



Big T Wash Line

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ABOUT THE BIG TUJUNGA WASH MITIGATION AREA

“Big T” is a parcel of land located in the City of Los Angeles’s Sunland area (see Page 6).

The Big Tujunga Wash Mitigation Area (Big T) covers an area of approximately 210 acres of sensitive habitat, encompassing the Big Tujunga Wash and Haines Creek. The site was purchased by the Los Angeles County Department of Public Works (LACDPW) in 1998 as compensation for habitat loss for other LACDPW projects.

LACDPW’s implementation of the Master Mitigation Plan for Big T has been underway since April 2000. Big T protects one of the most rapidly diminishing habitat types found in Southern California: willow riparian woodland. The Big Tujunga Wash is home to several

protected species of fish, including the Santa Ana sucker, Santa Ana speckled dace, and arroyo chub, and contains habitat for sensitive bird species such as the least Bell’s vireo and southwestern willow flycatcher.

The purpose of this newsletter is to provide updates to ongoing programs and to explain upcoming enhancement measures that will be implemented on the site. Newsletters are published on a semi-annual basis in the spring and fall.

More information can be found at:
dpw.lacounty.gov/wrd/projects/BTWMA

Fire Adaptations

How do plants persist after a wildfire?

Imagine you're a plant. Now imagine you're a plant with eyes. You see a bewildering glow in the distance. As it creeps nearer, you hear an unfamiliar crackle (yes, you're also a plant with ears), and the temperature begins to rise. It's getting too hot for your little plant body to bare! A huge gust of wind and in seconds you're engulfed in smoke. Your vision is clouded and you try not to breath in the harsh fumes (no surprise, you're a plant with a nose and lungs as well). It's a fire! What do you do? Run? Duck into a nearby burrow and wait for the flames to pass? Jump into the creek and hope for the best? Fly away? Unfortunately, plants can't escape wildfires. They are rooted to the ground and must bare whatever adversity comes their way.

As most are well aware, adversity visited Big Tujunga Wash in early December of last year when the Creek Fire swept through, burning a large portion of the Big Tujunga Wash Mitigation Area (Big T) and leaving behind the stark and ashy remains of Big T past. However, all is not lost. Although the plants at Big T have none of the characteristics we were imagining, many of them do have a plan! A plan that allows them to persist in an environment punctuated by intense, wind-driven burns. A plan more specifically referred to as adaptations.

Adaptations are alterations in behavior or physiology that allow living things to become better fitted to survive and multiply in their environment. Big T is composed of and surrounded by several vegetation communities that have long-running relationships with wildfires. Plant species within these communities have developed various ways to persist, or at a minimum, allow their offspring to persist even after being burned to a crisp!

Let's take a look at some fire adaptations of plants you may be familiar with at Big T. First up, the **obligate resprouter**. After a burn the obligate resprouter will resprout vigorously from the root crown, a portion of the root that stores dormant buds and carbohydrates. The seeds of obligate resprouters typically cannot endure the heat of a burn and thus, the plant is "obligated" to resprout after a fire in order to persist. Examples of obligate resprouters you may encounter at Big T are toyon (*Heteromeles arbutifolia*) and scrub oak (*Quercus berberidifolia*). Speaking of resprouting – in case you were concerned that all of the poison oak at Big T would be gone forever, you'll be glad to know that poison oak can resprout from an extensive underground root system and should be back in no time!

Next, we have the **obligate seeder**. The obligate seeder will die in the fire; however, the obligate seeder will have many generations (hopefully) of fire resistant seed stored in the seedbank. The seeds of obligate seeders



The native Fire Poppy (*Papaver californicum*).

lay dormant in the soil until they receive an environmental cue that tells them to start growing. In fire adapted species this cue could be the intense heat from a burn that weakens the tough outer seed coats of seeds preparing them for germination, or chemical cues from combustion products that stimulate enzymes or growth regulators within seeds, initiating germination. Obligate seeders you may encounter at Big T include species of Ceanothus (*Ceanothus sp.*) that cannot resprout from vegetative structures (i.e., roots) after a fire.

Then comes the **facultative seeder**. The facultative seeder likes to keep its options open. It can resprout from the root crown but also produces fire resistant seed that can germinate with fire cues. Laurel sumac (*Malosma laurina*) and lemonade berry (*Rhus integrifolia*) are examples of facultative seeders you may encounter at Big T.

Last but not least, are the plants commonly referred to as "**fire followers**". Fire followers take full advantage of the increased sunlight and reduced resource competition that fires provide when they destroy mature vegetation communities. These plants may not be present at the time of a fire but have seeds present in the seedbank that will respond



Habitat damage from the 2017 Creek Fire in the Verdugo Mountains.

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to fire cues and germinate after a burn. Fire followers are obligate seeding annuals or short-lived perennial species that may only be present for a season or two after a fire occurs or may persist for several years until dominant plant species have had time to establish. Once dominant plant species establish, the fire followers decline or completely disappear until the next fire. Fire followers you may encounter at Big T include: deer weed (*Acmispon glaber*), bush poppy (*Dendromecon rigida*), stinging lupine (*Lupinus hirsutissimus*), phacelia species (*Phacelia* sp.), fire poppy (*Papaver californicum*), whispering bells (*Emmenanthe penduliflora* var. *penduliflora*), wild cucumber (*Marah macrocarpus*) and many more!

Big T's recovery after the Creek Fire will be a slow and complex process. For the next one to three years, you can expect Big T to be dominated by annual and perennial grasses

and herbaceous species. Once the shrubs have had time to develop and the shrub canopy begins to close, herbaceous species will start to decline. It will likely be five years or more before shrubs are once again dominant and the landscape starts to resemble pre-fire conditions. The post-fire recovery of riparian habitat (vegetation found along rivers and streams) such as the willow riparian habitat found along Haines Canyon Creek will take longer. Riparian habitats are fairly fire resistant due to the high water content of streamside vegetation, however, when riparian habitats are located adjacent to drier shrub habitats that are prone to burning (such is the case at Big T), riparian habitats can burn as well. Riparian trees such as willows and cottonwoods that were burned but not completely killed by the fire have the potential to resprout within a couple of years, but it may be more than a decade before a mature tree canopy will be seen along the creek again.

WHAT ABOUT THE WILDLIFE?

Once the grasses and herbaceous plants start to grow, herbivores will start to repopulate the Mitigation Area, and once those grasses and herbs go to seed, the granivores (seed eating animals) will move in. It won't be long before the omnivores and carnivores figure out the best place around to find a meal, and once they do, balance will start to return to Big T.

Announcements

2018 Annual Meeting and upcoming recovery efforts. If you ever see a fire, call 911!

Report Any Emergencies! If you see something suspicious occurring in the Mitigation Area, call the LA Sheriff's Department dispatch immediately to report it. LACDPW cannot respond to emergencies; however, please notify BTWMA@dpw.lacounty.gov of any incidents reported to law enforcement, and we will gladly follow up. LA Sheriff's Department Dispatch: (800) 834-0064

Community Advisory Committee Annual Meeting

The annual meeting of the Big Tujunga Wash Mitigation Area Community Advisory Committee (CAC) will be held on Thursday, April 26, 2018 from 6:30 p.m. to 8:30 p.m. at:

Hansen Yard
10179 Glenoaks Boulevard
Sun Valley, CA 91352

The purpose of the CAC meeting is to update members on the status of site monitoring efforts in the mitigation area and to discuss upcoming activities. We invite all interested

parties to attend. The minutes from the previous meeting are located on the mitigation area website. We look forward to seeing you there this April.

ATV/AUV Use During Recovery

The use of all-terrain utility vehicles (AUV) will be utilized at Big T as part of the exotic weed eradication efforts. There will be up to two AUVs in use for a couple of months. The AUVs will be mounted with a spray rig to access most areas of the site. As much vegetation has been destroyed at Big T, this will allow for quicker coverage to prevent emergence of invasive species. All AUV personnel will have Chambers Group shirts and business cards.

Fire Prevention

Fire safety practices must continue even though the Creek Fire destroyed the Mitigation Area and surrounding areas in Big T. Existing vegetation and the emergent vegetation growing this spring and summer, coupled with dry, windy conditions continues

to be a fire risk. Removal of dead vegetation, debris, weeds, waste, litter, and any other combustible materials from your properties and surrounding areas is encouraged to prevent fire spread.

As a reminder, fire safety practices are not just for these habitats and can also be practiced at home. Practice these spring cleanup tips at home to prepare for the coming warmer months:

- Clean garage and yards of rubbish that may fuel a fire.
- Test your smoke alarms & change batteries if needed.
- Dispose of any oily or greasy rags, or store in proper containers.
- Be cautious using outdoor BBQ grills. Place it away from buildings, windows, heating, A/C units, and dead vegetation.
- Check your electrical cords and outlets to make sure they are in safe, working condition.
- Clean out your clothes dryer, as lint can be a fire hazard.

2017 Cleanup Day

On Saturday morning November 4, 2017, the County of Los Angeles Department of Public Works and Chambers Group hosted the 11th Annual Big Tujunga Wash Mitigation Area Trail Cleanup Day.

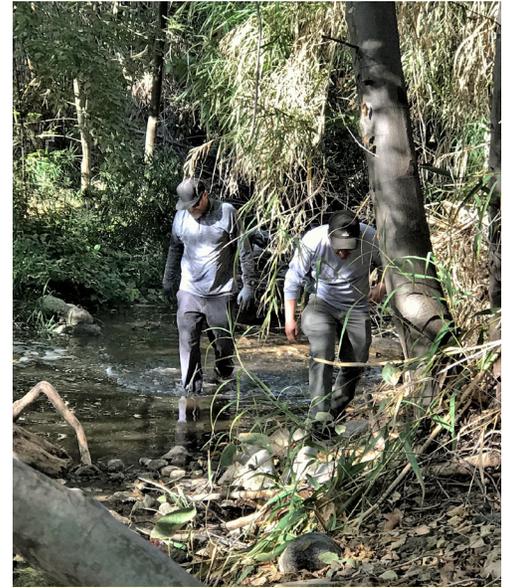


Dozens of community members, County employees, and Chambers Group employees gathered at the Cottonwood Avenue entrance and signed up for a day of trash and rubbish cleanup along the trails. After a brief safety meeting and some group stretches, the volunteers were divided into two teams playfully dubbed the “wet team” and the “dry team”.

The “wet team” focused on cleaning trash and debris from riparian trails west of Cottonwood Avenue where the main trail crosses Haines Canyon Creek several times; thus, they all got wet during the cleanup process! The “dry team” focused their cleanup efforts on the riparian trails east of Cottonwood Avenue and around the Tujunga Ponds where there are no creek crossings; thus, they all stayed dry (except for a little sweat)!

The volunteers worked through the morning hours with some collecting and bagging the trash and debris from the trails and others transporting full bags of trash and bulky items to up to a collection point near the Cottonwood entrance. The teams finished with all of the garbage piled high into one heap, ready for the County’s crews to pick up and haul away.

Over forty full trash bags of debris were collected including hundreds of metallic cans, plastic containers, plastic bags, clothing items, boxes, paper, diapers, tarps, toys, fishing line, rope, cable, and other debris. Bulky trash items, including several mattresses, tires, wooden pallets, coolers, suitcases, and dozens of shopping carts, were also removed. All trails remained open to the public during the cleanup efforts.



Regular removal of trash enhances habitat within the Mitigation Area by reducing predator attraction (ravens, coyotes), reducing harm to aquatic and terrestrial wildlife, increasing aesthetics, and increasing public health and safety.

A big thank-you to the volunteers that helped make the 11th Annual Trail Cleanup Day a success! We hope you'll join us for the 12th Annual Trail Cleanup Day planned for the Fall of 2018.

Stay tuned for event details and other Big T news

dpw.lacounty.gov/wrd/projects/BTWMA

Ash and Safety

Fire safety doesn't end when the fire is put out.

After being spared by the smallest margin from the La Tuna fire this past September, Big T was almost completely burned by the Creek Fire in December 2017. It will take years for the wash to recover. In these early stages of the recovery, we need to remain vigilant of the hazards present in the area and the need for safety when in fire-burned areas.

Although not permitted, camping and dumping had left all kinds of trash strewn throughout Big T. While the fire did consume the flammable material, the remaining metal, glass and non-flammable material

poses a risk to all who walk through Big T. Cuts and punctures can occur from the remaining trash covered by ash. We do not know the threats that lie below the fine, powdery ash until it gives way causing a tripping hazard.

Wildfires, which burn at higher temperatures than brush and forest fires, also produce toxins that mix with the ash. These toxins can range from heavy metals like copper and arsenic, uptaken by the vegetation in the previous years and decades and from the burnt trash,

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to asbestos and lead from the surrounding affected neighborhoods which was blown into Big Tujunga Wash on the fine ash clouds.

Moving through fire-burned areas disturbs the ash causing it to plume and decrease the air quality we breathe. This is why it is highly advised to use respirator masks and only enter these fire-burned areas only when needed. It is especially true for those with asthma, bronchitis, and other respiratory conditions as health problems can occur from breathing in the fine particulate and irritating the respiratory passageways. Everyone's health and safety is of utmost importance, so it is advised to avoid fire-burned areas like Big T whenever possible and to take all precautions when venturing in until the rain has reduced the amount of ash present.

Even with all the problems caused by wildfires the ash also poses a benefit for the environment. Ash contains the macro- and micronutrients needed for plants to grow. As the ash becomes incorporated into the soil it becomes fertilizer for the succession of vegetation re-colonizing the newly-empty land. Signs of this can already be seen at Big T. The Creek Fire did not reach the canopies of trees and new shoots could be observed a few weeks afterwards. Surviving seeds have

already begun germinating. Big T will rebound and make a comeback over the years. The LACDPW-led efforts to restore the wash will hopefully allow native vegetation to gain a foothold over the invasive non-native plants that have encroached over the past decades.

The Aquatic Environment

The Creek Fire not only affected the terrestrial ecosystems within Big T, but also the aquatic ecosystems. The rapid influx of ash into the ponds and Haines Creek affects the fish and amphibians that call the waterways home.

The endemic Santa Ana sucker depends on algae for a large part of its diet, but the large inflow of ash initially covers and kills off much of that algae, as it can no longer photosynthesize. As such, the Santa Ana sucker and other algivores (algae eaters) need to move to other not affected, but possibly less favorable, sections of the waterways.

When all the nutrients — like phosphorus and nitrogen — of the ash build up in the water column, an algal bloom is produced. The free-floating algae takes over the streams and lakes, but is not accessible as a food source for fish and the larval stages of amphibians. The algal bloom grows exponentially until it consumes all the dissolved oxygen, and then

crashes in a process called eutrophication.

While the foundation of the food chain for many species in the aquatic ecosystem is decimated and the dissolved oxygen is depleted, the influx of ash also briefly increases the acidity (lowers pH) of the water as the carbon is incorporated into the water column. Although the spike in pH will subside in a few hours or days, the effect on the organisms is longer or permanent. Fish and amphibian eggs will be stunted as the change in acidity can fluctuate outside the tolerance of the processes needed for normal development. Fish and amphibian larvae gills can be burned by the change in acidity, inhibiting their ability to intake oxygen. If serious enough the fish and larvae will suffocate.

However, the aquatic ecosystems are resilient and will eventually recover, especially with the help of the community. Treading lightly and carefully, and taking the shortest path while crossing streams within Big T will increase the rate at which the ecosystem can reestablish.

Types of Fires

Both brush fires and forest fires are wildfires occurring in scrubland and forests, respectively. Normally the brush and forest fires burn at a lower temperature and at regular intervals, burning the vegetation within the area.

Ecosystems have evolved to actually rely on these fires. Due to decades of fire management, where all fires were put out as soon as possible, dead and dying material has been left to accumulate.

In this context, wildfires are large uncontrolled fires that consume everything in their path at higher temperatures due to all the built-up fuel. This can kill the vegetation normally resistant to fires and sterilizes the soil, extending the recovery period as soil bacteria recolonize the area afterwards.

RESPIRATORY SAFETY

After a fire, there are considerable deposits of ash near fire locations both indoors and outdoors. Fire ash can be irritating to the skin and can cause respiratory issues if inhaled. Short-term exposure to these particulates can have the following signs and symptoms:

Coughing, Scratchy throat, Eye irritation/watery/puffy, Runny nose, Asthma, Headaches, Sneezing/Wheezing, Tightness of the chest, and Shortness of breath.

People who have pre-existing respiratory conditions, young children, and the elderly are more sensitive when exposed and can experience chest pains, palpitations, fatigue, and light-headedness. Practice the following safety tips if you are planning outdoor activities that may expose you to dust and ash:

- Walk in areas where ash has been reduced by foot traffic (such as trails).
- Keep vents and windows closed when riding in a car to reduce outside air from entering.
- Avoid areas that may worsen breathing

conditions such as smoking areas or bonfires.

- Avoid spreading ash and dirt in the air by wetting down surfaces (do not use leaf blowers or vacuum) when cleaning.
- Keep children and pets away from areas accumulated with ash.
- Avoid outdoor activities if possible during windy conditions.
- Use physician-recommended respirators or masks if you have a respiratory condition. Make sure the use of these devices does not get in the way of breathing.
- Use dust mask rated N-95 or P-100 to effectively block dust and ash particles.
- If you start feeling dizzy, or have difficulty breathing when wearing a respirator or dust mask, go to a place with cleaner air and remove mask.

If you still experience any of those symptoms and are starting to feel dizzy, lightheaded and have trouble breathing leave the area immediately and call 911.

KID'S CORNER**Creek Fire Word Search****Word Bank**

1. Big Tujunga
2. mitigation
3. habitat
4. riparian
5. adaptation
6. seedbank
7. ash
8. poppy
9. algae
10. amphibian
11. oxygen
12. wildfire

b b r i p a r i a n n k
 i q f a u x t t o o n w
 g a l g a e a i i a y i
 t s y t f t t t b p n l
 u h y r i a a d p y x d
 j h a b t g e o u k p f
 u k a p i e p d y l h i
 n h a t s e s o m l o r
 g d i w e o x y g e n e
 a m a m p h i b i a n p

EMERGENCIES? INCIDENTS? QUESTIONS?

CALL 911 TO REPORT ANY EMERGENCY SUCH AS FIRE OR ACCIDENT

• To report minor incidents or regulation infractions contact the Sheriff's Department at 1-800-834-0064. (Please DO NOT use 911.)

• Do not attempt to enforce regulations yourself; please allow law enforcement to handle the situation or incident.

• For emergency follow up or to report minor incidents, obtain information, or get questions answered during weekday work hours (8:00 a.m. to 5:00 p.m., Monday through Thursday), please contact:

Crystal Franco, Stormwater Engineering Division
 County of Los Angeles Department of Public Works
 900 S. Fremont Avenue
 Alhambra, CA 91803
 Email: BTWMA@dpw.lacounty.gov
 Phone: (626) 458-6158

Where is the Big Tujunga Wash Mitigation Area?

Downstream of Big Tujunga Canyon, right in Lake View Terrace and south of the 210 freeway, you'll find a native riparian (water loving plant) natural area filled with cottonwoods, willows, and pools of water that support many native aquatic species.

Check out the Big T website for more information at:

- dpw.lacounty.gov/wrd/projects/BTWMA

