**Transcript: The disappearing dunes of ‘Dune’**

Note: Episodes of Outside/In are made as pieces of audio, and some context and nuance may be lost on the page. Transcripts are generated using a combination of speech recognition software and human transcribers, and may contain errors.

**Nate Hegyi: Over a hundred years ago, giant sand dunes threatened to overwhelm parts of Florence, Oregon. The sand came from the Cascade mountain range. Over millions of years, it tumbled down rivers, and the wind blew it back onto the coast. Roughly fifty miles of folding, rolling, snaking sand. Around four times the footprint of Manhattan. Some dunes are taller than the Great Pyramid of Giza.[[1]](#footnote-1)**

MUSIC: Baska, Blue Dot Sessions

**Nate Hegyi: And that sand moved. It swallowed forests, buried roads and railways, engulfed houses, even entire villages. When writer Frank Herbert visited the area in 1957, he was stunned by the awesome power of the sand.**

*Frank Herbert (voiced by Nick Capodice):* ***“****Sand dunes pushed up by steady winds build up waves like ocean waves… every bit as devastating to property as a seismic wave.”*

**Nate Hegyi: But it wasn’t just the sand that inspired Herbert. The people that lived near these dunes, they were trying to stop the sand from moving. To fix the dunes in place. And to Herbert – it looked like they were winning.**

*Frank Herbert (voiced by Nick Capodice): "The small Oregon coastal town of Florence is the scene of an unsung victory in the fight that men have been waging since before the dawn of recorded history. The fight is with moving sand – with dunes."*

**Nate Hegyi: For Herbert, an idea had taken root… one that would eventually give rise to a science fiction classic… Dune.**

*Dune trailer part 1*

*Chani: “My planet Arrakis is so beautiful when the sun is low. Rolling over the sands, you can see spice in the air.* *The outsiders ravage our lands in front of our eyes…”*

**Nate Hegyi: “Dune” is the story of a desert planet. A world of sand and storms, colonization and deadly political intrigue.**

*Dune Trailer p2*

*Paul: He who can destroy a thing has the real control of it.*

**Nate Hegyi: “Dune” is now an enduring classic. It’s sold millions of copies, and has been adapted for film and TV a number of times. But the dunes that inspired Dune? These days, they are not so enduring. Because that project “to stop the moving sands?”**

MUSIC: What Does Anybody Know About Anything, Chris Zabriskie

**Nate Hegyi: It worked. Really well. Too well. Today – the dunes which inspired Dune… are disappearing. And now… a lotta people want them back.**

*Jesse Beers: … and pretty soon you're going to come up here and it'll talk about dunes on the sign and you won't see any dunes.*

*Patty Whereat Phillips:**It's it's one of those, what do you call it, like a Sisyphean task*

*Dina Pavlis: I guess that's hard is. Right? Like it's messy. The whole thing is messy, right? Like, because we've messed it up.*

**Nate Hegyi: Today on Outside/In, almost 70 years after Frank Herbert’s fateful visit, producer Justine Paradis follows in his footsteps… revisiting the dunes of Oregon… to learn what happened… AFTER they stopped the moving sands.**

MUSIC FADE

**Justine Paradis: When I started reporting this story, it felt like everyone was telling me there was one person in particular I should really be talking to. Dina Pavlis.**

*Justine Paradis: Hi! Hi.*

*Dina Pavlis: Okay, my dog's going to have to say hi to you.*

**Justine Paradis: So, I was delighted when Dina invited me to join her – and her German shepherd…**

*Justine Paradis: Hi, sweetie.*

*Dina Pavlis: Her name is Juno.*

*Justine Paradis: Juno. Hi.*

*Dina Pavlis: No jumping!*

*Justine Paradis: It's okay, it's okay, I like dogs.*

**Justine Paradis: …on a walk, to check out a stretch of dunes near her house.**

*Dina Pavlis: One of the deals I have with the neighbors is if you take people out, you don't have them advertise this location. So –*

*Justine Paradis: Sworn to secrecy?*

*Dina Pavlis: Yes. So you're sworn to secrecy. I'm taking you to my secret spot.*

*Justine Paradis: Okay.*

**Justine Paradis: Dina calls herself an amateur naturalist. But the more I got to know her, the more I came to see just how much of an ambassador for these dunes she is.**

*Dina Pavlis: … That's why I moved here, you know? It's the love of my life. The dunes, so. Well, my husband, I guess, is the love of my life. Don't let him. Don't tell him. I said the dunes were the love of my life. They're the second love of my life. Well, the third, because my daughter first. Husband, daughter, dunes. That order.*

MUSIC: Divider, CGI Snake, Chris Zabriskie

**Justine Paradis: In the mid-nineties, Dina was living in Seattle, working a stressful job – so stressful she got sick.**

*Dina Pavlis: I mean, it didn’t happen overnight, but Iended up in a wheelchair. I couldn't walk, and I had contracted an illness from the stress, and I realized that I needed to change my life.*

**Justine Paradis: Around this time in her life, she visited the coast, and experienced the dunes here for the first time. This was almost 30 years ago – and the feeling of being out on the sand – it was so wild, so evocative.**

*Dina Pavlis: And I said to my husband, I want to walk on these dunes every day, not just once every few years. And what do you think about moving to the coast? And he said, let’s do it.*

**Justine Paradis: Dina paused long enough to drop off her bags before driving to the Forest Service office, and signing up as a volunteer. Eventually, she’d write a book called *The Secrets of the Oregon Dunes*.**

*Dina Pavlis: We’re gonna have to do a bit of exploring to get through…*

**Justine Paradis: Dina wants to show me an example of pristine dunes – but we’ve got a bit of a hike ahead of us. We skirt around the edges of spring ponds.**

*Justine Paradis: That water is so clear.*

*Dina Pavlis: Isn’t that beautiful? So … on a warm day, almost warm enough today, but not really, I’ll sometimes come out with a bathing suit underneath and swim in some of the deeper ones.*

*[calling for Juno]*

**Justine Paradis: Until at last, we reach a place that really does look like the world of Arrakis – the world of “Dune.” And it is otherworldly.**

 *Dina Pavlis: I mean, the way I would describe this is we just have a vast, wide expanse of sand. Just open sand with dune after, like, rolling dunes. I would call this rolling dunes…*

**Justine Paradis: The dunes are *National Geographic* cover photo material. The hills look like ocean breakers (but the kind that wreck ships).**

*Dina Pavlis: To me, sand mimics water. It doesn't move like water, but it looks like water would move if you took a photo… so it should be wave after wave after wave from the ocean all the way, it would have been past Highway 101, three miles inland these dunes would have extended. You know, what is this? A quarter of a mile, maybe, width that we've been, you know, diminished to.*

MUSIC: Take Off and Shoot a Zero, Stunt Island, Chris Zabriskie

**Justine Paradis: We hike to a high ridge on the plain, a place where the dune is demonstrating its old power.**

*Dina Pavlis: So this area here, what you're looking at is a bunch of dead trees, right? We call it a ghost forest. Ghost trees.*

**Justine Paradis: The ghost trees are poking out of the sand at the crest of the dune. They appear maybe 10 feet tall – but really, they’re 60, 80 feet tall. They’re just almost totally buried by the sand.**

*Dina Pavlis: We're walking on tree tops right now. These are the tops of these trees.*

*Justine Paradis: Oh my god.*

**Because the dune is slowly, inexorably, swallowing the forest on the other side of the ridge.**

*Dina Pavlis: What’s happened is – this sand blows in, and as it blows in, it backs up here against this forest. This is called a retention ridge…. When it hits a 33 degree angle, roughly close to 33 degrees, it begins to slip down… And that slip face, you can see how it's starting to bury the tree. So this sand will fall down. It will bury the trees. It will build up again, slip down again, bury the trees more. So that is the dune process, how the dunes grow and expand.*

MUSIC FADE

**These moving dunes can be intimidating. The biggest hazards are probably dehydration and sunburns. But wander a little too close to a ghost forest, and you could find yourself falling knee-deep into a tree hole: an air tube created when the trunk of the tree decomposes. They’re also called “devil’s stovepipes.”**

**So, watch where you step.**

**Like Dune’s Arrakis, this is not a place empty of people. Humans have lived with the dunes for a long time.**

*Patty Whereat Phillips: There's a site actually not too far from here. Out in the dunes was a small village, and sometimes it's uncovered and artifacts are exposed, and at other times it is completely buried. And you would never know that a village had ever been there, because huge dunes will completely cover it.*

MUSIC: Vally, Blue Dot Sessions

**That’s Patty Whereat Phillips. She’s an enrolled member of the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, and she’s a language teacher for the tribes.**

**People didn’t set up their permanent villages in the dunes. The sand and the rivers just moved so much – so, they spent time in the dunes more seasonally.**

*Patty Whereat Phillips: Yeah, along some of the creeks that flow through the dunes, people had fish camps there. Every year. The moving sands didn't bother them. They would just come in and put up with it for a few weeks while they would set up and be fishing for migratory salmon and lampreys.*

**Every so often, when the sand buries a creek, the water pools into dune lakes. Some bigger and more stable, others smaller and ephemeral.**

*Patty Whereat Phillips: They almost make a chain. And in fact, it was such a good chain of, of lakes … that people would portage their canoes between lakes. So they’d paddle along the lake … then haul out the canoe, portage it to the next one, paddle, then haul out, portage… It's like, oh my God! I don't think I –*

*Justine Paradis: That’s hard!*

*Patty Whereat Phillips: Yeah, I don't think I could do it, but they did it.*

MUSIC SWELL AND FADE TO TONE

*Justine Paradis: And then, and then what happened?*

*Patty Whereat Phillips: Disastah!*

**Justine Paradis:**[**It’s a familiar story:**](https://www.oregonencyclopedia.org/articles/coast_indian_reservation/) **European settlers had a very different relationship to the landscape.**

**With the opening of the Oregon Trail and the draw of the Gold Rush – the number of white settlers in the area grew. Leading to conflicts over land, fish, and basic rights. The US government would eventually force their tribes onto a reservation – a reservation that it would gradually shrink before dissolving entirely. And as for the sand – when settlers looked at the dunes, they saw unused land.**

*Jesse Beers: You know, the, the Indians weren't properly utilizing the resources, quote unquote. And and I'm using bunny ears ironically there. But because the, the there is a real difference of view of culture… you know, they're not resources, they're relationships and relatives.*

**Justine Paradis:****That’s Patty’s colleague – Jesse Beers.**

*Jesse Beers: Uh, my name is Jesse Beers. [speaks in Siuslaw language] Siuslaw and Lower Umpqua person, from Siuslaw Territory. I am the cultural stewardship manager for the tribe, so, work in natural resources and cultural resources… They're one and the same thing for us.*

**Justine Paradis:****To settlers, land should generate value through farming, or through timber. They didn’t want temporary camps. They wanted permanent homes. So, all that movement of sand and water — that was frustrating, to say the least.**

*SFX: [getting into Jesse’s truck]*

**Justine Paradis:****We decide to head outside, to check out a spot where we can get a good view of the dunes, about 20 minutes away. So, Jesse and I climb into his truck. The cab smells sweet and woodsy. He’s got bundles of dried plants on the dashboard.**

*Justine Paradis: Smells like sweetgrass.*

*Jesse Beers:**Yeah. Yup. Got some sweet grass, some cedar, some white sage. And there’s some stickers there if you want a sticker.*

*Justine Paradis: “Smoke salmon, not cigarettes. Keep tobacco sacred. [fading] Reclaiming our medicine…”*

**Justine Paradis:****As we cross the river on Highway 101, we pass bright blue signs warning us that we’re entering the tsunami hazard zone. It’s a drizzly day, even more so as the road bends into the woods. Under the trees, it’s beautiful and almost overwhelmingly green and dim.**

 *Justine Paradis: [in background] this forest is so dense.*

**Justine Paradis:****But, every once in a while, we get a reminder: we are still driving on sand.**

*Jesse Beers: This is that spot that kind of constantly comes into the road here.*

*Justine Paradis: Oh, yeah.*

MUSIC: Chris Zabriskie, Oxygen Garden

**Justine Paradis:****We’re passing a dune, maybe 60, 80 feet tall. It’s a bit grown over. So, the only exposed sand is at the very bottom, almost like the dune is pointing out its foot underneath a grassy skirt. It looks like it wants to just let go and spill across the highway.**

*Jesse Beers:**Mmhm. And it constantly does. And uh, ODOT, uh, Oregon Department of Transportation is constantly removing sand from that area.*

*Justine Paradis: What do they use, like a tractor?*

*Jesse Beers: Yeah, like a big bucket. Depends.*

**Justine Paradis:****This isn’t the only problem area. Just north of town, there’s a grocery store with its back right up against a dune. And there, the dune feels like a hulking giant, trying to sneak up behind the store. The fence between the parking lot and the sand looks almost comically low. A few people told me they regularly see tractors hauling sand off the parking lot.****This is exactly the kind of thing settlers encountered here as they tried to put down roots.**

MUSIC FADE

*Justine Paradis: We’re arriving.*

*Jesse Beers: Mhm.*

*Justine Paradis: Oh wow, you can see the waves.*

*[turns off truck]*

*Jesse Beers: Sorry for the diesel, it’s probably kinda loud on your –*

*Justine Paradis: It’s all good. It’s the journey, you know!*

**Justine Paradis:****After we arrive, we climb a broad set of wooden stairs to a viewing platform, looking west towards the ocean. It’s beautiful. But the dunes, they don’t really look like dunes. They look like a forest.**

*Justine Paradis: Yeah, I mean looking at this, I'm actually kind of, um, kind of shocked. It's like, I had seen pictures of of the dunes and, like, they are, um, you can kind of see the extent of them looking off to the south here. Yeah. Um, but it's amazing how much beach grass and forest is covering these dunes.*

*Patty Whereat Phillips: Yeah. I mean, it looks a lot different than when Frank Herbert was here. What would that be, almost 70 years ago? Um, the dunes have changed a lot in a fairly short time frame.*

*Justine Paradis: They do not look like Arrakis.*

*Patty Whereat Phillips: [laughs] Definitely. Even back in the 50s, they didn't, because unlike Arrakis, we've always had water. You know, there are dozens of lakes and ponds... Uh, so it's always been a wet place. And we've always had tree islands, though granted to a much smaller extent. I mean, one of the words I find really fun in the Hanis language, kwich’aliiya, and kwich’aliiya is basically a clump of something different from what's around it. So that could refer to, like, a clump of beach grass, a tree island. They were used to refer to tree islands. So we've always, always had them, it’s just now the grassy and forested areas are much, much, much bigger than they were even in the recent past.*

MUSIC: Forner’s Churn, Blue Dot Sessions

**Justine Paradis:****In 1908, after failed attempts at farming in the dunes, President Teddy Roosevelt put much of them in the charge of USDA’s Forest Service. The Forest Service established a two-part planting regime: first, they’d plant a species called European beachgrass. Then, follow up with another species: Scotch broom, which is hardy shrub, with bright yellow pea-like flowers. This language can be loaded, but to be clear, both of these are introduced species, native to the coast of Europe and North Africa, and they are tough.**

MUSIC FADE

*Jesse Beers:… This material here, that's roots from European beach grass.*

*Justine Paradis: Oh yeah. Look at it. It's everywhere.*

*Jesse Beers: And it's –*

*Justine Paradis: It's strong!*

*Jesse Beers: Yeah, it's strong. And you can, um, when the sand is dry, it's wet right now. So it just breaks off where, where you pull on it. Kind of. But, um, when it's, uh, dry sand, you can actually pull this up in big mats and it'll kind of pull up. Um, and so it's laying a framework under there to stabilize the grass so it can spread. And it also does this, right, it stabilizes the sand enough that other plants can come in and… you're looking at the sand here, that there's tiny little buds of all kinds of different plants coming up.*

**Justine Paradis:****The Forest Service and private landowners planted grass here throughout the first half of the 20th century. Once it was stable, local tree species like pine and spruce started taking root.**

*Patty Whereat Phillips: If you look, you can see there's kind of a solid row of trees behind the beach and, uh, that's just behind what they call the foredune. The foredune did not used to exist. It’s a creation of the European beachgrass… and unfortunately that blocks the inland motion of sand. So, the ocean used to deposit more sand that could blow back into the dune field. And it’s blocked off now.*

MUSIC: Wonder Cycle, Chris Zabriskie

**Justine Paradis:****Without that cycle of new sand coming from the ocean, the dunes stopped growing and the landscape began to transform. Instead of rolling, wavelike dunes, the plantings caused some dunes to change shape. To get spikier and taller. Native species adapted for open, moving sand struggled. Plants like seashore bluegrass, lupines, and pink sand verbena. Insects like terrifyingly giant sandworms – just kidding, that’s a Dune joke. There’s also the Western snowy plover, an endangered shorebird which nests on open sand. Its eggs and its chicks are both the exact color of sand – because its entire strategy is based on blending in with the sand. Hiding from their main predators, which are ravens and crows. But these days, it’s a bit like plovers on a platter. Because they’ve only got small patches of sand in this increasingly forested landscape.**

MUSIC SWELL AND FADE

**Justine Paradis:****At the spot where we’re standing, the Forest Service estimates 60% of what was once open sand is gone. *Sixty percent.* Replaced by grassy meadows, wetlands, and evergreen trees.**

*Jesse Beers: …and pretty soon you're going to come up here and it'll talk about dunes on the sign and you won't see any dunes. You'll see forest, which is awesome in its own right. But it's not the dune ecosystem.*

*Justine Paradis:**What does it take to save the Oregon Dunes?*

*LONG PREGNANT PAUSE WITH BIRDS CHIRPING AND NERVOUS LAUGHING*

**Justine Paradis:****Did you hear that pause?**

*Patty Whereat Phillips: It's – [sigh] it's one of those, what do you call it, like a Sisyphean task or it seems like it, you know, because you can try and remove the beach grass, but it just comes back almost like it was before.*

MUSIC: Brevik Strand, Blue Dot Sessions

**Justine Paradis:****Today, the US Forest Service has reversed course. Now, they’re trying to help bring those native plant and animal species back. So instead of planting grass, they’re trying to pull it out. But that grass is a pretty tough opponent.**

MUSIC SWELL AND FADE

**BREAK**

**Justine Paradis:****This is Outside/In. I’m Justine Paradis.** **At one point in Frank Herbert’s *Dune*, Paul – the main character – develops a strategy about the desert resources everyone’s fighting over.**

*Dune Part II trailer: “He who can destroy a thing has the real control of it.”*

 **Justine Paradis:****But on the Oregon coast, destroying the dunes was actually pretty easy. Living with them is a lot harder. And getting the open sand back from the roots of European beachgrass is incredibly challenging.**

MUSIC: Silent Observer, Sarah the Illstrumentalist

**Justine Paradis:****If European beachgrass gets buried by sand – no matter. It will push up through it. If you burn it, it usually comes back stronger. Sometimes, the Forest Service sprays the beachgrass with herbicides. I saw a patch where this had been done – the grass looked dead – the clumps had an eerie silvery cast, like dry bones. But when I got closer, I saw green shoots pushing up from the sand.**

MUSIC SWELL AND FADE

**The beachgrass isn’t the only plant to contend with. There’s also the Scotch broom. It can be cut or pulled out. But it's hard work and a bit discouraging because the seeds of Scotch broom can remain viable in the soil for up to 80 years, one botanist told me.**

**It’s not like these efforts do nothing. They make a difference. But in a way, they’re treating symptoms, and not addressing the source of the problem.**

*Dina Pavlis: There is no new sand coming in here because it can't get here. So this process is in essence halted out here.*

**Justine Paradis:****This again is Dina Pavlis. About ten years ago, around 2014, a coalition formed to Save the Oregon Dunes. It’s a group of some unlikely allies. There are the environmentalists, citizens like Dina, plus the tribes, and the Forest Service. And then there are people who support the area’s** [**more-than-billion-dollar tourism industry**](https://assets.simpleviewinc.com/simpleview/image/upload/v1/clients/lanecounty/Marketing_Plan_FY24_5_16_23_compressed_18ba634f-cc2f-46a4-b115-c419c5268c01.pdf)**. And also… the dune buggy community.**

[[dune buggy sfx]](https://www.youtube.com/watch?v=T1hpaDBcywg)

**Justine Paradis:****Because one thing people love to do on the sand is drive over it in ATVs, “Mad Max” style.**

*Dina Pavlis: We may not all agree on how to use this area, but we all know that if we don't do anything, it's going to be gone. I mean, we're watching it disappear. And so they all got together and formed this group, the Oregon Dunes Restoration Collaborative, and they put together a three pronged plan…*

**Justine Paradis:****The first prong was ‘save the best.’ Protect the most pristine areas, like the ghost tree ridge at Dina’s secret spot.**

**Second prong: restore important spots, like popular hiking areas, or places that are home to endangered species like Western Snowy Plovers.**

**The third prong is maybe the most important but also the most hardcore. The forest and tall foredune right by the beach – they act like a wall, preventing the wind from bringing in more sand from the ocean.**

**This third prong is bulldozing the foredune and the forest there. Cutting trees, to save the dunes. They did do this on one beach and they had plans for more.**

*Dina Pavlis: So, they had all the approvals in place, um, all ready to go. And Baker Beach, which is north of here, was one of the areas and there were two more to the south. And then the coastal marten, which is a – looks like a weasel… was listed as threatened… we don’t really know where they are, once an animal is listed, anything that is potential habitat becomes protected.*

**Justine Paradis:****And with that, everything stopped. The US Fish and Wildlife Service had listed the adorable coastal marten as threatened on the Endangered Species List.**

**As the marten lost habitat further inland, it moved into these new forests cropping up on the coast. So even though these particular trees are threatening the entire dune ecosystem, now they’re protected. Bulldozing them down to feed the starving dunes is not an option anymore.**

*Justine Paradis: Well I can see, like, you’re disappointed, because you made this plan, and you’re trying to restore these processes, but like…*

*Dina Pavlis: Yeah, we finally had the approval… I mean, that's not easy, right? And so to do all that work and then, you know, and that we got the, that happened right before Covid. So it was like we were told, ‘no, you can't do that big part of the plan.’ And then Covid hit and it was like everything just came to a halt.*

 MUSIC: Red Star Stems, Elm Lake

**Justine Paradis:****In Frank Herbert’s *Dune*, the major powers are fighting for control of the desert on the planet Arrakis. Because this desert is the only place in the system that produces a resource called “spice,” a drug which makes all interstellar space travel possible. But some have a different vision for the planet. A dream of transforming the desert into a “paradise” – to slowly capture water and terraform the planet. Doing that, though, would also destroy the desert, and the production of the all important “spice.”**

MUSIC OUT / Dune clip

*Liet Kynes: “Arrakis could have been a paradise. The work had begun, but then the spice was discovered, and suddenly, no one wanted the desert to go away…”*

**Justine Paradis:****These are competing visions for what the planet should look like– much like what is happening here, on the dunes which inspired Dune.**

MUSIC RETURN

**Justine Paradis:****Conservationists often place different values on species or ecosystems. Some value the dunes for their fragile, unique ecosystem; others, because it’s super fun to ride around them in an ATV. In most contexts, wetlands are places people want to protect – but here, they can feel destructive. And the forest? It sounds like Dina wishes she could cut it down, despite the fact that it’s the last stand of an extremely cute weaselly mammal.**

*Dina Pavlis: And the thing I guess that's hard is. Right? Like it's messy. The whole thing is messy, right? Like, because we've messed it up. We've messed everything up, you know what I mean? But I think, like, well, what about the beetles? And what about, you know, what about the rare plants? And what about the other rare animals that are out here? Like, do we not care about them? So are we just going to let all of those disappear to protect one animal? You know? And I think that's the thing that's hard. I don't know the answer to that. And by, the way I'm saying it makes it sound like I have an opinion, but I honestly don't know what the answer is. You know what I mean? My opinion, probably. It probably sounds like I have an opinion because I care about this place so much, right? But I really don't know what the answer is.*

MUSIC SWELL

**Justine Paradis:****If the strategy of planting beachgrass + Scotch broom had been suggested today, in the world as it is now, things might have turned out differently. At least, Jesse Beers thinks so. Again, Jesse’s the cultural stewardship manager for the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians.**

*Jesse Beers: You know, if those things were happening today, like, we're one of nine federally recognized nations within the state we now call Oregon, and we would hold consultations with the Forest Service… about, you know, what are the, uh, hazards of this?... Is there mitigation for these things? Because these are the predicted outcomes according to tribal indigenous knowledge, like, you know, and so it'd be a whole different conversation than it was at the time it occurred.*

MUSIC SWELL AND FADE

**Justine Paradis:****But of course, it’s not like we can just go back to how it was before. First of all, the project was, in a way, successful. While I was in Florence, I was never trapped by giant piles of sand blocking the road. Plus, restoring even part of the dunes is a massive undertaking. The project encompasses more than** [**13,000**](https://downloads.regulations.gov/FWS-R8-ES-2018-0076-0007/attachment_53.pdf) **acres, across about 50 miles of coastline. This work is going to take a long time. Probably generations. Much like the centuries-long terraforming project on the planet Arrakis.**

MUSIC: Reappear, Chris Zabriskie

**Justine Paradis:****Dina herself has actually never read or watched any of the adaptations of *Dune.* But she’s basically living many of its themes.**

*Dina Pavlis: Science fiction has a way of somehow always predicting the future… yeah! It's really interesting to see that what is happening here is kind of was predicted and and really, in a way, what is happening here is what they wanted to happen, right? The goal was to create a forest… I mean, they knew what they were doing. They were smart about how they did it. It's just that now we have a different viewpoint. Right? … So what changed, I guess, is the viewpoint, because we see the outcome is not what we thought we wanted.*

*[wind and dune ambience]*

*Dina Pavlis: If you wanna walk for just 5 seconds this way, I can probably show you a few native plants…*

*Justine Paradis: Okay, yeah!*

*Dina Pavlis: Right here with these runners, this is the coastal or beach strawberry, coastal strawberry.*

*Justine Paradis: Do you eat the strawberries?*

*Dina Pavlis: Oh my god they’re so good. This year they’ll be early, we’ve had a lot of rain… [fade out]*

MUSIC SWELL AND FADE

MUSIC: Rainbow Inside a Cloud, Sarah the Illstrumentalist

**Nate Hegyi: Before you go… if you are inspired to see the dunes of Dune for yourself – Justine, you have a travel tip to share, right?**

**Justine Paradis: Yes! This is kind of applicable to anywhere you travel – but go to the public library. The Siuslaw Public Library in Florence is home to the Herbert Collection – a collection of books which Frank Herbert was reading at the time he was writing Dune. And if Dune has ever meant something to you – I will tell you it is great fun to browse the collection.**

**Nate Hegyi: Oregon Public Broadcasting by the way has also reported on this collection – we’ll put a link in the show notes.**

**Justine: Special thanks to Meg Spencer, library director, who showed me the collection. Special thanks also to Kevin Mittge, and to Armand Rebischke and Kegen Benson of the Forest Service for help fact-checking this episode.**

**And special thanks to our colleague Nick Capodice, who lent his voice to bring Frank Herbert to life. Nick is the co-host of the wonderful podcast Civics 101.**

**Nate Hegyi: This episode was reported, produced, and mixed by Justine Paradis. It was edited by Taylor Quimby and Katie Colaneri. Our team also includes Felix Poon. Rebecca Lavoie is NHPR’s Director of Podcasts. Music in this episode came from Sarah the Illstrumentalist, Elm Lake, Chris Zabriskie and Blue Dot Sessions. Outside/In is a production of NHPR.**

MUSIC SWELL AND FADE

1. Manhattan: 22.8 sq miles. 50 x 1.5 miles (average) = 75 sq miles.

Great Pyramid of Giza: 481 feet. Tallest dunes = 500 feet. [↑](#footnote-ref-1)