



INTERVIEW

SARAH BECK

You're listening to Garden Futurist. I'm Sarah Beck with Pacific Horticulture. Today I'm talking with Kim Sorvig, who is research associate professor at University of New Mexico and a George Pearl fellow, which is an honor given to professionals whose work encourages discourse and positive change in architecture, planning, and historic preservation.

Kim, it's a pleasure to talk to you.

KIM SORVIG

Thank you. I'm glad to be here.

SARAH BECK

This is a very timely topic with this severe drought recently declared for many areas of California. 55% of the Pacific Northwest region I just saw is in drought conditions. And of course the devastating wildfire season we experienced last year in Oregon and California. You have been critical of Firewise codes focused purely on clearance and defensible space. Can you share a few of your critical points on why these single strategy practices are misinformed?

KIM SORVIG

Yeah, sure. I don't want anybody to get the idea that I think it's not a serious issue. And not all fire prevention things are created equal nor are all of them bad, but particularly the idea that we should clear as much vegetation as possible around each house in a forest in order, supposedly, to prevent forest fires is what I'm concerned with.

We have people. And I've been one of them for a summer job. I was a forest firefighter long time ago. We have people that are making heroic efforts to save houses that have been built in places that are unsafe or in ways that are unsafe, but clearance is not the answer to it. And in fact, I've asserted several places that is actually counter productive. And helps create some of the problems that it is supposed to prevent.

The thing that I think is important is to understand what's usually meant by clearance is often called fuel modification, which is a way of obscuring the truth of what's going on, I think. Clearance usually means a requirement under law to remove 80% of the vegetation in an area, 30 to a hundred feet around your entire house.

And it can be applied to outbuildings as well in some places. It also means in many cases that your road has to be paved, which in the areas we're talking about are usually rural. Driveways has to be paved, has to be widened to accommodate urban style, large fire crews.

And then in addition, 10 feet on either side of the road has to be cleared of vegetation. If you do the math, for a 2,500 square foot house and a quarter-mile-long driveway, which are



fairly average, you're clearing about two acres in addition to the area of the pavement and the area of the house itself.

So two additional acres per property. That adds up to a huge sacrifice and a huge cost for the homeowner. It adds up to a ton of greenways, more than a ton, four tons I think is about average, which is a cost to the jurisdiction because of having to pay for it to be dumped or composted or whatever.

SARAH BECK

Oh, that's interesting. That's a hidden cost.

KIM SORVIG

Yes. And of course then there is the whole question of the ecosystem being perforated, as one person called it, by cutting holes in the forest. And that's really where you get into the counterproductive part of it is that by removing so much vegetative cover, you actually change the conditions in the direction of more fire rather than less.

SARAH BECK

You've told me that massive clearing promotes desertification. It made me think about the many of ecological gardening basics that our Pacific Horticulture audience is familiar with. And how incongruous the clearing seems. I'm wondering if you could unpack this a bit?

KIM SORVIG

Sure. I've actually written a book called Sustainable Landscape Construction. One of the conclusions that my coauthor and I came to in that is that you should really be saving virtually every tree you possibly can, especially now that climate change is being taken seriously. Instead when you remove the canopy of forest cover, or even the shrub cover over a large area, it deprives the soil of organic nutrients, which every gardener knows is important. It increases the soil temperature, which can be good for a few plants and a lot of insects, but not generally for plants that are adapted to the old regime. Soil erodes more easily, it gets dried out and that increases not only the erosion, but the propensity for water to run off because the soil has been baked and it can't absorb the water.

Eventually there's a change in microclimate, at least, and it changes in the direction we don't want it to change. It changes towards more drought. New Mexico, where I am, the entire state is in extreme drought at this point, which is a hellish classification, literally. So when you do this vegetation removal over a large area, you're actually increasing the root cause condition of wildfire.

SARAH BECK

You wrote an article for Landscape Architecture Magazine called "Crying Fire in a Crowded Landscape: Do Firewise initiatives ward off or help spark catastrophic wildfires?" In the article you say, and this is a quote, "scientists are only beginning to quantify these clearing to drought, to fire relationships, but that is no excuse for ignoring the likelihood that clearing to prevent fire is like damming rivers to prevent floods. Processes like flooding and fire are



inevitable. And although a prevention strategy may work in some cases, it may actually worsen the problem." Can you tell me more about this letting go of the idea of preventing wildfires?

KIM SORVIG

Well, yes. One of the difficulties that we're up against is that we can't prevent wildfires. There are whole ecosystems and plant communities that are fire adapted in order to set seed or to release their seeds onto the ground, in order for the ground to be in the right chemical condition, it varies with different plants. They have to undergo fire. And some of them, the parent plant is burned up entirely, leaving room for the seeds to germinate without competition. In other cases like redwoods, the bark on the tree is so thick that it doesn't burn up enough to harm the tree.

So there are various fire adaptation strategies that plants have. And if you're living in the middle of a chaparral that has to burn in order to keep itself alive, it's going to burn. And the idea that we think we can come in and build in those areas and not figure out a way to co-exist with them is one of the many roots of this problem.

SARAH BECK

You seem to be in total disagreement with Smokey The Bear, I noticed.

KIM SORVIG

Well, a lot of people are having second thoughts about poor old Smokey The Bear.

I remember playing with my dad. One of my favorite games was I got to be Smokey The Bear and my dad would rescue me out of the tree.

Yeah. And yeah, I'm not totally against them, but the message of fire suppression has certainly been damaging and that's been discussed a lot, why we have such thick forests full of flammable fuels. And that's one of the directions I think we have to turn is to solving those problems rather than doing these bandaid solutions around individual houses.

[AD BREAK]

SARAH BECK

So you're talking about some event fuel buildup having to do with making fires more intense and uncontrollable.

KIM SORVIG

Yeah. And also making them run up the trunks of small trees and get into the canopies of the major forest trees, at which point they are the scariest thing you'll ever see if you're anywhere close to them. They also throw firebrands, I believe the last I read was somebody who was saying average was half a mile ahead of the fire. So clearing is not going to do a darn thing for those firebrands.



SARAH BECK

That's super scary.

I think we have experienced some frightening moments in the last couple of years and you're absolutely right. I think it's time for us to look at some new methodology.

So. We're futurists here at Garden Futurist. Even if we have to look far beyond the tools we currently have, what are the possible solutions? Are there some good answers to this?

KIM SORVIG

Well, actually I don't think we have to look so far into the future in the sense of what is technically available today. The question of whether people will do it and whether the policy makers will require it is really where the future comes into it.

Just wanted to say one thing about the clearing. If it actually worked, it might be a sacrifice that we were all willing to make. The problem is it doesn't. I documented, in that same article that you mentioned, several houses in San Diego that were owned by landscape architects. They were knowledgeable about the codes. They were compliant with the codes, at a cost of tens of thousands of dollars in one case, and both of their houses burned to the ground. So clearing is not enough.

There are forest health initiatives of various kinds: grazing, selective thinning, preferably by community forestry so that the small wood being taken out is put to some use, but also very carefully returning as much of the nutrients of the thinnings to the soil as you possibly can, because otherwise, again, you're depleting the soil and that risks going towards desertification.

SARAH BECK

Other than building materials, are there any ideas about planting design that could be really fire appropriate? Are there some creative and interesting ways for us to be thinking about the actual plants surrounding a house?

KIM SORVIG

Yeah, definitely. The first one is not to think the way that Firewise tends to think. Which, apart from all its other sins, is pushing us back towards the suburban lawn and lollipop kind of landscape of the fifties.

SARAH BECK

You don't love that aesthetic. Is that what you're saying?

KIM SORVIG

Yeah. That's out of fashion so I don't think it's too dangerous that people are going to embrace that warmly. But that is the net result. The first thing that these clearance-focused policies want to do is to get you back to a bluegrass lawn and a few trees that are so



isolated, that if one burns the other ones won't catch fire. That's not a planting design anybody wants.

My favorite idea about this actually is from Japan and from traditional Japanese gardens. If you look carefully at a cross section through the house and the Japanese garden outside, there's this wonderful hierarchical transition that goes from enclosed on all six sides where you're indoors to enclosed on three sides, which is called an engawa, we might call it a portales in Spanish speaking parts of the United States. It's a big porch that runs along the side of the building and is open to the elements.

When you first step off of the engawa you generally step onto paving in a traditional Japanese design and that extends for a certain ways, and then you start getting plants and gradually you get more plants and less stone until you finally merge into the forest or whatever is the most vegetated condition you have on your property.

That creates a defensible space like the firefighters want because the paved area is not going to be damaged and you can work in that area rather than having to specially cut out plantings and I think there's some possibilities for adapting that idea in areas that need to co-exist with fire adapted ecosystems.

One of the other problems that directly affects planting design is that many of the policies come with planting lists, you know, acceptable planting lists for fire zones. And all of them are ones that are fire resistant, so-called. Guess what that means? That means non-native and it means heavily irrigation dependent.

And so everything that we've been working for in terms of using native plants and reducing the amount of irrigation, which is even more important than the native plant aspect, in overview of things, all of that is being undermined.

SARAH BECK

Do you see new types of decision-making around land use and housing zoning as part of any more resilient future planning for living with wildfire?

KIM SORVIG

Well, yes and no, I don't have much of a crystal ball on politicians anymore. I kind of give up on that. But there's, there's a number of things that I think I see going on. One of them is actually fairly positive and that is that people in the younger bracket of people who are buying houses for the first time, or of that age, seem to be showing a very distinct preference for living in walkable cities, which means mixed use development. It means you're close to your work. You can walk to work, you can walk to the grocery store.

The physical layout of the city includes infrastructure. So you can walk sidewalks and bike paths and so on.



And that's a huge change, the demographic that is coming into power, and I think is drastically changing our whole viewpoint on ecological preservation or conservation. I think they're changing it for the good, and they may actually have more practical impact on this whole issue than all of us aging idealists that, you know, the ex hippies who didn't believe in cars and so on. Well, now the kids don't particularly want cars.

SARAH BECK

They don't even care about them.

KIM SORVIG

Yeah. They'd much rather walk they'd much rather ride public transportation or bike or whatever.

So that may pull half of the problem out, which is that, as you say, people are moving into these wildfire-prone areas. If people cluster in walkable cities, the problem could go away, in a sense.

SARAH BECK

So I love what you're saying though, about folks getting interested in living in denser communities and the idea of possible new construction. Oh your, your concept of the Japanese garden is wonderful. It makes me realize that if you had some dense housing in the center of a community, That dense housing could be designed with that very careful landscape design as well.

KIM SORVIG

Yeah. The sociology is always the difficult part, but I think that if we had a really strong urban planning tradition, which my friends among the planners will probably be annoyed with me, but compared to Europe, for example, planners have no authority here. They can suggest, they can maybe convince the community jurisdiction to enforce a few things, but to actually have something that would centrally plan, for example, you can use parks as firebreaks. Even if you're in a forested area, if you clear a park and put in ball fields and small gardenesque kinds of plantings and so on, what people like in their parks, if you put in wetlands, including the constructed wetlands that can process sewage, all of those will act to stop a wildfire spreading.

SARAH BECK

Well, it's tricky. Isn't it? When you think about just trying to communicate science, I mean, I was just in my own mind, imagining your community neighborhood controlled burn concept and imagining how you would have Smokey The Bear say, well only you can have a controlled but complex explanation for

KIM SORVIG

Oh, you can burn your garden biannually. Right?

SARAH BECK



It's very catchy. Exactly.

KIM SORVIG

Yeah, really. Well. It's good to have some fun about these ideas because people get understandably very attached to their environment. Not only what they actually own, but what surrounds them. And these are emotional choices that people are making.

We talked about this a bit before, that people actively choose to live in these wild areas because they're beautiful and they're satisfying. They're restful. There's good evidence that being in contact with nature in any way you can is good for your health. And yet by doing so, it's kind of the Heisenberg uncertainty effect here coming in, you change what you're observing you change just by being there. The whole ecosystem. And when that change gets large enough that it results in big wildfires, then there's some real hard decisions to be made.

I don't want to trivialize any of this. Nor to point fingers at the people who insist on living out there as you sometimes hear it referred to.

SARAH BECK

No, you make a really great point. And I think the fact that everyone is truly wanting to interface with nature and connect to plants, and we do live in in the West here. I mean, we do experience that wildland-urban interface, and it's a benefit to humans like you say, and everyone does care. But these are very difficult management conversations and I think a lot of ecologists are really coming to a place where they are saying that there's nothing really unmanaged anymore, at least here. We don't have any spaces that we can really consider protected wild land, completely hands off. Right?

KIM SORVIG

Well, that's debatable in a lot of different ways. To some degree, I think that mixes together places that are slightly touched by pollution or something that blows in from 3 miles away with places where we are actively cutting and managing and planting and harvesting and doing all those sorts of things.

It's a continuum. And. I've never quite been sure that the argument that there are places that are managed, in some sense, actually applies to all of our wilderness areas. For example, they're not managed in the sense that your back garden is. And I sometimes wonder about whether that logic really helps us to make better decisions.

I don't know. You can start fist fights in certain academic circles with that particular discussion.

SARAH BECK

So much controversy today.

KIM SORVIG



Yeah really, you thought this was a gardening show.

OUTRO

SARAH BECK

I'm Sarah Beck back with Adrienne St. Clair, Adrienne. That was a really interesting conversation.

ADRIENNE ST. CLAIR

Such a tough topic. I feel really conflicted about it. And I think that he portrays that difficulty really well in his discussion.

SARAH BECK

Tell me a little bit more about why there's a feeling of inner conflict when confronting this, especially from an ecologist's perspective.

ADRIENNE ST. CLAIR

There's this feeling of urgency that we all have when we're discussing this topic. And especially after last year, I live in the Pacific Northwest in the Willamette valley of Oregon, and we had what I can only describe as a very traumatic wildfire season last year. It came very close to urban areas and a lot of people's consciousness.

And so there's this sense of knowing that there's imminent danger, that we need to do something about it and not having the right answer for it. And I think that that was really captured in our discussion today.

SARAH BECK

I agree. I experienced a little of what you're talking about as well, being on the central coast of California and being under threat of evacuation a couple of times last year as well.

ADRIEN ST. CLAIR

His idea of having this transitional landscape from human habitation to transitional spaces and then into forest is incredibly compelling. And I think it really speaks to that part of us that wants to be part of the ecosystem as well, not have this fight against people and nature and understanding that people are part of nature. And how do we have those environments that we want to live within in a safe way, and be able to share that space with the forest that we also adore and love.

SARAH BECK

I agree. We as humans love to be near nature. We love to feel like we're connected to the coast or to be connected to the forest. And if that design solution can allow us to transition between those spaces in that wild land, urban interface. I think it's an amazing promise for the future and thinking about planning that way, it's really inspiring.

ADRIENNE ST. CLAIR



It is. He also had some pretty solid infrastructure solutions. It's combining those two answers of the infrastructure and the design elements. That'll probably be the answer that we find most successful.

SARAH BECK

And I think that's where that new technology and cutting edge research gets very relevant in this conversation. Because when we start talking about materials, that can be more resilient and non-toxic and appropriate. I think there's a lot there.

ADRIENNE ST. CLAIR

Yeah. That's why we're garden futurists. We've got lots to look forward to, right?

SARAH BECK

We do. Thanks so much, Adrienne.

ADRIENNE ST. CLAIR