INTERVIEW #2 with BD010

Zoom Transcript

[Interviewer] 08:04:03

And I have captions on, okay.

[BD010] 08:04:11

It up as well. Okay.

[BD010] 08:04:19

So. Did you want a few comments from me? Is that what the purpose of today's meeting is?

[Interviewer 2] 08:04:25

Yeah, so, yeah, if you'll remember, we started the process of connecting your system components together with the with the relationships between those like, we have a few drawn here in the blue, and we were hoping to to finish drawing out any relationships that you see between your system components.

[Interviewer 2] 08:04:46

I think we had said last time that we in particular wanted to focus on some of the.

[BD010] 08:04:56

Let's do it again.

[Interviewer] 08:04:56

I'll see we lost you again.

[BD010] 08:05:07

Nope!

[Interviewer] 08:05:48

Okay, so, Kelsey is gonna rejoin.

[BD010] 08:05:50

Okay.

[Interviewer] 08:05:51

But yeah, we wanted to try to add some more connections to this model and hopefully specify some ways to some of the connections, cause.

[Interviewer] 08:06:04

When we added them last time we met we were just doing one as like a strong relationship.

[BD010] 08:06:10

Okay.

[Interviewer] 08:06:10

I don't know if you had a chance to look at this since our last meeting, and if you had any comments about it.

[Interviewer] 08:06:18

But if you do, we can do that first, and then start going around the model again.

[BD010] 08:06:24

Yeah, let's do the comments. First. There's some things I haven't had a lot of time.

[Interviewer] 08:06:27

Yeah.

[BD010] 08:06:32

I may have mentioned my had a full hip replacement a week ago, so I've been pretty much involved with her, but she's doing splendidly still.

[Interviewer] 08:06:33

It's okay.

[BD010] 08:06:45

It's it's a big deal. Yeah.

[Interviewer] 08:06:46

Yeah.

[BD010] 08:06:47

Have the top of your femur cut off, and titanium ball socket placed in on on an X-ray. It looks like a golf tee has been inserted, you know.

[BD010] 08:07:00

Well, this is my first one was a decade ago. This is the second one, so it's a little easier this time, but not much.

[Interviewer] 08:07:01

Yeah, my, dad got a hip replacement about a decade ago.

[Interviewer] 08:07:04

So I know how it, how it is.

[BD010] 08:07:15

No easier on me. I'm not sure it's so much easier with her.

[Interviewer] 08:07:17

Yeah.

[BD010] 08:07:18

Let's try again, Kelsey.

[Interviewer 2] 08:07:21

Can you hear me? I have no idea. I have no headphones near me.

[BD010] 08:07:22

Yup!

[Interviewer] 08:07:23

Yes.

[BD010] 08:07:27

Yeah. I turned all mine off to. But here, a quick, some quick observations on this starting it sort of starting at the left hand top corner, going around.

[BD010] 08:07:42

It's not just restoring Navy.

[BD010] 08:07:47

You're going again.

[Interviewer] 08:08:24

While Kelsey tries to troubleshoot.

[Interviewer] 08:08:27

Let's continue with comments that you had. So you were mentioning something.

[BD010] 08:08:29

So you come starting there. Yeah, starting there, that is not just native to the sport.

[BD010] 08:08:37

There's a story. Native species, richness. Well, not just the microbial one.

[BD010] 08:08:44

It's just overall restoring species, rich richness that that supports all of these things.

[BD010] 08:08:53

Secondly, moving down, I want to just do it by colors in in your yellow boxes.

[BD010] 08:09:00

All of these are you list them as management actions, and most are what you have here are supporting of biodiversity, conceptation, but not all like coastal urban development and planning.

[BD010] 08:09:20

So it should be very clear that that management actions can be both supporting and and harmful.

[BD010] 08:09:26

In as you. I've seen me writing it up this way, but it just struck me as is the indication that these you get 3 out of 4 that are shown as a as supporting and one that isn't and I'll when I get to the stressors you'll see where I'm going with

[BD010] 08:09:45

this assembly of harmful art organisms I've stuck down in this corner here, and they need to be someplace, but harmful is usually used in terms of impacts to humans.

[BD010] 08:09:57

Not necessarily the organisms, impacts to the biodiversity itself, or to to a given ecosystem, so it can be they can be harmful if if the whole system is out of whack, for so to speak, and and you have

[BD010] 08:10:14

noxious species, taking over, not just to other organisms as well as to human.

[BD010] 08:10:20

So just want to be careful that you're not misusing.

[BD010] 08:10:23

Well, just thinking about about that. Oh!

[Interviewer] 08:10:28

What we can do here is for this box right here. I can change this to harmful organisms to the system, and then I can add a separate, concept, harmful organisms to humans.

[BD010] 08:10:42

Okay.

[Interviewer] 08:10:42

If that makes sense to you.

[BD010] 08:10:45

Yeah, because because the you know the.

[BD010] 08:10:52

Yeah, yeah, they are harmful to humans, harmful to the system.

[BD010] 08:10:55

And they, and they are not necessarily the same.

[BD010] 08:10:59

By any means. For example, having sewage pollution probably doesn't do a lot of damage to most systems at reasonable level, but it should.

[BD010] 08:11:11

Come in contact with it, just as an example.

[BD010] 08:11:20

Similarly, I'll skip the blue boxes at the bottom and come around to these to the green ones.

[BD010] 08:11:30

The issue list is stakeholders. Yeah, in every case the stakeholders are also major stressors.

[BD010] 08:11:39

You don't list any stakeholders such as environmental organizations which could be classed more as supporters, but the places where you may want it to since you use the color coding, whether you want to do you may want to think about using part pink and port green

[BD010] 08:11:57

and these cases, because and again, not all environment groups are created equal, but nonetheless, the the push for conservation was, let's think about conservation activities generally being supportive.

[BD010] 08:12:14

But it's hard to think of commercial and recreational fishing activities generally being supported.

[BD010] 08:12:20

Of biodiversity, or of shipping industry being supportive, supporting of anything and military, with the exception of some land around certain bases, is certainly not supported, but marine biodiversity.

[BD010] 08:12:35

So thinking about these a little bit in in coastal developers while staying alone, and I think that the developers also put biodiversity much more into the the process. They usually don't.

[BD010] 08:12:49

So this is again.

[BD010] 08:12:53

I wanna make sure that at least in what I'm suggesting to you that the that the stressful roles of these stakeholders also be included, and the public at large is not included there anywhere.

[BD010] 08:13:08

And there is a place where, where you know we're public accounts.

[BD010] 08:13:13

If mobilized properly, could have a strongly positive effect.

[BD010] 08:13:21

Else in here.

[BD010] 08:13:38

Yeah. And the restoration stuff should probably focus on habitat and ecosystem restoration to be again be very clear.

[BD010] 08:13:47

What you what you're talking about. I'm sure it will be in your writer, but you know, since I'm not seeing it right up on it, just thinking about what hits me, and looking at this.

[BD010] 08:14:06

And I still don't quite see how we gotta do much withdrawing lives, because everything that connects to everything and yet you end up with with the spaghetti diagram that becomes almost impossible to decipher.

[BD010] 08:14:23

I built some of those, and and then put 'em on a slide and say, Okay, now, how do I explain this to anybody?

[BD010] 08:14:31

When it literally looks like worms crawling all over the paper rather than nice straight lines, because we couldn't.

[BD010] 08:14:36

The straight lines just became a blur. So we did all these curve lines, and they become quite, quite entangled.

[BD010] 08:14:43

Shall we say?

[Interviewer] 08:14:46

Yeah, that'll be the fun part for us later.

[BD010] 08:14:49

Yeah, I'm not quite sure how you got to pull that pull those threads apart, but.

[BD010] 08:14:56

Anyway. That's my comments at the moment. I only have a few minutes to really look at this, but that's the sort of things I I was.

[BD010] 08:15:04

See that we're quite there yet.

[Interviewer] 08:15:07

Okay.

[BD010] 08:15:27

Yeah. One other comment I'll make to use it to the functional diversity.

[BD010] 08:15:34

Really in in my mind is key.

[BD010] 08:15:39

That's the essentially biodiversity supports redundancy.

[BD010] 08:15:47

And redundancy in the system, then functional and process redundancy that depending on biodiversity, then support ecosystem resiliency, ecosystem resiliency that allows the system to deal with some of these stresses that's why I think that one

[BD010] 08:16:02

is, a you know, you know, gets big flashing lights around it, or something to to emphasize its importance.

[BD010] 08:16:12

Because we talk about species richness. But it's really that functional diversity, not just at at the microbial level that makes it the key difference.

[Interviewer] 08:16:38

Any other thoughts?

[BD010] 08:16:41

I think that's exhausted. My morning brain.

[Interviewer] 08:16:47

Okay. Well, with the rest of our time. If we could try to add a few more connections to what we have just to try to like, link everything up in the model.

[Interviewer] 08:17:05

Starting with the orange biodiversity concepts and then we'll work our way around.

[Interviewer] 08:17:11

So last time, like you can see in the model.

[Interviewer] 08:17:17

We only have blue connections. So you only picked things that had a positive influence on something else. That's fine.

[Interviewer] 08:17:26

If you see more positive stuff, you can also add negative connections.

[Interviewer] 08:17:31

If you see things going in and out of the model that way.

[BD010] 08:17:33

Okay, I think I've hit on a lot of the negatives from the right hand side and obviously from from the peak side, that the from the P. Side started. Let's start with habitat forming species that those are really important.

[Interviewer] 08:17:49

Okay.

[BD010] 08:17:49

In the coastal protection and carbon, the sequestration and and.

[BD010] 08:18:01

In and really health, because so many of of the habitat forming species.

[BD010] 08:18:10

Let's think Wetlands, and and coral reefs play a role in people's status.

[BD010] 08:18:21

Their their identity with specific places, and those then support the positive mental health outcomes for specifically for anxiety and stress, alleviation and improvement of moved. Because you know that you know what I'm talking about.

[BD010] 08:18:40

Exactly so. Those kinds of things, I think, are really important to note for habitat forming species.

[BD010] 08:18:44

Sea, grass, beds. Another one of these that are so imported kelp forests, and those kinds of things, and where and where it's possible for people to either see or no, that those habitat forming species provide spaces for a lot of other critters and things it's not just critters

[BD010] 08:19:11

so those, I think, are are imported. I think the species of conservation concern, and charismatic megaphone, as we put it last time.

[BD010] 08:19:23

A lot of that stuff is supported to the public at large, which then translates into positive attitudes towards conservation, and in some cases actions.

[Interviewer] 08:19:44

So would you connect that to any of these management actions?

[BD010] 08:19:49

Oh! And connected to the Restoration into.

[BD010] 08:19:57

And land reserves. Yes!

[Interviewer] 08:19:58

Okay.

[BD010] 08:20:04

I mean, you could connect again. You could connect all sorts of things, but I'm trying to look for dominant to think about dominant connections.

[BD010] 08:20:10

Here as opposed to to small ones.

[BD010] 08:20:18

The key food web supporting species have about the I wouldn't so much put them to middle help, but clearly to to functional diversity species, diversity and.

[BD010] 08:20:36

And I import it in restoration activities without restoring those organisms.

[BD010] 08:20:43

You don't really have much restoration.

[BD010] 08:21:08

Not quite sure what to do with harmful systems, but I'm assuming that would would go into the, you know, loss of habitat, I think that's one of those things I thought was not here degraded, degraded habitat and

[BD010] 08:21:26

ecosystems. Is it really here as a as a box?

[BD010] 08:21:30

It probably should be some place. Am I missing it?

[Interviewer] 08:21:37

No, you're not.

[BD010] 08:22:03

Degraded habit that means loss of biodiversity, you know.

[BD010] 08:22:07

So that's that's.

[BD010] 08:22:11

And like you, put a positive on that. I'm not sure that's a positive line to harm harmful organism.

[BD010] 08:22:18

There. I guess it's the effect is to degrade, so I don't know how you're using your positive and negative.

[BD010] 08:22:23

So exactly!

[Interviewer] 08:22:26

So this is kind of hard, because it's almost a double negative. But as harmful organisms to the system increases, then degraded habitat would also increase.

[BD010] 08:22:30

Yeah.

[Interviewer] 08:22:41

Does that make sense? Okay, okay?

[BD010] 08:22:42

Yup, I'm with you!

[Interviewer] 08:22:53

So you said, degraded habitat would in general decrease biodiversity with that decrease.

[Interviewer] 08:23:01

All of these gray boxes.

[BD010] 08:23:03

Yes, I think so.

[BD010] 08:23:20

And this is like, I said, this is where it gets, so that following the lines gets interesting.

[Interviewer] 08:23:28

What I can also do there's a feature on here, or I can just select out certain concepts.

[Interviewer] 08:23:36

So when it gets really, really fuzzy, we could start doing that.

[BD010] 08:23:40

Yeah, I see it's nice to have on the computer. It doesn't work too well unless you got a you're right in a book.

[BD010] 08:23:54

Okay, what's next? Let's see.

[Interviewer] 08:24:09

Was there anything else that harmful organisms to the system impacts?

[BD010] 08:24:19

Oh, you know, since we've got horrible organizations to humans, some of these are the same they call flower blooms, for example, can be very harmful to the system that they very harmful to humans as well, and and and the harm to humans can be either.

[BD010] 08:24:38

The physical or or mental health, and certainly can mean loss of recreational opportunities and I don't think so of that. Nature.

[BD010] 08:24:52

Think about what's happening along the the coastline right now has been over the last several months, and we reduction in beach use, for example, even if people don't get sick.

[BD010] 08:25:06

Those kinds of things, the same thing with with a sewage.

[BD010] 08:25:11

Still, you know, people people get discretaged from going into war. Obviously, when you say big sign or for meeting oysters.

[BD010] 08:25:18

And they see a big sign that says has subsequent corresponds on it, usually as an indicator. You shouldn't be there.

[BD010] 08:25:27

I know at least hour in my state for oyster beds that are closed to pollution.

[BD010] 08:25:32

There is a sign on the scalding crossbones.

[BD010] 08:25:35

It's really pretty graphic that says, Don't.

[Interviewer] 08:25:39

Pretty, ominous!

[BD010] 08:25:41

Yeah, yeah, you get, you get the idea. But the positive side of that kind of thing is, it calls public attention that this is this is a problem that needs to be solved.

[BD010] 08:25:55

That's the part of it I liked.

[BD010] 08:26:02

So and so that looks.

[BD010] 08:26:13

So when we get to the Hmm, I don't know all of the pink stressors that can have negative effects.

[BD010] 08:26:22

I know.

[BD010] 08:26:24

I know a few of some of these can have, I guess, a local positive effect, though I've never seen one for ocean acidification.

[BD010] 08:26:37

I don't know. We need for coastal development.

[BD010] 08:26:41

Maybe for temperature, refuse the looking at the distribution of a particular species that you're interested in.

[BD010] 08:26:47

If if it's distribution changes to make it more available to you, maybe that's a positive change.

[BD010] 08:26:52

But overall I do not.

[BD010] 08:26:56

Anything, in nutrient loading. It's not just haves, but all sorts of things.

[BD010] 08:27:01

But yes, that's all that is to me is so.

[BD010] 08:27:07

Predominantly harmful to both biodiversity and to ecosystem function.

[BD010] 08:27:14

The ecosystems that, with their it's functional diversity, will adapt.

[BD010] 08:27:20

But they won't be the same ecosystem.

[Interviewer] 08:27:25

Right.

[BD010] 08:27:27

See what's the identification. I got it up on my computer to see if I can see it.

[BD010] 08:27:39

I tend to see rainfall. So let me get changes.

[BD010] 08:27:44

High intensity rainfall. All I see is negative's mostly from Ronald.

[BD010] 08:27:49

Here, and in some cases the lack of high intensity rainfall, even though we may get lots of water.

[BD010] 08:28:00

It's in short periods of time and then other periods of time.

[BD010] 08:28:03

You're facing essentially drought situations that's happened in Salt Marsh, for example, and cause significant problems in Georgia and South Carolina.

[BD010] 08:28:12

I know particularly, it has. So there's something, or at least that's the theory of what happened to Browning.

[BD010] 08:28:20

Right, big brown spots, and dead spot showing up in coastal marshes.

[BD010] 08:28:24

So let mes, the changes typically tend to be stressful.

[BD010] 08:28:30

I don't know of any. You know. Climate driven solantic changes that I would list as having positive effects.

[BD010] 08:28:40

You may find something in the I just don't know of anything.

[BD010] 08:28:45

Usually it means like greater. Soilization of both ground water and surface water, as they, you know, often use for computer coastal surface for portable water supply and for the penetration of things like boring sponge and whatped up into shellfish

[BD010] 08:29:05

beds and things like that with the fire salinity.

[BD010] 08:29:07

Spreading, spreading of speedies. It can be harmful, alright in a given environment.

[Interviewer] 08:29:24

So, okay, obviously, stressors are all harmful for ocean acidification.

[Interviewer] 08:29:34

I added that they had negative impacts to all the green or all the gray biodiversity boxes for the sake of keeping this model easy to read while we're doing this, do all the other stressors also connect to the gray boxes.

[Interviewer] 08:29:56

Cause. I won't add them in right now, but I'll just take a note.

[BD010] 08:30:03

Well, I'm not sure they.

[BD010] 08:30:14

So!

[BD010] 08:30:18

So the when you've labeled things, rebuilding and restoring your the great boxes, you might want to think about pulling the those verbs out.

[BD010] 08:30:30

If you leave if if it's the impact on species, diversity the functional diversity.

[BD010] 08:30:35

Yes, those all the stresses gonna have negative effects in my mind. If you talk about rebuilding, it's going to depend.

[BD010] 08:30:43

And rebuilding is as as a management action, or at least the result.

[BD010] 08:30:50

Often the result of manufacturing. It can be absorbed.

[BD010] 08:30:54

Natural actions too, and I'll you know, but usually it's it's a result of a something in restoration.

[BD010] 08:31:01

Let's say, I'll save the flow is restored to a previous previous previously sold.

[BD010] 08:31:06

Marsh. Then you will get a positive action that occurs naturally, but it but it only happened because water flow is restored.

[BD010] 08:31:19

And that might have happened probably happened as a restoration acted to be taken could happen as a result of a hurricane reaching something again, a dike or something.

[BD010] 08:31:28

But I would remove those verbs, because what you're talking about is the basic concept.

[BD010] 08:31:34

And then management deals with restoration or rebuilding.

[Interviewer] 08:31:38

Right? Okay.

[BD010] 08:31:43

And I the same thing with regard to all virtually all the green, except the general public and environmental groups. All of those are going to have negative effects unless, you know, they really get good management decisions.

[BD010] 08:32:03

Well, I used to. In my earlier days I spent more than a decade managing fisheries, for example, and.

[BD010] 08:32:13

It's hard to. It's hard to see positive environmental impacts or effects from fisheries, though that's not different than any other extracted use of natural resources.

[BD010] 08:32:27

We all wanna have some, some impact properly manage. One can reduce those.

[BD010] 08:32:33

And the reality is the Us. Has the most effective phishing regulations in the world, but they still the total magnitude of the effort, the fishing effort in recreation and commercial fishing will result in negative impacts.

[BD010] 08:33:04

As much as I like to my wife, and I like to take cruises.

[BD010] 08:33:08

The impact of Bruce industry is highly significant. In certain areas.

[BD010] 08:33:13

You know those kinds of things are recreational, just the recreational industry.

[BD010] 08:33:18

Can tourism. It could go into that green column.

[BD010] 08:33:22

There, and even eco-tourism overdone, becomes harmful.

[BD010] 08:33:28

And the harmful effect will be again overdone.

[BD010] 08:33:33

That is too many people tends to tends to erase the positive, attitudinal, and you know, changes in behavior that result.

[BD010] 08:33:43

For some people, as a result of ecotourism.

[BD010] 08:33:59

You're pretty good at capturing extreme of consciousness, thinking here as we go on.

[Interviewer] 08:34:04

That's okay.

[BD010] 08:34:05

Very good.

[Interviewer] 08:34:08

So I'll also, for right now just keep the green boxes out just to keep this model clear.

[Interviewer] 08:34:17

If that's okay with you. We talked about stressors.

[BD010] 08:34:19

Yup, yup, sure.

[Interviewer] 08:34:25

We talked about. Stay we've talked about 5 diversity concepts.

[Interviewer] 08:34:31

How about the management actions? It looks like, last time we started connecting them.

[Interviewer] 08:34:37

But are there other places, you see, that they might add into the bottle?

[BD010] 08:34:47

Well, the yeah.

[BD010] 08:34:50

The heybitat, ecosystem restoration, and Mpas both hit all of the diversity have positive influences, or could have positive influence on on all of the diversity that matters here.

[BD010] 08:35:07

For sure!

[BD010] 08:35:14

And.

[Interviewer] 08:35:17

And is that the orange boxes to, or just the grass?

[BD010] 08:35:20

Well, that's certainly the key key food. We have supporting species and functions all but harmful organisms to humans. I think.

[BD010] 08:35:44

Same for the Npas.

[BD010] 08:36:03

And I.

[BD010] 08:36:05

See.

[BD010] 08:36:18

And I think the coastal, the planning development, planning.

[BD010] 08:36:26

Certainly species of conservation concern.

[BD010] 08:36:32

Key food. We have supporting species, nit supporting species have a that forming species leave out the harmful.

[BD010] 08:36:43

Yeah, I don't think it's quite as important, but these would be positive effects that this, that action could be could have, or it without that there'll be negative effects.

[BD010] 08:36:57

So the management decisions gotta go on. The positive side is what I'm getting at.

[BD010] 08:37:08

And those the you know, the coastal urban development, the coastal development that's stress, of it. Top, that's gonna be a key issue.

[BD010] 08:37:17

You know whether you know, going up to the Pink, whether or not these are reduced any at all.

[BD010] 08:37:23

So that's that's a key thing. There!

[Interviewer] 08:37:39

So would you say that the management and the stressor are connected somehow?

[Interviewer] 08:37:45

Sorry. I don't understand what you mean.

[BD010] 08:37:46

Yes, yes.

[BD010] 08:37:52

If you start climbing in here someplace, it would be certain to be connected to coastal development and high intensity.

[BD010] 08:37:59

Rainfall. For example, in this case I'm saying that the cost of development and the planning, the group, the amount of stress resulting from ecological stress resulting from coca development is in part dependent on how well the cost of development is managed that goes right down to this

[BD010] 08:38:21

planning and management stuff. That's what I'm getting.

[BD010] 08:38:24

At!

[Interviewer] 08:38:25

Gotcha!

[BD010] 08:38:27

The same thing with, you know, like I said with fisheries, it really is not a question that you go to do away with it.

[BD010] 08:38:35

That doesn't make any sense. People have to have a place to live you know, to work, to eat all of it.

[BD010] 08:38:40

All of that stuff. And so how do you do that?

[BD010] 08:38:44

In a way that has the the least impact, or at least manageable.

[BD010] 08:38:49

Impacts on the environment. And that's where this is.

[BD010] 08:38:54

This coastal, manage, the cup becomes so important that that those decisions and those decisions also include things like Mpas and habitat restoration and protection.

[BD010] 08:39:05

And you know that that the Npa. Coastal Land Reserve, you know other conservation efforts need to go in there.

[BD010] 08:39:12

There are 2 other land conservation efforts, because this will, for example, there's a lot of Co.

[BD010] 08:39:17

Aches of Land Land Conservation Efforts in species, conservation efforts that don't fit into into Npas or formal reserves.

[BD010] 08:39:27

Lots of places. Get the.

[BD010] 08:39:31

Low development, agreements, you know, placed on on the deeds to work of things like the nature concern.

[BD010] 08:39:39

See, while I find another post of other environmental organizations working with other partners who eventually take over the land.

[BD010] 08:39:49

Ducks unlimited. For example, in my previous life of working with Dnr.

[BD010] 08:39:54

Ducks unlimited is not necessarily what I think of first as a conservation organization, yet they have played major roles in preserving while the waterfowl habitat, which in turn then provides a lot of other positive values it, provides a

[BD010] 08:40:11

lot of days of shooting sports for some people who like to go do that.

[BD010] 08:40:15

But the habitat that's preserved has a huge, positive ecological impact.

[BD010] 08:40:22

So that's the kind of thing I'm getting at.

[BD010] 08:40:23

Say right here.

[BD010] 08:40:27

And we have a fair amount of conservation efforts going in this State that are based on extinguishing or limiting development rights without giving up complete private ownership.

[BD010] 08:40:40

And some quick cases. The private ownership is given up, and it's turned over to the State agencies or Federal agents.

[BD010] 08:40:47

But in many cases it's working with private land or land owners who have interest in maintaining quality of life.

[BD010] 08:40:56

On a broader piece of property, so you extinguish or limit development.

[Interviewer] 08:41:08

Out of curiosity does South Carolina have anything?

[Interviewer] 08:41:12

In their State constitution. The designates a certain amount of money each year for the State to like, buy lands and have them be.

[Interviewer] 08:41:25

I guess, like protected forever.

[BD010] 08:41:27

Not in the State Constitution, but about 2025 years, 20, or 25 years ago we passed a law that established a small conservation land bank that gets it has to funding has to be agreed regularly by the General Assembly but it gets when it's

[Interviewer] 08:41:42

Okay.

[BD010] 08:41:50

agreed upon. It gets a dedicated personion of real estate tax.

[BD010] 08:41:54

Stamp funds to go into buying properties. Also.

[BD010] 08:42:00

South Carolina, and what it's department natural resources has the oldest Heritage Trust program in the Us.

[BD010] 08:42:10

Which was dedicated to preserving land that had unique ecological or archaeological value.

[BD010] 08:42:18

Not historically when I was there. At least we did not buy up property that had a historic house on it, or something that was left to the Historic Preservation Society.

[BD010] 08:42:28

But if there are subsurface archaeological remains that were known or suspected, and it could be protected.

[BD010] 08:42:34

Then we attempted to do that, so the State has a very vibrant program of land protection that involves the Heritage Trust Program with the Dnr.

[BD010] 08:42:45

And things like the Conservation Land Bank, which was housed in Dnr.

[BD010] 08:42:51

For a long time to provide some of the funds.

[BD010] 08:42:54

Then again in a number of our municipalities, that, using hospitality funds and tax funds, and some others to generate revenues, to provide green space.

[BD010] 08:43:06

So you know, you find a lot of different ways to do it.

[BD010] 08:43:09

South Carolina, has a has a very strong tradition of working also with large landowners, that the heritage, so to speak, of the old coastal plantations to develop these limited development agreement, so that literally hundreds of thousands of acres on our coast that are protected so you have these areas like

[BD010] 08:43:30

Myrtle Beach area that the coast has gone.

[BD010] 08:43:34

I mean, it's it's a huge megalopolis, and you got a city of Charleston, and you've got the whole pilot head complex south of this, and then it's spots in between a major development.

[BD010] 08:43:46

But there, there's been also thousands of acres of on our on our northern coast and on a southern coast that are protected one way or another.

[BD010] 08:43:56

A lot of it with private agreements and some in and things like State reserves, coastal reserve or Federal wildlife reserves, or combination of 2.

[BD010] 08:44:09

We have 2 national history research reserves in this State that we established one in the Georgetown, Winio Bay area, one in the South, called the Ace Basin, near that I was very much involved in getting established in I think it both of these came about 1980

[BD010] 08:44:24

84, 85, 86 somewhere in there, anyway.

[BD010] 08:44:28

So depend on the State. But there, there's a lot of effort here in the southeast.

[BD010] 08:44:35

I think Georgia and Florida have some I know Florida did have a very strong.

[BD010] 08:44:41

We designed our conservation Land Bank. In part of what Florida was doing at the time.

[BD010] 08:44:45

I don't think it's quite as aggressive these days, but it was pretty strong program.

[BD010] 08:44:51

I don't know about Alibaba and and Marilyn. I just don't.

[Interviewer] 08:44:57

In Alabama we have a forever wild program that yearly they get a certain amount of money from revenues from offshore oil and gas, and that month gets decided on like through a board.

[BD010] 08:45:00

Oh!

[BD010] 08:45:10

Yup!

[Interviewer] 08:45:16

They'll pick tracks of land that have ecological or cultural significance, and the State will buy it, and then it can never be developed on so they could restore it.

[Interviewer] 08:45:26

But it's like for the people forever.

[BD010] 08:45:29

Yeah, we don't have the oil and gas revenues.

[BD010] 08:45:33

We use the other revenues, but it's the same kind of concept, and I think that those are the concepts that that should be.

[BD010] 08:45:42

You know, built on the Land and Water Conservation Fund, that the Us.

[BD010] 08:45:47

Congress funds is another avenue of doing this, and we over the years we've gotten lots of Federal money, and when we had much better, much stronger Congressional representation with my my political mentor, Senator Fritz Hollings was in office, we managed to get direct

[BD010] 08:46:05

appropriations a number of years. Yes, earmarks for land protection.

[BD010] 08:46:11

That's that. Those are big deals. When you could pull them off we bought several islands, for example, that way.

[BD010] 08:46:16

That'll never be developed if Area Beford, South Carolina, Hilton head area.

[BD010] 08:46:25

That would have been otherwise, you know, just another resort development.

[BD010] 08:46:30

So these are imported things to note and important things that this country has.

[BD010] 08:46:36

It problem is maintain political support. And that's why the general public support plays a big role.

[BD010] 08:46:50

That was one of the fun parts of my old job where I got the that help broker some of these land deals.

[Interviewer] 08:46:58

Very cool.

[BD010] 08:46:59

It's still being yelled at by people, you know, who wraps up about something.

[Interviewer] 08:47:10

Oh, great! With the last couple minutes we have some connections with the ecosystem services.

[Interviewer] 08:47:21

Do you see any other ones that we can add, either that improve that influence something, or that?

[Interviewer] 08:47:31

Are influencing ecosystem services.

[BD010] 08:47:41

I'm trying to see the.

[BD010] 08:47:47

The habitat forming species. Let's see, we got them to coastal protection.

[BD010] 08:47:52

Help, and so on, and which, supporting?

[BD010] 08:48:01

If the if you go back to a genetic diversity over here aligned to the pharmaceuticals, is probably a a really big in one.

[BD010] 08:48:13

Here, there's potential. It's not never been realized.

[BD010] 08:48:16

But still remains a huge amount of potential for development of natural products from marine species.

[BD010] 08:48:24

And and if you look at the new Biodiversity Treaty, marine Biodiversity Treaty for areas outside national jurisdiction of genetic resources are big deal.

[BD010] 08:48:38

And in those discussions, mostly about what, any revenues that result being being that would be distributed also the the habit for habitat forming the species to green spaces would be a big one.

[BD010] 08:48:55

Here, I I would think I'm thinking more of of wetlands, sea grass, beds, things, things of of that nature that that provide green space, but also zoom supporting plants.

[BD010] 08:49:14

Some of them the maritime forest plants that stabilize the coast, so that those sorts of things, as well.

[BD010] 08:49:28

That's most of it, I'm sure. I come up with more.

[BD010] 08:49:30

If I if I gave that long enough!

[BD010] 08:49:42

So you probably draw a line to everything, from everything to everything.

[BD010] 08:49:51

And someday you can tell me what you're doing with all of this stuff, too, aren't you?

[Interviewer] 08:49:54

Huh? Yeah, so we're doing a bunch of integrs with different marine resource experts all across the country.

[Interviewer] 08:50:05

And everybody's making a model like this, just to see their own, like each person's perspective on how they see biodiversity being incorporated into management.

[Interviewer] 08:50:18

And then, once you've collected all of the models, I think somewhere, like 50 Kelsey.

[Interviewer] 08:50:24

Yeah. Something like 50. We're going to aggregate them.

[Interviewer] 08:50:29

So this looks really really messy. But when we combine your model with 10 other experts like some of these ecosystem services, can get bin, some of the stressors can get binned, so it won't look quite as ugly and it will be a little easier to

[Interviewer] 08:50:49

read, and then you can run scenarios with these I accidentally clicked on the the tab earlier, but we can simulate increases, or decreases in like a management action.

[BD010] 08:51:04

Alright!

[Interviewer] 08:51:06

So we'll say that habitat and ecosystem restoration increased, and then, based on that, other things in the model, would also increased by certain changes based on what their relationships were.

[BD010] 08:51:24

So this, this allows you to quantify qualitative input perfect.

[Interviewer] 08:51:32

Yes.

[Interviewer] 08:51:36

Yeah, one of the.

[BD010] 08:51:36

And by, but effectively averaging, that is, combining, aggregating.

[BD010] 08:51:43

The issue, smooth out the the extremes, or ignore the extremes and you've come to some sort of I'll call it average of expert opinion, or something like that, is that I'm assuming this.

[BD010] 08:51:56

What you're after.

[Interviewer] 08:51:57

Yeah, and so what we'll make different group models based on the type of person.

[BD010] 08:52:02

Hmm!

[Interviewer] 08:52:06

So we'll have academics like State and government managers hopefully, a tribal group as well.

[Interviewer] 08:52:14

And then compare how different groups of people are seeing these systems differently.

[BD010] 08:52:22

Thank you.

[Interviewer 2] 08:52:25

What are the chances that my audio is working? Oh, okay, okay.

[BD010] 08:52:28

It is.

[Interviewer] 08:52:28

Hey!

[Interviewer 2] 08:52:31

Thought I would try to end. Yeah, thank you, Sarah.

[Interviewer 2] 08:52:34

So much for jumping in there. I have no idea what was going on.

[Interviewer 2] 08:52:38

I think it probably was working a little time, but I didn't wanna try to navigate, and then it go in and out the whole time, so that would have been really, really annoying.

[Interviewer 2] 08:52:44

But yeah, that was a great description of what we're planning on doing.

[Interviewer 2] 08:52:49

The final thing that hopefully we'll do is we'll go do some focus groups with community stakeholders.

[Interviewer 2] 08:52:54

And so then we'll bring managers and stakeholders together to try to see.

[Interviewer 2] 08:52:59

You know how different community members perceive some of these issues, and then how what different management approaches can be utilized for different ecosystem services that different stakeholders were rely on and bring managers and community members together to talk about those issues and look at

[Interviewer 2] 08:53:16

trade-offs of different management approaches.

[BD010] 08:53:19

Okay.

[Interviewer 2] 08:53:21

The last thing I was gonna ask in our last, like 5 min we we didn't really have time to get to this, especially because your model is so complex, which is a good thing.

[Interviewer 2] 08:53:32

We think of it as a good thing. I know it looks.

[Interviewer 2] 08:53:33

It looks stressful, but it is a lot of really great data for us.

[Interviewer 2] 08:53:37

So we appreciate your time. The last thing that we could do in these models is we could wait the relationships which obviously we don't have time to go through all of our relationships.

[Interviewer 2] 08:53:46

I'm not asking for that, but what we will do to sometimes when we have time is we'll go through each relationship, and we'll ask if that relationship is a low medium or high impact on the system to look at how different components impact the rest of the system in different ways.

[Interviewer 2] 08:54:03

If that makes sense. So I just wanted to ask really broadly from you, like, if just thinking about these concepts that we have here when thinking about the management approaches.

[Interviewer 2] 08:54:15

For example, like, are there different impacts that those approaches have on the system?

[Interviewer 2] 08:54:21

Or would you say that they impact the system pretty equally across the board?

[BD010] 08:54:25

If you're talking about management actions.

[Interviewer 2] 08:54:27

Yeah.

[BD010] 08:54:32

They don't impact equally. No, if it's gonna be on both the kind of management action and what's being managed there's a difference between managing land use and managing fishery.

[Interviewer 2] 08:54:34

Okay.

[Interviewer 2] 08:54:41

Yeah.

[BD010] 08:54:48

Take, for example, here, in the likely kinds of impact, though both can have depending on.

[BD010] 08:54:56

The fishery or the land use, if both can have significant effects on habitats.

[BD010] 08:55:03

Many cases from me the effect of of management, action owned habitat integrity, ecosystem integrity is more important, then.

[BD010] 08:55:15

An individual plot of of rich species, for example, because if these, if the system is still intact, not completely phone report, then it'll it'll work.

[BD010] 08:55:29

If if it's not still intact, then at least in that location, the system is not going to work.

[BD010] 08:55:36

And again, here's where for me, the functional biodiversity becomes so important because if you've got the functional redundancy, even if you lose some things that we think may be key species, or at least imported species in terms, of abundance and

[BD010] 08:55:56

distribution, you may not leave the loose, all of the imported system functions.

[BD010] 08:56:03

So that's where I put you know this.

[BD010] 08:56:05

And I put, I would put the stronger emphasis on management actions that protect habitat integrity and owned protecting functional biodiversity more than neat looking species that we all think are fascinating.

[BD010] 08:56:27

Only microbial it just light microbes. Nobody else does.

[BD010] 08:56:32

Lots of people like charismatic megaphone, and I'm aligning my microbiology friends.

[BD010] 08:56:39

But you understand what I'm getting at. I think.

[Interviewer 2] 08:56:41

Yeah.

[BD010] 08:56:42

Oh, and yet here's the opportunity to say, Yeah, it's these little guys or other kinds of things that makes systems function.

[BD010] 08:56:52

When people on the coast think about shrimp.

[BD010] 08:56:55

They think about edible shrimp. They don't need about grassroots, but both of you familiar with grass ramp in the areas where you are the little tiny pigment needs a little clear.

[Interviewer 2] 08:57:08

Okay.

[BD010] 08:57:09

Yeah, big that you see in marshes. There are billions of those little little crustaceans in a hectare of of marsh hugely imported food resources.

[Interviewer] 08:57:09

Okay.

[BD010] 08:57:23

So forth. So nobody talks about managing that kind of critter. But that's the kind of criter that, along with others that have to be thought about in the context of what you were. You were thinking, not just the ones that that people recognize.

[BD010] 08:57:40

That's my point of it. The management action has to look at at the habitat.

[Interviewer 2] 08:57:42

Yeah.

[BD010] 08:57:47

The system more, and we use that we use habitats more than anything else, as a proxy.

[BD010] 08:57:52

I think providers, because we can understand the a salt marsh as a unit of of biodiversity, of a unit of system, of biodiversity.

[BD010] 08:58:06

We can't understand the entire coastline or the entire ocean as as a system, nearly as well.

[BD010] 08:58:13

That's the sort of might think it. And when you get down to issues relating to to impact the fish on bottoms, what we call hard bottoms here, that it's places with relief and sponges and all sorts of things soft calls and whatever growing on them

[BD010] 08:58:31

and and and wetlands and things.

[BD010] 08:58:35

Then you can conceptualize the impact of negative fishing practices, wiping out species, wiping out entire habitats.

[BD010] 08:58:46

Our development processes on the coast wiping out that think about up until the probably the sixties or seventies.

[BD010] 08:58:53

How often coastal development, theers knocked down every sand damage site, put the houses right up on the beach, and how destructive that was without even thinking about the ecological consequences.

[BD010] 08:59:06

Think about just the short protection that housing protection, bad use of the dunes, but they're also ecological values of those dunes and the associated vegetation.

[BD010] 08:59:17

No, anyway. So those are, those are 2 key components, for me at least, that I would.

[BD010] 08:59:21

I would put the heavy weights so.

[Interviewer 2] 08:59:24

Okay. Great. That was, that was really helpful. Thank you. A lot to do.

[Interviewer 2] 08:59:31

And 1 h, even 2. So, yeah, yeah, we appreciate your time so much. Thank you so much. Again.

[BD010] 08:59:35

I have to run so.

[Interviewer 2] 08:59:39

This this is really.

[BD010] 08:59:40

Sure that's been a lot of fun. I hope you get something useful out of it.

[Interviewer 2] 08:59:44

We definitely did from you. So thank you so much.

[Interviewer] 08:59:46

Okay.

[BD010] 08:59:47

Thank you. Take care! Bye!

[Interviewer 2] 08:59:48

Bye!