On a lovely October afternoon in 2015, I decided to take a nice hike along the Guardian Rock Trail in Whiskeytown National Recreation Area with my dog. It was when my dog wanted to take drink out of Lower Clear Creek that I felt like something was out of place. I looked around and noticed that I was surrounded by a plant that looked like any old roadside tarweed, but it was taller and occupied just about 100% of the footprint of an access road. I examined it closer and began to realize that this was something new to me—and the smell was something I definitely would have remembered before. It stunk like a vapor rub.
In a panic, I sent photos out to botany friends far and wide. It was definitely a challenge, but the first to figure it out was Julie Nelson, who is the Forest Botanist for Shasta-Trinity National Forest. Her email began with, “Bad news—I think it is Dittrichia graveolens, a.k.a. stinkwort; an invasive that’s on the move.”

I am pretty good at my weeds, but this one I’d never heard of before I started to do some research and ran across a professional poster in which someone called it “Chuckyweed—because it is out of control and just won’t die!” My panic had now escalated to a freak out. I didn’t want to have to deal with something referred to as Chuckyweed!

Stinkwort is originally from the Mediterranean and was first reported in Santa Clara County in 1984. It has spread exponentially in California and, by 2012, it was present in 36 out of the state’s 58 counties. It was first detected in Shasta County between 2005 and 2006, and it was first realized that it might be a problem here in 2010. Stinkwort is a high priority species because it can be highly invasive, poisonous to animals when eaten, and cause a rash on contact with bare skin. This species is an annual, but tremendously prolific and mobile; a single plant can produce 15,000 sticky fluffy seeds that blow around in the wind or can adhere to clothing, boots, paws, and fur. It flowers and produces seed between September and December.

National Park Service staff immediately began to map the infestation and survey for more. The pattern was incriminating; it definitely appeared to have been introduced or spread with rock material that was used for an access road in a fish habitat restoration project. During these surveys, I saw seeds blowing around, a group on horseback riding through it, and employees associated with the dam and utilities driving over plants to access their facilities. The worst was that, at the time, the Park had the Kennedy Memorial Drive road improvement project, which had equipment staged in flowering stinkwort. All of these activities were undoubtedly spreading it, and people were probably taking it home.

I am not sure if it was a rally cry or a loud whine that got people to help, but once the word got out that this was a weed that needed to be stopped, everyone pitched in. The Park hand pulled and bagged as much as we could around facilities and even had some help from the agencies like the Bureau of Reclamation, the Western Area Power Administration, and Lower Clear Creek Services District. The interagency
team responsible for the fish habitat restoration was immediately responsive and began to investigate other locations outside Whiskeytown where that road base material was used and they discovered the plant flourishing in disturbed sites south of the Park. We called the Shasta County Department of Agriculture and they were a great help. Working with such a proactive group of collaborators from so many different agencies really made me feel fortunate here in Shasta County.

Gibson: Stinkwort

There are numerous examples from around the globe of how non-native and invasive plant species such as stinkwort can have severe adverse consequences to land managers: they can alter fire regimes, affect nutrient cycling and soil chemistry, harm livestock, reduce agricultural productivity, and change water availability. They can also impact visitor experience—who wants to picnic in puncture vine? Or hike through a stinky patch of plants that causes contact dermatitis?

If you don’t know what stinkwort looks like, walk out your door and look around in abandoned lots, around parking lots, disturbed areas, or along your street. It is often overlooked, but once you develop an eye for this species, you will see it everywhere. It can grow about 2.5 feet tall, has little yellow flowers, and its identifying characteristics include being sticky and foul-smelling.

Controlling stinkwort can be tricky because of the timing: you have to treat early and often. Hand pulling before the plant begins to produce seeds is critical. The plant is shallow rooted, so it is easy to pull up, but please place plants in a plastic bag and dispose in the trash before the plants begin to flower. The bagging part is critical because flowering plants that have been pulled and left on the soil surface without being bagged have actually matured and produced seed. Hence the name Chuckyweed.

Also, it’s best to treat before the plant goes to seed because you can make the infestation worse, or spread the plant to new locations by having the seeds glom onto you while you work. Mowing can provide some control, but doing so while it is flowering and seeding would be a disaster. Mowing before flowering can work, but it can regrow after cutting and a second mowing may be necessary late in the season.

In the evolution of problem-solving, all those involved in the Park’s infestation began to focus on prevention: halting the spread of this plant and any new introductions in the future. Prevention is critical in this realm of work because stopping introductions before they occur is like practicing good hygiene. These practices include keeping vehicles and equipment clean, cleaning weed whackers and mowers before moving on to a new site, and making sure you don’t have weed seeds on your shoes and clothing—and that goes for pets, bikes, and horses. You know that little sticker that gets in our socks, shoe laces, and all over our pets? Well, I guarantee you that it is in your backyard because it hitched a ride. So, picking these things off your clothing and brushing it out of pet hair and into a garbage bag is one step towards reducing the spread of undesirable plants.

Also, a big part of prevention is ensuring that the location of road and landscape materials (whether it be gravel, road base, straw, or hay) is inspected and weed free. Paul Kjos and his team at the Shasta County Department of Agriculture have begun inspecting sources of gravel and road base materials for stinkwort and other invasive plant species and is collaborating with these companies in maintaining their sites as weed free as possible. A critical component of this is storing the materials in weed-free locations. When purchasing landscape materials for your backyard, I highly recommend looking around the piles before taking the material home. If you see plants you don’t like around the piles, there is a good chance they will end up in your backyard if you purchase those materials. And this goes for agencies that purchase rock and materials for road improvement projects—there is a good chance we could be spreading weeds along entire road corridors if we don’t use clean material, clean our equipment, and store materials in clean locations. Inadvertent spread along roadsides can be devastating because the subsequent infestation along a road corridor can be
so big that it is too costly to treat. So, the dialogue that Paul is having with quarries and hay and straw suppliers is critical, and the more we can spread the word about the importance of weed-free materials, the more there will be a demand for it and the suppliers will reap the benefits.

Lead restoration technician for the National Park Service, Joe Nicholas, hand pulling and bagging stinkwort within a road improvement project. Photo by Jennifer Gibson.