**“Glen’s Parallax Perspectives”** is a series of TV programs offering fresh ways for people to see issues such as foreign policy, social and economic justice, governmental functioning, the environment, and so forth. We provide voices and viewpoints that are rarely heard in mainstream media.

**Mainstream media, politicians, and culture see the world in conventional ways. Therefore, in order to solve problems, we need to see things in fresh ways.** Glen Anderson created this TV series to help people see things differently so we can solve problems at all levels from the local to the global.

This series title refers to “***parallax***,” which is the view you get by looking from a different perspective. For example, put one finger in front of your nose and another finger farther away. Close one eye. Then open that eye and close the other. Your fingers will seem to move. This is called a “parallax” view. **This TV series invites you to look at issues from fresh perspectives.**

Each program airs three times a week (currently every Monday at 1:30 pm, every Wednesday at 5:00 pm, and every Thursday at 9:00 pm) for the entire month on Thurston Community Television (TCTV), channel 22 for cable TV subscribers in Thurston County, Washington. TCTV is part of Thurston County Media. You can see their schedule at [**www.tcmedia.org**](http://www.tcmedia.org)

**You can also watch the program described below through your computer** at [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org). All episodes of “Glen’s Parallax Perspectives” are posted on this blog’s “TV Programs” part and also in one or more of the categories listed in the right side of the computer screen. Also, see information about various issues at the category headings at [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org).

**🡪 I saved this document in Word format with live links.** If this document does not load or print properly for you, please e-mail me at **glenanderson@integra.net** and I’ll promptly send you the links you request.

**🡪 This document includes a few more pieces of information that we did not discuss during the interview.**

**🡪 Please invite other people to watch this video and/or read this thorough summary at these parts of my blog,** [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org)**: “TV Programs” and “Environment” and “Olympia area.”**

**“Understanding Environmental Water Quality Problems and Solutions”**

Glen’s Parallax Perspectives TV Series

December 2021

**Glen introduced this month’s topic and our guest, Harry Branch:**

*Although the specifics of this interview pertain to one local area, the basic science and environmental issues pertain to other areas too.*

Glen said the December 2021 interview on “Glen’s Parallax Perspectives” helps people understand how Puget Sound’s water quality has been seriously hurt. We clearly explain the science and practical aspects, so ordinary people can easily understand. People who already know about this will learn even more.

He welcomed our interview guest, Harry Branch. Harry has a solid educational background, solid personal experience, and extensive professional expertise. He has a degree in biology from San Francisco State College and a Master of Environmental Studies from The Evergreen State College.

Harry grew up sailing on his dad’s boats. He has fished in the California Rockfish fishery, the Eastern Pacific Albacore fishery and the Puget Sound sub-tidal geoduck fishery. He has skippered many boats for charter, education, and research. For two seasons he skippered a dive boat out of Neah Bay for the National Oceanic and Atmospheric Administration. He has supervised a variety of marine science research activities.

**In the environment, everything is interconnected in systems, including water:**

Glen said that one of the basic principles for understanding the environment is to recognize that everything is interconnected. All lands, waters, plants, animals, soils, and so forth are interconnected with each other as part of systems – ecosystems – so whatever we do to anything causes changes to everything else.

During this interview Harry helped us understand the concepts of systems – ecosystems – and water as part of our ecosystems.

He said oceanography deals with the study of the physical, chemical and biological parameters of large bodies of water. He gave examples of each of these three parameters. He said they are interconnected, and they affect each other. Physical changes that people do to bodies of water significantly affect the chemical and biological situations there. He said that modifying a bay, dredging an estuary, installing rocks, or taking other actions would significantly change the amount of dissolved oxygen in the water, the amount of nitrates in the water, and all of the plants and animals that had been living there before we disrupted their ecosystem.

Glen mentioned that he has a friend with a solid academic and professional background in oceanography who has special expertise regarding the kinds of damage that are caused when people who live on shorelines install concrete bulkheads on the water edge of their properties. They think it would be nice to have a concrete bulkhead so they can plant a lawn all the way out to the edge of the waterfront, but they do not understand the many kinds of damage they’re causing to water quality, the plants and animals, and other aspects of the ecosystems. Harry said bulkheads prevent the spawning of forage fish who need the upper beach area as their spawning area.

**This interview discusses problems before we propose solutions:**

Glen said this interview will discuss both problems and solutions. We need to explore interesting aspects of the problems well enough first, so people will easily understand the solutions that Harry will be proposing. The status quo has become problematic, but we can solve problems.

Glen said the problems are very serious. Solutions do exist, but we face an uphill struggle because the problems were caused by powerful political and economic forces – in addition to the lack of public knowledge and attention. Still, if we can inform the public about the problems – and if we can organize the public to stand up for the environment – we can solve the problems. Often the public gets elbowed out – partly because they feel they don’t understand the science – and partly because the problems seem too complex for them to solve. Actually, we want the public to empower themselves so they can understand the problems and promote good solutions.

**Puget Sound’s water quality problems:**

Glen said this interview helps people understand Puget Sound first, and then we work our way upstream. He asked Harry to summarize Puget Sound’s water quality overall, including the southernmost tip (Budd Inlet) near Olympia.

Harry said we need to understand both the water itself and the sand and clay underneath the water. These sand and clay [and the organisms that live there (benthos)] are in the “benthic zone.” He said benthic sediments are contaminated by dioxin and PCBs from industrial activities in the Port of Olympia area. The dioxin came from treating wood poles with harsh chemicals so they could be inserted into the ground and resist rotting. These treatments were done near the end of the Port peninsula. Those areas of land and water are still dangerously toxic.

Harry said when scientists take benthic samples, they measure what’s in just the top two centimeters [slightly less than one inch] and also what’s in the layers below that. He said this is because the layers of sediment are deposited over periods of time, so the deeper layers include whatever was laid down longer ago than the most recent surface layer. Therefore, he said the top layer of benthic sediment is the most recent – and current, ongoing – source of contamination that is being put into the bay.

He added that the contamination in Budd Inlet’s surface benthic layer is evidence that we have uncontrolled sources of pollution. Dioxin is continuing to flow into the bay.

Glen said that the toxic treatment of poles in the Port area had stopped long ago, but Harry’s evidence shows that the dioxin is continuing to circulate in the waters and settle into Budd Inlet.

Harry said it is likely that the most recent contamination has been coming from sediments that were used as fill in the Port peninsula area. He said more than one million cubic yards were dredged from in front of the Cascade Pole site before it was recognized to be a Superfund Site. That’s a huge amount of contaminated, toxic material that was spread around as fill. Harry added that groundwater flux and tidal water flux also contributed to spreading it around. He said a lot of water flows into the bay from cracks in storm drains, and so forth. When tidal waters flow in and out of the area, it also pulls the toxins into the bay.

Glen said that near the end of this interview he will tell the TV viewers how they can watch some of his previous TV interview programs that are directly relevant to the information Harry is sharing during this interview.

Those four TV interview programs are titled:

* “Solving Local Environmental Problems”
* “Local Governments Must Protect the Environment”
* “Base Public Policy on Honest Science”
* “Restoring the Deschutes Estuary to its Natural Flow”

Glen invited people to watch any of these – and/or read a thorough summary of what we said – by visiting Glen’s blog, [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org), clicking the blog’s **“Environment”** category, and scrolling down to see these. Near the end of the document you are reading now, you can see the direct links to these four TV programs. You may also tell your friends about these information resources.

**Harry explained “nutrient loading” and nitrogen:**

Harry explained the relevance of nitrogen in water – and the concept of “nutrient loading.” He said when we move upward from the benthos into the water, nitrogen and nitrates are nutrients that come from the land. He said this is part of the natural process that has existed for millions of years. Bears poop into the woods, and nutrient materials flow from that into streams and out into the water. Salmon die, and the nutrients from their bodies flow downstream and out into the water. It is natural and normal for streams to bring these kinds of nutrients downstream and into bodies of water.

But humans also add significantly to the nutrients that flow into water bodies, so this addition is referred to as “nutrient loading.” We need to control this excessive amount of “nutrient loading” so it won’t disrupt natural balance in the waters.

He said another factor is dissolved oxygen, which we want a lot of. Some bodies of water do not have enough dissolved oxygen, so we need more in order to support life in those waters, while we also need to reduce the “nutrient loading” that disrupts the natural balance.

**Harry explained estuaries and the circulation of salt water and fresh water:**

Glen said Mother Nature designed nearly all rivers to flow through flat lands just before entering salt water. But when the salt water tide rises, salt water flows back into the river, so in those areas we get a mixing of fresh water and salt water. Those areas are called **estuaries**. Huge amounts of good biological activities occur in these biologically rich estuary systems. Glen asked Harry to help us further understand estuaries.

Harry said an estuary is where fresh water enters the marine environment, and a great deal of mixing occurs with interesting mixing patterns. He said this is oceanographically very important because nutrients are flowing into the system, and we want those kinds of nutrients to enter the system. Phytoplankton are consumed by zooplankton, and various species higher up the food chain consume those below, so the magnificent web of life is allowed to thrive. Estuaries – if they are allowed to be natural and healthy – are rich with life.

Glen added that many species of plant life and animal life need this mixing of fresh water and salt water and the food chain web of life that Harry mentioned. Estuaries also are excellent places for many kinds of birds to feed.



Next, Glen showed on the screen an image that Harry provided to illustrate the concept of a “salt wedge.” Harry explained the water circulations in what is called a “salt wedge.” He said the upper left shows where fresh water and nutrients enter from the upper left corner of this image. He said fresh water weighs less than salt water, so it tends to flow on the surface. This tends to draw salt water in underneath, where the image shows the salt water flowing low from right to left.

He said it’s especially important that fresh water and nutrients are flowing high in the water while the salt water is bringing marine organisms, phytoplankton, zooplankton, and so forth, underneath, so they can mix with the nutrients. He said this happens best in shallow waters where there is a lot of sunlight and atmospheric oxygen. The mixing is spread out well. He said healthy estuaries typically are shallow tide-flat areas – “one of nature’s perfect designs.”

He said sometimes we can actually see it in the water in the real world. He has seen it clearly in Budd Inlet by Ellis Creek [near Priest Point Park in NE Olympia].

**Phytoplankton and other tiny life forms are very important in water ecosystems:**

Glen said all life forms are interconnected, including very tiny life forms such as phytoplankton. He asked Harry to explain what phytoplankton are – and how they and their well-being are related to the health of Puget Sound’s waters and salmon.

Harry said phytoplankton are very tiny plants that grow in water. Like other plants, they absorb carbon dioxide (CO2) and break it down into its two parts: carbon – a building block for life in carbon-based life forms – and oxygen, which is what animals breathe. Phytoplankton are a perfect machine that takes a greenhouse gas, carbon dioxide, and breaks it down into these two life-giving components.

Glen asked whether phytoplankton are the entry point into the food chain.

Harry agreed and said in a healthy estuary the zooplankton would be consuming the phytoplankton and controlling their abundance. In turn, the zooplankton would be consumed by fish. Sometimes zooplankton are larvae of larger species. The food chain (food web) goes from there. He said this production all begins with phytoplankton. He added that if you don’t have a shallow estuary with a good mix of phytoplankton and zooplankton and the salt wedge and eddies around the edges of the body of water and tides flowing in and out, you can have an overabundance of phytoplankton consuming too much nitrogen in a confined area. Then species die off and you end up with a real mess.

**In order to support life, streams must flow in daylight, not through pipes:**

Glen said everybody knows that salmon are hatched far upstream, flow downstream, swim into oceans, and eventually smell their way back from the oceans into the very same streams where they were hatched. In those streams they lay eggs and fertilize eggs so new salmon can start the life cycle all over again. He asked Harry to tell us more about stream estuaries, the need for sunlight, and the dangers of routing streams through pipes, as Olympia and some other places have done.

Harry said phytoplankton also exist in fresh water systems, so photosynthesis occurs there too. Phytoplankton in streams absorb daylight and carbon dioxide, process the nutrients, produce dissolved oxygen, and contribute to the food chain. He emphasized that daylight is absolutely necessary for this process, so putting a stream into a pipe stops this process. He said this is especially damaging for estuaries.

Many streams drain directly into Puget Sound, and they have estuaries too. The Nisqually River’s big estuary is absolutely amazing. A little bit closer to Olympia is Tolmie State Park, where a stream estuary interacts with Puget Sound. This is a very important place. Long ago, stream estuaries existed in many, many places around Puget Sound. He said people largely ignore stream estuaries and pay attention almost exclusively to river estuaries. We must pay careful attention to stream estuaries too.

Glen said he has read many articles Harry has written about the matters we were discussing in this interview. Harry’s writings have been helping Olympia area people understand local aspects of these realities.

Glen said Mother Nature wanted the Olympia area to be a wetland, but people have been filling it and filling it and filling it and filling it for about a century and a half. Also, over the decades, the City of Olympia has put many streams (Moxlie Creek and others) into pipes where the water flows in darkness through downtown Olympia. Harry had said a moment ago that we need daylight for the life to function.

Harry said there are 116 miles of culvert in Olympia, so it is very common here for surface water to be running through pipes instead of naturally in daylight. It is hard to find a stream that does not run through a pipe. All of that water is dead. People wonder why the bay has too much nitrogen and not enough dissolved oxygen, but the reason is that people have destroyed the entire watershed.

Glen added that salmon have difficulty finding their way back to their spawning area for a number of reasons. *See more about this when we discuss watersheds on page 5*.

He asked Harry to discuss the need to remove many of the pipes, so water can flow freely and naturally in daylight, so the natural processes can function. Harry said that besides allowing sunlight to reach the stream so the phytoplankton can live and thrive, we also need to allow the water to interact with the soils beneath and on each side of the stream. He said this is called the hyporheic zone. [*Glen found this source of information:* [**https://en.wikipedia.org/wiki/Hyporheic\_zone#:~:text=The%20hyporheic%20zone%20is%20an%20ecotone%20between%20the,low%20in%20dissolved%20oxygen%20but%20carries%20dissolved%20nutrients**](https://en.wikipedia.org/wiki/Hyporheic_zone#:~:text=The%20hyporheic%20zone%20is%20an%20ecotone%20between%20the,low%20in%20dissolved%20oxygen%20but%20carries%20dissolved%20nutrients).]

Harry said the interactions between the stream water and these soils are very important. Running water through a pipe instead of naturally through the soils prevents these important interactions from occurring. The land becomes less able to hold moisture and release it over time. More flooding and drying (desiccation) occur. The plants that would normally live next to the stream can’t survive. The piping disrupts many things in many ways. He urged us to remove the pipes so streams can flow naturally.

**Upstream, we must protect watersheds for environmental water quality:**

Glen summarized that we have talked about Puget Sound’s water quality – and the need for healthy estuaries – and the need for protecting streams so they can flow naturally in the daylight instead of being forced to flow in darkness through pipes. He said next we would look farther upstream into the watersheds where the streams come from. Rain falls everywhere and runs downhill into streams, and the streams flow down into larger bodies of water.

He asked Harry to share information about the watersheds that exist farther upstream. How have watersheds been damaged? How does that damage affect water quality?

Harry said that the ways we build things affect water quality there. We build impervious surfaces (roads, roofs, etc.). To build those, we destroy native vegetation. He said salmon need to smell the chemical cues in order to find the streams to which they must return. These chemical cues are based on the soil characteristics and the plants growing around the stream beds in which they had spawned. When humans disrupt that local spot, how can the salmon find their way back home?

We did not have time to further discuss a knowledgeable friend’s concern that – because salmon rely on sense of smell to find their spawning waters – stormwater runoff from roofs, roads, parking lots, etc., runs into the streams and salt water, so this changes how the water smells and interferes with salmon who are trying to smell their way back to their spawning waters.

**Real estate developments often hurt natural systems and water quality. Local governments often let real estate developments hurt natural systems and water.**

Glen said many people are concerned that some real estate developments hurt natural systems and water quality. But local governments – instead of protecting local environments – often let real estate developments hurt natural systems and hurt local waters.

Harry said this has been a problem in Olympia and in many other local communities nationwide. He said a local group, the Olympia Urban Waters League, has worked on these issues. He said if you drive from the east into downtown Olympia on State Avenue and cross Plum Street, a huge new building on the right was built this year. It’s called Westman Mill [also known as Westman Mills]. He said a few years ago when the building was being planned, this local group appealed the local approval to build it, on the basis of damage to a stream running through the exact location where the huge building would be built. The group had to spend a thousand dollars to get a hearing in front of the Hearings Examiner.

He said the Hearings Examiner made two rulings.

First, the Hearings Examiner decided that the group did not have “standing.” [This is the legal term for who has enough of a stake in this matter to be able to object to it.] Harry said this means that unless a person or their property would be damaged by the huge new building, they don’t have legal “standing” to appeal it.

Second, the Hearings Examiner decided that the City of Olympia has officially ordained that once a stream goes into a pipe, the stream no longer exists.

Glen said both of these decisions sound Kafkaesque.

Harry said their group had two lawyers who took the case because they believed in it. They were up against the developer’s team of lawyers, the City of Olympia’s team of lawyers, and the Port of Olympia’s team of lawyers. He said they were outgunned 3-to-1 by lawyers – plus all of their staff.

Harry said this kind of thing has happened repeatedly in the Olympia area, where real estate developers want to build giant, disruptive developments and ordinary people who want to protect our local environment are dismissed because we don’t have “standing.”

Glen said that later in this interview we would discuss a smart remedy for this: recognizing legal rights for nature. Nature should have “standing” because nature is hurt by various kinds of abuses (real estate developments, reckless mining, deforestation, etc.).

**Public hearings and formal comment opportunities have been debased into mere
“engagement theater”:**

Glen said that federal, state and local levels of government often include public hearings and other processes where concerned citizens can submit written comments and/or speak orally about issues pending before those governmental bodies. Some people feel that those governmental bodies already have their minds made up and do not seriously consider what people are saying. Some people have called those experiences “engagement theater.” He invited Harry to discuss these concerns and the concept that these are largely “engagement theater.”

Harry said he has submitted comments at many meetings, hearings, etc., hosted by many governmental committees and commissions. He has heard other people do this too on many occasions. He and others have often submitted written comments in many settings before governmental bodies. At this point in our interview he said he is not aware of any instance when public comment had any significant influence upon the decision the governmental body was making. The public seems to have no bearing at all upon those decisions. People are allowed to speak their minds, “but you’re going to be ignored.”

Glen said he has done quite a lot of work in relation to organizing grassroots movements to change political, social and economic processes. He said one of the great resources he has been drawing upon for decades says that the process that Harry described just now is part of what we must go through – even though the system is rigged to prevent meaningful public comment from being heard – because we must do what is called “exhausting your administrative remedies.” So, for example, if you disagree with something a governmental agency has done, you must go through that agency’s internal appeal process before a court will allow your case to be entered into court. Also, of course, even appeals processes are rigged against us, as Harry explained just a few minutes before.

Glen said if we have a long-term view of what we want to accomplish overall, we need to document how the system is rigged against us (including the “engagement theater” instead of honest, open-minded listening), and use our documentation to help ordinary people in the general public to recognize that the system is unjust or downright corrupt. When the public is outraged in this way, more people will join together in a grassroots movement to significantly change the system. Harry agreed. Glen said this experience is frustrating, but we do need to go through those seemingly futile steps in order for a growing grassroots movement to leverage these experiences into seriously changing the system. People working on a variety of public policy issues have done this in order to make the progress that they ultimately seek.

Harry agreed that public awareness grows with every turn of the wheel. He said we need to document what went wrong so we’ll know how to fix it when the time is right to fix it. Even if the time is not yet right, we need to keep building until the time is right to fix the broken system.

Glen added that these systemic dysfunctions occur in relation to many issues, so somebody else working on an issue different from your issue can see how this process is similar to what they’re experiencing too – “Hey, the same thing happened to me” – so now we can join together in a broader coalition and generate synergy to make progress on both of our issues in more profound, systemic ways.

**We must promote real sustainability:**

Glen said people often explain the term ***sustainability*** by saying it’s about meeting current needs without impairing our ability to meet future needs. For example, the United Nations World Commission on Environment and Development wrote: “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Harry said he tries to think about how current decisions will affect the next seven generations – the next two hundred years. He said the new buildings around Olympia’s waterfront have a life expectancy of perhaps 75 years. They will be long gone before the seventh generation two hundred years from now. He asked what these temporary buildings will turn into. He said these buildings use a lot of resin-impregnated siding, fiberglass or gypsum, oriented strand-board, vinyl window frames, vinyl conduit, polyethylene plumbing, and other materials that cannot be reused, cannot be recycled, and cannot be landfilled. Much of it is toxic waste – and it is very dangerous if it catches fire.

He said nowadays a lot of the new buildings are “mixed-use” for residential above commercial. The bottom one or two floors might be concrete. The process of creating concrete produces huge amounts of greenhouse gases – about 8% of the human-caused greenhouse gas pollution. The current way of building hurts the climate. When the building wears out, it’s just another huge pile of waste.

He asked, “What’s this all going to look like in two hundred years? None of this is sustainable.”

He said he drives an all-electric car, which he likes. He said it has a 600-pound lithium battery. However, the earth cannot tolerate having a billion cars like that, because that would total 600 billion pounds of lithium. This is more than can be mined.

“We need to simplify our lives. We need to occupy less space and use less stuff.” He suggested we should be happy with our current kitchens instead of remodeling into new kitchens. We can’t build our way out of this. We need conservation.

Glen said the big businesses that sell all of this stuff want us to believe their advertising about how “green” they are and how “green” all of their stuff is. But actually, those companies make their money by manufacturing and selling stuff that cannot be reused, cannot be recycled, but simply ends up as toxic waste, as Harry said just now. Glen said we need to make major systemic changes.

**Climate disruption makes these problems even worse:**

Glen built upon Harry’s statement that concrete has a huge carbon footprint by added that human activities have been hurting the climate in many, many ways. He said the term “climate change” sounds too benign because a “change” could be a change for something better or a change for something worse or merely a change to something different. Instead, we must use the terms “climate **disruption**” and “climate **chaos**” because that’s what’s really happening.

Harry referenced the well-known statement that we have surpassed the earth’s ability to assimilate or take up the carbon dioxide that people have generated. He said he has heard that phytoplankton produce 70% of the earth’s oxygen. He has also heard that in the eastern Pacific Ocean phytoplankton have been reduced by about 40%. Phytoplankton convert carbon dioxide into oxygen, so this sharp loss of phytoplankton has seriously reduced earth’s ability to get rid of greenhouse gases.

Likewise, he said, this happens also when we cut down an old-growth forest and replace it with a tree farm. We’re getting rid of a beneficial system and replacing it with something that’s costing us.

He expressed concern about the earth’s diminished ability to assimilate carbon dioxide.

**Individual actions are not enough. Systemic problems require systemic solutions.**

**Instead of seeing problems in separate “silos,” we need profound understanding
and profound changes to the culture:**

Glen said the problems we have been talking about are complex and have resulted from multiple causes. They have been caused by how our political and economic systems have been functioning for many years. Solving these problems will require changing how several systems function – including how our political and economic systems function [and how we fund election campaigns and how news media function and whether people feel empowered to change our dysfunctional status quo]. Also, in order to solve the problems, we must change our culture to start respecting Mother Nature and sustainability. He said these are big challenges. He invited Harry to discuss this larger approach toward solving these problems.

Harry said something that is lacking in Washington State – and probably lacking elsewhere too – is that we do not follow established methods of scientific inquiry. He said we need to follow the sequence of observation, hypothesis, test, and conclusion. He said we commonly see elegant, fantastic documents hundreds of pages long, full of information, data and graphs that say absolutely nothing. He said this pattern is by design. Instead, we should follow established methods of scientific inquiry.

Also, he said we should practice ecosystem-based management. Natural marine ecosystems are productive, resilient, and maintenance-free. They produce many benefits. Instead of looking only at individual species or individual parameters, we need to examine entire ecosystems and how everything fits together.

Harry said that we should hire real scientists instead of consultants. Glen laughed, agreed, and said many consultants focus on how to finagle money out of this or that – and how to sweet-talk somebody into fooling them into doing this or that – rather than taking an honest scientific approach.

Harry said, “If you’re hired to do a job, the first thing you do is to figure out what you’re hired to do.” Often it’s something that ultimately serves a real estate developer. For example, a consultant might be hired to develop a mitigation plan for pocket gophers so a natural area can be built upon, even though a specific species might be harmed somewhat.

Glen said this reminded him of what – during the Watergate era – “Deep Throat” told the two journalists: “Follow the money.” Glen said if some real estate developer or other business hires a consultant, the consultant will perform the work in ways that will serve those financial interests. Governmental entities such as the Port of Olympia do that too, like businesses do.

Glen said that in recent years there has been an actual campaign against honest science. Trump waged an aggressive war against science. For example, he removed from Executive Branch websites information about the climate crisis. Glen said we need to lift up and protect honest science and follow the legitimate methodology, as Harry urged just a moment ago. Follow the legitimate steps honestly, and then include the necessary step of having other scientists conduct “peer review” so they can critique the methodology, the conclusions, and so forth. This allows scientists to argue it out professionally so the truth can emerge and prevail. He said we do not have enough of that now.

Harry also said we need to practice the kind of thinking that indigenous people have traditionally done. People lived here successfully for thousands of years. We need to understand how they did that. They actually practiced sustainability. We need to learn from them.

Glen added that their sustainability practices came partly from their worldview and their spiritual grounding. “It was sustainable, and it did work for thousands of years, so there is a proven track record. You harvest the fish, but you make sure the system continues to produce more fish.” Likewise oysters and other resources. “Recognize that the ecosystem is bigger than us and needs to continue functioning and being productive, so we have a symbiotic relationship with people seeing themselves as part of nature rather than a dominator over nature.” Harry agreed.

Harry said indigenous people actually practiced important aspects of scientific inquiry. He said if you see birds circling over a certain part of a bay, that is your observation. Your hypothesis might suspect that herring are swimming under where the birds are circling. You test your hypothesis by taking your canoe and a dip net out to that location and harvest the herring. Your conclusion is that when you see birds circling over a certain part of a bay, you can take your canoe and dip net and catch herring. Repeat this sequence hundreds and hundreds of times over thousands of years, and you will develop a good understanding of the environment.

Glen said the information, knowledge and wisdom pass along and are validated over and over again. He said a scientist wants to replicate another scientist’s experience. Someone else sees the method that Harry has described and replicates it in their own different local area, so the process goes on. Harry agreed.

**We did not have time to add these points:**

* Some of the points we’re making in this interview will be uncomfortable for some people to hear.
* Some powerful interests are promoting “red herrings” and false solutions. We must reject those. Also, the solutions that we desperately need are much more profound and systemic than simple things that individuals can do (change light bulbs, drive electric cars, etc.).
* Let’s get beyond separate issue “silos.” Salmon and orcas are part of larger systems. Hatcheries are not enough. We must think bigger, systematically and holistically.
* Real solutions require significantly changing our economic and political systems and our spiritual groundings.

**Let’s recognize legal rights for nature, so Mother Nature could protect herself:**

Glen said one creative solution that has been attracting a lot of interest and support worldwide is the proposal to **recognize that Nature herself should have legal rights**. Very often, legal cases are dismissed because of lack of “standing.” “Standing” is a legal concept that determines whether someone has a right to challenge something in court. If the plaintiff has not been personally harmed, the case is thrown out for lack of “standing.” Harry had given an example a few minutes before when he said the Olympia Urban Waters League lost its case at the Hearings Examiner level partly because Harry and his friends had not been personally hurt by running Moxlie Creek through a pipe. But what if we had a law that would give legal “standing” to that stream? Then the stream could have sued to free itself from the pipe, win its right to daylight, and prevent the huge building from being constructed over it.

Glen said that in recent years a growing legal movement has been affirming the rights of Nature, so that rivers, forests, wildlife, etc., should be recognized as having “standing” and can sue to protect their interests. A few South American nations have written this into their constitutions. A recent case in the U.S. recognized Lake Erie’s legal rights.

Glen’s January 2022 TV program will focus entirely on recognizing legal rights for nature. One of his TV guests will be a guest from his April 2014 TV program, which promoted profound democracy through “Community Rights Ordinances.” Glen invites people to watch that 2014 interview and/or read a summary of what we said at this link on Glen’s blog: [**https://parallaxperspectives.org/a-growing-movement-asserts-that-the-environment-rivers-forests-wildlife-etc-has-legal-rights**](https://parallaxperspectives.org/a-growing-movement-asserts-that-the-environment-rivers-forests-wildlife-etc-has-legal-rights)

Harry said it’s crazy that we do not already recognize the legal rights of nature. He gave the example of recognizing that the orca whales in our waters – which are already identified by numbers and sometimes also by names – should have legal standing. Even though an orca whale cannot physically fill out legal forms or enter into a courtroom, someone could represent that whale. It’s already common for one person to legally represent someone else by signing documents on their behalf and to represent them in court.

Glen said it’s already very common for an adult to have legal power to represent someone who is younger than legal age or someone whose mental abilities are not sufficient for them to represent themselves in court. He said we need some analogous “power of attorney” function to represent the rights of nature.

He said he keeps reading about horrible abuses of nature in various parts of the world. For example, in El Salvador a river has been horribly, horribly polluted by a foreign-owned business that has been mining for gold and polluting the river with toxic chemical wastes to such an extent that it kills the fish and makes it too dangerous for people to use the water. The foreign-owned mining company gets away with that because the river has no legal standing to protect its integrity and rights. The river should be recognized as having legal standing so it can go to court and sue the mining company.

He said in parts of South America, rainforests have been clear-cut and turned into grazing lands for beef cattle, and many other abuses of nature have occurred. This has prompted some South American nations whose forests, rivers and ecosystems have been horribly hurt have written into their constitutions the recognition of legal rights for nature.

He added that “if Mother Nature has legal rights, we can change a lot of things” for the better, but “you can imagine a lot of push-back from the powerful interests that are quite well established now.”

He mentioned again his April 2014 TV program in which he interviewed guests who were promoting a more profound kind of democracy by empowering communities to create “Community Rights Ordinances” in which they could assert local powers

Glen thanked Harry for the creative thinking that Harry has done. He said both of us are working with other local people who are creatively thinking and working here to change systems for serving the public interest and Mother Nature’s interest. He said we need a lot more of this.

**Harry’s closing thoughts:**

Harry said we need big solutions. We can get there, but it will take some time. He hopes we have the time. He said we need to get beyond consumerism.

He also said we need to deal with corporations, but this will be difficult. He said many of the new buildings in Olympia are owned by Limited Liability Corporations. He said corporations have no morality but are focused only on making money for their investors.

Glen said historically – centuries ago – corporations were chartered to serve a particular limited function, such as to build a certain bridge in a certain location, and then they dissolved when that project was completed. But in Britain some corporations started doing a number of different business functions, and they would persist over time. He said corporations were chartered by governments, and theoretically a government could revoke a corporation’s charter if the corporation seriously or repeatedly misbehaved. A corporation that behaved unethically or refused to stop polluting or persistently discriminated against vulnerable people could have their charter revoked, so the government could put them out of business.

He said the banks that crashed our economy in 2007-2008 broke a lot of federal laws, and this led to the crash. They should have been put out of business, but instead they were rewarded by allowing them to get even bigger than when they were deemed “too big to fail.” Our system is fundamentally broken, so we need major systemic changes.

**Sources of information:**

Glen said that in addition to the information and insights that Harry has shared with us during this interview, he invited the TV viewers to discover other sources of information. A number of non-profit organizations – locally and nationally and globally – have researched and advocated for positive solutions to the problems. He encouraged people – wherever they live – to find people and organizations that are well informed about the science and the public policy issues related to what we’ve been discussing.

He highly recommended these organizations:

* The Deschutes Estuary Restoration Team is working to remove Olympia’s 5th Avenue dam so the Deschutes River can flow freely into Budd Inlet with an environmentally sustainable estuary. See [**www.deschutesestuary.org**](http://www.deschutesestuary.org)
* The Olympia Coalition for Ecosystems Preservation is working to protect ecosystems ranging from West Olympia’s highlands and fresh water sources to Budd Inlet. See [**www.olyecosystems.org**](http://www.olyecosystems.org)
* At the national level, the Community Environmental Legal Defense Fund (CELDF), [**www.celdf.org**](http://www.celdf.org), works on the Rights of Nature issue.

Glen said his blog, [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org), provides relevant information in the “Environment” category. In that part of his blog – in addition to the “TV Programs” part, he is posting the video of our interview and the thorough summary he typed up, which you are reading now. Please invite your friends to visit Glen’s blog, [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org), and click either the “TV Programs” category or the “Environment” category. Look for this TV episode’s title, **“Understanding Environmental Water Quality Problems and Solutions.”**

Glen said that in recent years he has produced and hosted some TV interview programs about the topics we discussed in this current interview program. You can watch those interviews and/or read thorough summaries of what we discussed at the links posted to his blog along with the video of the TV program you are watching now. During this interview, **Glen mentioned these relevant programs, which you can watch and/or read about through his blog:**

* January 2019 TV interview program: **“Solving Local Environmental Problems”** --
[**https://parallaxperspectives.org/tv-solving-local-environmental-problems**](https://parallaxperspectives.org/tv-solving-local-environmental-problems)
* September 2018 TV interview program: **“Local Governments Must Protect the Environment”** --
[**https://parallaxperspectives.org/tv-local-governments-must-protect-the-environment**](https://parallaxperspectives.org/tv-local-governments-must-protect-the-environment)
* July 2018 TV interview program: **“Base Public Policy on Honest Science”** --
[**https://parallaxperspectives.org/tv-base-public-policy-on-honest-science**](https://parallaxperspectives.org/tv-base-public-policy-on-honest-science)
* December 2014 TV interview program: **“Restoring the Deschutes Estuary to its Natural Flow”** --
[**https://parallaxperspectives.org/tv-restoring-the-deschutes-estuary-to-its-natural-flow**](https://parallaxperspectives.org/tv-restoring-the-deschutes-estuary-to-its-natural-flow)

You and your friends can watch any of these – and/or read a thorough summary of what we said. Visit [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org), click the “Environment” category, and scroll down to see them.

**Additional sources of information in no particular sequence:**

* Understand Puget Sound’s ecosystems better could help the species living here: [**https://www.pugetsoundinstitute.org/2021/11/recovery-of-puget-sound-species-could-hinge-on-better-understanding-of-ecosystems/**](https://www.pugetsoundinstitute.org/2021/11/recovery-of-puget-sound-species-could-hinge-on-better-understanding-of-ecosystems/)
* Making room for salmon - estuary restoration - Salish Sea Currents Magazine: [**https://www.eopugetsound.org/magazine/tribes-estuary-restoration-2021**](https://www.eopugetsound.org/magazine/tribes-estuary-restoration-2021)
* Indigenous Women in Peru Seek to Turn the Tables on Big Oil, Asserting ‘Rights of Nature’ to Fight Epic Spills. Their lawsuit demands protection for a river hurt by an oilfield carved into the Amazon Rainforest with nearly 2,000 contaminated sites: [**https://insideclimatenews.org/news/05112021/indigenous-women-in-peru-seek-to-turn-the-tables-on-big-oil-asserting-rights-of-nature-to-fight-epic-spills/?utm\_source=InsideClimate+News&utm\_campaign=d0d82f91ba-&utm\_medium=email&utm\_term=0\_29c928ffb5-d0d82f91ba-327502737**](https://insideclimatenews.org/news/05112021/indigenous-women-in-peru-seek-to-turn-the-tables-on-big-oil-asserting-rights-of-nature-to-fight-epic-spills/?utm_source=InsideClimate+News&utm_campaign=d0d82f91ba-&utm_medium=email&utm_term=0_29c928ffb5-d0d82f91ba-327502737)
* This article says we can’t rely upon hatcheries to produce salmon for the declining numbers of orcas: [**https://www.postalley.org/2021/11/04/hatcheries-for-waning-orcas-no-longer-works/**](https://www.postalley.org/2021/11/04/hatcheries-for-waning-orcas-no-longer-works/)
* We need to challenge the convenient (but false) assumption that we can continue “growth” and make endless growth “green.” See this: [**https://www.theguardian.com/commentisfree/2021/sep/29/green-growth-economic-activity-environment**](https://www.theguardian.com/commentisfree/2021/sep/29/green-growth-economic-activity-environment)
* This article is titled, “Urine trouble: Untreated nitrogen from other waste treatment plants causing low oxygen in South Sound. Here is the article: [**Urine trouble: High nitrogen levels in Puget Sound cause ecological worry**](https://crosscut.com/environment/2021/10/urine-trouble-high-nitrogen-levels-puget-sound-cause-ecological-worry)
* Salmon need trees: A new study finds that logging watersheds has an outsized impact on salmon and trout. See this: [**https://www.hakaimagazine.com/news/salmon-need-trees/**](https://www.hakaimagazine.com/news/salmon-need-trees/)
* South Prairie Creek: A Puget Sound Dairy Farm is Restored to Steelhead and Salmon Habitat: [**https://www.wildsteelheadcoalition.org/news/south-prairie-creek**](https://www.wildsteelheadcoalition.org/news/south-prairie-creek)
* The Washington State agency called “The Puget Sound Partnership” was created to lead the region’s collective effort to restore and protect Puget Sound. Working with hundreds of government agencies, tribes, scientists, businesses, and nonprofits, the Partnership mobilizes partner action around a common agenda, advances Sound investments, and tracks progress to optimize recovery. Their website is [**www.psp.wa.gov**](http://www.psp.wa.gov). Like all governmental agencies, it thinks is doing a good job, even while many people say it is not doing enough. The agency says, “While Puget Sound is not doing well, there are signs we are making progress.” It admits that most of the scientific indicators of Puget Sound’s ecosystem health “are staying the same or getting worse,” a few things are improving. You can download their ***2021 State of the Sound*** report from this link**:** [**https://stateofthesound.wa.gov/**](https://stateofthesound.wa.gov/)

**Glen’s closing encouragement:**

Glen thanked Harry Branch for sharing his information and his wise insights during this hour. He also thanked the people who have been watching the interview.

He said he believes that all people are situated in environments that need our care. We must protect our natural ecosystems. He encouraged people to connect with environmental organizations and good-government organizations in order to protect ecosystems.

He supports the advice that parents give to their children: Clean up the mess you made.

Our system of government claims that it serves the broad public interest. Let’s firmly hold all levels of government to that pledge. Let’s make sure all levels of government actually will protect all ecosystems instead of letting private interests abuse them.

He believes that ordinary people of good will can organize effectively from the grassroots up to protect ecosystems and serve the broad public interest. He invites people to sign up for the FREE ONLINE WORKSHOPS he conducts to help people strengthen their skills at grassroots organizing. Information about the November-December 2021 series of workshops is at this link: [**https://parallaxperspectives.org/sign-up-now-for-free-online-workshops-so-you-can-make-more-progress-on-issues-you-care-about-4**](https://parallaxperspectives.org/sign-up-now-for-free-online-workshops-so-you-can-make-more-progress-on-issues-you-care-about-4) He will continue offering these workshops into the future. If you’d like information about upcoming workshops, contact him at (360) 491-9093 or **glenanderson@integra.net**.

You can get information about a wide variety of issues related to peace, social justice and nonviolence through my blog, [**www.parallaxperspectives.org**](http://www.parallaxperspectives.org)or by phoning me at
(360) 491-9093 or e-mailing me at **glenanderson@integra.net**

Glen ends each TV program with this invitation to help make progress:

**We're all one human family, and we all share one planet.**

**We can create a better world, but we all have to work at it.**

**The world needs whatever you can do to help!**