POISONED_WATERS audio

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SPEAKERS

Robert Kennedy, Jr., Hedrick Smith

00:00

The

00:08

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01:19
Puget Sound,

01:22
Chesapeake Bay.

01:24
They are America's great coastal estuaries, and they are in peril.

01:32
I would put Puget Sound in the intensive care unit. The situation is critical. The Chesapeake Bay is like the canary in the coal mine. It is an indicator of what we are now learning to expect in

any body of water across the planet.

01:48

Three decades after the Clean Water Act, frontline takes a hard look at why America has failed for so long to clean up the nation's waterways. Agriculture is by far the largest source of pollution to all of the waters in the country.

02:05

We're not talking about little mom on the farm anymore. We're talking about industrial production. It is industrial waste,

02:15

and how contaminated water is threatened not only wildlife. You have frogs with six legs, male frogs with ovaries, but ultimately threatened our own health as well. The same things that are killing the animals will kill people too.

02:32

You're in a two hour special report. Frontline correspondent Hedrick Smith uncovers the danger to the nation's waterways

02:40

tracking new threats. If you were living in Washington, DC, would you drink water coming out of the Potomac probably not confronting new challenges?

02:51

This is sick. This is sick. It's like a cancer. It's growing. I'm discovering the ultimate problem. It's about the way we all live. And unfortunately, we are all polluters. I am You are at all of us art. Tonight, frontline investigates what's poisoning America's waters?

04:04

Chesapeake Bay at dawn

04:09

one of those magical moments when you feel at peace, and in harmony with nature.

04:16
For me, the Chesapeake has a special place and extraordinary natural treasure.

04:24
Over the past 30 years I've spent a lot of time on the bay.

04:28
Sailing, hiking, swimming grabbing.

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I love the water. It's calm its beauty, its majesty.

04:38
And I'm fascinated by its meandering shorelines.

04:46
In the early morning light, the bacon looks so pure and pristine, but that's deceiving.

04:52
I know that like most of America's waterways Chesapeake Bay is in trouble despite years of trying to save it. And that worries me

H Hedrick Smith 05:03
I wanted to firsthand look, and so I headed out on the water with Larry Sims, a Waterman who has been commercially fishing the bay for 60 years.

05:12
And its peak Tom if he drained the bay, the crabs and fish and horseshoes and everything. We would probably be 10 foot deep on the bottom over the whole bay.

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Over the past several decades, Simms has watched the good times of bountiful harvests slip away about like your home waters here. Yeah. What is the Chesapeake Bay like today for Waterman.

05:39

The only thing that we have in abundance that we had back then which was the striped bass or rock fish, other than that everything else is diminished. With the washers we used to catch 2 million bushels a year. Now we catch 100,000 bushel. I never ever dreamed that I wouldn't be catching shed anymore. We make catching yellow perch and lower windy catching tarpon anymore. And I've ever dreamed that that come to an end.

06:05

Sims took me to the old fishing town of Rock Hall or Waterman we're bringing in the days crab catch.

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Crab crabs have long been the trademark of Chesapeake Bay. But the catch is now down more than 50% from 25 years ago.

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So how was the catch today dropped off a little bit today? Dropped off. So we come in with 678 bushels 909 bushels 10 years ago, how many would you caught on an average day? We've got 30 about 30 bushels, but three times as many.

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How do you feel about the bay? And what's happened to it? I think it's a tragedy. I think a

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little upset that my children can't

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enjoy this way of life that I've chose, you know,

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a Rock Hall with all that used to be processing houses for striped bass for boosters for clams. For everything we was harvesting. A lot of people in the fish and crab and oyster business went out of business. Yeah.

07:15

You're talking about billions of dollars of economic impact with oysters, crab shad striped bass. The decline in the Fisheries has just been dramatic. I wouldn't have thought even 10 or 15 years ago that we would literally lose oysters as a commercial fishery we have it's done.

07:39

What a man is seeing the symptoms of decline. But the deeper problem I learned is that the very dynamics of the Bayes ecosystem are being fundamentally altered by human impact.

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The bay is acutely vulnerable, because its watershed is so large, 11,000 miles of shoreline, and it drains big rivers from six states.

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In all of North America, it's the largest estuary and we're talking to six to the east coast from Cooperstown, New York, out into West Virginia, almost down to North Carolina.

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It is the receptacle of an enormous volume of water in a uniquely shallow basin. Its average depth is only 21 feet, making the bay an ecological hothouse.

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It's fabulously productive, but also exquisitely vulnerable to land use because it has a huge drainage basin. So you have you know, the classic place for trying to determine whether humans and nature can coexist.

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One problem for Chesapeake Bay is that humans have drastically overfished the resources, especially crabs. But scientists have also tied the dramatic decline in fisheries here to

manmade pollution, and a growing phenomenon called dead zones. dead zones happen when too much fertilizer, nitrogen phosphorus comes in. It grows lots of excess algae, the algae die decompose suck up the oxygen from the deeper waters which aquatic life needs to live.

09:26

This is what a healthy oxygen rich Bay bottom looks like. Full of lush grasses where a fish and crabs can grow.

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A dead zone is completely different, barren and empty. The bottom of the bay when there is an algae bloom or when you have a dead zone is as dead as the face of the moon that there is absolutely no oxygen in these dead zones and nothing can live that requires oxygen for survival. Crabs can't make it for crabs can't make it oysters can't make it fish. They get caught in a dead zone where literally

10:00

die. If they can't get out of a dead zone, they'll float up to the surface their bellies will explode. And you'll see fish kills throughout the Chesapeake Bay.

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In the heat of summer dead zones now occupy as much as 40% of the main stem of the Chesapeake Bay. But it's not just a bay wide problem. It's worldwide. All across the planet dead zones have been doubling in frequency and size every decade. There's one in the Gulf of Mexico the size of the state of Massachusetts.

10:39

Pollution is not just creating dead zones, it's playing havoc with human health and recreation. And those health advisories at Sandy Point Beach are still in effect and will be every year more beaches have to close periodically because of pollution help, people are urged to avoid direct contact with the water on the east. The unfortunate reality is that people get sick from contact with water every single day. And we have information suggesting that that problem is getting worse today than it was 10 years ago. And this is a result of a number of different contaminants being in the water that ultimately can make people sick.

11:19

Today, we're at a point at which this system called the Chesapeake Bay may be on the verge of ceasing to function in its most basic capacities. And what do I mean by that, providing a place for people to swim, recreation, providing a source of seafood, shellfish fin fish, oysters, crabs,

underwater grasses, which support the crab populations. And being a system that is absolutely wonderful to look at to support tourism to be a source of real pride to the region. We are at the verge where all of those functions of the Chesapeake Bay that we value could be lost to the next generation. Unless we take dramatic and fundamental action today.

12:10

What leaves the base defenders distraught as not only its perilous condition, but the public's evident loss of interest, and the failure of federal and state governments to stick to their repeated promises over the past 25 years to clean up the bay.

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There has been so much investment in science and in modeling and in monitoring. We know today precisely what is necessary to save the Chesapeake. And now it's very clear it comes down to the question of political will.

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You know, there's a tendency to blame it on lack of political will will Hill who elects the politicians and who reelect them. Last time I looked it was us. We ran out of excuses for delaying many, many years ago around the Chesapeake.

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We can afford it. We don't necessarily want to pay for it, but we can afford it. So I have to say that collectively, we don't care enough.

H Hedrick Smith 13:10

There was a time when we as a nation didn't care enough to demand action. Four decades ago, when the country was rocked by a series of environmental disasters.

R Robert Kennedy, Jr. 13:21

Well, I remember what it was like for Earth Day.

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I remember when the Cuyahoga River burned with flames that were eight stories I remember when the Santa Barbara oil spill in 1969 that closed virtually all the beaches in Southern California. I remember when they declared Lake Erie dead. I remember that I couldn't swim and

the Hudson or the Charles the Potomac. When I was growing up. We could see the pollution, smell it, even touch it. The problem was in our faces, and the public demand for action exploded on Earth Day.

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In 1970, this accumulation of insults drove 20 million Americans out onto the street 10% of our population and the largest public demonstration in American history.

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It was anger at the state of the world at the state of your own backyard, whether it be a water body or the air or your mountain range, whatever it was you related to as the environment. There was anger that we as a country had let it go. And there was a very much of a grassroots rebellion, saying this has got to stop.

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There was a big issue it exploded on the country. It forced the a Republican administration and a president wish it really never he'd never thought about this very much on President Nixon. It forced him to deal with because public the public said this is intolerable. We've got to do something about it.

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Respond

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Need to congressional pressure, Nixon created the Environmental Protection Agency. He picked Bill Ruckelshaus, a Justice Department lawyer with a solid Republican pedigree as its first administrator, and Ruckelshaus quickly took charge. We had to select some big visible polluters, both industrial and municipal, go after them, make sure the public understood we were being responsive to their concerns. And that would energize the agency and get us in a position to do things that needed to be done in order to address the problem.

15:37

Congress armed Rako, SAS and the EPA with a raft of new environmental laws, like the Clean Water Act, that impose strict pollution limits, and penalties for violators. The Act call for America's waterways to be fishable and swimmable again, by 1983. It had strong bipartisan support in Congress, but not it turns out from President Nixon,

16:03

when we finally passed the Clean Water Act to the Senate and the House, Nixon vetoed it. And for the first time in the Nixon administration, he had a veto overridden substantially and significantly. And was that saying Nixon was out of step with the country Nixon didn't care about the problem. It was my impression, and I'm a Democrat. So I've got to be forgiven for that. But it was my impression. The Nixon's interest in environment was strictly political. He didn't know much about the environment. And frankly, he wasn't very curious about it. He never asked me the whole time I was at EPA, is air really dirty is something wrong in the water? What? What are we worried about here? He would warn me since you gotta be worried about that. EPA, he called it EPA, I really wanted the country to call it EPA, everybody, EPA, EPA, he called it EPA. And he said those people over there now don't get captured by that bureaucracy.

17:02

But with bipartisan backing in Congress, Ruckelshaus took strong action. Anyway, he banned DDT, and posed a tight deadline for reducing auto emissions, sued several cities and big steel and chemical companies for polluting the air and water. His tough approach made enemies. Most of the people running big American manufacturing facilities in those days, believe this was all the fat it was going to go away. And all they had to do was sort of hunker down until the public opinion subsided, public concern subsided, and I'm gonna go away when you went after the big polluters, you sued them, you took them to court, what was the reaction of USDA like of me, I remember going up to see Ed cod, who was a CEO of US Steel. He told me, he said, you know, we don't like you very much. And he said, We don't We certainly don't like your agency. And I said, Well, if that's your attitude, and we're probably gonna get in a fight over. So you had to enforce the law. You had to be a tough regulator. That's right. You you had to reassure the public, that this was a problem the government was taking seriously. We had to be tough. We had to issue standards, and we had to enforce them.

18:16

One of the first big regulatory success stories came right here on the Potomac River. The Potomac river goes up to the mountains of Appalachia. It comes past our nation's capital, and then it enters the estuary of the Chesapeake Bay. And what we saw in the Potomac River in the 1960s was what was seen in many rivers around the country where it smelled so bad, you didn't want to get anywhere near it. And that odor was in large part created by poorly treated sewage.

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If you were out sailing in a small boat and capsized, you had to go in and get a shot or two. I mean, it was literally hazardous to your health to come in contact with the water.

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Restoring the Potomac meant modernizing the sewage treatment plants along the river, like this one called Blue plains, just south of Washington

this one called Blue plains, just south of Washington.

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Blue plains handles the waste of 2 million people. And it embodies just the kind of pollution targeted by the Clean Water Act, pollution coming out of a pipe.

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And in the 1970s, blue plains was the biggest single source of pollution to the Potomac.

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The blue plains was the key wastewater treatment plant that had to be modified. If we were really going to make a good effort at restoring water quality in both the river and in the bay. So Potomac had become overrun with acres of green algae caused by excess nutrients from human waste, like phosphorus and nitrogen. The regulators said okay, Phosphorus is a problem in the Potomac therefore, you people running the wastewater treatment plants

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we'll upgrade to remove phosphorus, and it happened in a very short period of time.

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But the river didn't improve all that much. It turned out they needed to remove nitrogen to a costly process.

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But Cliff Randall found an answer a new more economical technology called biological nutrient removal, or BNR. The way we treat sewage is we take in the sewage, and we feed it to a large mass of bacteria and other microorganisms. And basically the the sewage, the eat the sewage. That's correct. Much, much, much. That's right.

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It took a billion dollars in federal and state funds to modernize blue plains with several new technologies, including BNR. But the effort paid off. And more than 100 sewage treatment plants around the bay adopted BNR technology.

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How much of these early gains were not only the result of technology, but have a pretty tough regulatory stick from the EPA and the state governments. I mean, you know that that was a tried and true formula. I mean, with sewage treatment, where we made the biggest gains early on and continued to make the biggest gains. You have very clear laws, you have penalties, you have deadlines, you have enforcement, you have inspection. I mean, we know what works.

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But the 1980s brought a new era and the political climate on the environment change.

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The winds of deregulation were blowing through Washington, especially during the Reagan years.

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It is time to check and reverse the growth of government, which shows signs of having grown beyond the consent of the governed.

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It is my intention to curb the size and influence of the federal establishment. There's no question that the Reagan administration in fact brought to Washington, a deregulatory agenda. I remember back in the Reagan days have seen memos that would come out from the White House to the Chamber of Commerce and other big businesses asking them for a list of regulations from which they would want relief. environmental regulation was a prime target of the Reagan White House for giving relief to American business.

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The Reagan Administration essentially gutted the EPA, they stopped it in its tracks for a period of six, seven years, Reagan and his White House appointed people to run the Environmental Protection Agency who were flat out opposed to the mission of the agency and were set to undo that mission. The Reagan administration not only handcuffed EPA on enforcement, it shifted to a new strategy of voluntary compliance.

23:07

A strategy typified by the Reagan EPA a new program for Chesapeake Bay.

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What we created in the Chesapeake Bay was a grand experiment. It was going to be alternative to the regulatory approach that had swept the EPA that swept the federal system. They were going to try to do this in a non regulatory cooperative manner.

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The new approach was long on promises and targets, but short on hard deadlines and clear accountability.

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It is a voluntary program, you are never going to effectively deal with a multistate pollution problem with a voluntary program.

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The result was the Chesapeake Bay Program repeatedly missed its targets leaving unfulfilled the clean water acts promised to radically reduce water pollution.

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I saw the consequences of how deregulation has played out here on the Chesapeake Bay's Eastern Shore, where huge factory scale farms now dominate the landscape. And where half the pollution flowing into the bay, much of it from agriculture remains essentially unregulated.

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I'd come here to meet Rick dove, a professional photographer and environmental consultant, who under the authority of the Clean Water Act has been gathering information for a potential citizens lawsuit against agricultural polluters.

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Dove took me up on a small plane and gave me a bird's eye view of his detective work on the Chesapeake Bay watershed.

25:01

Got a really clear picture up here. It's almost like a diagram up here looking at it. That's one of the interesting things about flying. And that is that either No No Trespassing signs, you can look straight down and you can see everything you need to see you can document it, obviously investigating the pollution from big chicken farms.

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As we fly, he points out rows of long flat sheds each a couple of 100 yards long, each holding up to 40,000 chickens. No matter where you fly on the Eastern Shore. It's loaded with these chicken farms. That's the problem is where there are chickens, there's manure, it's everywhere. We know there's bad stuff in poultry waste once it gets in those ditches. And once it those ditches begin to flow down to the all these rivers on the Eastern Shore, it's on its way to the bank. These rivers are delivery systems, whatever nutrients are flowing in that river are being delivered to the bay.

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chicken manure is loaded with nutrients like nitrogen and phosphorus. Remember the dead zones in the bay. They were caused by algae, which is fed by nitrogen and phosphorus

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will shoot for five 600 pictures in an afternoon. And we're going to blow them up and we're going to take a look at all the details because that's how you really are able to identify exactly how that poultry waste is leaving that farm and get into the bay.

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Today some of the pictures I took we're going to go to the site and we're going to see that on the ground.

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The aerial photos lead up to a chicken farm has been watching for more than a year. That's less like up there. So it is that's less eggs farm right there. There's a four barns on the right are the original barns. And the last year he's added these two on the end. Oh, that's a pretty big place. We're talking to her and 42 and a 50,000 chickens there at any one time.

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So you'll have can check on farm runoff from public roadways.

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And the photos give him a clear map of how polluted rainwater moves from the farm to the bay. This is the Lesyk farm. This is animal waste poultry litter. big piles of it is a big pile. But what's really alarming about this is you can see what's happened when it's rained. All this water

has collected around it and it is formed some leach aid. And you can see how this this leech aid is running down alongside and in between these barns with all the stuff in it with whatever it's collecting from that poultry waste.

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It comes out of these pipes here comes in there comes over to here. And then it goes under the road and right on down to the Minoan river right on out to the bay. Wow. And have you tested this water right here? This is where we've tested here there and what kind of readings you get extremely high. The E. coli standard is 126 colonies. Theirs was 48,392. And how about nitrogen and phosphorus all elevated clearly indicating that animal waste is involved here and even arsenic at nine times what the the normal background level would be. So there's a lot happening here. Now you know we farm on our Erin Lessing did not respond to frontlines repeated efforts to ask him about the water tests, which doves team turned over to the EPA, those photographs. So look who is growing for Lessig is growing these chickens for Purdue, whatever the sign advertised says it's Purdue Lesyk farm.

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Every Purdue chicken has one of these days. It means you're getting a fresh, tender, tasty and chicken. I make sure that because every one of these times there's my name.

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over five decades Perdue farms grew from a family business to the dominant poultry processor on the Chesapeake Eastern Shore. And as Purdue grew, it transformed the chicken industry. There used to be 200 companies on the shore involved in the poultry industry, but they were all independent. So you had an independent Hatchery and independent processing plant. The story of the poultry industry and of Purdue is vertical integration.

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Integration met a few big chicken companies controlling all aspects of production. Purdue mushroomed into a multi billion dollar conglomerate, small family chicken farms became chicken factories.

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Well, I think capitalism in general

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stimulates efficiency. And efficiency often is size. And so you know, I think things had to become bigger in order to keep costs lower, so you could maintain your price structure.

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factory style poultry production drove down chicken prices and Americans responded. Over the past 50 years per capita consumption of chicken has tripled.

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But there's been no

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they're priced all those cheap chickens.

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poultry farming, like most animal farming has become much more intense, much more concentrated where you had 50,000 chickens on a given plot of ground, you've got a half million or 2 million now, which produces a huge problem of what to do with the manure.

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In 2008, Delmarva Peninsula, poultry farms raised more than 570 million chickens, and all those chickens produce massive mountains of manure 1.5 billion pounds a year.

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That's more manure than the annual human waste from four big cities New York, Washington, San Francisco, and Atlanta, all put together.

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Before mass production, chicken farms, local crop farmers used to absorb the chicken manure.

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Now there's way too much for them to absorb.

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Agriculture is by far the largest source of pollution to the Chesapeake Bay, and it is arguably

the single biggest source of pollution to all of the waters in the country. So the problem isn't just manure, but it's too much manure. It's too much manure and arguably too many animals under the current structure. Now, there's too many animals in one place. Exactly. It's a problem all over the country, hog farms in the Carolinas and Iowa poultry farms in Arkansas and Texas, cattle farms in Wisconsin and along the Susquehanna River in Pennsylvania, in terms of just damage to the ecosystems, you know, destruction of entire ecosystems of aquatic communities of fish going extinct. There's nothing as bad as the as these factory farm operations nothing.

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So to save the bay, the EPA says it's essential to get control over the animal manure. What's made that hard is deciding just who's responsible for all that manure.

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You just need to check to understand how the chicken business is organized and how it's run. I checked in with Carol Morrison, a successful Purdue grower for many years.

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Typically, the farmer has a contract with the company, whether it be Purdue Tyson, whoever, and you contract to raise their chickens, they own the chickens, they just drop them off on the farm for us to raise to a marketable age. And then they come and pick up the chickens. Take them for processing. When Purdue require that Morrison moderniser chicken houses at a cost of $150,000 or more, she decided to get out of the business. This is her last batch of Purdue chickens. Now what's the relationship here? Do you bargain with one company or another as a grower? There's no bargaining in the contracts. Contracts are designed by the company brought out to the farm and you either sign it and get chickens or sign not sign it and not get chickens and ultimately lose the farm. So you're saying that the processors dictate the terms they run the show? Yes, the processors dictate all of the terms. The terms are very specific. The big chicken companies own the chickens, supply the feed, dictate the growing regimen, do all the processing. They own it all except the chicken waste. Well, anybody else who owns an animal is responsible for their waste. If the company owns the animal, why are they not responsible for their waste? I've never understood that.

33:51

I have horses I have a dog that's outside I'm responsible for their mess. Now chicken, chickens are owned by these companies like Purdue and Tyson. How is it they're not responsible for it? Help me understand one thing. How do you wind up by owning the chickens owning the feed? And not only in the sense of legal responsibility, the manure?

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The manure is considered a resource. Actually, the producers want the litter they want the

chicken litter. It's not a matter of who owns or doesn't own it. It's a matter of what use is it being made being made from it.

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As factory farming has grown, the volume of excess manure has mushroomed and there's been an increasing push to regulate farm pollution. But American agriculture has fought off pollution controls for three decades.

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The whole agricultural community has remained maybe the the last big or the biggest, unregulated, largely unregulated area of water pollution and it's why BPA tells you for cross

35:00

The country agriculture is responsible for 60% or something like that of our water quality problems.

35:09

We are talking the equivalent of medium sized cities in terms of the waste that is generated that is virtually untreated going into the Chesapeake Bay and cities have their have their waste treated go through water treatment plants, farming, agriculture, these concentrated animal raising operations. They're not treated the same way. That is absolutely correct.

35:33

The Delmarva poultry industry on the base Eastern Shore doesn't see it that way. It contends that there's a fundamental difference between industrial pollution or urban sewage and agricultural waste.

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Industry spokesman Bill Satterfield said in the poultry farms be subject to the same kind of limitations that sewage treatment plants or industrial plants, a small industrial site that has to have a permit knows the source of what goes into that pipe. With nonpoint source pollution. There are various ways that nutrients can get into the groundwater, and maybe flow through that pipe.

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farm fields are not talking about fields, I'm talking about growers and sheds where I mean, I can

I've literally stood in front of farms, and I've literally looked at chicken houses, I've seen pipes coming into the drainage ditches, coming from ditches between the chicken houses, the source visibly is quite clear to know where those nutrients came in, would require an investigation. And if the if the pipe passed under a chicken house and started over here in a field, who's to say, what entered that pipe on that end? Who's to say whether the nutrients if there are any came from chickens, or Fox, or deer or birds, or something else? Russell Long, famous senator from Louisiana used to say, when people gave an answer like that, it's not you. It's not me. It's that guy behind the tree. It seems to me as though every time we get to this, even though the evidence is pointing to a most highest concentrations, right near agricultural poultry operations, you're saying? Well, it could be the foxes or the geese. If there were proof positive, that those nutrients are from chickens, then we can accelerate our programs and do a better job.

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But we can't solve all the rivers problems with all the people all the growth, all the other animals on the back of the chicken and the poultry farmers. I'll be the first one to say I did it.

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I've said this before, we're all part of it. And yes, I think agriculture is a big contributor to the pollution

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to the runoff the runoff into the Chesapeake Bay. The industry knows it. And what I am tired of is everyone wasting all their time and energy in saying I didn't do it?

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I did it. Why can't they admit it?

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I mean, you know, let's all say okay, we're a part of it. Now, let's find an answer. All in favor of adopting a conference committee report saying five are saying hi. Because no, but finding an answer has been politically impossible. 178 is on third reading the clock in the late 1990s. A bill went before the Maryland legislature to require mandatory nutrient management by farmers to curb runoff from chicken manure.

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Big chicken didn't like that idea at all. I think the survival of the poultry industry is at stake on the eastern shore that poultry industry among the most financially powerful lobbies in Maryland, pushed for a lesser alternative. Well, certainly the alternative was to have voluntary

Maryland, pushed for a looser alternative. Well, certainly the alternative was to have voluntary goals. It was going to be cooperative. It was gonna have no regulatory teeth, and it was going to be overseen by the Maryland Department of Agriculture, a non regulatory agency rather than the Maryland Department of Environment. The farming industry cannot live with mandatory nurtured regulations. We got to keep it voluntary.

39:15

And the industry Bill one, and since then, the industry has been successful in blocking or tying up subsequent efforts to regulate their waste. You sat in the Maryland legislature for 12 years during that period. Did you see the big chicken companies steadily resist regulation on manure runoff? Absolutely. Big chicken companies were a presence. Jim Perdue, the son of Frank Perdue was a constant presence. Whether it was sitting in my chairman's office are holding a reception in the evening or whatever the the chicken lobby was and it was well represented. They hired the Top Gun

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Understand the lobbying community in Annapolis, and they made every effort to prevent us from enacting tough regulations on agricultural. Some people have said to us that you'd clean up the whole situation much faster. If the integrators the poultry processes were responsible, you got to clean it up, and you all are responsible.

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Well, we can only do what we can do. The farmer certainly is, you know, is the own businessman out there on the farm. And I think it works better if it's a cooperative effort.

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So Purdue pioneered a process to recycle part of the chicken growers excess manure to ship it across the country.

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And Purdue launched a voluntary program to teach its growers, better manure management, then the programs that we're looking at are an alternative to more regulation, I guess. And more regulation and enforcement, which, which nobody likes. I mean, nobody likes saying, Oh, somebody's coming onto your farm, you know, without any warning and those kinds of things. There's no question that the influence of the agricultural farm lobby in general has had a very successful role in limiting the amount of pollution control regulations that we see in the Chesapeake Bay watershed, or nationwide. You know, corporations are externalizing machines, they're constantly devising ways to get somebody else to pay their cost of production. And you

know, if you're in a polluting industry, the most obvious way to do that is to shift your cleanup costs to the public. Make yourself a billionaire by poisoning the rest of us. Are you saying the markets distorted? You show me a polluter? I'll show you a subsidy.

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chicken farmers bristled when the Obama EPA started demanding pollution discharge permits this spring. The industry claims it's already doing enough. The poultry industry is doing more every year, we're seeing more best management practices on farms. Our program to put trees on poultry farms to uptake the nutrients is a very progressive thing. There are more and more programs offered to help farmers put in manure storage buildings. And as the science says we can do more without putting our people out of business. I'm sure we will do more.

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But environmentalists like Rick Doug remain skeptical.

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Now this industry says they're doing better. And you know, I can't say if that's true or false. But I can tell you that what I'm seeing here on the ground right now is absolutely terrible. So if it was worse before, then I can understand why the bay is in such bad trouble.

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While the bay is besieged by runoff from the big chicken in cattle farms along its rivers, I learned about a whole new kind of pollution as I traveled up the Potomac as it winds its way past Washington up towards the hill country of West Virginia.

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Up here near the headwaters of the Potomac, I heard about the big new pollution threat, not even known when the Clean Water Act was passed.

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Six years ago, marine biologist became alarmed at reports of massive fish kills on the rivers in this region.

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Every year smallmouth bass were being decimated by some mysterious problem. Spring and Fall, hundreds of fish would be found floating in the water belly up. So you'll see this I caught

up with Vicki Blaser, a fish pathologist with the US Geological Survey was trying to figure out why the fish were dying

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when we got here, so here we have this large, discolored area in the liver. And then you see all these little white spots. Here's another totally just colored area. And that's a signal of some some bigger problem. Yes, when we see a really high prevalence in a population that indicates there's some problem going on in that water. And when Blaser dug deeper, she found a surprise.

44:22

One of the major and most interesting findings was intersex in the male bass. When we look at the male gonads or testes, what we find is immature eggs within the male testes. So we got sort of feminization of male fish is that a big alarming finding in marine biology Aquatic Biology? Yes, and that has certainly attracted a lot of concern and attention.

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Scientific studies have linked abnormal mutations in marine creatures like intersex to exposure to chemical

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compounds that mimic or imitate natural hormones in the body.

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These chemicals are called endocrine disruptors.

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Endocrine disruptors are very, very potent chemicals at infinitesimally small quantification. I mean, talking about parts per million or parts per billion, they interrupt the normal way in which the body controls everything from growth and development to thyroid function to reproductive function to estrogen levels, testosterone levels. So they're very, very important. And they are a deep concern, because there's so many of them now, there are 1000s of these worrisome chemicals that have gotten into the environment. And one reason is that they're part of everything we do. The list of things that bring these organic pollutants into our bodies is a long list. And it ranges from homecare products, soaps, toothpaste, cleaning agents in the household, to things we put on our lawns, the things that we use all the time, the plastic

industry, the rubber industry, lubricants fuels, the highways, when you see scientists like Vicki Blaser cutting open fish, finding intersects in the male fish, seeing high levels of fish kills, seeing immune systems disrupted seeing other damage to the fish.

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Is that a warning to you potentially about human health? Oh, absolutely. In the morning, not not just from the small mouth bass in the Potomac, but from amphibians all across the country. You have frogs with six legs, hermaphroditic frogs, male frogs with ovaries, female frogs with male genitalia.

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These are the Canaries, the modern canary in the mind that we haven't been playing, paying enough attention to.

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So many new chemicals have emerged lately, that scientists and regulators are playing catch up to industry, trying to spot which chemicals they think pose new dangers in our water.

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EPA does not regulate any of these things yet. And in many cases, there isn't even the methods to measure them in the amounts that they actually have a biological effect. So science and the regulators are behind the curve dealing with what industry and society is producing or wants correct. And the head kidney and hind kidney were loaded with playing catch up and regulating these new chemicals may be a problem for more than just these fish. Well,

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the endocrine system of fish is very similar to the endocrine system of humans, fish have thyroid glands, they have the functional equivalent of adrenal glands, they pretty much have all the same hormone systems as humans, which again is why we use them as sort of indicator species. So Fisher having intersects or lesions that's kind of spooky. It is.

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You know, we can't help but make that jump to ask the question. How are these things influencing people?

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To get a handle on that question, I headed down river. Just above Washington, I found another USGS team sampling water from the Potomac, part of a nationwide survey, checking for 300 emerging contaminants in our drinking water. They were looking for well known pollutants like pesticides, and for newly detected contaminants found in pharmaceuticals, body lotions, soaps, and deodorants and only found 85 compounds on their watch list. Many of them are chemicals we're just now starting to be able to even analyze for in water, but the treatment isn't intended to remove those products.

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What makes us a matter of concern is that this is the intake for the Washington aqueduct, where 1 million people in the DC area get their drinking water.

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Few of us may realize it, but people downstream use wastewater from people upstream that it comes from the Potomac like other rivers serves as both the place where we dump our wastewater and the place where we get our drinking water

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into one big continuous recycling operation, from the toilet or the shower to the tap.

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The river flows down. A community takes water out of the river, puts it back through a wastewater plant a few miles down, out, back out back. And with proper regulation and proper processes at the wastewater plant and proper processes at the drinking water plant. It works very well so we sort of continuously recycle this recycling process works well for known contaminants. But what about the new chemicals for which the EPA has not yet set safety standards?

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How tough is the challenge just to keep up with all that new sources of pollutants. There's new elements come in synthetics, herbicides, pesticides, pharmaceuticals as those things enter the water stream in concentrations because of more advanced development, more human activity, more animal activity and more commercial activity. Those things as they get into the river make it harder for us to do our job. There's no question about that.

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Not just harder, but actually impossible to stop all the new contaminants, according to the USGS findings, because the old filters weren't designed to catch the new threats when you

sample to the finished water at the Washington aqueduct, and we found about two thirds of the compounds we detected, were still detected in finished water. So you're saying that roughly two thirds of these emerging contaminants that you found in the river water at the intakes for the Washington aqueduct, came all the way through the filtering system, and were in the drinking water, the tap water and the district. And that's what we saw it all the studies that were done.

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Denver's findings mirrored what USGS has found all across the country, everywhere, they saw lots of new contaminants in America's drinking water, even if at low doses.

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Were you surprised by the findings of this USGS study? Or did you did that fit what you thought was probably going on? I was surprised by the number of different compounds that were detectable.

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I knew we were swimming in a sea of chemical soup. But I didn't realize that soup was quite as concentrated. You talk about a soup, some people have used the term toxic cocktail, is there a danger that if a level of a particular compound were acceptable, and another one were acceptable, that you start to put a bunch of them together, and then that's no longer a safe level? You put your finger on one of the real concerns about toxicology, it may be safe to have a little bit of compound a, or a little bit of compound B. But when the two of them are together, they're synergism. And they become really deadly. If you were living in Washington, DC, would you drink water coming out of the Potomac?

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Probably not. Because? Because we really don't know what, what all is in there. Today, I drink the water with great confidence because our water meets the regulations. But of course, the question is, do the regulations match the threat? Were their endocrine disruptors, chemical compounds in the Washington aqueduct intake water that were of concern to you in terms of their potential impact on human health?

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Are their chemicals of concern? Yes, I think at this point, the levels are very, very low. So I don't have a great deal of concern that something needs to be done imminently. But it would certainly be nice to reduce what's getting into the water, we can show that people with higher levels of some of these chemicals may have a higher incidence of a certain kind of effect than people with lower levels of these chemicals, that kind of effect. There are associations with what's called male testicular dysgenesis syndrome. That's a big term, but it means

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lower sperm count, lower sperm count, are we facing a long term slow motion risk that we don't recognize, because it's not readily apparent? We are there are 5 million people being exposed to endocrine disrupters just in the mid Atlantic region. And yet, we don't know precisely how many of them are going to develop premature breast cancer are going to have problems with reproduction going to have all kinds of congenital anomalies of the male genitalia, things that are happening. We know they're happening, but they're happening at a broad low level, so that they don't raise the alarm in the general public. Do you know what the safe levels are? In most cases, we don't know what the safe levels are. And some of the new science is suggesting that levels that we used to think were safe, may in fact, not be safe for humans, for humans. So we're finding in certain cases that much lower levels than we previously thought were a problem may in fact, have the potential to harm at least some segment of the population. Do we have an adequate system of regulation or should we be regulating on a different standard? I'm not a regulator. I'm a researcher. But in my personal opinion, I would like cam I would like to know that a chemical is unlikely to cause harm before we expose our population to it.

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It's our fifth

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way to control toxic chemicals before they cause trouble in the environment that haunts our waters all across the nation.

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Places like Puget Sound, which I've come to know well in recent years.

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The sound which lies off the coast of Seattle is a place I've come to cherish as a phenomenal resource.

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A gorgeous natural playground,

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gateway to the Pacific.

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And historically, a treasure house of fish and wildlife.

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But today, the sound is in peril.

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I would put Puget Sound in the intensive care unit. The situation is critical. We've known for decades that Puget Sound had serious issues. But we're at a point now where the the species that are almost extinct are telling us we've got some real bottom line problems here.

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Click these regional icons the killer whales or orcas.

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They're a major tourist attraction, but increasingly, Puget Sound. orcas are being closely studied by scientists as a barometer of the health of the entire sound.

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To see what scientists are learning, I headed out with Brad Hanson, a team leader with NOAA, the National Oceanic and Atmospheric Administration

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over there

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Hansen and his colleagues have been studying the Orca population for several years.

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Why study these whales, but they're the top predator in the food chain. So they're essentially accumulating all the contaminants. They're the you know the last stop and in the food chain

and so on or a laboratory in a way? Well, that tells you what's going on in the whole equals there. Yes.

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The Orca story is troubling. In one year seven local orcas died. Their population is now down to 86. so low that in 2005, Noah listed Puget Sound orcas as an endangered species.

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To figure out why the Orca population is in decline. Hanson's team goes on after biological samples

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to get up pretty close to these whales in order to take samples at some point right I get within just four or five meters or five meters. So that's up close. Yep, they shoot blunt nose darts into the orcas and extract small samples of blubber.

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That blubber is sent to the lab to be tested for a slew of contaminants, especially telltale toxins like PCBs, the lab results have been alarming.

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Our research over the last 10 to 13 years has been able to demonstrate that these killer whales are the most PCB contaminated or marine mammals in the world. So we're very, very concerned about what that might mean to their health. PCBs are cancer causing chemicals so toxic that Congress banned them three decades ago, but they keep showing up.

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PCBs are probably the number one persistent contaminant of concern anywhere in the Northern Hemisphere, the bio accumulate and food webs. You mean they build up they build up in food webs and in organisms, we have trouble getting rid of them, we have a lot of trouble getting them out of our system. When I say we, I mean humans, rats, killer whales harbor seals doesn't really matter. Increasingly, scientists worry that PCBs are a problem, not just for orca whales.

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These animals are eating wild fish. wild fish is good for us too. But if there's contaminants in it,

it's going to have an adverse impact on us. So that's that's the thing is that that's why these animals are important. central space is not just for ecosystem general but also for him.

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At the Center for whale research director Ken Balcomb has been keeping records for three decades on the whales that make Puget Sound their regular home.

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Fewer whales are making it to maturity, the population is declining. We are seeing

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probably the next 20 years we'll be witnessing the departure of this population. Do you think they're gone? They're gonna die out. I've already told our government folks that we can go through this for about 20 more years. If we don't

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and provide a remedy. And we will see the end of this population. Okay, so welcoming the staff know these whales so well by sight that they can track them from birth to death. What are these charts? These are the family trees of all the whales we've been studying for the past 32 years. We just put in Tombstone markers. balcom told me underscore a worrisome trend among the youngest, most vulnerable orcas? Is these older whales up here they died is that that's kind of normal, but to have so many down here is younger whales die. Is that a bad sign? That's the distressing part is that the mortality pattern we're seeing now is that young whales are dying way before they even mature. So these these alarmed at the high levels of PCBs that Hansen's team found in younger whales, which absorb PCBs from their mother's milk pieces act. Are there enough parallels between the way that human body works the chemistry and biology of the human body and the whales so that we can actually take lessons from them?

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Yes, we can take lessons from not only the whales, but the seals in the fish. And it's been demonstrated in the health statistics, in especially Arctic environments, cold environments where there's a high fat diet and the children of these high arctic people are suffering these same problems, immune deficiencies, reproductive problems. All of these are affecting humans as well as the other mammals.

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At NOAA testing labs like this one, scientists have established that king salmon and Puget Sound are much more heavily contaminated with PCBs and salmon in other Pacific coastal waters

waters.

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Everything we see points to Puget Sound being a hotspot for PCBs and a persistent problem. We've seen contamination of animals. We've seen no improvement and the levels of PCBs in the last 20 odd years, despite regulations implemented in the 1970s. And that, to me indicates there are continuous inputs from Landbay sources from the sediments and delivering them right into that food web.

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One big reason PCBs are a persistent problem is that it takes so long to clean up places like the Duwamish River. Seattle's industrial corridor.

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Some of Seattle's heaviest industry settled here decades ago, and today, it's the region's largest hotspot for PCBs.

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My name is BJ Cummings. I represent the Duwamish River Cleanup Coalition. We're a community Jay Cummings leads tours of the river. This isn't your typical tourist outing. It's an environmental wake up call. EPA did an investigation here on the Duwamish River about 10 years ago,

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and concluded that the industrial history here had left behind such a legacy of toxic pollution that the river was declared a federal Superfund site in 2001.

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Superfund is one of EPA big sticks. It was the regulatory program created in 1980. To clean up America's worst pollution problems. Your typical Superfund site used to be factory pipe Superfund site right at the bottom of your pipe. That's not what we have here we have what's called a mega site, we have a five five and a half mile stretch of river end to end that's being investigated for cleanup.

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This is one of the largest Superfund sites in the country. The river was listed as a Superfund site because of an accumulation, a legacy of toxic pollution that has built up in the mud at the

because of an accumulation, a legacy of toxic pollution that has built up in the mud at the bottom of the river.

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There's a direct link between contaminated sediments in certain areas and contamination of the food web above those settlements. In fact, one might even think of the PCBs riding an elevator up from the sediments up into plankton up into little fish. Big fish harbor seals killer whales, eagles humans. The toxic buildup in the Duwamish River bottom is the product of more than a half century of industrial development along the river. Boeing for example, the area's biggest corporation had its main operations here during World War Two. We are the builders. We are the builders of the B 17. With our hands a million strong. We build and build and Sharon saw the success of Boeing mirrored the 20th century boom in the American economy, and Euro when industrial progress brought unprecedented expansion

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was the build the queen, the V 17, the fortress.

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But that progress also left behind an unprecedented amount of pollution, or what's called Legacy pollutants.

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The term legacy pollutants is when it's historical practices what what was acceptable in the 40s and 50s is we would find very objectionable today in the 90s. And the 80s. And beyond.

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People did not know the damage that some of these materials caused at the time, they did not know

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the long term effects of them that we do today.

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PCBs are a classic legacy pollutant found here at Boeing,

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a toxic chemical once widely used by industry, often as a high stress lubricant in power stations. And also in building materials.

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Frequently, it takes a lot of detective work to find hidden PCBs.

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So Steve, you found a contamination problem in the flightline? Out here? Yeah, it's the this material that we see between the concrete panels, it's called joint compound, material that was installed in the in the late 60s contain down very high levels of PCBs. And since we'd made this discovery, you know, in the late 90s, we've now removed about 50 miles of this throughout 50 Miles throughout all Boeing's black of our looking stuff, yeah, this material throughout all of the Boeing facilities here in the Northwest. Alright. Why was it so hard to find? Well, it wasn't obvious to us. And it was, you know, normally when when people talk about PCBs, you think about electrical equipment, you think about hydraulics, that's where it normally PCBs are used. The fact that they were used in something that was right in front of us was difficult, it was really difficult that we we overlooked at

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making sure that Boeing doesn't overlook any of its legacy pollutants is the job of Sean Blokker. A former Marine who has been EPA is point man on the cleanup at Boeing. What I want to talk about today is basically some additional data that we have that's on the sediments, outside the current boundary, the cleanup for the Boeing plant to and the significance of the Boeing facility is the number of contaminants that originate from the facility. It has over 24 things in the groundwater 40 some odd different things that are in the soil that are above cleanup levels. So it's the biggest accumulation of contaminants in that area.

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From the get go, Boeing and EPA have clashed over how to clean up those legacy pollutants. And the arguments have led to long delays.

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When were you first ready to go with a cleanup plan? We submitted a plan to EPA in 1999. When, you know to dredge, we call it an interim measure to take what is adjacent to Boeing and and excavate that material. Boeing says that over a decade ago, it was ready to clean up at all it held it up with bureaucratic red tape from the EPA.

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I would disagree with that, from my review of what they were going to do. I didn't think they had fully defined where all the bad stuff was. They didn't know the totality of what the contamination was even in groundwater soil. But you obviously had a higher threshold for let's get to the bottom of how bad this pollution is. Then Boeing did.

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Boeing is doing what they're asked to do. No more, no less. So time and again, Blokker press Boeing to do more more work and more tests. By now Boeing has spent $80 million on testing and interim cleanups.

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There's over 500 sampling locations at this facility that have been drilled over time. And if we came here 10 years ago, how many would there have been?

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50. Okay, so hundreds more have been drilled since because of this back and forth with the EPA. That's correct.

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Not only has Boeing been feuding with the EPA, but it's been locked in a fierce battle with the City of Seattle, which used to operate a steam plant next door to Boeing Field.

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So, typical of Superfund sites, these two powerful neighbors have been wrangling over who's responsible for PCBs flowing through this ditch or flume when it rains. The flume runs from the now defunct steam plant through Boeing's territory to the river. Boeing says it's the city's PCBs. So it was this just the city steam planner did Boeing and other people put storm drains into this and use it? Pretty much it was just for the cooling water from the steam plant. The city flat out disagrees and it has taken Boeing to court

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or PCBs are coming by connections of other people to our ditch. They come through line drainage lines that come from other properties, most specifically Boeing's property. So Boeing was attaching its drainage pipes to your Flume, sending some of its dirty stuff down near flume

to the river, there have been over 20 lines attached to our ditch that came from the Boeing property 20 lines. So it's gotta be an endless argument with Boeing over whose line put the dirty stuff and that flew. It's a continuing argument.

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And that argument is holding up the big cleanup on the Duwamish River. J. Manning, who heads Washington's Department of Ecology, which helps EPA supervise the cleanup showed me the cost of this continued delay to Puget Sound, we're looking at four very large outfalls have drainage pipes that carry stormwater from more than 30 square miles of this area, you can see the one there to the right, this is an industrial dumping ground in effect. This is this storm water drains a very large industrial area, are you all still finding PCBs and other contaminants in that water, unfortunately, the storm water coming out of those drain pipes, we're still detecting PCBs,

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this is going to cost millions to clean up maybe 10s of millions. And owning 90% of that liability is not a place you want to be. So these folks who are not stupid, are busy trying to prove that it's somebody other than them, pointing the finger at everybody else. And they are trying to prove probably that not that they have no liability, because that's pretty hard to do. But proving that they have very little compared to their neighbor. That's what it's about. And it's about money.

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Ultimately, the issues of cleanup, time and money are tied to a larger question for all of us. That is how clean do we expect our waterways to be?

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Here on the Duwamish, the state is posted warnings not to eat local fish and shellfish because of pollution.

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And so the fight now is over whether the river can be cleaned up enough to let the locals fish the river once again, without risk. What we determined was that the most sensitive population we had out there were Native Americans that eat the fish out of the Duwamish. And they had a lot more fish than most of us they do. And so that was the standard you want to set clean it up so that tribes can eat the fish safely without getting poisoned from PCBs. Yes. Okay. And Boeing objected to that, basically, they don't feel that that stretch of the river can ever be returned to where you can harvest these kinds of fish and shellfish. We disagree with that, I think people need to understand is that there are going to be certain uses of the Duwamish

River that aren't going to be possible in the future. And I'll give you an example. I don't think people are going to be able to subsistence fish out of the species that are in the Duwamish. I think we have to set reasonable expectations for cleanup in industrial areas.

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Where do you come down on that? How clean is clean? I mean, do we need to get rivers back to where people can fish and safely eat the fish without fear to their health? That's the goal. That is the goal. That has to be the goal. Because every one of those rivers and streams are going into Puget Sound. So it's not as if it's about that river or that stream alone. It's about the whole ecosystem.

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Just across the river from Boeing, the threat of legacy pollution and the question of How clean is clean became personal.

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Right here in South Park. We're in 2004, the community was rocked by news that some of its streets and people's yards were contaminated with PCBs.

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People in South Park, particularly people with with families with small children got incredibly nervous. I mean, out and out scared about what this might mean. My push my kid stroller down that street every day, you know, I go down there and I fish my dog runs along that waterfront. You know, what does this mean for me? What does this mean for my health?

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And something like this pounds and that feels so scary what you're saying? Gee, he's talking about PCBs cancer causing microbes banned in the 70s. But taking an emotional toll on the residents of South Park today.

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The city of Seattle realized it had a crisis and moved quickly to pave the contaminated streets, clean up the polluted yard and tell people how to take safety precautions.

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Suddenly, South Park, a largely immigrant working class neighborhood surrounded by industry

was galvanized into action.

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Residents demanded a long promised cleanup of an abandoned

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industrial site called malarkey asphalt

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malarkey asphalt for years, operated directly across the street from homes in South Park, and was a really, really dirty business. For many years there was open dumping on the riverbank, there was waste oil that was sprayed in the area to keep the dust on the unpaved streets down and that contaminated the roads and yards brighten people's gardens around the property.

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years earlier, the old malarkey site had been bought by the Port of Seattle, which did a PCB cleanup on part of my Marquis property.

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But people in South Park suspected there were still many more undiscovered PCB hotspots upland from the riverbank at malarkey.

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So the neighborhood said, go take some tests that are tell us what's there. EPA and the port said Oh, no, no, we did the upland, it's finished. We eventually were able to succeed and getting just a few more tests. just assure us show us It's okay.

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We were finding numbers that were higher than any of the Hotchkis, the ports manager for the Maliki site ran tests. And what he found surprised every what was the hottest spot you found how high was the hottest spot for PCBs was right in this area here. And it was about 9000 parts per million 9000 And the federal limit is 25 Emmys is a really hot spot. Yeah, and luckily it was under asphalt. But it was still something that even under asphalt you couldn't just leave there. So Hotchkis drafted a plan to clean up Malarkey, but it backfired. We would be cleaning up to 25 parts per million, which was the cleanup level that that EPA had accepted before. And how did the community take that? How do they react?

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They were they were not happy with it. They didn't find it acceptable.

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In fact, Southpark was up in arms, insisting on a cleanup to the residential standard of one part per million

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Duwamish River Cleanup coalition residents from South Park started calling up Port Commissioners and explaining the problem to them. They got in vans and buses and went down where the port commission was meeting. And one after another got up and told the port commission that they were worried about their health and that the port commission had the responsibility to the community to make sure that that cleanup would be safe for the entire community to use. Well. It was a very emotionally charged meeting. I wouldn't necessarily say it was confrontational, but it was a lot of emotion in the room. And I remember a particular episode where a young mother came up to the stand and said, you know, if it's only a question of money, how can you forsake the children of South Park and that was something that really hit home to me. So the elected Port Commissioners sensitive to public opinion back down, they adopted the more protective residential standard at twice the cost.

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I think that this effort has been successful, because this community has been uncompromising and speaking up for itself and insisting that people listen.

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We essentially have a community here that has been on the fringes of any kind of economic or political power in the city of Seattle for many decades. So it's a community that has only recently and if refound its voice

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by finding its voice, South Park redefined the meaning of clean.

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And the community is now at work developing riverfront habitat sounds at malarkey and elsewhere along the Duwamish

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in the absence of a BJ Cummings or somebody like her who is out there on the water, knowledgeable, aware of what's happening and poking and prodding and asking us the hard questions, we would not be making the progress that we're making.

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The greatest threats to our waterways are often invisible to the naked eye.

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Evidence crops up in unlikely places like Alki Beach across Elliott Bay from downtown Seattle.

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It's a favorite spot for scuba divers, but taking to the water here isn't for the faint of heart. Temperatures in the Puget can be in the 40s.

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But for the adventurous, underwater exploration offers a unique perspective on the marine environment.

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Today we saw a Giant Pacific Octopus underneath the Honeybear which is a little boat that sunk out here it lives underneath the bow of the boat.

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It also provides a close up view of the hidden threat to Puget Sound

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like this drainage pipe one of the main outfalls for Seattle's rainwater runoff swam by the end of the storm water drain and it was pretty dramatic. They ended up pipe creates

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a brown noxious soup of nastiness that is unbelievable. And kind of dramatic and a little bit scary.

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Unbelievable, because the water looks so good from up here.

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So we're looking at something we think is clean and underneath you can see dive in there. It's not clean. It's not clean when we when we see that thing running in full flow.

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We turn around and we swim the other way quickly. There is just this unbelievable gunk gunk coming out of the end of this pipe. This is our front yard. Would you allow your front yard to be sick? This is sick. This is sick,

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doesn't look sick, but is sick.

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What's making this water so sick is what scientists have now labeled the number one menace to our waterways. Stormwater runoff.

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In Seattle peak time for stormwater runoff is during fall and winter and the rain comes down in Torrance.

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Everywhere that rain falls and hits the ground, it's going to pick up something it might be nothing more hazardous than dirt. Or it might be PCBs. It might be some toxic pesticide, and it will travel along with the water into the nearest drainage ditch into the nearest swale into a creek into a river and ultimately into Puget Sound. And whatever pollutants that water picks up on its journey to Puget Sound, it's going to deposit in Puget Sound.

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We put in about 150,000 pounds a day of untreated toxics into Puget Sound. We thought all the way along that it was like a toilet to be honest with you, which put in you flush out and it goes out to the ocean, it gets diluted. We know that's not true. It's like a bathtub. So what you put in stays there.

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The pollution in stormwater runoff in major cities like Seattle or in suburban and urban areas across the country is massive. Yet until recently, it was little control. The original Clean Water Act didn't regulate stormwater at all though some limits have been adopted since but the problem remains poorly understood. Because so much of the pollution is invisible.

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People go nuts over a 50 gallon oil spill because you can see it and it's really nasty look and when you see it on the water, it is impressive how horrible it looks. And so oil spills aren't invisible. They're highly visible and they galvanize people like nothing else about the invisible. What about the auto traffic what what kind of coat oil spill is there from our ordinary living based on actual sampling in the Puget Sound base and we've estimated that the volume of oil that is carried into Puget Sound by stormwater runoff is equal to the oil spill in Prince William Sound but the Exxon Valdez spill every two years. Storm water in Puget Sound carries that volume of oil into Puget Sound.

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The heart of the problem is concrete, asphalt, streets, sidewalks, buildings, shopping centers, suburban housing, rooftops, hard surfaces, what scientists called impervious surfaces that blocked the downpour of rain from naturally sinking into the ground. How the land is developed, how intensely will have a direct impact on the quality of stormwater. You take down a forested area and replace it with pavement or a rooftop. And instead of almost all of the water, slowly moving through the forest canopy and down to the ground and infiltrating down into groundwater, where it will move slowly. That water the day it lands within minutes of it hitting the ground it's going to be gone.

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And so scientists, environmentalists and regulators all say that combating pollution is not just a matter of regulating industry. But the key to stormwater runoff is land use, how we develop and use our land.

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King County Island has become a laboratory for testing the politics of land use. It's an area bigger than the state of Rhode Island. Home not just to Seattle and 1.8 million people

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But two thirds of it is still forest.

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So it's an area where environmentalist one has strictly control the pace of development. And the man who has been leading the charge his longtime King County chief executive, Ron Sims,

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you have to protect our forests, you have to enter agricultural areas, you must because if we don't protect them, our water quality will be significantly diminished. And why sacrifice clean water for growth or harvest already, these sim says his mission has been to save Puget Sound by protecting critical areas like forests.

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Way up here 45 miles east of Seattle, he paid $22 million in tax money to buy development rights on 90,000 acres of forest. Now the nature of meaning that no developer could build on that land won't be turned 1000 We have 100 people are going to build their homes here are going to have the supermarkets here their gas stations here. We stopped it and we stopped it forever. What is saving this? Timberland have to do with Puget Sound. The waters that come off this 90,000 acres flow into the Snoqualmie River, which flows into Lake Washington which flows into Puget Sound. We need pristine waters coming from this timberland into the Puget Sound. And so this property is absolutely critical to it.

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Washington State's Growth Management Act directs local government leaders like sim to concentrate new growth in cities and to prevent sprawl and lightly populated rural areas.

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For King County Sims pioneered a critical areas ordinance that limits just how much forest and woodland property owners can cut down.

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Simms targets places like this, a five acre one family plot of land that belongs to Howard and Patty van Lake.

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Back in 2004, King County passed this critical areas ordinance that

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takes away the usage of 65% of your property if you don't have it cleared off, and we didn't have ours cleared off at the time. So we're we cannot touch 65% of our property. So why would you want to clear more than 35% of this wonderful forest. What we originally did it planned when we were in 1980 when we bought it was that we could subdivide and maybe give our kids a parcel land to build a house on or and or sell off part of the property for the proceeds to be able to keep our house

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and retire. How do you feel about that? rather angry? Very angry, very angry. It's our property. We have been paying taxes on this property since 1980. And we can even print grass angry at home anguish, what I'm angry with the King County government because they more or less took away our property rights without any compensation. For our property, we're getting the shaft. We're they're putting the burden on the small land owner, not on everybody.

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The van Lincoln's problem actually stems from a zoning ordinance passed in the early 1980s that barred subdividing properties under five acres. But the many rural landowners Simms new ordinance was the last straw and they formed the Citizens Alliance for property rights.

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I met with several of them one evening over beer in Issaquah. We

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were we're in the same position that the blacks were in the in the 1950s. Absolutely. We are calling we are crying. We are doing everything we can to talk to those who have their hands on the levers and they aren't listening. Everybody one throbbing refrain was resentment against political domination by the Urban majority, which out numbers rural voters nearly five to one very bleak talking about critical areas ordinance like it's a nice little one page thing. We're talking about over 400 pages of amendments to existing law

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400 over 400 pages. How much of the frustration out here is a matter not just of a single ordinance, but of a series of regulations that feel onerous. I mean, how much of this is built up

over time, much of it is built up. It started in 88 with the sensitive areas ordinance.

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In 2000, we had a gigantic downzoning fight. And then the coup de gras was the 2004 critical area ordinance. It says an accumulation is very much an accumulation of regulation. He told me people were so steamed up that Ron Sims rarely dared to come to their part of the county. People on his staff say he's gotten threat for us. I bet somebody would have gone