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[00:00:10] You know obviously after being involved in fishing for close to 50 years now range of stories. So it's kind of hard to come up with just one but I think just kind of going back early years to the actual very beginning of what got kind of my interest piqued in both fishing and in sex was when I was in high school back in Illinois. We used to fish farm ponds.

[00:00:37] And so this is this is more I can't say is the great fishing story but it's certainly one that has influenced me over the years and so we're out in this little pond in the evening.

[00:00:49] And there was this huge hatch of burrowing may flies next engineer type of mindfulness and I'm unfamiliar with those critters at the time. Never seen anything quite like it. But in this particular pond on this particular evening it was like the whole surface of the pond just lifted up with insects and flew away. And it was spectacular. And it wasn't a trout pond it was bass and blue gill and of course those fish were jumping and feeding all over the place as well as trout would. But just that whole kind of sight of seeing that and in the way that just came off was really impressive and stuck with me and I said like you know I gotta I got to do more of this I gotta figure this out. And so I was kind of that was kind of a big event that kept me on the path kind of stayed enthusiastic about fishing in insects.

[00:01:55] I grew up on a vegetable farm in northern Wisconsin. OK. My uncle collected insects dragonflies had a lot of cases down to the basement. Is that was that type of life. Being around that in the Midwest is that kind of what drew you to and demolish it to the study of insects.

[00:02:14] Yeah. Yeah it was I think just as a kid I wasn't one that who had a big huge butterfly collection and spent you know hours doing that sort of thing but as a kid I was always had an option. I lived in a very small town in farm town in kind of upper central Illinois and so we just had easy access to the outdoors and you know playing around around lakes and ponds and creeks and we did a lot of fishing as kids just grabbing a bicycle right now to a creek and went fishing. You know so wasn't wasn't the trout fishing season but it was just a lot of opportunity to be outdoors and around water and fish and bugs and there was something that I just was crab kind of gravitated to and I had an uncle in Missouri who actually put a flyer out in my hand. My dad wasn't a fly fisher. He would fish a little bit. He wasn't even that serious about fishing but he would fish some. But my uncle in Missouri was just constantly fishing and he was going to put a flyer on my hand when I was like twelve and said you know do this.

[00:03:18] And that's actually in Missouri is where he caught my first trout on a fly and and really just got into in the Fly Fishing kind of in that I just kind of ran with it on my own in order to hers.

[00:03:31] Flight Time kid started time flies go out to these ponds that were near me and cut blue gill and basket you know and just read about it watched some fishing shows on TV and just kind of had the bug and literally and figuratively. Yeah. Well I have a favorite bug but it's not an aquatic bug. Actually one of my favorite bugs is the ant lion. Yeah I am. And then I kept one in terrarium for a long time and and fed it. And you know. And had that whole thing go on for weeks and weeks and actually went on vacation and just before I went on vacation I saw that it wasn't eating ants anymore so I figured I'd die. But we're just

ready to take off sides of all deals and then get back. So you're gone for like almost two weeks they come back and the very moment we walk in the house from vacation it was actually Pew painting it wasn't dead it was Pew painting while we were gone and it was actually emerging as I walked in the door and looked at the terrarium. It was crawling out and hatching into the adult which was really cool. But but I like and Lions both the adults and the lava they're great they're cool quite again sex.

[00:04:52] I probably like the May flies a lot just partly because they're more delicate and yet they're so abundant in most healthy kind of cold water systems you're going to find lots of different kinds of me flies and just their short lifespan they're also considered possibly the first insects to ever have flown when May flies when you look at the evolution of flight in insects may flies are considered perhaps the very first ones that actually flown and the fact you still go have one land on you today and look at this critter that's 300 million years you know ago they were flying around is pretty incredible. So I guess I have a soft spot for him. They flies.

[00:05:42] Well I would think one of the major benefits would be to anybody doing research and writing about any aspect of fly fishing where they want to go back and look at some of the other earlier information about it and some of the people that have been involved in it over the years.

[00:06:02] Where do you go to get that information. I mean libraries are where you're gonna go.

[00:06:06] I mean that's one of the key places even in today's world with the Internet it thinks it seems to make sense and be great to have that kind of in a location where it's easily accessible to people that are trying to to learn about the history and over the years it'll become more valuable.

[00:06:24] You know I I enjoy reading books by authors that are you know back 100 years ago and it be. And there are few collections where you can go and you can see a large collection of fly fishing literature through the eras and I think it's really great to have that available. So that seems like one of the biggest benefits to me.

[00:06:53] Yeah. I do I stand by this question.

[00:06:55] I had a sale earlier and again I've fished a lot of different places and all around the West End and some in South America Chile and such Argentina.

[00:07:09] I had one of my favorite places is actually in British Columbia just across the border from Washington state so it's not actually that far from here where I live about a six hour drive away. And it's it's the upper Saget River which the shadow River is a famous steelhead stream in the state of Washington back in the 50s they built a dam right near the border of Washington and British Columbia called Ross Dam and it backed up the reservoir. In the top of the reservoir of the lake of the reservoir actually is in British Columbia.

[00:07:42] They didn't include any fish passage back in those days. You know many times they did then. But that and so there's no steelhead anymore they get up to the headwaters of this gadget. But the headwaters of the stream is up in B.C. flows into Ross lake and it's just to me that streams for trout fishing that attract me to the sport.

[00:08:05] And just in general have this you know kind of pristine sense of the environment you're going to a place that's beautiful but also still in a very healthy condition ecologically and habitat wise. And that's true for that upper gadgets. It's in a provincial park. It has it has been logged in sections but not heavily and there's big sections that are still old growth time about Cedar and Hemlock that are 500 plus years old. So the habitat is really pristine. You get a sense of what a really healthy functioning stream looks like. It's beautiful waters super clear even after a rainstorm. It's got a great trout native trout population in it that have residual fish that have you know were there when they put the dam in but very healthy rainbow trout population healthy bowl trout population. Great hatches of insects. It's a very entertaining place to fly fish.

[00:09:09] You can be out there in the course of a day you might have three or four different insect hatches that you're gonna change to match if you're going to still be in the fish. So it's entertaining beautiful place to be.

[00:09:24] The one thing about it and it actually prevents it from getting crowded is the mosquitoes there are unbelievable. I mean I've been in Alaska I've worked in Alaska I've fished in Alaska. This will compete with anywhere I've been in Alaska.

[00:09:40] In like late June July and August through that summer period. The mosquitoes are phenomenally and you'll see on blogs about this gadget you know if you go and read the fly fishing forums. Good fishing. But the mosquitoes almost bled me to death kind of thing and does keep the crowds down. Yeah.

[00:10:04] Well you know there've been a number of theories on that. I think that the trout. They're going to feed in the most efficient way. I mean they're out there to survive and get enough food to survive. Is very basic formula. So they're going to feed the most efficient way to get the most calories for the least effort. If there's no dominant food source at a particular moment in time.

[00:10:29] I don't believe trout are very selective. You throw out something insect looking buggy looking food looking kind of thing and you're probably going to catch some fish but one particular food form gets really abundant. And is really dominating at that particular point in time. It's more efficient for that fish to ignore other items that are drifting by and get. You might call it a search image.

[00:10:55] For that one food form. And even that one particular stage of that food form might be the nymphs stage swimming up or it might be in a merger in the film or it might be a spinner you know adult on the water surface.

[00:11:08] They'll get down to just of image of just a particular stage of that insect that's hatching. And by focusing on that they can be more efficient. And it's like well yeah this floated by but this is what I'm eating now and this is one. And they just zero in on it. And until that food is gone that's what they focus on. And that'll change them through the course of the day. If you get another dominant food item that shows up. So that image isn't locked in for you know forever obviously it's just when that food is there they can lock into that food. And. Be very efficient feeding on.

[00:11:52] Well my uncle I mentioned earlier who put the flier out in my hand. I didn't spend much time with him we didn't go down to visit there very often. But he had this enthusiasm for fishing. He showed me the basic idea about fly fishing.

[00:12:08] I was with him when I caught my first trout fly fishing in Bennett Springs which is a spring creek in Missouri where they they stock it. But it's cold and has decent trout population in it. So obviously he's the guy that I have to look to when I think of. Getting started in the sport. But.

[00:12:30] Really when I. So that was a you know younger years and through high school I lived in Illinois and I left Illinois after graduating from high school and moved to Bellingham Washington to go to college there. So when I got out here I had very limited experience trout fishing.

[00:12:46] And it was just a steep learning curve to figure that out. And so the people I met you know out here in the Northwest have you had a big influence on me and my some of my best friends that I've been fishing with that are also people you're going to be interviewing Dave Hughes and Jim shamar. TICKY literally I you know learned a lot from them who they grew up out here and they grew up fly fishing out here so just people I've met over the years and become friends with you know really. Not only just learning about fishing but just the whole. Pleasurable aspect of going out fishing buddies.

[00:13:32] Well if you're gonna be a successful angler you have to be a good observer. Especially I think with fly fishing because you're out there fly fishing for trout. Specifically you're out there you're trying to understand. What fly to put on the end of your flight line. Most of the time in my experience that fly that's going to be successful is tied to something fishy. And we've already talked about how that changes through the period and times of the day and seasons. So you need to be a really good observer. If you're going to be successful fly fisherman.

[00:14:07] You don't have to know the scientific names but you need to know what things look like and what their behavior is like and try to imitate that with your technique and your flies.

[00:14:17] And so being a good observer carries over to certainly being a good researcher a good biologist goods. You know if you're involved that line of work and I think for a writer two writers have to be good observers. You have to be able to. Then.

[00:14:35] Write that down in a hopefully engaging way but it comes down to observing more than anything to start with. And I think an appreciation. As an angler if you take the time and just are observing knowledge you see. The world in how the fish are responding to it but you actually see the world very closely and you I think you can really just gain a greater appreciation for nature and that whole fascinating part of just what's going on out there you're just able to step into it as an angler and be a part of it which I think is just you know.

[00:15:15] Pretty special.

[00:15:17] Yeah I've heard other people say similar things and recognizing that the relationship between the plants are blooming on the side of the river and then sizing the fish.

[00:15:25] Absolutely. It's all paint. It's a picture as a whole.

[00:15:29] Yeah absolutely. And to me that's that's what keeps me going back you know catching fish is fun if you don't catch fish it's like Wow wasn't as good a day as yesterday where I caught 30 fish maybe.

[00:15:40] But on the other hand it's not you know catching fishes and you don't have to catch fish. You know the whole thing is a great experience.

[00:15:55] Well I've really focused my career fishing fly fishing on trout and could be rainbow could be cutthroat could be brown trout brook trout.

[00:16:06] But that's been my focus is trout as opposed to steelhead or salmon and living here in Oregon. There's plenty of opportunities fish for lots of steelhead and salmon and I have over the years but for a number of reasons I haven't gotten.

[00:16:24] Passionate about fishing for steelhead for example which lots of people out here. It's still Ed. That's their world. And the reason is really because of my interest in insects. And aquatic insects.

[00:16:39] When you're fishing for salmon and steelhead you're not trying to piece together the puzzle of what foods out there in the stream it's attract or flies it's being in the right place at the right time Neil's fish are moving there on their spawning runs there in this section of the river today two days three days later they're in a different section so you're got to be in the right place in the river and then it's just a matter of patience and time and a technique to get your fly in the right place in the water column but it's not about so much matching your fly pattern to the right thing. It's about. Having the patience and the stick to it oddness to stay out there for hours casting and know that you're in a place where there's some fish and that just doesn't excite me as much.

[00:17:23] The fishery you know exciting to catch with the whole process of it doesn't grab me like process trout fishing is a rare species of trout that that's your not so much.

[00:17:35] I've lived and fished more for rainbows than other species. But I wouldn't say so. I mean some people will. Gravitate to brown trout because they feel they're more challenging to catch a little more selective and they're feeding a lot more challenging to catch. Some people say rainbow because they're all more exciting when you catch and they seem to jump more and fight a little bit more vigorously when you catch them. Some people consider cutthroat too easy to catch. They're not as challenging in all those generalizations I think have some validity to them. But I've fished over cutthroat trout that have driven me nuts and not been able to figure out what fly to put on that they're so selective at the time that they're there credibly hard to catch. So I'd put those up against any brown trout in terms of selective feeding and I've caught some brown trout that have fought very well and jumped and stuff. So you know. To me it's more about the environment where I'm fishing. The the nature of the place I'm in the situation I mean it.

[00:18:42] Gets me more excited than say what to you efficient fishing for. But all trout species pretty much can get pretty excited about.

[00:18:51] Growing up in Wisconsin. Brookings always have a special place in Rangers fishing. Those little creeks and coming up on a dam and just. Just just. And they're such a beautiful fish. Oh yeah.

[00:19:03] Yeah. Brook trout have kind of a mixed message out here because they were introduced. Sure. And and they're very aggressive reproducing and they've interbred with some of the bull trout got some of that and some of the cutthroats in place. So there is a bit of a downside to it when they've been introduced in places they shouldn't be but they're beautiful fish and there's some places out here that have some really beautiful.

[00:19:34] Well both those groups you mentioned to you and in flourish fly fisherman f f f are doing a lot of work and really good work on both education and habitat improvement.

[00:19:48] I don't know their budgets so I can't give you any perspective on that at all but I just know they both are out there and I've worked with both of them. I've been involved with both those organizations a lot or my career and have a lot of.

[00:20:04] Really good things to see that they've done. So I. Think they both should be supported. I'd say over the last 20 years there's been a real increase in general and habitat. Improvement. Projects both.

[00:20:23] By t u f f f as well as state and federal government partly through endangered species listings which kind of forces governments hand sometimes to put money into that and other agencies to deal with it but also there has been a lot of.

[00:20:41] In Oregon there's an ordinance called all web which is funded through lottery money. It's Oregon Watershed Enhancement board and their whole mission is to fund habitat improvement projects around the state. And it gets along.

[00:20:56] Group from different agencies involved to identify where and what projects might be best to fund.

[00:21:03] But there's like every most states I'm familiar with in the West have similar kinds of efforts underway. So there is a lot of habitat improvement projects going on. The challenge I see with that and I've dealt with this through my work. Is that. You can go out there and and put on the ground. Habitat improvement work like.

[00:21:28] Putting in riparian vegetation adding new channel meanders to a straight and stream. You know there's a lot of lot of neat things you can do but usually that funding is to do the project. There's virtually rarity very rare to have funding that's going to monitor if that project is working overtime. So you might go back in 10 years and find that new landowners there and now they're grazing into repairing an area where the previous landowner was protecting it. And there's very little if any oversight. To look at these habitat projects over 10 15 20 30 40 further time you get out the less likely it's gonna be.

[00:22:12] Looked at because it takes money obviously to go back and monitor these things. But without that kind of monitoring I've seen a lot of habitat. Projects just over time. Change. They're not effective anymore and so you've lost the benefits and you've kind of lost the benefit of that money is spend. So I would like to see this not directed it to you and FSF so much as the federal government agencies I'd like to see them. Spend some more money in tracking these projects over time. And I think.

[00:22:47] You know it's challenging. It's very challenging to come up with the money and get support. To fund that kind of work. You can easily convince people throw money at a new project. To go back and monitor when it was 15 years ago in Amara. It's not as glamorous and and just to convince people to fund it is very hard. Sure.

[00:23:08] But to you and FFA for doing a great job and they're trying to involve the anglers really and some of that kind of monitoring where anglers are out there every year. Yeah yeah. And that's pretty simple to get some basic habitat information. It's not not rocket science.

[00:23:24] So I think the kind of involvement they're trying to work with on the fishing organizations anglers in general can be definitely effective for that. All right.

[00:23:38] Well I've seen us gain a lot in management understanding and improving management for fish trout populations. You know the whole idea of catch and release came about over the last 30 40 years. And that's definitely had a significant improvement in wild trout. Populations. No question about it. It's protected fish is daily when you talk about wild fish wild fish production that's been a significant factor. In and you can. I think when it comes to trout fishing a lot of places you're going to find. Very healthy fish populations and quality of the.

[00:24:25] Fish is as good as it was 50 years ago or longer. I think the challenges from my in my lifetime fishing say over the last 50 years. Is just that increased fishing pressure. And it's I think directly related to just increased population. And.

[00:24:49] I would say that's a pressure not just of increased fishing pressure but just increased human population pressure on water quality in general and our impacts on the environment. One of the things. I. Can say pretty clear is this. Clearly is that if you want a really good trout fishing.

[00:25:16] Look on a map and find the lowest population density of people and go to a stream there. You know I mean that's just sort of the nature of the beast because.

[00:25:26] Healthy cold water trout trout streams get degraded if you get more and more people in population living around it. And we do our a better job today of managing pollution. Particularly point source pollution waste treatment in.

[00:25:44] Industry and in that sort of thing. But there's a lot of non point source pollution from agriculture urban runoff that's extremely hard to control. And that's increased over the years. And I think it's a real unfortunate.

[00:26:01] Side of how we see things that each generation sort of has a starting point of what the environment looks like at a different scale or a different starting point. And so you know I see things that have changed in terms of. Streams in the coast range have been a heavy logging area. Fifty years ago I could go up there and it would be some really neat streams to fish those streams are gone. From logging. And but now if you just started fly fishing today you would still find a few streams in the Coast Range and you go up there inefficiently. Well that's pretty cool. But it's nothing at all like it was 50 years ago not even close. So. I think that it's really that human use of the resources human just activity and human presence that we bring with it a lot of side effects that are. Challenging to deal with in terms of protecting particularly cold water crossings.

[00:27:11] Oh I definitely I think. Well one of the better things going on with conservation now in my mind. Is that. People are spending money on western rivers Conservancy so like the nature conservancy buying tracts of land where they can set aside and protect from increased human development. Well you can do it. You can do the same thing with

areas and maintain healthy native species populations. I mean we need those kinds of places set aside where they're going to be protected you're not going to introduce the non-native fish or you're going to get rid of non-native fish that are there and really try to make sure you've got a healthy native population re-established. So I think you really need to identify those areas and I think national parks like Yellowstone are places you really should I. Makes total sense to me. That's what you should be doing there. That's not to say that everywhere that brown trout have been introduced in the West they should be you know. Axed 86 and you know tried to get rid of and so forth because I had a it's not going to happen with the expense and b those Fisher wild populations now self reproducing. And.

[00:28:26] I think that's fine. But I do think it's it's really important to find. Other areas where you can maintain those native fish.

[00:28:40] Well the opportunities are partly you I just mentioned about setting aside these areas and really identifying and organizations like the Western Rivers Conservancy and others like that out there protecting those places I think is the future really of some of the better conservation work continuing habitat improvements continuing our understanding of how to minimize pollution impacts from agriculture.

[00:29:07] Point source problems in research continue and that's going to be really critical really important. I think the biggest challenge when we're talking about that cold water trout streams.

[00:29:22] Is climate change. Be quite honest. I've seen effects of that in my lifetime.

[00:29:29] And and you know you can always debate whether this is short term or long term changes. But I I feel strongly its long term effects that we're seeing more dramatic now and I think they're going to continue and I think that's going to really create one of our. Greatest challenges of all. To deal with when we're dealing with cold water.

[00:29:55] Species especially. I mean a couple of degrees for trout to make a huge difference absolutely.

[00:30:01] And it's snowpack. Absolutely. I mean that is going to be the straw that breaks the camel's back. Yeah. Here in the West End last winter and this summer was the perfect example of that here here in the Cascades we had 15 percent of our normal snowpack last winter. And so our streams this summer were at lethal levels. Across the state for a number of weeks and they closed trout fishing crossed the state.

[00:30:33] For about three weeks this summer. And that's never happened before. In Oregon.

[00:30:39] Ever. So yeah that's that's going to be the huge factors the snowpack and how that's going to change and affect things.

[00:30:55] Don't try and learn everything all at once. In fact I mean there's so much good information available now.

[00:31:06] With all the instructional material out there and DVD and all the really good books and all the stuff on the Internet. Great stuff.

[00:31:16] Readily available. I think it's it's a double edged sword because you can get some really quick. Understanding and you can develop your skill. Very quickly but. The downside of that is that you're not enjoying and you're not getting that excitement out of self discovery discovering it on your own and you know growing up when I did when there was very little information available especially where I grew up in a little farm title annoyed.

[00:31:55] There was nothing out there for a fly fishing period. Other than herders you know and it was the it was the excitement of going out there. And. Finding out something that worked on your own. And finding out what didn't work and spending hours going getting frustrated as you weren't catching them and all of a sudden.

[00:32:18] Some weren't. And so I think that kind of self discovery just adds a tremendous amount of excitement. And and it sticks with you in a different way. So I would never say don't take a class don't read a book. But don't worry about figuring it all out. By getting it spoon fed to you. Go out there and struggle make mistakes have fun and I to me that would be one of the things I'd recommend to many anglers.

[00:32:49] Don't worry about knowing everything when you go out there. Sure.

[00:33:00] Just do it. You know if you've got a passion for it and a strong interest just friggin go out there and do it.

[00:33:11] Don't worry about how to do it. I mean. Pay attention. You're going to need some good advice along the way and you're going to need to figure a number of things out to make money at it. If you want to do it is to make a living. I wasn't I didn't write to make a living. I didn't write about flight fish and make a living. I was working for the state as a biologist so I was always kind of my. Second occupation. But I think if you have the passion for it do it. And the way you make money out it is a moving target. You know what. I did what Dave Hughes you going to interview him what he did in early in the career. It doesn't work that way anymore. Just writing a book putting it out there expecting it. You. Have enough royalties to live on that. That's not going to work anymore. So you got to figure out how to use the Internet. You gotta figure out how to use social media.

[00:34:09] It's a real different beast but all good things to learn all good ways. You just have to be a little bit of a jack of all trades if you got to make a living at it.

[00:34:20] But just do it. Yeah just go out there and. Just go for it.

[00:34:31] It's a great question. Well I'm going to talk about Dave Hughes since you come out fishing parties because.

[00:34:39] He's been my closest fishing partner for about 40 years now. And. There's some fly fishing is an interesting sport at least the way it's.

[00:34:53] Typically approached here in the U.S. if you talk to people from Japan be a little different.

[00:34:59] But when we go fly fishing here it's a sport that you want to have some independents some privacy some sort of separation from the world at large. A lone time like to have some alone time and you're out fly fishing. Well there's some people in and sort of finding a fishing partner that has the same kind of sense of space personal space. When you're out fishing is sort of I think one of the keys to a partner is if you're going to get

along with them long term. And you know everybody is gonna have a different sense of personal space when it comes to how you share water personal space how you just deal with being outside and on a fishing trip together. So I think finding someone that has that same just native aspect of what they want for their personal space so you're not crowding them but yet you're still connected as a fishing partner. You know during the day and you feel like you've shared it in and that's a challenging thing I've been with people that are just way too much in my space. I mean is like standing next to you talking it's like Yeah great okay. I'm kind of like to go up here and go fishing now. And I've had people that get in the stream in the morning you don't see him till 10:00 at night which can be fine but it's not so much the shared experience. Sure. So I think finding someone that kind of shares that same kind of natural personal space interest and getting along with Dave I can go fishing on a small stream. We don't have to talk. We know how to just kind of leapfrog each other to fish the water without screwing up his water he's not messing up my water but we're you know there and can talk and can have lunch together. It's just a very unspoken natural day efficiently. And then I think that that's uh you know that's what really makes it worth. Specifically state and national parks as opposed the Forest Service land. Yeah. OK. What are they doing right. What are they doing. So to be honest here. Say in Oregon one very familiar with I wouldn't say state parks are the places I think of or national parks. I think of for the majority of fishing areas access to state parks tend to have a real focus on recreation use camping heavily you know high density camping areas and so it doesn't generally have the kind of less crowded more remote areas that I tend to go to for trout fishing. And the same thing would be too true for national parks in Oregon like really we only have one national park ordinance Crater Lake. It's not a fishing location. Washington state is its. Rainier National Park. So again yeah there's trout streams on Mount in Mt. Rainier National Park but their focus here and it would be different I think in Yellowstone. And even maybe in Yosemite or some like damn that here. The focus in those places really is different than say what you'd look for for fishing.

[00:38:40] So out here I think for service and BLM land is the real areas that are like critical for maintaining the kind of environment for trout fishing. So what are they doing right. What could they be doing better.

[00:39:01] Well they're they're paying attention to the forest service I think is doing a lot right. The National Forest Service. They've been really aggressive at closing roads which is controversial but some of these old logging roads are key sediment sources that really pollute streams. And by closing them they let the vegetation grow up on these roads again it's going to prevent a lot of sedimentation and streams. They have very good logging rules for riparian protection much stricter than state forest lands have. So their logging practices are better for streams and protecting for trout streams.

[00:39:49] And they're generally not crowded when you go in you know fishing and Forest Service land. You generally aren't going to be crowded conditions. So that's just the nature I guess of a little more time involved to get to the back country and you might have to hike in or something so you find less people.

[00:40:06] They maintain trails so I think it's there their management of the habitat is is done well in most cases. I always look at things that didn't work out. But in general I think it's done very well. BLM similar things they've improved their approach to riparian areas and repairing habitat significantly. Which is really critical for good stream health. So I think they're doing a lot of things good. I think again their pressure is going to be in the future and just continuing to balance resource extraction and recreation and that's always there. You know two balls they have to juggle and we don't have natural gas and oil issues in

Oregon but other places in the West. That's huge. So those kind of start with your last part of that question and preserving habitat. Is that also preserve aquatic insects. And I'd say in general yes if you're doing good things for watershed in terms of minimizing pollution minimizing sedimentation issues you're gonna be doing good things for insects.

[00:41:32] Climate change we talked about warming a lot of the things that happened the streams more in terms of non point source effects would increase temperature in streams.

[00:41:46] Removing repairing vegetation from logging or agriculture is is a huge win. But anything that kind of related to that if you're warming streams is going to be bad for the stream is going to be bad for insects. So cooling improving habitat repairing vegetation maintaining a good shade cover debts all going to be great for the insects is great for the watershed in general. So I'd say in general you if you're doing good things for the water quality in the watershed you're gonna be doing things for the insects the insects are I think really good indicators. If you are doing good things there one of the better things to go out monitor to assess whether or not what you're doing in the watershed is making improvements because they're integrating everything that's going on for them to thrive. Now is the temperature have to be decent but the sediment load has to be you know healthy.

[00:42:44] Pollution from agricultural runoff or if they're spraying insecticides and new forest lands they've planted part of love spray programs out there that's getting in the water it's going to impact the insects so they're integrating all these different facets of what's I help going create a healthy watershed. So if you've got a healthy insect population.

[00:43:09] You can I think be pretty confident that that watershed is functioning well and they're going to be one of the first things that will change they'll change quicker than trout populations or other fish populations because they have a short life cycle so they're immediately able to respond either negatively or positively to the changes in the watershed. So there your early indicators they're going to be one of your best indicators how things are going. In terms of angling are you going to be a better angler. Yeah I think you will be a better angler. Again it comes down to observation. The more you learn about the insects the more you learn about how to observe them.

[00:43:51] And where to look. What you're looking for a lot of people get hung up on entomology because of the scientific names and the genes I have to learn you know. Well that's a gastro process not a culinary you know. Now it doesn't matter. That can be fine and you know it allows you to read other books and know what they're talking about when you see a scientific name. But it's certainly not necessary to be a good angler. But being a good observer is an anybody I've read.

[00:44:20] Over the years who have written fly fishing books that are successful trout fishermen. They know.

[00:44:27] A lot about insects you know they may not know the science tipping names but they know a lot about insects. And so yeah I think the more you observe and understand them better fisherman fly fisherman you're going to be more like science.

[00:44:46] That's a good question. Interesting question. They're so different to work on a book versus a DVD video.

[00:44:52] Completely different. I would say.

[00:44:59] They're both creative processes so if you like the creative process of putting something together and seeing it done they both have that satisfaction and enjoyment. I think books feel more like.

[00:45:11] Giving birth you know being pregnant for maybe two years and it's they're growing and you know starts kicking at night and you can't sleep.

[00:45:21] And it can be you know a real struggle until that thing is born. And so to me books to kind of have that. Kind of sense to them is this is starting to grow and. Oh my gosh this is going to take a while but.

[00:45:36] At the end you're holding your baby right. This book is in your hands and it's a great feeling. DVD to me your videos are more immediate gratification satisfaction kind of the more I fighting for I'm excited to work on you're out there.

[00:45:54] Now with the digital world. You get your shots you review the shots and you see what you got in. You know if you need to read take something you do it. But there is just this more. It's faster and things are happening. You know you're trying to get this shot of fishing particular Hatch you're out there and there's the fish rising you've got to get the shots everybody's moving it's kind of this intensity and an quicker turnaround that you don't have with doing a book. So they they they are very very different animals.

[00:46:26] They both are fun in their own way. They're both work a lot of work in their own way.

[00:46:33] A lot of the work with DVD comes in the editing at the end. That's a grind. Yeah. Look through you know hours of footage on your computer and piece together you know what it's going to be at the end it's. 30 minutes. You might have 50 hours or something turn in the 30 minutes. So that's that's where the grind and in kind of the more effort comes into the DVD. I don't know what's more effective for the audience for the user. I would tend to probably say books. But. Only because you just like producing it. It's a slower way of integrating the information in your brain. You can go at whatever pace you need to go out for that particular page of information. So I think in some ways that's an advantage with books over DVD. But then to try and describe Nim fishing. Versus seeing it done I think that visual is probably better in some ways for some techniques. If you're reading about how many species of May flies there are and where they live the habitat and stuff I think probably books are better but if you're waiting to see what how to do a reach cast I think you're probably better off watching a video than seeing a picture and description in a book.

[00:48:04] OK. Well what I don't want to go into a long discussion with a lot of different authors some stuck to who really to me have been a big influence both because of the topic they write about but also just the way they write it. And those two are our skews. George Edward MacKenzie skews. Who wrote in England fished the ancient river in southern England one of the choc streams in the early nineteen hundreds and the other is Ernie Schubert and I'd probably skews has been my favorite author over the years. I go back and reread his stuff the way of a trout with a fly as one of my favorites but great writer and not trained biologist. He was a lawyer stuff so he didn't come at it from a scientific point of view. But what a great observer.

[00:49:04] And a phenomenal observer of trout behavior and insect behavior too.

[00:49:11] And the way he wrote was very eloquent not talking above the reader. It was like down to earth.

[00:49:26] But it was also like very humble you know he didn't put himself out there as the authority and any he would often say you need to go out there and find this out for yourself. Don't believe me. This is what I've experienced. Don't believe me. Go out and see if that's true for you. And to me that was really valuable. And I just like the way he writes and it's good information very good information.

[00:50:01] Even though he wrote in England I'm Chalk streams it's information you can use on a tail water fishery in Montana Oregon wherever any any place about trout and then sweeper just had both in a beautiful way of writing.

[00:50:21] But the amazing thing I mean he was a genius in my mind because of the detail he wrote about and he wrote a lot about insects matching the hatch being his you know the first book that kind of connected insects and trout fishing which I love. And so he connected that in a time when it was just starting in a big way. And and has the ability to remember just about everything that ever happened. Guy had to have a photographic memory and all the drawings of each species of insect.

[00:50:54] He would talk about his just amazing work that he put together and a great writer.

[00:51:00] I mean you read I like his prose. It's just kind of puts you in the place where he is fishing. So his prose but his connection of bugs the trout fishing obviously hit a spot for me. So those two particularly excellent.