

### **NARRATOR:**

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- Our \$20 billion tourism industry is at risk. And we need to be able to look at it.

- Communities have to be educated on what is climate change? What contributes to climate change? What contributes to those negative health outcomes impacts?

- What are we willing to do as a society? Are we willing to make those tough decisions about allowing the natural progression of the marshes and the estuarine systems for upstream and inland. And that's a tough call.

- Basically, just the simple things that little things can add to the big picture,

- I think we're at that point where if action is not rallied around soon, we're going to be behind the eight ball.

- The greater Grand Strand is very vulnerable to what's going to happen with climate change. It's the rising ocean, it's the marine life, it's our tourism, it's the cultural effects. Like for example, the sweet grass baskets. They are part of our culture, and they're going to disappear when the sweet grass disappears.

- The sea level has been rising for thousands of years. But I think as people that occupied South Carolina going back thousands of years ago, we adapted to that by moving. And allowed the natural habitats to just migrate inland or upstream. Now, the way we're sort of set up in the modern

world, we've sort of drawn lines or drawn barriers and said no.

We have title to this property. We're not moving. Or we're not going to allow the natural progression of the marshes, or the oyster reefs to kind of move inland. So I guess that's what I call the sea level rise conundrum for us. Is just how do we deal with that as a society, how do we accommodate what may need to happen to preserve our estuarine habitats, but at the same time be respectful of personal rights and things.

- Every community that we've had a chance to go in, and just ask the fundamental questions, have you seen any differences over the last 30 years? In this part of world the resound response has been yes. In particular, people, when you can ask them off the record, they tell you I've seen the water come up. I've seen more water come in places that I've never have experienced in all my life living here. So if we can just get away from all of the polarizing of things politically, and get to the facts fundamentally what's going on in each location, what's going on in your neighborhood. If people can just come to grips with that reality, then I think they would have no choice but to recognize that we are experiencing some significant changes.

- Climate change is one of many major concerns that we have in public health, because it impacts so many people in so many different ways. For example, global warming, rising sea levels, rising standing water. And in my particular case, infectious disease focused, more mosquitoes and mosquito borne diseases, and waterborne diseases. Such as harmful algal blooms, are but a few of the climate change worries that we have.

- Being a mother, and soon to be grandmother, I think a lot of people like me, that we are willing to do what we need to do. You know, I'm trying to protect my daughter from Zika, and that's very, very frightening. But these issues are real.

- Climate change just adds some variables to the picture. If you think about it, we're sort of set up to deal in a static world. And if everything stays exactly the same it would be challenging enough. But when you add in the variability of climate changing, which can result in things like seawater temperature changes, sea level rises, changes in salinity, rainfall patterns. It adds to the decisions we have to make, or the things we might have to do to take care of our fisheries.

- The important message to come through, is that the climate change in itself really isn't isolated to the realm of science. Its overlapping interests. And there's lots of things that we try to develop responses to and policy for as a society that it ultimately is a matter of cost. These events that we're having, if they keep happening more increased frequency, they're very expensive. Someone is paying for it. And there's a lot of repercussions for that.

**MARY JEFFCOAT:**

I think the corporate people have as much at stake as anybody. And I think in the long run, they're going to be the ones that are going to control what happens in Myrtle Beach. When the banks realize that the ocean level is rising, and the oceanfront properties are going to be under water in 100 years, pretty soon they're going to start looking. Maybe 50 years from now, they're going to quit lending on the beach. Insurance companies are going to quit insuring on the beach. And so rather than waiting for that day to happen, let's try to be proactive and see how we're going to control the environment so we

keep our tourist economy strong.

- The impacts of climate change on fresh water supply specifically here in Myrtle Beach in the Winyah Bay area is incredibly important. Several of the surface water intakes in Winyah Bay Area are actually in plane, when you look at the current projections of sea level rise. Which would ultimately mean that if you have any type of salt water intrusion, you would lose a good quantity of your current fresh water supply. Now that within itself may be tenuous. But when you couple that to, you've had an incredible increase of population here in Myrtle Beach, I think going from the 1970s around 100 and maybe 70 people, to now over 270,000 people. Over 100,000 people have been added. When you couple that to the population growth, that becomes not just a passing concern, but a serious concern to lose any access to fresh water supplies.

**MELVIN BELL:**

Basically our high tides are higher on average now than they used to be. I mean, even sometimes a foot above what they used to be. So if that's an indication of sea level rise, or a precursor to sea level rise. If that continues, that that could be problematic in terms of compromising intertidal resources, such as marsh grass and oyster beds, which are intertidal.

- The kinds of things you might expect to experience in South Carolina, and certainly along the coast, they're familiar with the term low country. It is low elevation wise. And so changes in sea level, we are particularly vulnerable to, because we are so low. And a small change in sea level can be a very large change in inundation and in line surface. And we've seen these changes over time. There's long historic charts and maps where you can see areas that have changed over time. But that, ultimately, is one of our biggest concerns.

Because you're changing the water level, that means where your ground water table is draining to or where your rivers are draining to. You're seeing things in your community, such as the regional storm water drainage. Where is this material or water going to? It's hopefully going to the ocean. Here in the coastal zone, we hear a lot on the news. There will be flooding in the usual areas at the time of high tide during this rain event, because water level is a little bit higher. And I think if you've lived on the coast for a while, you may have perceived or noticed that these things seem to happen a little bit more frequently over a longer period of time. So it's kind of creeping up us in that regard, in terms of water levels.

**MELVIN BELL:**

Water temperature can drive fish to get a move sometimes. So fish will basically stay within an area that they're comfortable in. So if you have average water temperatures changing to the point where the fish decide that they're going to move to accommodate where they want to be, related to an optimal temperature, that could result in fish sort of moving out of an area. Or fish moving into an area. So that's not necessarily bad for the fish, it's just that if you're a fisherman and you're in a particular area, and you're depending on going out and be able to find these fish, and they've sort of moved up the coast or down the coast, that can become kind of problematic for you.

We see, also related to temperature, positive and negative things. So positive could be the fact that our warmer winters have resulted in higher white shrimp crops. So when we have a warm winter, we

generally have a good white shrimp season. When we have a cold winter, we don't. It tends to kill the overwintering shrimp and the population is depressed. Sort of that period of warm water is sort of expanding, then the period where you could safely harvest and consume shellfish actually decrease. So warmer waters might be bad for shellfish harvesting from a human health perspective, but it might be good for white shrimp.

- Climate change, which people refer to as extreme weather, means that the storms are often worse or more frequent. And we have more flooding, more drought. But in particular, the southeastern United States is rapidly becoming a moist, nearly tropical area. In which we can expect to see more standing water. And without proper mosquito control programs, then diseases like Zika will become more prevalent in our communities. We've already seen this in South Florida, Miami. With Dengue, and now Chikungunya, and now the latest Zika.

- Climate change on health. With extreme heat events we have populations who do not have adequate heating. They do not have adequate air conditioning in their homes. So this adds to the chronic illness that many of the community members face. So we have heat cramps, heat exhaustion, heat stroke, dehydration, all these concerns that can be exacerbated with climate change. And they are lack to be able to adapt to those situations appropriately.

**PAUL T. GAYES:**

One of the projections for the changes that we're seeing in the global climate is more intense rainfall events. And I think one can make a case. Not statistically arguing this at the moment, but just in the last few years. We've looked at the event we had

here in South Carolina, the historic flooding of this funneling of the moisture in the quarter, up through Columbia. And the devastation that happened in that regard. I mean we've seen that event again in Maryland, and recently in Louisiana, Houston, and Iowa just the other day.

These things are happening. And are happening more frequently. And we're not really prepared for those kinds of events, because there's a change from what we're used to in our weather.

- I would say from a political standpoint it's not so much a lack of awareness of climate change, as a denial of the science. You know, we're in a very Republican area. And repeatedly, people are hearing climate change is not happening. It's all a figment of the Democrats imagination. So it's very challenging in this area for politicians to stand up and say, let's look at the data, and let's assume that perhaps it might happen. And if that happens, what does it mean for our community?

- If we continue on this path of just politicizing the issue, ultimately what's going to happen is the person will make a decision that they don't want to hear what the scientists are saying, and they're going to put potentially themselves, their communities, and their way of life at risk.

- The American populace being so divided on so many issues, has likewise been divided on public health issues like Zika. And as a result, Congress has taken no action. And they instead took a summer recess. And many people in America don't believe much in science anymore, don't trust the government, and even when we develop a vaccine, there's going to be huge mistrust. So we have many barriers to overcome. And hence education and awareness and these

sorts of approaches must be done. However, the public is not likely to respond until and unless it hits them personally, health wise or personally in their wallet.

- Climate change is a global phenomenon. Doesn't mean everybody gets the same deal. Change happens and kind of plays out regionally, and there's lots of feedback within the system on different temporal and spatial scales. So you can be in one area that has not been getting a lot of change, saying, this is not happening. You can be in another area that is experiencing a lot of changes going, anecdotally I perceive it happening. And so there's a lot of that kind of complexity within the system that influences, I think, people's perceptions.

- There's no simple solutions. It's not a simple problem. It's a rather complex problem in terms of like you mentioned it. It affects people's livelihoods. It affects literally where they live. There's a lot of things that have to be kind of managed. And that involves both government, private industry, private citizens. Everybody needs to be able to work together to come up with solutions that work for the communities.

So the whole idea of social media, education, the educational system, I think we have to get to our students in the schools. But then again, that brings up another political element. Is the school board going to allow the information about climate change to be taught? And I'm not sure where we are in Horry County. But I know denial is very, very deep in this community.

- I believe that what has polarized the issue, and I think it was unexpected consequence, was when at the time, Vice President Al Gore, made the piece Inconvenient Truth. And I think what it did, because of his alignment and affiliation, and

because of the time of history where we were politically, it all of a sudden framed the topic as a democratic propaganda issue. That the chief ringleader of that effort was at the time Vice President Al Gore.

But historically, if you look at the topic of climate change and people in bipartisan support, that you think about it in these terms. That prior to the Inconvenient Truth piece, you actually had US senator Lieberman, you had US Senator Graham, and you had at the time US Senator Kerry. Who had all signed on to do a bipartisan, essentially bill, that was going to be introduced into the US Senate around comprehensive energy. And green economy consideration. But then if you take it at the state level, that one of the most sweeping legislation in terms of combating climate change, AB 32 which was in the state of California, was passed under at the time Governor Arnold Schwarzenegger. And he is what? A Republican.

And so my point is that this has not always been. It has not always been a polarized issue. It is history of this being a bipartisan issue and people from both sides of the track seeing value in us planning to mitigate our risk. But I will be remiss if I didn't say that I think that a big part of the dichotomy and the POLARIZATION that came, came as an unintended consequence of the "Inconvenient Truth" documentary put together by, at the time, Vice President Gore.

- The other thing that we need to do to influence Congress is to not make it a Democrat and a Republican issue. It's not Democrat or Republican. It is that the environment is

collapsing around us. And what are we going to do about it?

[MUSIC PLAYING]

I really don't know how we begin to engage the community in a positive way to accept the information that is there, that climate change is real. What I'm experiencing is we've got a very large retired population. And I've actually had people tell me that's not my problem, I won't be here. So emotionally, we have to appeal to their concern for their children and grandchildren. I think that is an important appeal that we make. Well, you know, we can leave it and it won't be our problem, but we do have children and grandchildren. I think we have to continue to put the facts out there.

- How can we get people, the stakeholders, how can we bring people to the table? There's so much going on our country and in our world that people seem to focus that divides us all. And we're spending so much time in focusing on those things. What-- what is it going to take for us to come together because we have common issues such as this that we have to, we need to address. And-- and I believe when people feel that it affects them personally, it affects their families, their children, then they're more willing, they're more open to listening and to learning and then, consequently, acting to try to resolve these issues.

- You know, we can talk about hardening shore lines and building barriers. I mean, in the Netherlands, of course, they've done a lot of building, you know, dykes and things like that where they're saying, no, we're going to have the sea come in here. Well, if we do that in the estuarine habitat, we're saying we're basically going to just cut off the ability of the

natural progression of the marshes to move. And I don't think we want to do that because once the marshes go, the estuarine habitat goes, so go the fishery's resources.

- With that projection, if you don't give that habitat room for upland migration, the problem is you're talking about putting at risk a critical habitat that is absolutely almost like the mainstay for this part of the world. It is-- it is entrenched in the cultural identity of this part of the world that is in play in the next 85 years if we don't have a strategic thought process.

- We, as advocates, need to push more about engaging our communities, getting our researchers, getting the health practitioners, the academics into our communities and bringing the necessary resources in to help us address the concerns around environmental justice and climate change.

- Not just at the local level, but at every governmental level, we are faced every day with current, this problem has to be solved today. And there seems to be a lack of vision to get above the weeds and look at the bigger picture. And that's what we have to look-- we have to look for leaders who have vision and leaders who are willing to take a risk, and leaders who are willing to say, I don't care if I lose. I've got to-- this is important enough for us to fight.

- Individuals right now, until a Zika vaccine or a Dengay vaccine becomes available, must learn two basics. Number one, remove all standing water from around the homes and call the county for standing water in ditches and other neighboring areas. Number two, use personal protection against mosquitoes, meaning mosquito repellents plus long sleeves when going outdoors during mosquito season. However, in the Charleston and South Carolina Lowcountry, mosquito season is basically 24/7 365. Communities also

must deal with standing water problems and large neighborhood mosquito control, both in water and spraying the flyers that bite.

- For the long-term future, I just hope people recycle. For my children, I'm going to recycle too. And for other people, you know, throw trash in the trash. Try to reduce trash. Like, reuse-- reduce, reuse, recycle. So just do stuff like that and then we can actually save our earth. Like, don't throw trash on the beaches, simple as that, you know? Or pick up trash if you see trash. If you see a bottle or something, recycle it.

- But what I really think we need to do is individually, one-on-one work with the members of Congress, the congressional delegation, to tell them, this is real. And it is such a universal problem, not just a national problem that a little local politician like me has to look to leadership beyond the boundaries of Myrtle Beach. Myrtle Beach has 18,000 people. That's it. [INAUDIBLE] County is one of the largest counties in the state. We have the largest tourism base in the state, but we're fragmented. So we need to look at statewide leadership and national leadership to embrace the concept of climate change and help begin the education and the policy change.

- At the end of the day, I'm not a politician. I'm just a pragmatic science guy, science policy guy. But I think my humble hope is that at least let's use the best data and the best information to make those decisions.

[MUSIC PLAYING]