

## The Loop: Episode 13

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**David Levin:** You're listening to The Loop, an audio series about the mud, microbes, and mammals in the Gulf of Mexico. I'm David Levin.

When a huge disaster like an oil spill strikes, you'll hear a lot about its price tag. Like, what it'll cost to clean up, or how much income people lose when fishing grounds close.

But there are other, less tangible costs. The loss of wetlands, for instance, which can block storm surges. Or the loss of wildlife that keep an ecosystem running. Those sorts of things are called "ecosystem services"—and it's pretty hard to put a value on them.

But that's exactly what David Yoskowitz is doing. He's an economist at the Harte Research Institute in Corpus Christie, Texas. And he says that when it comes to the environment, the idea of "value" isn't just about money. In this episode, we talked to him about his work, how it could shape policy, and how it might even affect the way we respond oil spills in the future.

Stay tuned.

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**Levin:** So let's start off with the big question. How do you start to define an ecosystem service?

**Yoskowitz:** Really the easiest way to think about ecosystem services are just the benefits that we humans receive from our natural environment, and it's as simple as that. [00:01:07] going to the beach and enjoying a sunset – that is an ecosystem service as well as // the freshwater that we receive and are able to drink and use to bathe; as well as the storm protection values of marshes and mangroves. So all those benefits really define what ecosystem services are. People understand benefits. You know, "ecosystem *services*"? Eh, not So much. [laughs]

**Levin:** So as an economist, though, how do you start to measure its *value*? That seems pretty slippery, right?

**Yoskowitz:** [00:01:49] Ah, value. Yes, well, that is the that is the big question to be able to answer. // When we try to measure value in monetary terms—yen or dollars or pounds or euros—it's a really difficult thing to do, // And so you know, the last stage that we want to get to in // building our value story is the monetary value. What we really want to start out with is just demonstrating // the workings of the natural environments, and how those directly impact people. So we might start with a simple assessment of // the functioning of an oyster reef as it // removes the nutrients that helps clear up the water which makes

your boating and fishing experience much greater. // That story there might be enough for people to understand the value of a particular environmental asset.

**Levin:** But if you're not giving it a monetary value, how do you quantify it? How do you tease out what that value is?

**Yoskowitz:** What we do is we apply a very scientific approach, and // we poll individuals like you would poll individuals before an election. Right? It's very scientific. We are asking people to make tradeoffs between their hard earned cash, which they can hold onto, or they can choose to protect marsh mangroves and oyster reefs and pay to protect them. And what that demonstrates is when they're willing to separate themselves from their hard earned dollars, then // we begin to pick up that value that those individuals have, and now we're able to do it in a monetary sense. For example, we just did a study in Galveston, the greater Houston-Galveston Bay region, where we surveyed individuals about protecting coastal freshwater wetlands as a result of sea level rise changing those wetlands. And what we found was that households in that region were willing to pay over 300 dollars a year to protect the wetlands because of the benefits that they enjoyed for those wetlands. And that's a significant // total level for the for Houston and Galveston region.

**Levin:** Is that 300 dollars kind of a proxy for the intangible benefits of those wetlands, or is it, 'we'd pay 300 dollars now, because we'd have to pay 50,000 to fix our house when it floods?'

**Yoskowitz:** [00:22:49] Yeah it's a great question. You know it's interesting; it's actually a mixture of both those, at least in the way that we did this particular study. So people do them in different ways. They may only want you to value a particular ecosystem service or benefit; they're only interested in a question about flood protection, or they're only interested in a question about recreation. [00:23:16] it really becomes hard for people to divorce or compartmentalize all those different benefits that we receive from our natural environment. And so you know what you talk about is really getting to this idea of existence values. //For example, I may never get to the Amazon, but the fact that I know that it will exist and that my donation will go to you know help preserve it, and so it *will* exist, connotes tremendous value to me. And so that's critically important. What we find is // these cultural and existence values are some of the highest values that people have.

**Levin:** It sort of sounds like you're just trying to understand peoples' thought process in general.

**Yoskowitz:** [00:14:33] Absolutely, yeah. [00:05:53] So I'm interested in how people make decisions, and *why* they make decisions, and // economics has really, especially in the type of work that we do, has really brought in a lot of psychology and behavioral sciences over the years. And it's because // we as humans have to make tradeoffs. I mean we have to decide how // we're going to // enjoy a meal tonight; are we going to cook at home or we're going to go out to dinner? You know, that's governed in part by how much we have in our checking account. // all these link back to the scarce resources that we have.

[00:15:21] if there was unlimited amounts of // Marsh or seagrass or oyster beds or unspoiled bottom of the Gulf of Mexico, we wouldn't have to worry about, 'if there's a spill, what's going to happen?' // But that's not the way the natural world works. //we have to make decisions about // what we're going to protect and how we're going to protect it or enhance it. And where we want to // spend, we as humans, our time and our money.

**Levin:** So give me an example. How could that info could be used to protect a natural resource, or respond to an oil spill?

**Yoskowitz:** [00:17:43] Yeah. So, really at the end of the day, it's to make management decisions. A lot of what we're talking about in our coastal environment and our offshore environment are really public goods. // So when we make our management decisions on those public goods what we want to account for are all the costs that come with those decisions as well as all the benefits. [00:08:49] For example, you know the Deepwater Horizon oil spill. // That is a manmade event that had tremendous ecological impact measured by many scientists. But it also had a huge human impact everything from mental health to jobs lost to families being displaced. And so understanding that connection between what's happening in our natural environment and how it // ends up impacting human well-beings is critically important //. There's no way that we could connote the value of our natural environment without that really tight connection. [00:27:25] what's happened over the last couple of decades is a refinement of the tools and the techniques that we use to conduct valuation whether it be monetary or otherwise. And so as that has gotten better it has been easier for decision makers to take those values into account along with lots of other information.

**Levin:** David, thanks for taking the time to chat.

**Yoskowitz:** No problem. Good talking with you, David.

**Levin:** David Yoskiwitz is an economist at Harte Research Institute, part of Texas A&M University. He spoke with us from KEDT studios in Corpus Christie.

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