO as well which they are working on. They could also add more signage about not wasting food and what to properly recycling in places such as CINO.

The Campus Shuttle runs from University Place, east campus, and main campus as well as trips to Walmart. CCU also offers the Re-Cycles program that provides free bikes to students that want to use them. They have over 350 bikes available and it comes with a helmet and a lock. Another program CCU offers is Zipcar, a car-sharing service. All of these programs allow students to lower their carbon emissions by giving them access to public transportation, carbon free transportation, and reduced car usage through Zipcar (Teal). Just like with dining it would be more beneficial if Coastal made students more aware of the emissions created through transportation and ways they can combat this by advocating more for these programs.

Recycling is one of the biggest sustainable programs that CCU has. On their website, they give a comprehensive list of the items that you can recycle and where you can drop these items off such as in all of the office building across campus, outside along the sidewalks and at the entrances of buildings, and 14 recycling containers located across campus and at University

Place. The recycling amounts of gone down in the past few years but for the 2018-2019 school year is was 571 tons and for 2017-2018, 544 tons (Recycling). Coastal does a good job of recycling but could do a better job of telling students exactly what can and cannot go in the recycling by increase signage.

Coastal Carolina University has many opportunities for students to get involved in sustainability programs across campus through the Eco-Rep Leaders, the Green Team, Sustain Coastal, and clubs and organizations. The Eco-Rep Leader program "educates students about global, national, local, and campus sustainability issues, and provides logistical resources to help them undertake sustainability projects on campus or in the community" (Abel). They work to educate their peers about important sustainability issues and was to adopt a more sustainable lifestyle. The Green Team is made up of students who collect the recycling on campus and during sporting events like the 'Zero Waste' football games. Sustain Coastal is the name of the sustainability initiative at CCU that wants to create a more sustainable campus through "campus operations, student curriculum, engaging students through learning and outreach, and collaboration in the community" (About). Most of the work is done through students like the Eco Reps and the Green Team. The students use social media platforms like Twitter, Facebook, and Instagram to engage other students and educate them on ways to live more sustainably.

Coastal Carolina University has a few programs in place that allow students to learn more about sustainability issues while gaining practical, real-world experience. Two of these programs are Georgetown RISE and the Coastal Solar Ambassadors and both are run my Dr. Pamela Martin. Georgetown RISE is part of the United Nations Regional Centre of Expertise on Education for Sustainable Development. It allows students to work with the Georgetown community to enhance knowledge, research, and implement sustainable development in

Georgetown County ("Georgetown RISE"). The Solar Ambassadors work with nonprofits in the community to install solar panels so they can save money on their electricity bills. They have installed solar on two VFWs in the community and will be installing solar at the Plantersville Cultural Center in the fall. Through the Solar Ambassador program, Dr. Martin has given her student opportunities to get real world experience. One semester she brought students to Denver Colorado to see and help install solar panels. Another time she bought students to Kauai, Hawaii to see solar policy in action as Kauai is on their way to operating on 100 percent renewable energy. She also has helped get students NABCEP certified increasing their chance of getting jobs in the solar industry (Martin). These are good examples of ways that Coastal is implementing sustainability into curriculum while making a positive impact on the community.

Sustainability at other Universities and Improvements to Coastal:

Many of the universities I have looked at that are sustainable have many features that Coastal does not have. First, they have the necessary funding in place to finance their sustainable initiatives and changes. Second, they also have the needed leadership in place that allows sustainability to take place. At many of these schools, the director of sustainability has a seat at the president's cabinet which allows the administration to work with the faculty and staff to see where changes need to be to create a more sustainable campus. They are in constant contact with the people under them to see ways that changes can be implemented at the faculty and staff level and helps to get changes implemented. The president works in tandem with their staff to help get their sustainable visions put into action and see the change that everyone wants. Third, these universities have a culture of sustainability that shows how dedicated the university is to creating a sustainable campus. They actively promote sustainable initiatives all across their campus and demonstrate how they are sustainable. Many of the universities have signage indicating markers

of sustainability at every aspect of campus including dining halls, green buildings, events, ways to participate in sustainability programs, gardens, green areas, etc. These universities typically have very comprehensive sustainability webpages that allow present and future students and the community to see what the university is doing to be sustainable and how they can get involved. The top green universities have these important ideas but they are missing at Coastal.

Coastal can improve in its sustainability initiative in many ways the biggest being making changes to get the funding needed, having administration to back up the programs, and creating a culture that shows that sustainability is important on campus. A study evaluating the environmental sustainability of institutions of higher education in England and Australia found that even though schools in Australia did not have state or national support for the implementation of sustainable programs and initiatives they did have leadership support from senior management (Ralph). This is very important in regards to South Carolina which tends to not support environmental sustainability. This shows that if they have the correct leadership in place on campus that supports and encourages environmental sustainability then it can be achieved. With the incoming of the new president, Dr. Michael Benson, there is room for a change in leadership in regards to sustainability, and based on the sustainability programs at previous universities under his tenure it looks like Coastal could be headed towards that change.

Coastal can learn a lot by looking at what other universities do to be sustainable. One of the first things that Coastal needs to do to improve their sustainability efforts is to create an office of sustainability with a Director of Sustainability that is in direct contact with the president and has a say in every aspect of CCU. They also need to work with faculty from every department to see what programs can be implemented to make each department more sustainable. By having this position in place if someone suggests a change to any part of campus

someone would be there to evaluate the sustainability behind the change. The top green universities all have offices dedicated to sustainability that allow them to make comprehensive, campus-wide changes that are good for current and future students as well as the planet.

The office of sustainability should also thoroughly assess the sustainability programs on campus to see the effect that they are having. After this, they could then continue to improve them if they are working and make them even better, and if they are not see why they are not and tweak them so that they are working. This will allow the office to know what is currently being done and where they are lacking. Then they could use this to create goals to see where they would like the campus to be in terms of sustainability. They should put this into a report and publish the report so students, faculty, staff, and the community can see what they are doing to be sustainable and where they plan to go in the future. STARS reporting is a beginning way they could do this.

Most if not all of the top sustainable universities participate in STARS reporting. STARS is the Sustainability Tracking, Assessment, and Rating System produced by the Advancement of Sustainability in Higher Education (AASHE). Universities across the world can participate by self-reporting and earning points based on how they perform in four categories of Academics (AC), Engagement (EN), Operations (OP), and Planning & Administration (PA). Each category has subcategories that break the points down even further. Institutions can gain up to four extra points for exemplary initiatives under the category entitled, *Innovation & Leadership.* With those points, they are given a rating of either Platinum, Gold, Silver, Bronze, or Reporter. If an institution does not want to receive a rating and only wants to publish their data and the accomplishments they have made in sustainability, they can submit as a STARS Reporter which is free and can be used as a benchmark (Participate). In 2015 Coastal receive a silver rating but

that has since expired (Sellers). Coastal should work to update their STARS report because they can gain many advantages like being able to establish a baseline, seeing what the best practices are, making a system for improvement that includes collecting, quantifying, and releasing important information in regards to their sustainability programs across campus (Urbanski). It would also be an easy way to begin assessing their sustainability practices, how they measure up to other universities, where they should go in the future, and how to get there. Coastal is currently working to update their STARS report.

With the creation of the sustainability major on campus that shows that CCU is becoming more committed to sustainability. Every student who wants to complete one of the three sustainability and coastal resilience majors has to take an introductory course into sustainability but this should be a required core class that every student has to take before they graduate. If students can learn about the issues that the earth is facing they are more inclined to care about the earth and want to make changes to stop or reverse it. Mitchell Thomashow discusses this idea in his book *The Nine Elements of a Sustainable Campus* and he disagrees with it. He does think that in an ideal world that would be a good idea but that it is unlikely because professors from other disciplines can argue as well that their introductory classes should be required. What Thomashow suggests instead is a uniquely designed curriculum that incorporates sustainability into all courses or at least into all disciplines. With this in mind, I think every student should be required to take the introductory sustainability class because creating a brand new curriculum with an idea that currently is not central to the campus' culture will be very difficult to implement. The introductory sustainability class gives students a basic idea of what sustainability is and how they can get involved. At the very least Coastal should promote the sustainability class so students know that it exists.

Coastal can make sustainability a priority by signing the Second Nature Pledge. According to their mission statement "Second Nature is committed to accelerating climate action in, and through, higher education" (Our Mission). Coastal should sign this and the Presidents' Climate Leadership Commitment which used to be the American College & University Presidents' Climate Commitment (ACUPCC). The commitment does not have specific goals and metrics involved in sustainability reform but it does provide the needed support for creating new initiatives and improvements in sustainability (Dyer). Coastal has signed the pledge but they are no longer in compliance because they have not completed a greenhouse gas inventory and a climate action plan (Monday).

Coastal should also create a campus-wide survey to assess sustainability at Coastal. The University of New Hampshire created a survey of this type based on the surveys done by the University of Michigan, Colorado State, and American University. They designed a survey for the students and one for faculty and staff. If Coastal created a survey like this it could be used to assess students and faculty's knowledge of sustainability such as what it is, what the school is doing to be sustainable, where they found that information if they knew it, and ways they could improve. Then they could see how many students and staff know what sustainability is and what it means to be sustainable. Then they could see if they are doing a good job of being transparent with their sustainability initiative. For example, they could see if they are doing a good job of showing what exactly they are doing to be sustainable, what the program is, how it is working, how it will be improved later by asking these questions on the survey. They can see if these things can be seen on campus and/or on the campus sustainability website which should be up to date and should accurately reflect the current things going on to make Coastal sustainable. It can be used to assess the culture of sustainability on campus and then what can be changed going

forward to create a better sense of sustainability culture, it'll give them a better understanding of how sustainability is perceived by students and faculty. This can also be helpful when trying to implement sustainability initiatives into each department because it'll allow the chair to know how much their professors know about sustainability and how much they do not know. A Canadian based study that focused on facilities management directors and their thought on sustainability in regards to the university highlights the importance of sustainability surveys being conducted on campus. The study was done through a survey and it found that many of the directors wanted their universities to become sustainable and were believed universities are key to sustainability but many did not know what sustainability was or what it means to be a sustainable university (Wright). Assessing how much students and faculty know about sustainability will allow Coastal to be a better job of creating change.

Coastal Carolina University has implemented many programs to become a more sustainable campus but much of it happens behind the scenes where students, faculty, staff, and community members cannot see all that is going on. Coastal only has a sustainability website for Sustain Coastal and it does a good job of informing people of what they are doing for sustainability on campus but many of the sustainable initiatives on campus are not a part of Sustain Coastal. Jeremy Monday, the director of Sustain Coastal and Custodial Services, would like to change this. He would like to see a hub that showcases of all of the sustainability programs that take place at Coastal and how they connect to the 17 United Nations Sustainable Development Goals (Monday). This would allow students to see what Coastal is doing to be sustainable all across campus including the environmental, social, and economic dimensions of sustainability.

Climate change is one of the biggest issues facing the world right now and serious changes need to be made to slow down the effects and to begin to reverse them. Due to South Carolina being a coastal state it feels the impact of climate change through increased flooding from heavy rain and hurricanes and the economic, physical, and emotional toll that it has on residents. As a higher education institution and a university in South Carolina, Coastal Carolina University is in a unique position to become more sustainable to combat climate change. Coastal has many universities that it can look to create more programs and initiatives to become more sustainable. While looking at these universities it is important to keep in mind that they have the funding, the leadership in place, and the culture of sustainability on campus to implement their sustainability programs. While Coastal does not have these they can improve their sustainability by making a few changes. They can create an office of sustainability that works to improve sustainability in all aspects of the institution as well as assessing, tracking, and creating goals for the future. They should begin to use STARS reporting again coupled with a campus-wide survey to help with their assessment, tracking, and creating of goals. They can also sign the Second Nature pledge and promoting sustainability across the campus and working to create a culture of sustainability.

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