(Re)Turning to the River, a podcast from California State Parks

Episode 1: Where Does a River Begin?

[river sounds]

> **Naomi Ortega-Singh**:
>
> *[water and bird sounds]*
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> Water is really our cleansing. And not just, like, showers, not just washing stuff off, but like, when it comes to mental, emotional, like your spiritual grief and that and actually through mourning as well.
>
> And it can't just be sitting water. It needs to be running water; that's to carry away the grief.
>
> But, yeah, so that's my first real, like, explanation of why we cherish water, why we take care of it.

[theme song plays - multiple instruments, river sounds, bird song]

Dominic Papia: My name is Dominic Papia, and you're listening to the first episode of *(Re)Turning to the River,* a podcast from California State Parks focused on watershed stories. In this season, we'll share experiences from scientists, farmers, artists, and many other people who call the San Joaquin River Watershed their home. In the episodes ahead, you'll hear the voices of three community storytellers: Daniela Morales, of Clovis and Amanda Kaminsky and Jesus Valdez of Merced.

(Re)Turning to the River aims to provide space for people to either reconnect to well-known watersheds, or discover them for the first time, in their hearts, minds, and memories. We hope that the stories you experience in the following episodes will inspire you to get out there and explore what it means to be a member of a watershed community.

Our exploration of these stories of the San Joaquin River Watershed begins in the snow-capped peaks of the Sierra Nevada mountain range, down through the mid-elevation forests that are home to the largest trees in the world, and into the cultural and **agri**cultural powerhouse of the San Joaquin Valley, and concludes where the river meets the Pacific Ocean in the Sacramento-San Joaquin River Delta.

Now, you might be asking, what exactly is a watershed?

Well, simply, a watershed can be seen as an area which is bounded by a collection of landforms, like hills and mountains, that channels water into creeks, streams, and rivers. These waterways not only flow through wild landscapes, but also through our communities, and through us, on their

journey to outflow points which include groundwater basins, reservoirs, estuaries, oceans, and so on.

You can think of watersheds sort of like nesting dolls, with larger watersheds defined by bigger rivers containing the watersheds of smaller rivers and creeks.

[river and bird sounds]

A river like the San Joaquin has many large tributaries, or rivers that flow into it, including the Merced, Tuolumne, and Stanislaus Rivers, to name a few. Each of these tributaries, in turn, have their own smaller tributaries, and so on down to the smallest creeks and seasonal streams.

The San Joaquin River is upwards of 350 miles long which makes it the second longest in California. Its watershed covers 32,000 square miles and spans more than 12,000 feet in elevation. Do you drink water or eat food that came from the San Joaquin River Watershed? Chances are, you do! The San Joaquin is the primary source of water for over 30 million Californians and produces over half the state's agricultural output and is a major contributor to the nation's food supply.

In fact, everyone on Earth lives within a watershed, even you! Do you know what watershed you live in? Do you live in the San Joaquin River watershed? Well, even if you don't, you might be able to think of a river, creek, or other body of water near your home - chances are, this body of water is an important part of your home watershed. Everything we do inside our watersheds has a powerful impact on the environment and the water itself. These impacts affect all of us, human and non-human, who live in the watershed.

Naomi Ortega-Singh:

[water and bird sounds]

We should be mindful of how we treat our water. But it's not just for us. Like there's a whole whole life cycle, different ecosystems, different things that need it. So we have, you know, our, our relatives and for us as indigenous people, when we say relatives, it's not just your aunt, cousin, uncle - it is the plants, it is the birds, it is the ground animals, it is the trees.

It is everything that is living, that is our relative. And we can't take away their source, you know, of their survival and we have to, we have to protect it.

Dominic Papia: That was Naomi Ortega-Singh, CEO and founder of California Intertribal Alliances. We heard from her as well at the top of the episode and, as her quotes suggest, water, and the landscapes it flows through, are more than just mere physical features - they're histories,

relationships, and experiences. They're journeys through joy, through grief, and through healing. They're journeys into what it means to be you and what it means to be me.

And all journeys need a beginning, so where's ours?

[transition audio - rendition of theme song]

[blustery wind]

Dominic Papia: Sealevel. Pacific Ocean. The equator. The most direct heat from the sun begins evaporating seawater. It rises no more than a mile above the surface forming a narrow band of moisture that makes its way across the ocean to North America's west coast.

Is this where a river begins?

12,000ft on the North Slope of California's Banner Peak. Moisture from the Pacific Ocean forms grey, billowy clouds that cloak the Sierra Nevada in a cold, expectant shadow. A single snowflake falls, the first of the season.

Is this where a river begins?

Warmer than average winter temperatures. Sunlight on snowpack. Snow becomes water and the first drop touches exposed stone and is joined by millions of others in the flow downslope toward Thousand Island Lake.

Is this where a river begins?

9,800ft. Gravity. The path of least resistance. Physics guides flow toward the outlet from the lake as water takes its first tumble into the canyon of the Middle Fork of the San Joaquin River.

Is this where a river begins?

[blustery wind]

Dominic Papia: So, where does a river begin, really? Take a moment and visualize the exact point a river becomes a river. Not the general area, but the exact moment in space and time. Do you see it yet? Well, neither do I. It can be hard searching for the true beginning of something. Look close enough and you'll start to notice that a beginning is just a part of an ongoing process on which you chose to focus.

You may remember seeing figures about something called the water cycle in school science lessons - our drop of water, well, it's a part of that cycle. This means, in simple terms, that it was once a snowflake; and that snowflake, condensation in a cloud; and that condensation, seawater in the Pacific Ocean; and that seawater, water in a river that flowed from a mountain.

But we'd need a lot more podcast to dive fully into those types of topics! For now, we'll start our journey with that snowflake.

[transition audio - rendition of theme song]

Andy Reising:

So, results. Today, our snow survey resulted in a 28in of depth and 11in of water content. So, we gained a little bit from last month. Last month we were about eight inches here of water content. That really translates, if we melted this all down, to about a foot of water that's sitting here on this meadow. The averages for today: 47% of average for this date and 45% of the April 1st average at this location.

Dominic Papia: Around one hundred miles northwest of Banner Peak, Andy Reising, Manager of Snow Surveys and Water Supply Forecasting, and his team, just made the March 1st snowpack reading at Phillips Station along Highway 50, located within the American River Watershed. The California Department of Water Resources, or DWR, helps to manage a snow survey program where they conduct nearly 1,000 snow surveys at numerous locations throughout California each year.

Andy Reising:

Yeah. So our, our program, we, you know, we talk about the California Cooperative Snow Surveys Program. We partner with many agencies to get the snow course data measured on a month-to-month basis so that we can make our best forecasts. The San Joaquin is one of the 24 basins that we'll forecast for and so I say April 1st is a really important date as far as our typical snow peak. That's where we get the most measurements in a month, and that's about 25. And then, you know, January is early - we get maybe five. But over a five month period, probably about 90 measurements made with our cooperative program. And statewide, probably about 900 or maybe a thousand, snow course measurements in a year.

Dominic Papia: The measurements made in the winter of 2025-2026, like too many winters in recent memory, show below average snowpack. David Rizzardo, Manager of DWR's Hydrology section, puts this year's numbers in perspective in a brief to the media after the March 1 reading.

David Rizzardo:

So looking at statewide numbers a year ago, the water content was close to 19in. Compare that to where we are now here in 2026, about four inches less than we were last year, 15.1in of water content statewide. That's only about 57% of the April 1 average, or where we hope to be at our peak. And about two thirds of, 66% of, average to date.

We really haven't had the snowpack this year.

Dominic Papia: The DWR team is responsible for interpreting these snow survey numbers and translating them into a prediction of water availability into the rest of the year. In normal years, April 1st marks the peak snowpack but, in low snow winters like the winter of 2025-2026, the majority of the snowpack may have already melted. Andy describes how normal precipitation numbers don't always have to equate to deep snow.

Andy Reising:

Most of the storms this year were not as cold as we would have liked, and so it didn't produce snow when it rained, you know, in the higher elevations where we need it. So while our water - our precipitation index - is saying about 100%, our snowpack is, you know, 50%, 60% of average. So in that way and how it fell and the temperatures that we experienced and the types of storms we received, there's a discrepancy there. And that's not always the case. Many more times than not they're similar. Right? We've got this much rain and we've got this much snow. But this year we're seeing more of a dichotomy.

The rain has been good. It's just, it's come off early. So we've had higher flows in earlier months. And the hope is that we would keep a lot of that in the snowpack until we need it, after April 1st.

So currently most, if not all, reservoirs are at average or above average where they are typically at this time of year. That's a good thing. But is it too early with all this runoff that we're having in March? And end of February?

[transition audio - rendition of theme song]

Dominic Papia: Snowmelt is a major source of freshwater for the state of California. I visited Calaveras Big Trees State Park along the North Fork of the Stanislaus River, a major tributary of the San Joaquin, to learn a bit more about the importance of snow and snowmelt for the plant and animal communities of the mid-elevation forests.

Lillie Oravetz:

I'm Lillie Oravetz. I'm State Park Interpreter II at Calaveras Big Trees State Park.

[forest sounds - multiple birds including Mountain Chickadee and American Robin]

We are in a mixed conifer forest. But really the reason why people come here and why we're called Calaveras *Big* Trees State Park, is because of the Giant Sequoias. So we have two groves of them, and groves are just a cluster of sequoias that usually live together. So we're in the North Grove right now, and then there's the South Grove, which is on the other side of the river, which is why I said the river kind of cuts the park in half.

That has significantly more trees. The North Grove has just over 100 Giant Sequoias. The South Grove has over 1,000 and that's a very special preserve as well.

Sequoias really need a lot of water. They'd like a really big snow pack so the water can slowly melt into the ground. They get water year round. And down in the South Grove, there are year round creeks.

Dominic Papia: In addition to giant sequoias, there are other kinds of life, including humans, that rely on the snowmelt waters flowing through Calaveras Big Trees State Park.

Lillie Oravetz:

We have a wet alpine meadow, and that is this big area that just absorbs water like a sponge and holds onto it for a long period of time, as well as it filters it, it cleans it out, and local communities further down the mountain do use that water. So it keeps it intact, but it also purifies it, and it's just good ecological diversity. We have a birding program in the spring through the fall, and the guy who leads it, he's a docent. He always takes people to the meadow, because you see different birds in the meadow versus in the heart of the forest. So it's good to have that diversity of ecosystem to support a diversity of animals.

Dominic Papia: Although most visitors have their eyes set on *BIG* things, interpreters at Calaveras Big Trees also bring attention to some of the smallest creatures in the watershed through a “Creek Critters” program designed for kids.

Lillie Oravetz:

[river and bird sounds]

So we're talking like dragonfly nymphs and caddisfly larva, as well as fish and maybe the occasional tadpole. And the idea is, “hey, there are critters in this water. Isn't that cool? Also, did you know that a dragonfly starts out looking like this and then metamorphosizes into something else? That's amazing!” But they also teach kids that certain organisms are very vulnerable to pollutants and erosion and whatever else might be in the water. So if we can find those, then we know we have a healthy creek, and therefore probably a healthy watershed.

[transition audio - rendition of theme song]

Dominic Papia: Climate change, and the worsening periods of either drought conditions or severe storms that it can cause, is making the prediction of snowpack harder with each passing year. Andy talked more with me about the impacts he sees from climate change.

Andy Reising:

Yeah. Some of the risks and dangers we see with climate change that is occurring - it's not obvious year to year. You know, as we talked earlier, it's not something that can be predicted or seen on a year-to-year basis, but over the long term, you know, we're seeing or we're expecting that the snow line will rise on average over time. So the snow won't fall as low as it has in history with the warming temperatures. Other things, you know, we've got with, with, higher temperatures come earlier, drying of the soils, trees drier, more risk for fires. We've seen that in the last 10-15 years. Massive fires throughout the state.

That has major impacts as far as how the water falls, how it runs off, whether it, you know, percolates into the ground, makes it to ground water, comes off as runoff when we don't need it, things like that.

Dominic Papia: Back at Calaveras Big Trees State Park, Lillie describes how these climate change impacts have changed precipitation patterns and put giant sequoias at risk.

Lillie Oravetz:

I've only been here about four and a half years, but I work with people who are also locals, who grew up here, and they do say the snow pack is less. Now, that's a mix of the rain patterns and snow patterns being different due to climate change, but also just the snow level is going higher and higher up the mountain. So, in times like this year, I was talking to one of the staff who's been living here for decades, she said that in years past, we would have gotten snow when instead we got rain, because the snow level is just increasing with increasing temperatures. So the precipitation might not be too bad year to year, but the snow quantity is changing.

All Giant Sequoias, naturally, are found between about 4,000-8,000 feet elevation. So they're used to snow, they're used to cold; heat waves really stress them out. And if there's long periods of drought, or maybe there's not the snow pack, they're used to - the lingering water - they get very dry, very stressed. And if they're dry and stressed, they're more likely to burn from a fire. And fires have also increased because of changing weather patterns.

The fact that fires exist at all is a natural part of California ecosystems. Giant Sequoias are very adapted to fire, but the intensity of what we're seeing now is what's different, and that is human caused, and it's in part due to our impact negatively upon the watershed.

[transition audio - rendition of theme song]

Dominic Papia: Throughout the writing of this episode, California’s winter snowpack situation became even more dire. The state did not receive the late-season snowstorms that would have brought the percentages closer to average. In fact, the sustained above-average heat in March melted the majority of the state’s snowpack. On April 1st, DWR did another snow survey at Phillips Station and recorded ZERO inches of snow depth. That reading represents the second lowest on

record. The state as a whole was at 18% of average. Although total precipitation is near normal, most of it fell as rain, not snow. This means that, while reservoirs are near full, they're not expected to be recharged with late spring snowmelt. At the reading, DWR's Director, Karla Nemeth, bluntly stated that the water we have now is what we have and we'll have to manage it as is until at least October. This year, and as we move into future years where water availability will be increasingly impacted by climate change, water conservation becomes ever more important.

> **Andy Reising:**
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> Conservation is a way of life. You know, we are in an era where climate is playing a - playing a role in, in water quantity and when it comes. And so, you know, it's just going to have to become part of our, our lifestyle to, to consider conservation and saving water where we can, you know.

[transition audio - rendition of theme song]

Dominic Papia: As our drop of water continues down the watershed from the mid-elevation, it doesn't flow completely freely into the San Joaquin Valley. For hundreds of miles through the San Joaquin Valley, from Bakersfield to Stockton, nearly every major river that flows out of the Sierra Nevada is interrupted and captured behind dams, forming reservoirs, or artificial lakes made by humans. And for many of these rivers, it's not just one dam. As the San Joaquin River winds its way through thousand-foot-deep river canyons, it also has to navigate these barriers to its natural rate of flow. The San Joaquin River has four dams in the upper reaches of the river alone. About 20 miles northeast of downtown Fresno, our drop of water, which originally melted from snow on the north slope of Banner Peak, now finds itself held, against the force of gravity itself, behind the last of these major barriers: Friant Dam. Our drop now joins trillions upon trillions of others in the 520,000 acre-foot reservoir named Millerton Lake. With more than 40 miles of shoreline when full, Millerton is not even one of the five largest reservoirs in the state.

California's dams and reservoirs serve many purposes. In addition to providing flood control, dams can also help to generate hydroelectric power, and regulate the distribution of water for municipal, industrial, and agricultural use. The California State Water Project, which derives some of its water from the San Joaquin River Watershed, delivers clean drinking water to 27 million Californians and 750,000 acres of farmland. The project has undoubtedly helped shape the California we know today.

But the legacy of dam construction in California is not without criticism. There are around 1,400 dams in California and each has its own impacts on local ecosystems and tribal livelihoods that have relied on those ecosystems since time immemorial. For example, due partly to dams and the dramatic water engineering in the state, California has lost more than 90% of its historical wetlands and riparian woodlands, or woodlands near water features. This loss has consequences that go beyond just the loss of the natural spaces themselves. These consequences include not only the destruction of critical habitat for native plant and animal species, but also the elimination

of vital ecosystem services that wetlands provide, namely water purification, groundwater recharge, and mitigation of flood and climate impacts.

The water story in California is a complex one and requires complex solutions. There is an ever-growing need to widen the scope of our concern when making important decisions that affect our precious and varied landscapes. As we strive to build a more sustainable future, what might decision-making at the watershed scale look like? What might a world look like in which we truly consider the wellbeing of all our watershed neighbors, human and non-human alike, and see their flourishing as our own?

[transition audio - rendition of theme song]

Dominic Papia: In the episodes to come we will continue with water's journey down the San Joaquin River. We'll see how the San Joaquin's waters support the health, inspiration, and livelihoods of millions of people living within the watershed. We'd love to have you with us along the journey.

Water means so much to so many and it's never just something outside of us, but something that is literally a part of us all. Water hydrates. Water heals. Water gives us hope.

Naomi Singh:

[water and bird sounds]

I just sat there and I felt myself just, like, slowly creeping to the water. Like, I started with my feet. I started with my toes. I started just, "okay, let me move down more". And then finally I found myself just sitting, like it was lap deep, and I was sitting in the water and it was so cold.

I started recounting everything and I was like, I was, I was going in on me. I was like, "you have kids. You're being self-", you know, all the things that people say about that I was telling myself. And I just started crying, like crying and crying. I was just sitting there crying and that was just my my take in the moment, and I stopped and I was like, "yeah, no, this can't happen again".

I just dove under. I just dove under and I lay there for a bit. I held on to one of the branches and I just stayed underwater for a minute. My whole body was so cold, numb. I sat up and then felt the - you know when you feel the breeze it's so cold. I went back under and now it was warm and so it was soothing.

But in that moment, I opened my eyes and I'm like, I'm going to regret this. And I wanted to see. And I could just remember the little gold flakes, and I remember looking under the water, and I seen the gold flakes, and I could see the reflections of the water from the sun, and it was just like waves. And I just stopped and I was like, "that's so beautiful".

I've never seen it. I've never seen it unless I scoop it up and you get the mud in your hand and you see all the little gold flakes. I never seen it settled underneath the water undisturbed, and the little reflections that came off of it. I remember that forever.

It just brought me back like something so simple as just sitting here, so, like, unbothered.

I want to be like water. I want to be unbothered like water.

I want to be that unbothered - unbothered, and so beautiful.

[theme song plays - multiple instruments, river sounds, bird song]

Dominic Papia: *This has been (Re)Turning to the River, a podcast from California State Parks focused on watershed stories. Thank you so much for listening. If you enjoyed this podcast, please like, subscribe, and share it! To learn more about the people, the places, and the stories featured in this episode, please visit us at parks.ca.gov/ReTurningToTheRiver.*

We hope to see you again soon, returning to the river.