

Bottling water without scrutiny

COMPANIES TAPPING SPRINGS AND AQUIFERS IN CALIFORNIA WITH LITTLE
OVERSIGHT

Story by Ian James | Photos by Jay Calderon, The Desert Sun | March 8, 2015

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Piping water from a national forest

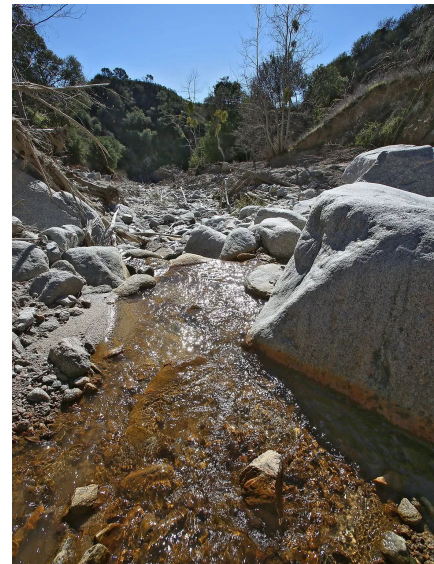
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Miles from the nearest paved road in the San Bernardino National Forest, two sounds fill a rocky canyon: a babbling stream and the hissing of water flowing through a stainless steel pipe.

From wells that tap into springs high on the mountainside, water gushes down through the pipe to a roadside tank. From there, it is transferred to tanker trucks, hauled to a bottling plant and sold as Arrowhead 100% Mountain Spring Water.

UPDATE: Groups seek fast ruling in suit to halt Nestle water use



(Photo: Jay Calderon, The Desert Sun)

(<http://www.desertsun.com/story/news/environment/2015/11/30/groups-seek-fast-ruling-suit-halt-nestle-water-use/76585344/>)

Nestle Waters North America holds a longstanding right to use this water from the national forest near San Bernardino. But the U.S. Forest Service hasn't been keeping an eye on whether the taking of water is harming Strawberry Creek and the wildlife that depends on it. In fact, Nestle's permit to transport water across the national forest expired in 1988. It hasn't been reviewed since, and the Forest Service hasn't examined the ecological effects of drawing tens of millions of gallons each year from the springs.

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Even with California deep in drought, the federal agency hasn't assessed the impacts of the bottled water business on springs and streams in two watersheds that sustain sensitive habitats in the national forest. The lack of oversight is symptomatic of a Forest Service limited by tight budgets and focused on other issues, and of a regulatory system in California that allows the bottled water industry to operate with little independent tracking of the potential toll on the environment.

In an investigation of the industry's water footprint in the San Bernardino National Forest and other parts of California, The Desert Sun found that:

- No state agency is tracking exactly how much water is used by all of the bottled water plants in California, or monitoring the effects on water supplies and ecosystems statewide. The California Department of Public Health regulates 108 bottled water plants in the state, collecting information on water quality and the sources tapped. But the agency says it does not require companies to report how much water they use.
- That information, when collected piecemeal by state or local agencies, often isn't easily accessible to the public. In some cases, the amounts of water used are considered confidential and not publicly released.
- Even as Nestle Waters has been submitting required reports on its water use, the Forest Service has not been closely tracking the amounts of water leaving the San Bernardino National Forest and has not assessed the impacts on the environment.
- While the Forest Service has allowed Nestle to keep using an expired permit for nearly three decades, the agency has cracked down on other water users in the national forest. Several years ago, for instance, dozens of cabin owners were required to stop drawing water from a creek when their permits came up for renewal. Nestle has faced no such restrictions.
- Only this year, after a group of critics raised concerns in letters and after The Desert Sun inquired about the expired permit, did Forest Service officials announce plans to take up the issue and carry out an environmental analysis.

A growing debate over Nestle's use of water from the San Bernardino National Forest parallels other arguments in places from the San Geronimo Pass to Mount Shasta. And those debates have turned more contentious as a fourth year of drought weighs on California's depleted water supplies.

Statewide, the bottled water industry accounts for a small fraction of overall water use. The U.S. Geological Survey has estimated that roughly 1 percent of the water used in the state goes to industrial users, with bottling plants being a small portion of that. Pumping from wells can pull down groundwater levels, and drawing water from springs can reduce the amounts flowing in streams.

Bottled water companies in California are typically subject to environmental reviews only when a permit for a new project triggers a formal study. Otherwise, the impacts of bottling plants on creeks and aquifers often aren't scrutinized by government agencies.

In the San Bernardino National Forest, Nestle insists its bottling of spring water isn't causing any harm. Water from Arrowhead Springs has been tapped and sold for more than a century. The company says it is complying with all the requirements of its expired permit in the national forest and has been informed by the Forest Service that it can keep operating lawfully until a new permit is eventually issued. The company also says that at all of the springs where it draws water, it monitors the environment and manages its water use to ensure "long-term sustainability."

The Forest Service and Nestle have had a cooperative relationship over the years. In 2003, the Old Fire swept through the area and destroyed portions of Nestle's pipeline. A month later, deadly floods and mudslides thundered down from the mountains. As Nestle workers rebuilt the pipeline on the mountainside, Forest Service officials oversaw the work. But the agency didn't require a new permit at the time, and in the years since hasn't examined whether draining away spring water poses problems for the creek and the forest.

Two former Forest Service employees interviewed by The Desert Sun say they think it's wrong that the agency for decades hasn't studied the impacts on the national forest. During the drought, they say, there is now an urgent need to protect the water sources on public lands and reexamine Nestle's bottling operation.

"They're taking way too much water. That water's hugely important," said Steve Loe, a biologist who retired from the Forest Service in 2007. "Without water, you don't have wildlife, you don't have vegetation."

Standing on a roadside several miles from the springs, Loe motioned to the peaks in the distance, and to the steep mountainside where a natural rock formation shaped like an arrowhead marks the location of Arrowhead Springs. Beneath that arrowhead, hot springs bubble from the ground at a long-closed hotel that once attracted celebrities in the 1940s. In nearby Strawberry Canyon, cold springs gush from the mountain and into the pipes for bottling.

"When you take water from the springs that are the source of those waters, you dry up these canyons," Loe said. "And they're the most important habitats that we have."

An avid hiker and outdoorsman, Loe can rattle off a list of animals that need the water in Strawberry Creek: frogs, insects, salamanders, and birds such as Bell's vireo and willow flycatchers.

An increasingly rare species of native fish, the [Santa Ana speckled dace](http://pisces.ucdavis.edu/content/rhinichthys-osculus-subspecies-2) (<http://pisces.ucdavis.edu/content/rhinichthys-osculus-subspecies-2>), used to survive in Strawberry Creek. Then, after the wildfire and floods of 2003, the little fish disappeared from Strawberry Creek and other nearby streams. Scientists who surveyed the area concluded that the devastating fire and flooding had wiped out the populations.

Loe said he suspects the bottling operation contributed to their demise by leaving few spots with enough water for them to survive through the summers. "It makes everything in the stream more vulnerable having all of that water removed."



(Photo: Jay Calderon, The Desert Sun)



(Photo: Jay Calderon, The Desert Sun)

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Nestle disputes that and says its use of water didn't harm the fish. But Loe said siphoning off water that could otherwise flow in the creek poses clear threats that need to be fully studied, particularly in light of the drought and climate change.

Loe first raised his concerns in an email in September to a list of federal and state officials and others, including a Nestle Waters manager. He pointed out that Nestle's permit "has long expired and needs to be reissued," requiring an analysis under the National Environmental Policy Act (NEPA). He suggested a meeting.

Soon afterward, Loe met with the Nestle manager and laid out his concerns. Five months later – after he and others sent additional critical letters to the government and after The Desert Sun posed questions about the expired permit – Forest Service officials met with Loe and told him they have started to evaluate the reissuance of the expired permit.

While pleased that the agency acknowledged the issue, Loe still has concerns. He wants to see an environmental study prepared by an independent third party. He also wants a review of Nestle's use of water from Deer Canyon Springs in the national forest. He said it's time for immediate measures to put more water into the streams while those environmental reviews, which can take years, are carried out.

"Because of the drought emergency, they need to go beyond just doing the NEPA," Loe said. "I would like to see the Forest Service and Nestle agree not to take water until they know if it's OK to take water. This hasn't been studied in a long time."

Ultimately, Loe said, protecting the flows of Strawberry Creek will likely require putting limits on how much water can be piped out.

"To keep taking water is just so risky if you care about the long-term health of that stream," he said. "We should be sitting down with Nestle and we should be saying, 'We've got to do something here.'"



A creek habitat

Strawberry Creek cascades down from the mountains in a rocky canyon filled with live oaks, white alder trees and poison oak. Often, the stream is narrow enough to jump across. Running alongside it is a 4-inch stainless steel pipe supported on metal scaffolding.

"That's Arrowhead's pipe coming down right there," said Gary Earney, a retired Forest Service employee, standing on the bank of the creek and leaning on a walking stick.

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Earney used to administer permits for the Forest Service, and he said the agency has never done an assessment of how the taking of water affects the creek. Back when the water pipes were installed in the early 20th century, he pointed out, no one conducted environmental reviews. Now, he said, it's long overdue.

"I'm not opposed to the taking of water. But the water removed needs to be surplus to the needs of the national forest," Earney said. If the water is needed for wildlife, he said, it should instead be diverted at the national forest's boundary after it has flowed through the creek.

Determining how much water is needed for a healthy ecosystem, he said, will require a thorough study. And that hasn't been done in all these years, he said, because the Forest Service lacks sufficient funding after repeated budget cuts and has a large backlog of expired permits.

"It's a national problem," Earney said. "I think it's just improper management and poor funding."



(Photo: Jay Calderon, *The Desert Sun*)

Walking among boulders, Earney said that if more water were allowed to flow in the creek, it would provide for plants and animals and would also sink into aquifers at the base of the mountains.

"We need to ensure that we have enough water to sustain the forest's health," Earney said. "I think we should look at whether or not it's a more beneficial use of this water to be bottled and sold in small bottles, or to be allowed to go down and drain off the forest and recharge the groundwater."

While Nestle's expired permit hasn't been scrutinized in nearly three decades, some other water users have been required to cut back. In the mid-2000s, as part of a regional review, the Forest Service went through the permits of hundreds of cabins on land in the national forest and reexamined their use of water from creeks. In Barton Flats, for instance, dozens of cabin owners were told they could no longer draw water from Barton Creek; instead, they would have to use wells or install tanks and truck in water. Cabin owners spent thousands of dollars putting in tanks.

After years, review of Nestle water permit to begin
(<http://www.desertsun.com/story/news/2015/08/21/years-review-nestle-water-permit-begin/32162533/>)

"Some of these people had been using the water with water rights for 80 years, and it was very costly to make the change. Nestle takes more water from the stream in one day than the total of all of those cabin owners in a year," Loe said. "It's just so unfair."

"We made the little people do the right thing," he said, "and we're not making the big people do the right thing."

Amanda Frye, a community activist who lives in Redlands, said she finds the lack of oversight by the Forest Service disturbing, particularly during the drought.

"The U.S. government is just giving away our natural resources to an international corporation," Frye said. "I think that's really wrong."



A big backlog, other priorities

Employees of the San Bernardino National Forest say they oversee about 1,500 permits for various uses of national forest lands, ranging from power lines to cabins. About 360 of those permits are expired, and officials say they are gradually working on the backlog.

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"The Nestle permit is just one of those 360. It's not like we've purposely held that one out," said Al Colby, a public services staff officer who oversees permits. "The thing is that Nestle continues to pay the fee that they were charged back when the permit was still valid."

Because of that, he said, the expired permit's conditions have remained in effect. "Basically as long as they're paying the fee that was established before it expired, the permit is enforceable."

The national forest has continued to collect a permit fee of \$524 from Nestle Waters each year.

The permit, granted to Nestle predecessor Arrowhead Puritas Waters, Inc., was signed in 1978. An amendment said it would "expire and become void" (<https://www.documentcloud.org/documents/1513931-forest-service-arrowhead-permit.html#document/p7/a206188>) in 1988.

The permit allows the company to maintain more than 4 miles of water pipelines in the national forest, as well as horizontal wells that tap into the springs on the mountainside. Records show the water is drawn from a dozen spring sites, and flows through separate pipes before coming together in the single pipe that runs along Strawberry Creek.



(Photo: Jay Calderon, *The Desert Sun*)

Forest Service officials said that in the 2000s there was talk of renewing Nestle's permit but that other priorities took precedence. Over the years, they said, those other priorities have included wildfires, forest thinning projects, a new rail line through Cajon Pass, and updating permits relating to Southern California Edison.

In Southern California and elsewhere, backlogs of expired permits developed as the Forest Service underwent repeated budget cuts in the 1980s, 1990s and 2000s. The agency has also been burdened with the growing costs of fighting larger and more destructive wildfires, cutting into the amounts of money available for activities such as reviewing permits.

Jason Collier, a lands and recreation specialist who handles special use permits, said he didn't know how much water Nestle has been using. He pointed out that when the permit was issued in the 1970s, reporting the volumes of water wasn't one of the conditions.

"If that tool was in the box," he said, "then we could exercise it."

Collier recalled that reissuing Nestle's expired permit was "part of the discussion" at one point – until the additional railroad track in Cajon Pass came up.

"Then the discussion became, 'There's a backlog in Long Beach (port) and we can't get our shipping containers moved. You work on the railroad,'" Collier said. "That's our reality, right or wrong."

Asked why the Forest Service reviewed the permits of more than 700 cabin owners while leaving Nestle's alone, Collier said that he couldn't speak to how the priorities were set but that the agency took up the cabin permits as part of a region-wide review.

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A STREAM OF BOTTLES
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Now that the Forest Service is considering Nestle's permit, Colby said one of the agency's first steps was to request files from the company.

"We need whatever information they have, studies that they have about the area, whatever permit files that they've got," Colby said. "Once we look at all that information, plus our own permit file, that'll help us figure out the scope of what we need to be doing."

Reissuing the permit likely will require studies to answer questions about how the water would flow if it weren't being extracted from the springs, said Robert Taylor, the forest hydrologist. Some of those questions, he said, include where a drop of water would otherwise go, whether it would in fact reach the creek, and how long its journey down the watershed would take.

Taylor said he didn't have specifics of the amounts of water used from Arrowhead Springs because the information is collected by another agency tasked with that responsibility. Taylor said he hadn't looked at Nestle's use of water from Deer Canyon Springs either.

"We have a lot to do. There are a lot of expired permits. We get direction from the regional office and the Washington office on how to handle our levels of permits," Taylor said. "I have 660,000 acres of the national forest to work on, and I'm just one guy. When it becomes a priority, I'll deal with it."

Chapter Five

BUYING WATER

Chapter Six

CALLS FOR OVERSIGHT,
TRANSPARENCY

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A stream of bottles

Nestle SA, headquartered in Vevey, Switzerland, is the world's largest food company. Nestle CEO Paul Bulcke has made headlines warning that water scarcity poses a major threat to food security around the world. Another influential figure on Nestle's board of directors is former U.N. Children's Fund Executive Director Ann Veneman, who was U.S. secretary of agriculture from 2001-2005 and oversaw the Forest Service under President George W. Bush.

The company has invested heavily in expanding its bottled water business. Subsidiary Nestle Waters, headquartered in Paris, is the world's biggest bottled water company. And its division Nestle Waters North America is the largest bottled water producer in the United States, with a total of 29 plants in the U.S. and Canada and net sales of \$4.1 billion last year.

Five of its bottling plants are located in California – in Sacramento, Livermore, Los Angeles, Cabazon and Ontario.

A display case in the lobby of the Ontario bottling plant shows early 20th century glass bottles for one of the many brands Nestle has purchased over the years: Arrowhead.

The company says water has been sold under an Arrowhead brand since 1894. Nestle has records showing that water has been collected from some of the springs it now uses since at least 1906, one year before the government in 1907 created the San Bernardino National Forest on lands that had previously been known as a forest reserve.

The story of how water bottling developed alongside the hot springs and resort is told in the book "Arrowhead Springs: California's Ideal Resort" by Mark Landis. According to the book, a sanitarium was first built at the hot springs in 1864, and by 1909 the Arrowhead Springs Company was formed to start bottling and selling water. For years, water was transported by rail in a "Water Train" of tank cars to a bottling plant in Los Angeles. Then, in the 1960s, trucks began hauling water to bottling plants.



(Photo: Jay Calderon, *The Desert Sun*)

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Nowadays, water from Arrowhead and other springs arrives by tanker truck at the Ontario plant, while water from Deer Canyon Springs flows through a pipeline. Nestle says that nowhere else in the country does its spring water come from sites on national forest lands. The plant also uses purified groundwater to produce the brand Nestle Pure Life.

Inside the plant, machinery hums. A stream of empty bottles soar past on an air-driven production line. Filled and capped, the bottles emerge on conveyor belts ready to be sold.

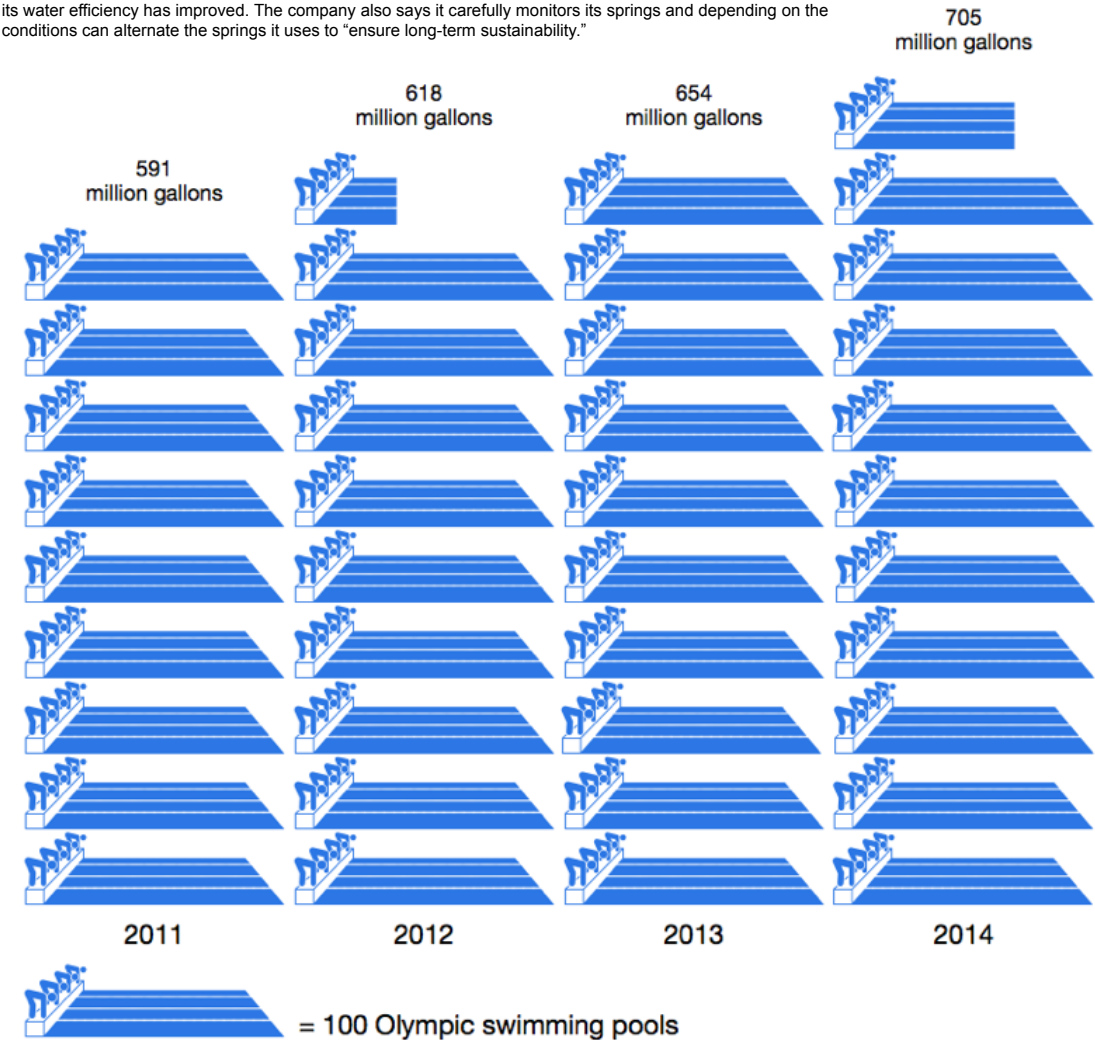
David Thorpe, Nestle's western supply chain director, touted the company's water efficiency, saying it takes about 1.3 liters of water to produce one liter of bottled water – much less than soft drinks or beer.

"We're very, very efficient water users," Thorpe said. "One of the things we're constantly working on is how to become more efficient."

Statewide, Nestle Waters used a total of 2,164 acre-feet of water from all sources in 2014, said Larry Lawrence, Nestle's natural resource manager. That's about 705 million gallons – enough to irrigate roughly 700 acres of farmland, or keep two golf courses green, or fill 1,068 Olympic-size swimming pools.

Nestle’s water use for bottled water in California

Nestle Waters North America provided figures summarizing its total water use in California during the past four years. The water comes from springs and other sources. Nestle says that while its overall water use has increased, its water efficiency has improved. The company also says it carefully monitors its springs and depending on the conditions can alternate the springs it uses to “ensure long-term sustainability.”



Note: One Olympic swimming pool holds approximately 660,000 gallons of water. All gallons figures have been rounded to the nearest million.
Source: Nestle Waters North America
Chart: Robert Hopwood, The Desert Sun

The company's water use in the state has been growing along with its sales of bottled water. Figures provided by Nestle show that between 2011 and 2014, during years of extreme drought, the company's water use in California increased 19 percent. Lawrence said, however, that the company carefully monitors its springs and adjusts the volumes of water drawn from different springs in response to the amounts flowing.

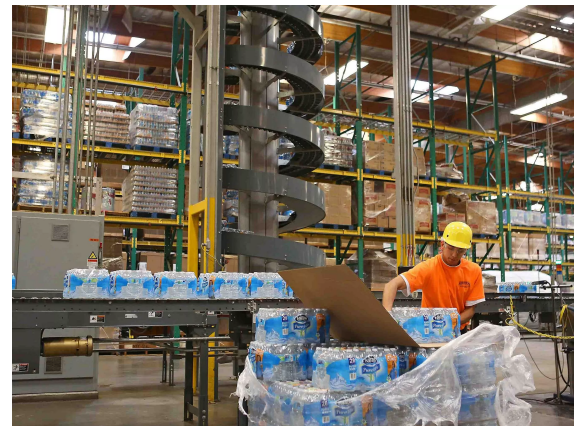
In Southern California, the company can tap spring water from six locations in Riverside, San Bernardino, San Diego and Inyo counties, and has been drawing water from five of those sites recently. The springs' names are printed on Arrowhead bottles: Southern Pacific Springs, Long Point Ranch, Palomar Mountain Granite Springs, Deer Canyon Springs, Arrowhead Springs and Coyote Springs.

"Everything is operated sustainably," Lawrence said. He said the company has been closely observing all of its springs as the drought has left less water flowing in many areas.

"We watch those flows and we manage our water take to those conditions," he said. "We look at environmental conditions around our sources as well to make sure that there's no impacts other than drought impacts that we see naturally occurring."

There are no regulations that would dictate drought measures for water bottlers and other industries in California. Lawrence said the company has its own internal procedures for managing springs during the dry years.

"We study our springs, and if we're seeing a spring slowdown in flow or being impacted in a way that we think is possibly from the drought itself, we may choose to take water from a different source or go to a source that's further away from our factory," Lawrence said. "We will restrict the flow from sources based on our assessment of the environment around the spring sites."



(Photo: Jay Calderon, *The Desert Sun*)

The company's water system at Arrowhead Springs is largely "self-regulating," Lawrence said, because it is gravity-fed and there is no pumping involved. He said Nestle uses the spring water that naturally flows from the ground, and the amounts change based on fluctuations in the springs' flow.

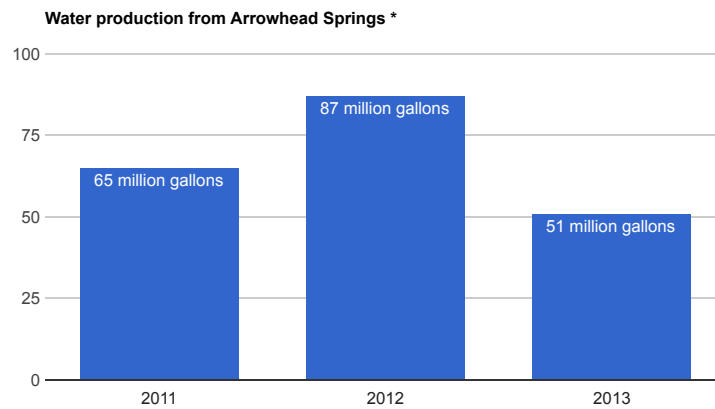
And while the company's overall water use had increased, Lawrence said Nestle has reduced the use of water from some springs, including Arrowhead, to avoid relying too heavily on them.

"We can harvest what's available," he said. "And on really wet years we certainly can't take all of the water that's available, and on dry years, we're pretty careful about what we do take."

The company says it bottled nearly 25 million gallons from Arrowhead Springs last year, on average about 68,000 gallons a day. That was down from about 27 million gallons during 2013.

Arrowhead Springs

Nestle Waters files reports on the amounts of water used from 12 springs in Strawberry Canyon.



* Nestle Waters says it doesn't bottle all of the water extracted from the springs. The company says it bottled 83 acre-feet (27 million gallons) from the springs in 2013 and 76 acre-feet (25 million gallons) in 2014. Nestle says some of the water collected at the springs flows to the water system of the long-closed Arrowhead Springs hotel under an agreement with the owner. The company says it also releases some of the water back into the watershed, both near the springs and near the hotel.

Note: Data for 2014 were not available. Figures are rounded to the nearest million.

Source: San Bernardino Valley Municipal Water District

Chart: Robert Hopwood, The Desert Sun

Those amounts are only a portion of the water drawn from the springs by Nestle. The state water code requires that groundwater pumping data be collected in four Southern California counties, and a group of local water districts gather and verify the information. Records filed with the San Bernardino Valley Municipal Water District show a total of 51 million gallons of groundwater used in 2013. But Lawrence said a portion of that water is delivered to the old Arrowhead Springs hotel under a contract with the owner, and some of the water is also regularly released back into the canyon, both near the springs and near the hotel.

Over the years, the Forest Service has authorized maintenance work such as replacing deteriorated valves and pipes. In a 1993 letter, then-District Ranger Elliott Graham wrote that because the company had kept paying the annual fee and had complied with regulations, "the permit is deemed valid until a new Special Use Permit is reissued."

Lawrence said Nestle has sought to renew the expired permit several times and is ready to work with the Forest Service.

"We just have to work through the process," Lawrence said. He said Nestle is waiting for word from the Forest Service on the next steps and would welcome "a science-based study of the watershed."

"We're hoping just to work through whatever biological process or study of the environment that they want to work with us on," Lawrence said. "We think we can certainly support our conclusions that our business is not harming the environment."

Buying water

Sales of bottled water have been booming for years in the United States. Last year, preliminary figures from the Beverage Marketing Corporation showed about \$13 billion in bottled water sales in 2014, an increase of 6.1 percent from a year earlier.

Bottled water plants are regulated by the U.S. Food and Drug Administration, and in California they are also regulated by the state's Department of Public Health.

The state's list of 108 licensed bottled water plants includes companies that sell individual-size bottles as well as larger jugs for home and office delivery. They range from CG Roxane, which packages Crystal Geyser Alpine Spring Water at plants in Weed and Olancha, to DS Services of America, which bottles brands such as Alhambra to Sparkletts at eight plants across California.

One small company, Borrego Springs Bottled Water, sells water pumped from the desert aquifer in San Diego County. Other companies with bottled water plants include Niagara Bottling, Coca-Cola, PepsiCo's Bottling Group, and supermarket companies such as Safeway, Vons and Ralphs.

Bottled water in California

California has a total of 108 bottled water plants that are licensed by the state Department of Public Health. They include companies that sell individual bottles as well as larger bottles. The plants shown on the map may bottle spring water and/or purified water from other sources. Click on the yellow markers to see the companies that operate bottled water plants. Bottling companies can also be located by using the drop-down search bar below the map.

Map

About the map

Some of the companies that bottle water in California

- Nestle Waters North America, which sells brands including Arrowhead and Nestle Pure Life, has five plants (in Sacramento, Livermore, Los Angeles, Cabazon and Ontario).
- DS Services of America, which offers a delivery service and brands ranging from Alhambra to Sparkletts, has eight licensed bottling plants (in Blythe, Brawley, Lakeside, Santa Ana, Los Angeles, Fresno, Milpitas, and Sacramento).
- PepsiCo's Bottling Group, LLC, which produces Aquafina bottled water, has four plants (in Sacramento, Hayward, Fresno and Riverside).
- Coca-Cola, which produces Dasani bottled water, has licensed plants in Downey, San Leandro and Anaheim.
- Niagara Bottling, LLC, has four licensed plants, including two in Stockton and two in Ontario.
- Crystal Geyser Water Company has plants in Calistoga, Bakersfield, and Valencia, and plans to begin bottling in Mount Shasta.
- CG Roxane, LLC, which produces Crystal Geyser Alpine Spring Water, has plants in Olancho and Weed.

Company — All — ▼

Sources: California Department of Public Health and the U.S. Geological Survey
Data analysis: Ian James and Lynne Stephenson
Map: Robert Hopwood

To meet growing demand, companies have opened more bottling plants over the years. And some, such as Nestle, have sought out new springs.

"One of the things that we're constantly looking for is additional water sources that meet our requirements. They're relatively rare," Lawrence said. "The drought year is a great year to go look for water because if it's sustaining its volume during a drought, then it's a nice, stable source."

People often contact Nestle offering to sell water from new sources, Lawrence said. The vast majority of those springs don't meet the company's requirements. But occasionally they do.

Since 2005, Nestle has been bottling water from Deer Canyon Springs in the San Bernardino National Forest under an agreement with the Cucamonga Valley Water District. Nestle approached the water district about the possibility, and the agency wasn't using water from the springs at the time.

"We weren't pulling from this canyon source because it was yielding such a small amount of water," said Kristeen Farlow, a spokeswoman for the Cucamonga Valley Water District. The water district owns rights to use all of the "subsurface and surface flows" from the canyon.

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"Because it's spring water, we sell that water to Nestle at a premium," Farlow said. "We opted to sell them that spring water at a premium so that way we could then take those funds and reinvest."

That deal, along with gradual rate increases paid by customers, has helped boost the water district's operating revenues, which grew from \$44.7 million in 2005 to \$83.4 million in 2014.

It's not clear how much Nestle is paying the water district, or how much the agency has benefitted from the deal. A copy of the agreement that the water district provided to The Desert Sun was heavily redacted to remove references to the price paid and other details. The water district cited an exemption in the state's public records law for "trade secrets."



(Photo: Jay Calderon, The Desert Sun)

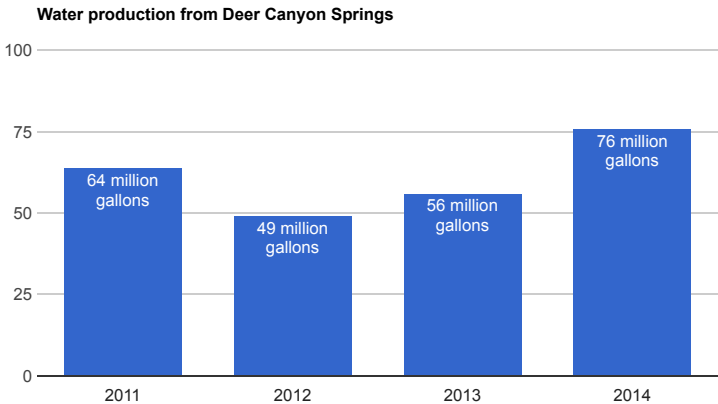
The Cucamonga Valley Water District (<http://www.documentcloud.org/documents/1658160-cucamonga-valley-water-districts-agreement-with/#document/p2/a206181>), which supplies water to more than 190,000 customers, says the earnings from Nestle have allowed it to keep customers' rates lower than they would otherwise be. Just how much isn't clear.

Lawrence said that Nestle and the water district have built "a great public-private relationship." As part of that relationship, Nestle has provided financial support for the Frontier Project, a state-of-the-art building next to the water district's offices that showcases water- and energy-saving construction. Nestle has also sponsored cleanups of creeks.

At Deer Canyon Springs, meanwhile, records show the amounts of water flowing to Nestle's bottling plant have increased during the drought. The Cucamonga Valley Water District, which sells water under an agreement with Nestle, reported 76 million gallons drawn from Deer Canyon last year, up from 56 million gallons in 2013 and more than in the previous two years.

Deer Canyon Springs

Nestle Waters uses Deer Canyon Springs as a source, purchasing water under an agreement with the Cucamonga Valley Water District.



Note: All gallons figures rounded to the nearest million.
Source: Cucamonga Valley Water District
Chart: Robert Hopwood, The Desert Sun

Loe said he's troubled that Nestle is removing water that would otherwise flow through the canyon and provide for wildlife. He said it's urgent that the Forest Service take a hard look at whether the use of Deer Canyon Springs is taking a toll on the forest.

Others have raised concerns about Nestle's use of water from a desert spring in Millard Canyon in Cabazon, where the company runs a bottling plant on the reservation (<http://www.desertsun.com/story/news/environment/2014/07/12/nestle-arrowhead-tapping-water/12589267/>) of the Morongo Band of Mission Indians.

Reports filed by the tribe with the state show that 598 acre-feet of groundwater was pumped in Millard Canyon during 2013, and 3 acre-feet of water was diverted. That translates to 196 million gallons a year, enough water to fill nearly 300 Olympic swimming pools. It's not clear how much of that water was bottled.

It also isn't clear how diverting that water may be affecting the desert spring and the oasis around it. The Morongo tribe has not granted requests by The Desert Sun to visit the area. The tribe and Nestle, however, insist they are managing water sustainably and causing no environmental harm.

"Morongo strictly monitors springs in Millard Canyon as part of its extensive reservation groundwater monitoring program," Michael Fisher, a spokesman for the tribe, said in an email. The tribe says it also uses surface water and flows from its wastewater treatment plant to replenish the aquifer. "Morongo and Nestle continue to carefully monitor and limit the amount of water used by the plant to ensure the springs remain healthy."

Calls for oversight, transparency

Disputes over bottled water have flared and led to lawsuits in California, Texas, New Hampshire, Maine and Michigan, among other places.

In parts of Northern California, some bottling companies have changed their plans in the face of strong local opposition. Nestle Waters proposed in 2003 to build a plant in the town of McCloud, at the base of Mount Shasta. Six years later, after a legal fight over the local government's agreement to sell water to Nestle, the company announced it was scrapping the plan and would instead use a plant in Sacramento.

Plan to bottle water hotly debated in Mount Shasta
(<http://www.desertsun.com/story/news/2015/03/07/bottled-water-shasta-snowmelt/24447449/>)

In 2009, Crystal Geyser Water Company announced it would build a bottling plant in the Northern California city of Orland. But facing opposition and a court battle, the company canceled the plan in 2011.

Crystal Geyser has since bought a vacant bottling plant previously run by Coca-Cola on the outskirts of the city of Mount Shasta and says it will start bottling sparkling mineral water and other drinks later this year.

A group of residents say they're deeply worried about the effects on wells and a nearby spring, and are demanding an environment impact report – a step that Siskiyou County officials say isn't required in this case. It's the sort of argument that has sometimes emerged in fights over bottled water: whether or not agencies are meeting obligations under the California Environmental Quality Act, which requires a review when a project involves significant environmental impacts.

California also has other laws intended to protect the flows of streams. The state Department of Fish and Wildlife, for instance, must be notified of any project that would "substantially divert or obstruct the natural flow." However, the state agency doesn't have any program to monitor the potential impacts of bottling plants or other businesses on streams.

In that regard, the water laws in California and other western states generally provide fewer protections than those of much wetter states in the Great Lakes region, said Noah Hall, a professor who specializes in environmental and water law at Wayne State University in Detroit. In Minnesota, for instance, Hall said state officials respond proactively to relatively dry periods and reduce the amounts of water that permit holders are entitled to use.

"They don't wait for the overpumping to harm the stream during the low-flow period," Hall said. Not so in California, where Hall said the law is essentially "about taking the water out of the stream and using it."

"The law in most western states regarding water was written more than a hundred years ago when states wanted to see streams dried up to promote economic development," Hall said. If people want to see greater protections for streams, he said, "it's time to change the law."

One significant change came last year as Gov. Jerry Brown signed legislation that for the first time established a statewide framework for managing groundwater in California. Those measures, which will take years to fully go into effect, give the state new authority

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to step in when necessary to prevent depleted aquifers from declining further. Primary responsibility for oversight, though, will remain with local agencies.

And it's often local agencies that, when they are required to, collect data on the quantities of water used by bottling plants. That information isn't tracked in a comprehensive way by the state. In some cases, the information is kept confidential. In other cases, it isn't collected at all.

"It would be really great if there was public information about how much water these plants actually bottled, and where it came from," said Peter Gleick, a water researcher who is president of the Oakland-based Pacific Institute. In order to know whether bottled water is being produced sustainably, he said, people need access to information about the sources tapped and the amounts bottled.

"There's so much angst statewide about water in general, and a lot of it is the result of a lack of transparency about who's using water to do what, from where," Gleick said. "I'm a fan of public transparency about water use. The other issue, of course, is there is a question about converting a public good into a private product."

While researching the bottled water industry several years ago, Gleick requested records from the state and obtained data from license applications showing how much water bottling companies anticipated using.

The state Department of Public Health has said recently, however, that it doesn't "authorize, regulate, or track" the amounts of water used by bottled water plants.

The state also doesn't keep a breakdown of water use by other sectors, such as golf courses or breweries or factories. Morrie Orang, who manages the water use unit of the Department of Water Resources, said a detailed state breakdown of water use by different industries is on his "wish list." He said the agency plans to create a survey to send to businesses asking them to voluntarily provide information.

The way water is managed in California, bottled water plants are subject to the same simple rules as anyone else: As long as a company owns a right to water or buys it from someone who has a right to it, it can keep on pumping.

What's missing from that system, Gleick said, is oversight and monitoring.

"The real issue is nobody's really paying attention to the local consequences on groundwater and streams," Gleick said. "There's a real difference between saying, 'We know there's no problem because we're watching,' and 'We don't know if there's a problem because nobody's watching.' Those are different, and all too often with our environmental challenges, we learn that nobody's really watching. And that needs to be fixed."

In the San Bernardino National Forest, the newly announced plan to take up the matter of Nestle's expired permit comes as the Forest Service is developing a nationwide policy to manage groundwater on national forests.



(Photo: Jay Calderon, The Desert Sun)

The agency released a [proposed directive \(http://www.fs.fed.us/geology/groundwater.html\)](http://www.fs.fed.us/geology/groundwater.html) for groundwater management in May, saying in a summary that "there is a clear need for the Forest Service—in cooperation with the States—to take an active role in managing all water resources on these lands."

The proposal, which is to be finalized later this year, would create new procedures for permits that involve using groundwater. It would also require that the potential impacts of groundwater withdrawals be evaluated, and that the quantities of water drawn from springs be measured and reported to the Forest Service.

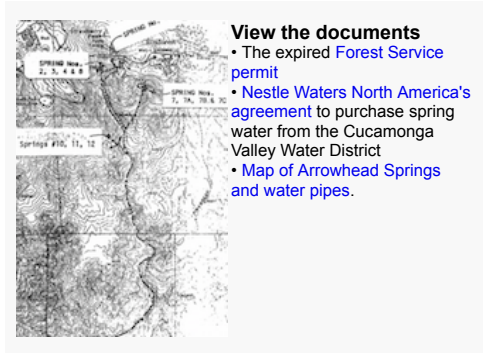
It's not clear how those changes, if adopted, might affect Nestle's use of spring water from the national forest.

In Strawberry Creek, downstream from Arrowhead Springs, state and federal wildlife officials are considering whether to reintroduce speckled dace to help save waning populations of the fish.

According to Nestle, the flows cascading down through the canyon are sustaining a healthy creek. As the Forest Service considers reissuing a permit, the biggest question it will need to answer is whether that is in fact true.

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