LATE ADDITION

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
MEETING OF SEPTEMBER 14-15, 2016
APPLE VALLEY

ITEM 5
EXCUTIVE OFFICER'S REPORT

LATE ADDITION
Please insert new EO Report Items No. 16, 17, and 18 behind bates page 5-22

ENCLOSURES		**BATE NUMBER**
1	EO Report Items No. 16, 17, and 18	**5-22.5**

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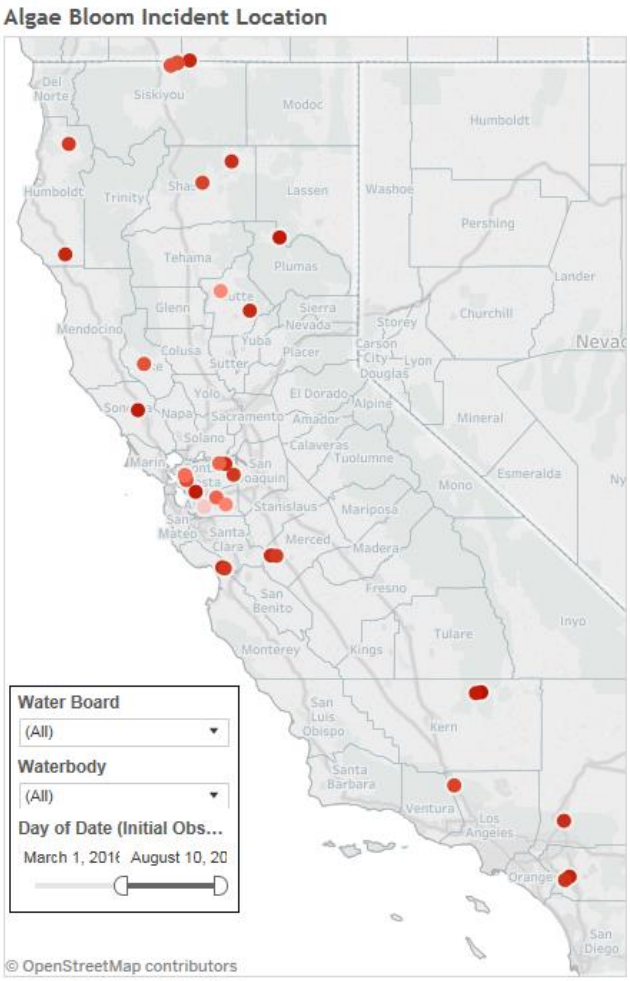
16. Are Harmful Algal Blooms Affecting Waters in the Lahontan Region? - *Mary Fiore-Wagner*



In recent years, California has been plagued by drought and warming trends resulting in environmental conditions that favor the growth of harmful algal blooms (HABs). Warmer air and water temperatures, high nutrient levels, and slow and stagnant water can cause cyanobacteria (also known as blue-green algae) to rapidly multiply resulting in blooms. Algal blooms can consist of both toxic and non-toxic algae. Toxic HABs can produce excessive amounts of cyanotoxins (e.g., microcystins, Anatoxin-A) potent enough to threaten the safety of humans, wildlife, and pets sometimes to the point of causing serious illness or mortality. Non-toxic algal blooms have impacted beneficial uses by imparting unpleasant tastes and odors to water and fish, and by affecting water clarity and color.

California's Water Quality Monitoring Council created a HAB portal to share cyanobacteria data, HAB maps, and public advisories. The HAB portal currently lists 32 incidents across the state of HABs, which have been voluntarily reported to the State Board's Surface Water Ambient Monitoring Program (SWAMP). (See figure below labeled Algal Bloom Incident Location.) Waterbodies with HABs have been reported in all regions but the San Diego (R9) and Colorado River (R7) regions. The Central Valley region (R5) has the most reported incidents with 13 affected surface waters or impoundments. As of September 1, 2016, SWAMP has only received one report of a confirmed HAB event in the Lahontan Region.

Silverwood Lake. In the Lahontan Region, a HAB incident and advisory for Silverwood Lake was reported on July 25, 2016 after sampling and analysis conducted by the Department of Water Resources (DWR) indicated levels of microcystins above the State's Water Board's warning level. (See picture below.)

California State Parks (State Parks), which manages recreation at Silverwood Lake, posted warning signs and closed swim beaches on August 3, 2016. To further warn the public, both DWR and State Parks issued press releases on August 4, 2016. Days later, State Parks closed Silverwood Lake to all water contact recreation after results from samples collected on August 4, 2016 indicated microcystin levels over ten times greater than the State Board's 20 micrograms per liter Danger Trigger Level established for the protection of human health. This extremely elevated microcystin level prompted new press releases, and updated of warning signs to indicate "Danger" status.

In response to the HAB outbreak at Silverwood Lake and after receiving a prohibition exemption from the Lahontan Water Board, DWR treated the affected portions of the lake with the aquatic algaecide copper sulfate. The treatment effectively reduced mycrocytin concentrations to acceptable levels. Ongoing sampling at the swim beaches by DWR indicates that levels have subsided to safe levels and all recreational activities have resumed. DWR plans to keep sampling Silverwood through the end of October; longer if toxins are detected.

Other Lakes in the Lahontan Region. Water Board staff have received information about four other lakes in our region that could potentially be impacted by HABs. In response to a report that Mono Lake appeared "pea-green", Water Board staff supplied the State Water Board's SWAMP team with a Mono Lake water sample for identification of cyanotoxins. Analysis under the microscope did not indicate the presence of toxic cyanobacteria cells. As such, it was not recommended that the sample undergo laboratory analysis to quantify levels of algal toxins.

This week, a report from a concerned recreationalist prompted staff to further investigate Diaz Lake, a freshwater lake located in Inyo County just south of Lone Pine on Highway 395, which supports a campground and both powerboats and non-motorized watercraft. Contact with the Inyo County Environmental Health Department (Inyo County Health) on September 1, 2016 revealed that Inyo County's Parks and Recreation (Inyo Parks) Department observed visible blue-green algae blooms along the shoreline of Diaz Lake. Since identification of algal cells and laboratory analysis could not be conducted before the Labor Day holiday, Inyo Parks staff cautiously issued a press release and posted warning signs advising persons to avoid water contact recreation. The press release included Millpond, which also reportedly developed blue-

green algae along the shoreline, though to a lesser extent than that observed at Diaz Lake. Also located in Inyo County, Millpond provides many water-contact recreational opportunities.

Considering the locations of the Victorville and South Lake Tahoe Water Board offices, it is difficult for Lahontan Water Board staff to quickly sample surface waters in Inyo County. Water Board staff have coordinated with staff from Inyo County Health, who have offered to collect samples at Diaz Lake and Millpond. Samples will be shipped to the Water Pollution Control Lab for laboratory analysis to determine the presence and magnitude of cyantoxins.

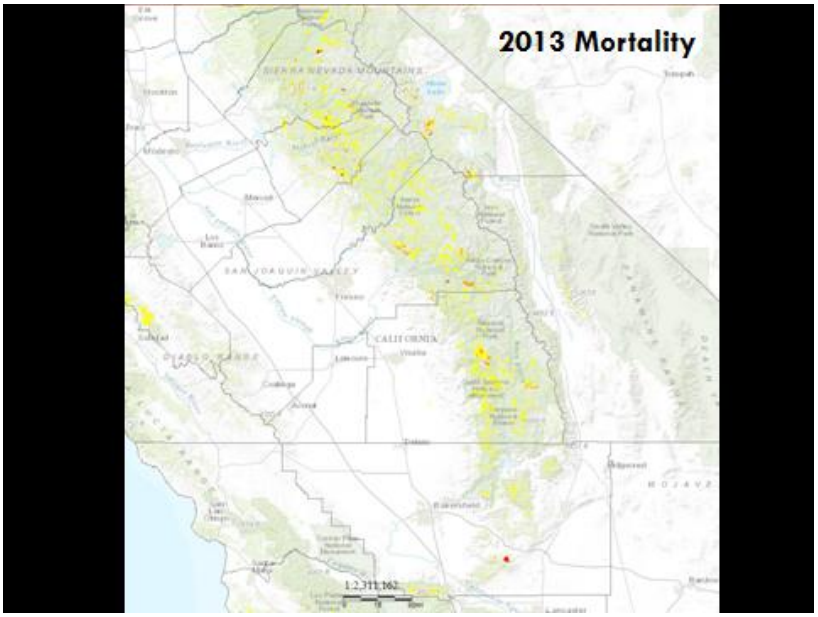
A Lassen County Times reporter contacted staff to determine if there is a harmful algal bloom at Eagle Lake after reading about a HAB in the Central Valley Region, and receiving complaints of excessive algae at Eagle Lake. Staff contacted partners at the Department of Water Resources and the California Department of Fish and Wildlife (CDFW), which regularly monitor Eagle Lake, for insight. Though the CDFW did not think the Lake was supporting an unusual amount of algae, we are partnering with CDFW and DWR to learn more. This week DWR and CDFW are collecting samples at Eagle Lake and will ship the samples to State Board to determine presence of cyanobacteria. Eagle Lake is particularly low this year, with only the southern basin consistently deep enough for boating navigation.

In addition to reports of HABs throughout the Lahontan Region, the Executive Officer has granted exemptions to the pesticide prohibition so water suppliers may apply aquatic herbicides to control unacceptable levels of invasive weeds and harmful algal blooms that spring up in water conveyances and supply waters throughout the southern Lahontan Region. Under future climate scenarios, it is likely HABs may worsen since global temperatures are expected to warm, which will enhance growing conditions for cyanobacteria. If HABs increase in abundance and frequency, State and Regional Water Board staff may see an increase in the number of requests to use aquatic herbicides to manage algal blooms. Staff is currently working with State Board on a HAB response protocol for our region so that we can consistently and effectively respond to HAB reports.

Additional information on harmful algal blooms can be found on these State Water Resources Control Board and Department of Public Health websites:
http://www.mywaterquality.ca.gov/monitoring_council/cyanohab_network/index.html.
http://www.mywaterquality.ca.gov/habs/index.html
http://www.cdph.ca.gov/healthinfo/environhealth/water/Pages/Bluegreenalgae.aspx

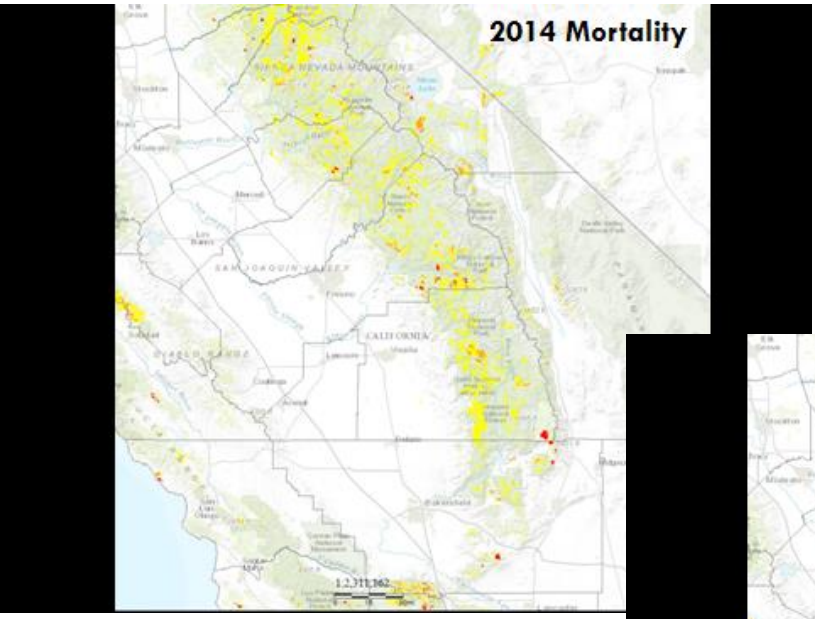
17. CALFire Hosted a Tree Mortality Task Force Workshop at Lake Tahoe Community College, So. Lake Tahoe– *Doug Cushman*

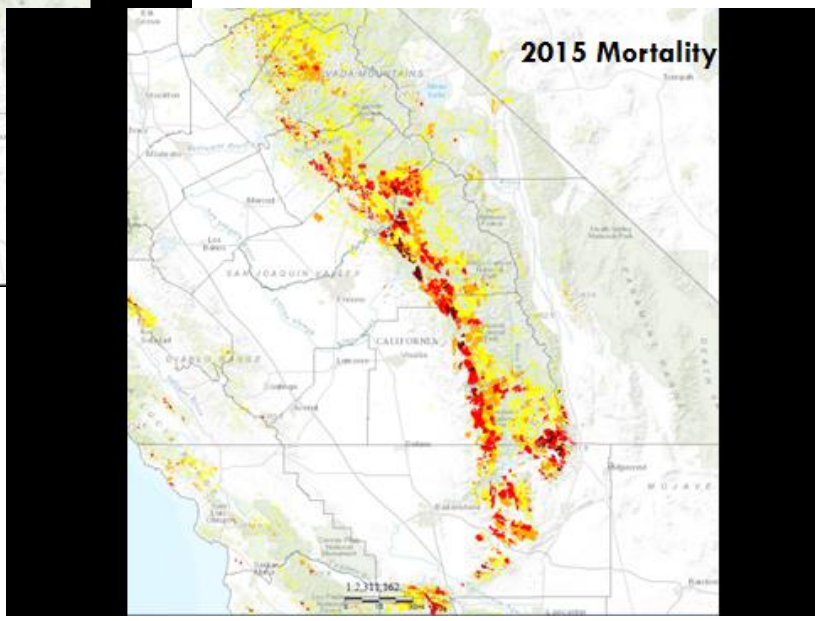
On August 30, 2016, CALFire and Office of Emergency Services (OES) hosted the Governor's Tree Mortality Task Force (TMTF) workshop to highlight issues related to the extensive drought and climate change induced tree mortality in California. CALFire and the United States Forest Service (USFS) have been monitoring tree mortality throughout the Sierra Nevada mountain range since 2011. Trees have been increasingly succumbing to native bark beetle infestations that have been exacerbated by climate change and drought impacts. Resources Agency Secretary John Laird reported that California had over 70 million dead trees in the Sierra Nevada and only 2 million trees had been treated to date. The number of dead or dying trees is increasing at an unprecedented rate and prompted the Governor to issue a Proclamation of a State of Emergency, on October 30, 2015. The emergency proclamation acknowledged the then existing extent of tree die-off and speculated that tens of millions more trees would likely die due to beetle, drought, and climate change induced stresses. Drought and climate change stresses constrain the defense mechanisms that healthy trees normally utilize to fend off beetle infestations.



Attendees to the workshop included high ranking representatives from CA Natural Resources Agency, including the Resources Agency Secretary Laird, CALFire Director Ken Pimlott, CA Dept. of Transportation (CALTrans), the CA Office of Emergency Services, staff members from the CA U.S. Congressional delegations, the USFS Regional Forester, the Executive Directors of the Sierra Nevada Conservancy, the CA Tahoe Conservancy, the Tahoe Regional Planning Agency, Lahontan Water Board Chair Dr. Amy Horne, and many others. The event was filmed as part of a future Netflix documentary on wildfire.

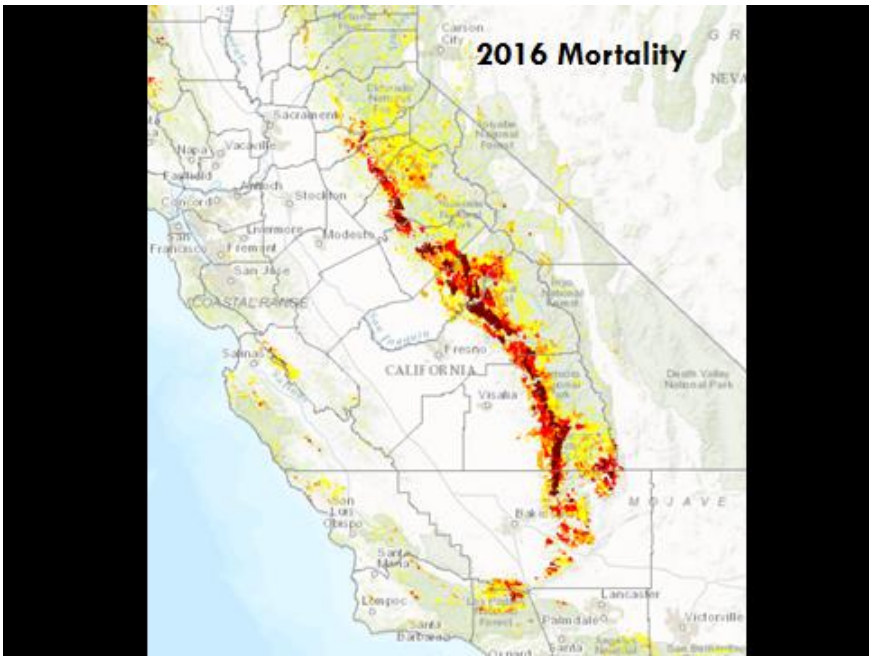
The TMTF has listed the areas with high tree mortality into Tier 1 and Tier 2 High Hazard Zones. Tier 1 areas are the zones in direct proximity to communities, roads, and utility lines. They represent a direct threat to public safety. Tier 2 areas are defined by watersheds that have significant tree mortality as well as significant community and natural resource assets. It was stated there is currently no capacity, in terms of agency funding and staffing or even for facilities to process the timber or biomass that has died. As resources become available to address the situation the Taskforce's focus is to address the Tier 1 areas first.





The scope of the tree mortality is increasing at a dramatic pace in the western Sierra Nevada and is spreading to other parts of the state, namely the eastern Sierra Nevada mountains. The tree mortality is critical in ten counties and covers 300 linear miles of the southern and central Sierra and is moving north. Over 4,000 miles of roads have dead trees adjacent to them and 5.5 million trees have been estimated as needing removal for public safety, at a projected cost of $2.2 billion for just for trees on non-USFS lands.

The drought induced tree mortality will impact the forests of California and their associated resources including: water and watersheds, wildlife, fire regimes, public safety, forest products, recreation, and the economies of the affected area for decades.



The graphics below were provided by CALFire based on annual surveys that have been conducted since the drought began. Tree mortality continues and is likely to impact additional areas. Water Board staff will be following this issue and collaborating with entities addressing the catastrophe as efforts proceed within the Lahontan Region.

18. USFS SBNF and INF Wildfire Summary, Summer 2016– *Doug Cushman and Jim Carolan*

San Bernardino National Forest

Blue Cut Fire

On August 16, 2016, the Blue Cut Fire started in the Cajon Pass area west of Interstate 15. During the course of the wildfire, railroad lines, local roads, State Highway 138, and Interstate 15 were closed along with a large evacuation area that included Lytle Creek, Wrightwood, Summit Valley, Baldy Mesa, Phelan, and Oak Hills. The wildfire burned approximately 36,274 acres of chaparral, grasses, timber, litter and understory, as well as destroyed105 single family residences and 126 outbuildings before 100 % wildfire containment was reached on August 23, 2016. Please see the attached map prepared by Christy Hunter of the Lahontan Water Board which depicts portions of the Blue Cut Fire footprint located with the Lahontan Region as well as initial Burn Severity Area estimates to be presented in the pending Burn Area Emergency Response (BAER) assessment report. Anticipated release of the BAER assessment report is mid to late September 2016.

Pilot Fire

On August 7, 2016, the Pilot Fire started in the Miller Canyon OHV area off of Highway 38 and quickly spread into the Hesperia, Deer Park Lodge, Lake Arrowhead, and Silverwood Lake State Recreation Center areas between Pilot Rock Ridge and State Highway 137 in Hesperia, California. The wildfire burned approximately 8,110 acres of chaparral, grasses, timber (primarily pinyon pine), litter and understory before 100 % wildfire containment was reached on

August 16, 2016. Based on current USFS estimates, no structures were destroyed in the Pilot Fire. Anticipated release of the BAER assessment report is mid to late September 2016.

Inyo National Forest

Marina Fire

On June 24, 2016, the Marina Fire started in an area west of State Highway 395 and north of Lee Vining, California. The wild fire burned approximately 654 acres of pinyon pine, sagebrush, bitter brush, rabbit brush and grasses before 100 % wildfire containment was reached on approximately July 7, 2016. Based on current USFS estimates, no structures were destroyed in the Marina Fire. Anticipated release of the BAER assessment report is mid to late September 2016.

Horseshoe Fire

On August 9, 2016, the Horseshoe Fire started towards the top of Horseshoe Road near Last Chance Meadow approximately 12 miles southwest of Lone Pine, California. The wild fire burned approximately 369 acres of sage brush, mountain mahogany, and mixed conifer before 100 % wildfire containment was reached on approximately August 16, 2016. Based on current USFS estimates, no structures were destroyed in the Horseshoe Fire. Anticipated release of the BAER assessment report is mid to late September 2016.

As our staff has done with post-wildfire activities for other fires in the region, Water Board staff is coordinating with the USFS during the development of their BAER assessment for these wildfires as well as all responsible and interested agencies participating in restoration efforts. The Water Board staff's focus during restoration effort plan participation will be the reduction of ash and sediment being delivered to watercourses via impacted creeks and drainages. The USFS's BAER assessment report will provide final maps, identify acreage burned by ownership, vegetation types, burn severity, dominant soils, soil erosion hazard rating, sediment potential, geology, impacted watersheds and subwatersheds, types and piles of impacted watercourses, and impacted transportation infrastructure (roads, crossings, etc.). The BAER assessment report will also include a summary of hydrologic design factors, summary of analysis, and a summary of proposed emergency treatments and treatment objectives. Once our staff receive and review the BAER assessment report for these fires, an updated EO report summarizing the impacted watersheds and watercourses and proposed emergency treatments will be provided to Water Board in November 2016.

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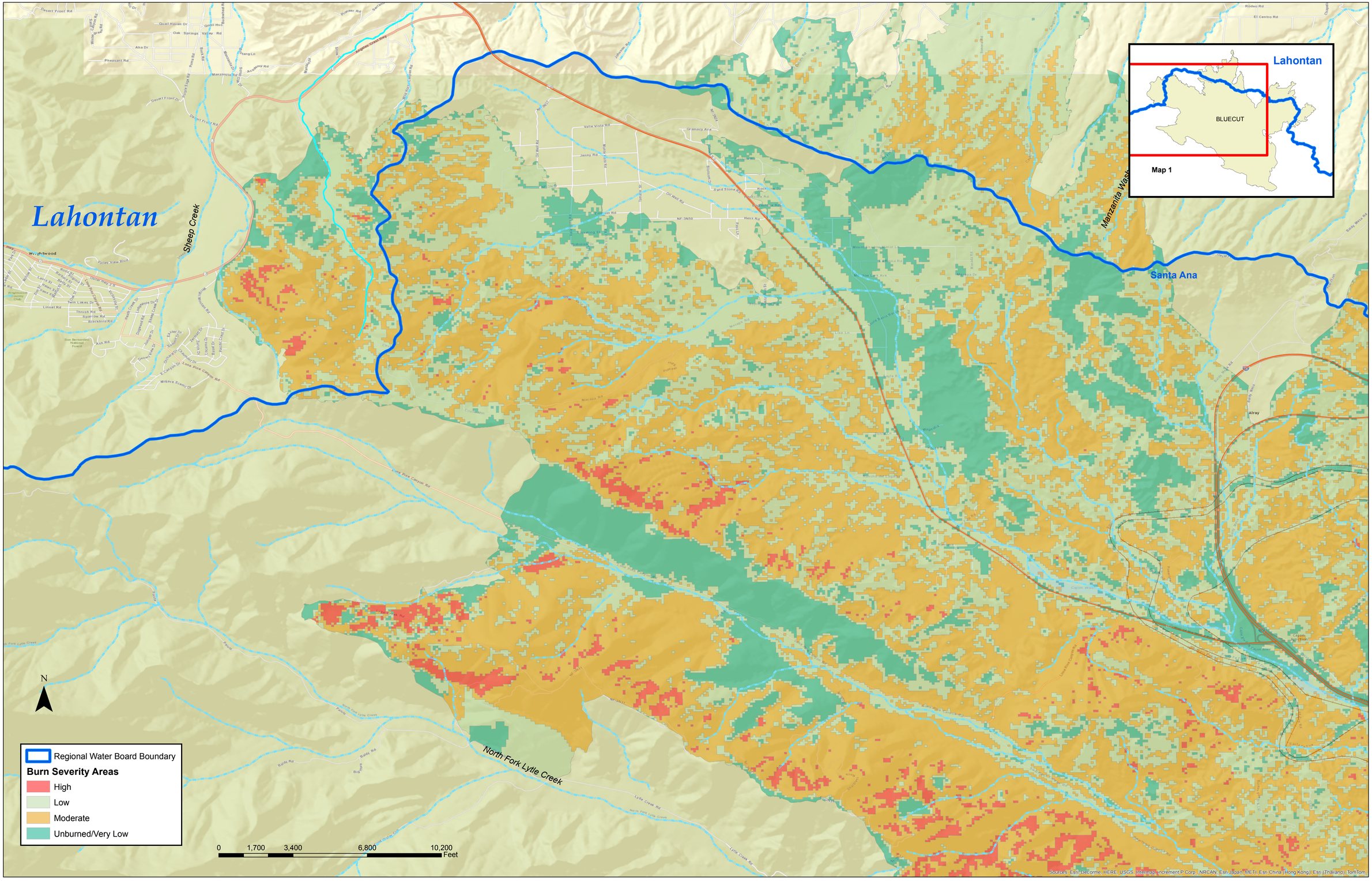
Lahontan
Sheep Creek
Santa Ana
Manzanita Wash
North Fork Lytle Creek
Lahontan
BLUECUT
Map 1
N
Regional Water Board Boundary
Burn Severity Areas
High
Low
Moderate
Unburned/Very Low
0
1,700
3,400
6,800
10,200
Feet
Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom